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CONTENTS.

ILLUSTRATIONS.

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Jan., 1883.

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NUMBER 1.

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1883

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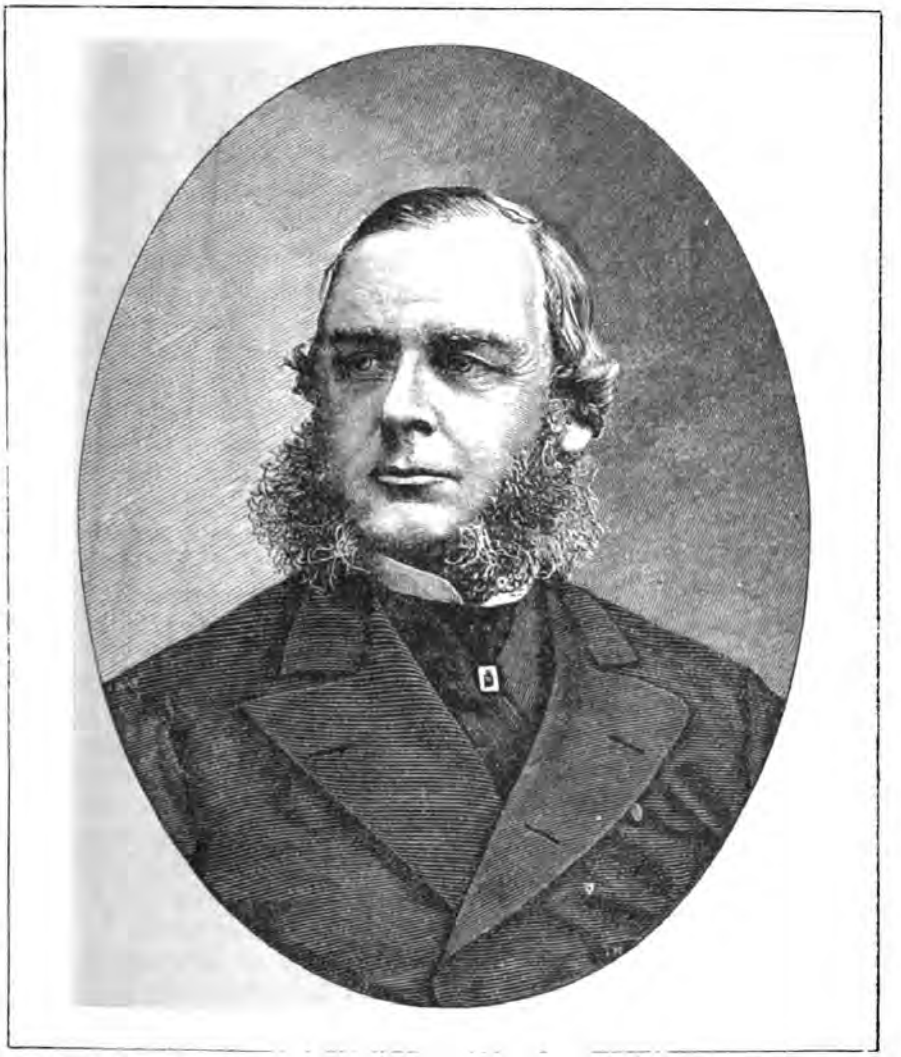


GEORGE B. LORING,

U. S. COMMISSIONER OF AGRICULTURE.

OUR readers who are energetic, progressive farmers, and those who are familiar with general scientific progress in the United States, will not have glanced at the title to this sketch and been surprised by a name of which they

are entirely ignorant. Dr. Loring has been too long a prominent worker and educator in agriculture not to be very widely known as an authority, and his appointment to be Commissioner of Agriculture in the Department of the Interior, is a compliment to the gentleman's worth and ability, rather than one of those occurrences in public life with which we are too familiar, as mere political jugglery, in which regard for competency is a minor consideration.

By organization he is possessed of gifts and capabilities above the average; the temperament is exceedingly well balanced, with a nervous fiber of very fine quality, and recuperative forces of unusual activity and strength. The brain is large, well developed in the basilar convolutions, and rising to a superior height, as the observer can at once perceive by casting his eye at the root of the nose, and glancing upward to the crown. There is much breadth in the region of the ears, showing that his motive powers are strong, that he is naturally energetic and persevering, desirous of pushing to completion whatever he undertakes. There is much of the sanguine element in his composition which impresses his work with spirit and vigor, imparts to his intellect quickness of impression and readiness of judgment. He has large observing organs, ability to comprehend the meaning of facts, to marshal them in order for any desirable purpose, and to make them effective as data in presenting his views on a disputed subject. He is naturally orderly and systematic, and this, with his marked Constructiveness and Comparison, renders him very able in organizing and applying materials and labor in any desirable direction. He entertains strong convictions because he is quick at conclusions through Human Nature, and through the rapid working of his practical faculties, and because he has a strong personality, a centralized, well-balanced consciousness of personal worth and capacity. He is proud-spirited, believes in reputation, and aims at excellence for both its own sake and the reputation it confers. He likes to be highly esteemed, but would seek no approval where he can not show something that deserves it. With large Language and exceptional ability in appreciation of facts, he should be a fluent, persuasive speaker, and likely to excel in oratory with practice.

GEORGE BAILEY LORING was born at North Andover, Mass., graduated at Harvard College in 1838, and at Harvard Medical College in 1842. For several years he practiced as a physician, in 1848 receiving the appointment of surgeon to the Marine Hospital at Chelsea, where he remained until 1850. In 1853 he was made postmaster of Salem, Mass. Meanwhile he had given a large share of his time to the study of practical and scientific agriculture, and wrote and delivered addresses on the subject, in the course of time becoming known in New England as an indefatigable worker in that line.

A fatal cattle disease broke out in Massachusetts and the neighboring States, causing great loss and producing widespread consternation, and Dr. Loring's professional and agricultural studies and his ability, drew attention to him as the fittest man to contend with that fearful scourge—pleuro-pneumonia. He was commissioned in 1860, and right vigorously did he perform the difficult task of stamping out that contagious malady among cattle.

Dr. Loring has conducted a farm for many years wherein he has introduced into practical operation the views which he advocates in the press and on the platform. The chief products of his own

husbandry were milk, vegetables, and hay. In 1859 he imported some of the finest Ayrshire stock that could be found in Great Britain, and he has continued to breed them successfully ever since.

He was the leading spirit in establishing the New England Agricultural Society in 1864, and was elected its president. The Society is in a most flourishing condition. He has for many years been a member of the American Institute and of the Farmers' Club, which is composed of members of that well-known organization, and is also a member of the American Agricultural Association. He was a trustee of the Massachusetts Society for Promoting Agriculture, from 1858 to 1863.

His prominence in so important a field as Agriculture, brought him into political relations which resulted in his election to the Legislature of his State, taking a seat in the House of Representatives in 1866 and 1867, and subsequently becoming a member of the Senate, and serving from 1873 to 1875 as president of that body. In his legislative career he did much for his favorite cause and for scientific education in the common schools, and that, too, without exhibiting the importunity or narrowness of the hobby rider. As a farmer he has been practical yet scientific and experimental, and proven that liberal intelligence and good judgment in the agriculturist are conducive to private benefit and public utility. From his own experiences as a tiller of the soil and a stock-breeder, he has drawn many valuable conclusions, which have been given to the public through pamphlet, periodical, and lecture, and to-day very few men in New England have as much influence upon the agricultural mind as Dr. Loring. In appearance he is impressive, being large in frame, well-proportioned and graceful, with an exceptionally pleasing face and voice. As a speaker he is a welcome occupant of the platform, being fluent, vigorous, and clear in his treatment of the subject which brings him before the public.

Dr. Loring is President of the American Forestry Congress, having been elected at the last meeting of that association of tree-protectors for a second term. With a few extracts from an address which he delivered before the Convention of American Agriculturists, held this year at Washington, D. C., we close our sketch of the Commissioner of Agriculture:

"The value of practical information can not be too highly estimated. It is the practical men who have been the pioneers in this great industry. They have leveled our forests, built our towns and villages, and it is through their demands that agricultural machinery has been brought in this country to that degree of perfection which is of so much value to the farmer, and the source of such infinite admiration to every observer. There are nowhere in the world finer exhibitions of agricultural machinery than can be found at our annual fairs, brought there, acre by acre, upon the demand of the successful farmers of every section of this country. It is the practical men who have brought this about. It is they who, led by Mr. Johnston, of New York, have instituted 'thorough drainage.' It is they who introduced the best breed of cattle, and have increased, by the introduction of animals adapted to our latitudes, the wealth of this Republic to an extent which the Superintendent of the Census informs me is almost incalculable. Now, the work that the scientists and that which the practical men have done should go hand in hand, and I have endeavored to combine both sides of this agricultural investigation in such a way that its result shall be felt, not only by colleges and schools, but also on the farms themselves. I thought that it would be well, therefore, to divide the work. The convention that follows this will be devoted to the animal industries of the country—horses, cattle, sheep, swine—during two days. Two days will then be devoted to the cereals—the best kinds of wheat, corn, oats, barley, etc., and to the discussion of methods relative to the management of these crops. . . . .

"Any gentleman who was present at the last convention held in this room and

is here to-day, must see the immense progress that has been made in agricultural education since that time. Some of the strongest men in the country engaged in the debate on that occasion, but it was evident that few of them comprehended its true value and importance. Since that day a great change has taken place. I see now no reason for any discouragement. I presume there never was a college that did not have some period in its existence in which its fate appeared to be somewhat doubtful. But no doubt should now remain with regard to that business interest for which the students of agricultural colleges are educated. As a profitable occupation it is now recognized. I have always said that there is no such thing as unprofitable agriculture in the hands of an honest, faithful, intelligent farmer. The earth has never yet failed to respond to a wise and proper demand. There are mistakes in farming, to be sure, as there are in other branches of business; but you take the community generally, and you will find that agriculture is as uniformly profitable and yields as generous returns as most of its associate industries. . . . .

"I desire to bear my testimony to what I have seen in the South. I perceive there a manifest desire to leave those things that are behind, and to press forward to those things that are before. The gentleman from South Carolina, Mr. Aiken, who is present, knows very well that everywhere in his own State, and other States of his section, there are evidences of advancing steps in the way of diversified and profitable agriculture. The great cattle interest in the West is as sure a mode of profit as is any well-organized commercial interest. What better evidences than these can one have of the success which is sure to follow the application of the sturdy common sense of an agricultural community to the business of farming.

"As I come East I see another system adopted with sound judgment and enterprise—a system which will ultimately extend throughout this country. It is the cultivation of special products devoted to local markets. Many an acre of land in the vicinity of our large cities is said, on good authority, to yield a thousand dollars annually. In my own neighborhood, in Massachusetts, there is land that pays the cultivator $250 and $300 per acre every year. You may see there good farm-houses and barns, the people cultivating their minds, accumulating libraries, and in every way striving to learn their duties as American citizens, and their obligations to the community and State in which they live. There is in the business of practical American farming the basis of our best civilization, the best intelligence, and a broad and enlightened State policy which is not equaled anywhere on the face of the earth.

"Now, if we have proved that our farming communities stand so high among those of the rest of the world, you may ask what is the necessity of agricultural science? For myself, I think the necessity for accurate endeavor is in proportion to the value of the occupation. Hence it is that we, of all people, need the aid of science in order that we may teach those laws of farming which shall make both the general and special agriculture to which I have alluded more systematically and accurately carried on.

"Now, when I am told that young men who graduate from these colleges avoid agriculture and adopt engineering as a profession, the reason at once suggests itself. It is much easier to graduate an engineer than it is a farmer. Every man knows that if he were running a railroad, he would find it easier to secure an engineer for his road, or mechanic for his machine-shop, than would his neighbor, who owns a thousand acres in Virginia, to find a man to organize his force and manage his land. You can graduate lawyers who will carry you through all the intricate windings of the courts, or physicians who are renowned for their skill, but when you come down to this business of agriculture, and would find a man whom you are willing to employ as an expert, you are involved in difficulty at

once. And yet there is no want of liberal compensation in this calling. Give me one hundred good horticulturists, competent to arrange vineyards in California or market gardens near New York or Boston, or to adapt themselves to the various systems of farming with their knowledge of the several branches of agriculture and horticulture — give me one hundred such men, and they can find employment at once. There is an abundance of it everywhere. The demand for such is greater than the supply."

WILLIAM PENN AND THE CITY HE FOUNDED.

THE recent celebration of the two hundredth anniversary of the landing of William Penn directs the mind to an event which is replete with historical instruction. Philadelphians may have thought it proper to make the occasion one of special enjoyment and hilarity, of parades and banquets, of speech-making and trade glorifications, but perhaps it were more profitable to us did we calmly reflect upon the nature of the event, the spirit of Penn and his associates, when they marked out the boundaries of the "City of Brotherly Love," and the character of the settlement's early growth. Penn was a young and ardent man, who had sacrificed a most promising career at the Court of King Charles, to become associated with a despised sect, the members of which were then most conspicuous for their refusal to take off their hats in the presence of royalty. Full of

faith in the sanctity of Quakerism, and possessed with the purpose of establishing "a city of refuge where all men could have liberty unmolested to worship God under any creeds they please," he came to America, landing in the latter part of October, 1682, at New Castle, Del. In an open boat, with a few friends, he sailed up the charming Delaware River, prospecting for the site of his projected city; finally selecting the one on which Philadelphia stands. "Here," said he, "I will plant a city, not like the crowded towns of the Old World, but with houses having gardens round them, so as to form a green country town." This motive, in spite of the rapid growth of the city in the past hundred years, and the imperious demands of commercial enterprise, is evident in the general character of its streets and buildings, in their open, airy, and spread-out character.

WM. PENN'S COTTAGE. Present appearance.

Treating the Indian possessors of the soil with candor and fairness, Penn won their confidence, and secured for himself and his associates their unswerving friendship. The famous treaty which he made with them was not written, but its terms were kept in remembrance after the aboriginal fashion, and never forgotten.

"There is nothing in the history of the human race," says an eminent historian, "like the confidence which the simple virtues and institutions of William Penn inspired in the Indian mind."

There had been a few settlements made by Friends on the territory included in the grant to the Penn family, previous to his arrival, but when he came he found them to consist mainly of caves dug in the banks of the Delaware, and one house. The city as planned at first and laid out was a level plain, bounded by the Delaware and Schuylkill Rivers, and by what are now Vine and Cedar Streets; High Street, now Market, was in the center, and the streets running in the same direction were named after different kinds of trees—as Chestnut, Walnut, Locust, Pine, Mulberry (now Arch), Sassafras (now Race), etc. These streets ran from river to river, crossing the others, which were numbered in order from the Delaware. It must be noted, however, that some of these streets were first named after prominent men among the colonists. Walnut Street being previously called Pool, and Mulberry Holmes Street, etc. Penn reserved at the intersection of High and Broad Streets a large square for public buildings and for health and recreation, and in each of the four sections which were formed by the crossing of the two streets above named, he designed a square for public walks. Penn remained in Philadelphia about two years, and then returned to England, where he

CARPENTER'S HALL IN 1774.

resided until 1699, when he revisited the city he had laid out, and found it grown to a considerable size and prosperous. While in his native land he used his influence to the utmost extent to alleviate the sufferings and stop the annoyance to which his fellow Quakers were subjected, and frequently became himself the object of malice and bigotry, because of his sectarian relation. The city he had established, too, became the scene of religious and civil quarrels, and reports were circulated to injure his character and the nature of his administration. In 1692 the King of England deprived him of his authority as Governor of Pennsylvania, and directed Governor Fletcher, of New York, to administer the civil affairs of the adjoining province. Penn had a hearing before the Council on the charges against him, and was honorably acquitted in November, 1693; but his government was not restored to him until the summer of the following year.

During his second visit to Philadelphia he busied himself about various reforms and improvements, but he was not permitted to continue at his noble labors long, for tidings reached him that a measure was pending in the House of Lords to bring all the proprietary governments under the Crown; and he found it necessary to hasten over the sea to defend the interests of his colony. For the remainder of his life he was involved in troubles occasioned by the vicious conduct of a son in Pennsylvania, and by fraudulent transactions of trusted agents in England; while sickness added its weakness, preventing him from taking that part in his affairs which was necessary to their furtherance, and finally causing his death on the 30th of July, 1718. For six years previous to his death his powers of mind and body were greatly impaired by paralysis, much of that time memory and motion being almost entirely lost.

The aims of this enterprising and courageous man were pure and noble; and although his indefatigable energy accomplished much, most of his labor and self-sacrifice were fruitless. It is said that his misfortunes were largely due to his inability to understand the character of others, and that he trusted too much to men of unscrupulous selfishness, and who cared nothing for the objects to which he was devoted.

SPEAKER'S CHAIR, & TABLE ON WHICH THE DECLARATION OF INDEPENDENCE WAS SIGNED.

Yet the city he founded was a success in growth, enterprise, and development, so far as population and commerce are concerned, if not in the direction of his hopes and aims. If it did not become the paradise of peace, the community where no sentiment of warfare could exist, it became known for its religious toleration, the city, above all, where sect could live in neighborhood with sect without perpetual animosities. During the seventy-five years following 1684 inter-colonial wars took place, in which

England was engaged against other European nations, but Philadelphia was not involved in these quarrels; the spirit of the Quaker part of its population was strong enough to preserve a dignified neutrality. In the French and Indian war, however, many who had no scruples about fighting could not be prevented from enlisting.

In 1683 the first legislative assembly

held in Philadelphia was convened; and in 1701 Penn presented the city with a charter. During the colonial period it was the most important city in the country, and for twenty or thirty years after the Declaration of Independence took precedence over all others. Between 1776 and 1800 it was both the Capital of Pennsylvania and also of the United States. The first Congress prior to the Revolution met in Carpenter's Hall, 1774; which is still standing in a court back of Chestnut Street. It was from a stand in the State House-yard, on Chestnut Street, where Independence Hall now stands, that the Declaration of Independence was read. The first President of the United States lived in a house on Market Street, once belonging to Gov. Richard Penn; the same house having been occupied by Lord Howe when the British had possession of Philadelphia for nine months in the Revolutionary war.

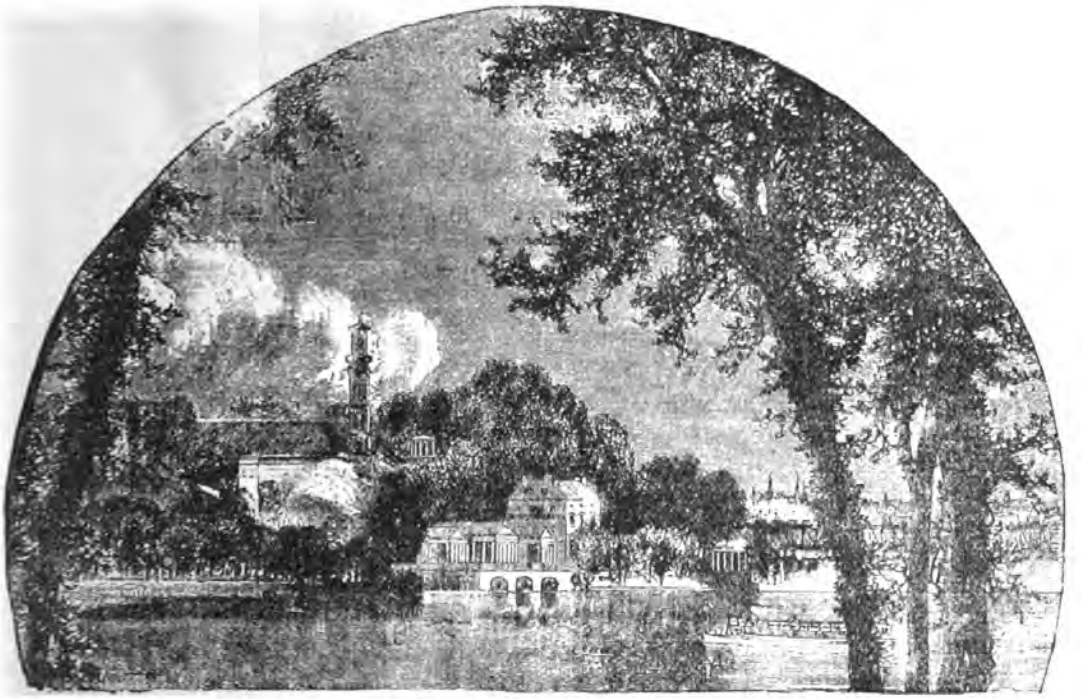
The Delegates to the Continental Congress met in the State House to frame a Constitution for the new Union, and its formal adoption was celebrated on July 4, 1788, by great rejoicings.

The United States Mint—always an object of special interest to the stranger in Philadelphia—was established by act of Congress, April 2, 1792, and a building was soon after erected for its use on Seventh Street above Market. The present Mint building on Chestnut Street, below Broad, was first occupied May, 1833; it has been frequently altered and enlarged.

Along the Delaware, above and below

the city limits, population early settled. The section above the city limits was called "North End"; and that below the city limits "South End," or "To City Hall." When the growth of population made municipal government a necessity, the suburbs were erected into separate municipalities, the suburb south into the municipality of "Southwark" in 1794, and the suburb north into that of "The Northern Liberties" in 1783. In course of time other municipalities were incorporated—Moyamensing in 1812, Spring Garden in 1813, and Kensington in 1820. Finally, all these municipalities were consolidated and, with the entire territory of the county of Philadelphia, placed under one general government.

ACADEMY OF NATURAL SCIENCE.



FAIRMOUNT WATER WORKS.

In the illustrations are presented several scenes of the old Philadelphia of the seventeenth and eighteenth centuries, which contrast strongly with what is seen in the city of to-day. Among the more noticeable buildings are the University of Pennsylvania, which was founded by Benjamin Franklin, and is one of the most complete in its organization of American scholastic institutions. The Academy of Natural Sciences is also a handsome structure.

GRAVE OF BENJAMIN FRANKLIN.

Franklin's grave is in the yard of Christ Church. The organization of this church dates back to 1695, when the first edifice was erected, and which has gone through several changes of enlargement and alteration until the present imposing structure was reached. The walls are lined with many tablets commemorating distinguished men, long since dead, who were wont to sit in their high-backed pews on Sunday.

The Library, the first public library in America, was instituted by a number of persons, including Benjamin Franklin, July 1, 1731. It was first opened in a room in Jones or Pewter Platter Alley, between Front and Second Streets, then removed to Carpenter's Hall, thence to Fifth below Chestnut, and within the last few years to the new building on Locust below Broad Street.

The Fairmount Water Works and Fairmount Park are also conspicuous features in the city. The buildings of the former are picturesque and attractive. The great extent and beauty of the latter are the wonder of every visitor. This Park contains 2,740 acres; includes part of the Schuylkill, and extends along on both sides of the Wissahickon from its mouth to Chestnut Hill. It was in this inclosure that the American Centennial Exhibition was held, and several of the beautiful buildings which were erected for that great occasion are permanent features of the Park.

A DAY IN A PORTRAIT GALLERY;

OR, THE FAVORITES AT THE COURT OF CHARLES II.

A PICTURE gallery is, to a person of refinement and culture, a place of peculiar enchantment not bounded by narrow walls. The pictures are so many windows opening on the past, looking to the utmost extent of the earth, or up through the clouds and the blue ether into things heavenly and a better world beyond, invisible to less ardent ken, for religion has inspired the highest performances of art, and some rays of ineffable splendor have descended into the souls of Raphael, Guido, Angelo, Van Dyck, and guided their inspired hands. It needs no argument to convince the lover of art of this; he feels it intuitively, and bows before its potent influence, while the more sordid individual estimates all things by their monetary value, and coolly asks, "Does it pay?"

The educating influence of a portrait gallery is second only to that of a library. When lingering in a gallery of pictures, with what eagerness of attention do we approach a portrait of Marie Stuart, or Beatrice Cenci, or Leonora d'Este. These are historical characters, and even at the risk of disappointment we ask for truth. The feeling is different when ideal or poetical characters are portrayed on canvas. Very seldom the artist can reproduce, equal to the poet's conception or our own vivid imagination, the imaginary beauties of a Venus, a Gulnare, a Corinne, or an Antigone. Then, too, there is more than a pleasure in looking at the portrait of a historical character. If the portrait sometimes derives from the poet or the historian its best value, the beauty of the portrait as often makes us turn with redoubled interest to the page of the poet. After looking at the picture of Charlotte Corday, or Queen Elizabeth, or Nell Gwynne, we take down Lamartine, Hume, and Macaulay with additional zest and enjoyment. Then we turn to the portraits again, and it is almost like seeing them in flesh to look at those dead heroines on the canvas. Better perhaps, for there we see them in their reception dress and visiting mood, courteous, affable, and complacent. In life many of them might not have welcomed us so cordially.

We were at beautiful Hampton Court—of course we refer to the galleries when we say beautiful, and not to the barracks and gloomy passages which meet the visitor on entering those old walls. What a bevy of beauties does the mere mention of it conjure up to our recollection! The lovely Hamilton, the blushing Bagot, the bewitching Stewart, the voluptuous Palmer, the tender-eyed Temple, the vivacious Louise de Querouaille, Hortensia Mancini, Nell Gwynne—who has not doated on them, either on those walls, or in the memoirs of Grammont! Where is there such another galaxy of charms as at Hampton Court? Van Dyck and Lely are here in their glory. And how those lovely, bewitching women smile at us and seem to woo us with their blandishments. Very different are they from the staid dames at Windsor and at Westminster. Charles II.'s beauties were the very reverse of their mothers in dress and in demeanor. The starched ruff, the steeple-crowned hat, the rigid stomacher, and the stately fardingale were banished with the gravity and morality of their wearers. A studied negligence, an elegant déshabille, is the prevailing characteristic of the costume in which they are nearly all represented; their glossy ringlets ecaping from a simple bandeau of pearls, or adorned by a single rose, fall in graceful profusion upon snowy necks, unveiled by even the transparent lawn of the band or the partelet, and the fair round arm, bare to the elbow, reclines upon the voluptuous satin petticoat, while the gown of the same rich material piles up its voluminous train in the background.*

* Perhaps it may be suggested by the editor that the drapery in these portraits, especially in the case of those painted by Sir Peter Lely, was designed rather according to the artist's idea of fitness than a copy of the dress worn by his lady subject.

This was the woman whom Louis XIV. sent as envoy to England to forward French interests at that court. He could not have sent a better messenger. She was trained in all the tricks of a court-life. She had great beauty, and the lively tongue and fascinating ways that Charles Stuart loved. She soon triumphed over all her rivals, was created duchess of Portsmouth, was loaded with wealth, and obtained a dominion which ended only with the life of Charles. Capricious and luxurious, she had her apartments thrice pulled down and thrice rebuilt by her royal lover. The sideboards were filled with rich plate. Costly paintings were on the walls. Costly cabinets, the masterpieces of Japanese art, adorned the niches, and gorgeous hangings from the looms of Paris, richer than any English tapestry, were ornamented with scenes from her own France. In the midst of this splendor, purchased by guilt and shame, the miserable woman died.

LOUISE DE QUEROUAILLE, DUCHESS OF PORTSMOUTH.

Her neighbor, Hortensia Mancini, duchess of Mazarin, and niece of the great cardinal, has a fair, aristocratic face, the features of which show her Italian descent. The head is finely moulded, showing a practical intellect and signs of culture, while the face is haughty, yet lively and firm in expression. The fire of the southland is in the large black eyes. The sanguineous elements predominated in her temperament, giving her mind its mobile susceptibility and sprightly character. She could not have been wholly bad, though a woman of the world. Vanity and greed were not elements of her character, but insolence, pride, and self-will were. These ruined her.

Born in Italy, she was early removed to the French court, where her uncle was supreme. From her fifteenth year she

was besieged by illustrious suitors whom her manifold attractions brought around her. No gift of nature or of fortune seemed to be wanting to her. Her face was beautiful with the rich loveliness of the south, her understanding quick, her manners graceful, her rank exalted, her possessions immense; but her ungovernable passions turned all these blessings into curses. She found the misery of an ill-assorted marriage intolerable, and abandoning her vast wealth, fled from her husband. After innumerable adventures in Rome and Turin, she fixed her abode in England. Her house was the favorite resort of men of wit and pleasure. Statesmen and scholars discussed politics and literature at her table. But her diseased mind required stronger stimulants than wit and learning, and she sought them in gallantry, in dice, and in usquebaugh.

Nell Gwynne.

Nell Gwynne, pretty, witty, merry, generous, frank-hearted Nelly, has much more than her own frailties to answer for, and they, alas that we must needs say it, are enough in all conscience. Yet, after all, but very few people understand her character. A sprinkling of hypocrisy, or a few cooling drops of discretion, would have rendered her either far better, or far worse. She was not shameless like Barbara Villers, or Louise de Querouaille. Frail she was, but not vicious; wild and extravagant, but never selfish or rapacious. Not one of all the other beauties of Charles II.'s court was half as excusable as she. They, with every advantage of birth, fortune, and education, became, from choice or perverted principle, what Nell Gwynne, poor, uneducated, and unprotected, became from necessity or accident. Her nature was really never corrupted; the contaminating influence of that licentious age and court indeed

stained the surface, but never reached the core. Most women when they have stepped astray seldom pause in their downward career till "guilt grows fate that was but choice before," and far more seldom rise from that debasement of mind and person, except by some violent transition of feeling, some revulsion of passion leading to the opposite extreme. With Eleanor Gwynne it was different. Despite habit, temperament, and opportunity, as years passed on she grew more circumspect, her character grew more elevated. The life which began in the puddle and sink of obscurity and profligacy, ended in wealth, refinement, and Christian charity.

That is a very lovely face, almost childlike in its innocence. How expressive are those eyes! The nose is pretty, the lips sweet and womanly, the chin handsome. Her vivacity and wit were proverbial, likewise her charitable goodness. She was a creature of humors, but most of her impulses were noble ones. She was frank-hearted, blunt, and independent. She respected neither persons nor positions, and all of her actions were seasoned with recklessness. Success was accepted as a matter of course, and adversity likewise without a murmur. She was faithful to the king to the last, and he did not forget her. His last words were, "Let not poor Nelly starve."

Frances Theresa Stewart, duchess of Richmond, dressed like an antique Minerva in a steel breastplate and lofty crest, might almost shame the goddess in splendor. Was that woman bad? They tell us so, but I think she was wild and capricious rather than maliciously wicked. Her faults were those of an ardent, active, impulsive temperament. The face is one of fine regularity. The brain is high in the crown. She was emphatically her father's child, and her affections were evidently ardent and strong. There is something about her head and face that reminds one of Theodosia Burr, and like her she was a leader of society.

In Mary Cavendish, duchess of Devonshire, we observe high elements of organization. Her profile, and what of the head is available for observation, indicate delicacy, earnestness, ambition, and an excellent degree of practical judgment. She shows a higher forehead and a more meditative disposition of mind than Frances Stewart. Her head is fuller in the crown, and more prominent in the region of Benevolence, Veneration, and Spirituality. She had less intensity of emotion, and held her feelings under good control.

The "good duchess," as her contemporaries called her, was one of the best women of her time. Wife of the second duke of Devonshire, she occupied a position second to none among the noble dames of England. A queen of fashion, with a strong social nature, she passed through life without once having her fair fame assailed. Other women gave way to passion, vanity, or flattery, but Mary Cavendish stood up proud in her chastity, queenlike in her womanly honor. King Lemuel would have delighted in her, for she was like the virtuous woman in Proverbs. As of her, so it could be said of the good duchess: "Many daughters have done virtuously, but thou excellest them all. Favor is deceitful, and beauty is vain, but a woman that feareth the Lord, she shall be praised."

FRED. MYRON COLBY.

A THOUGHT.

I saw a fair white bird with bleeding wing,
Her bosom lay aslant the driving wrack,
Beating an upward way: anon would ring
A burst of song borne by the tempest back.
I could have wept to see her snowy breast
Flecked with the purple of her wounded heart,
Save that my soul a kindred joy confessed
To see the bird quail not beneath the smart,
But onward hold her way with kindling eye;
Though gathering clouds embraced her snowy form
And hurtling arrows did around her fly,
Still backward came her song athrough the mighty storm.

ELIZABETH OAKES SMITH.

JUST thoughts may fail of producing just deeds, but just deeds always beget just thoughts.

THE SEMI-CENTENNIAL OF SPURZHEIM.

ON the 10th of November last a company of ladies and gentlemen assembled in the lecture-room of the Institute for the purpose of commemorating the fiftieth anniversary of the death of John Gasper Spurzheim, the disciple and coworker of Dr. Gall, the founder of the phrenological system. The exercises were opened by Mr. Nelson Sizer, Vice-President of the Institute, who in well-chosen words indicated the purpose of the meeting, and the propriety of offering a special tribute of respect and honor to so great a man, and then introduced the Secretary, who read the following letters:

MT. IDA, DORCHESTER, MASS.,
Nov. 6th, 1882.

DEAR MRS. WELLS:—Your note of the third instant asking me to say a few words respecting the semi-centennial of Spurzheim is just received, and when I am surrounded by numerous volumés and papers and deeply engaged on my history. Be assured it would afford me much pleasure to say much; but I am compelled to ask you to pardon me for saying little.

I can not realize that I have seen fifty years of time since the burial of that great philosopher, but the fact is before me, and if I can not count the hours or days in

memory the figures of the astronomer tell the story. The fact as a lesson should teach us the swiftness of time and the slowness of progress. It may be said of the progress of Phrenology that many of its great truths have been admitted by thinking men who have not had the courage or candor to acknowledge the details of the foundation of the science. For many years the science of mind has been neglected; and let us hope that when again it shall become a favorite study Phrenology will be revived to bless the world by an increase of the practical knowledge of man.

With best wishes for all your students, and with assurances of personal regard, believe me,

Ever and truly yours,

NAHUM CAPEN.*

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40 WEST 56th ST.,
NEW YORK, *Nov. 9th*, 1882.

H. S. DRAYTON, ESQ., *Secretary*.

DEAR SIR:—Your kind note of invitation to meet the Trustees in commemoration of the death of that most celebrated man, Doctor Spurzheim, is received. It would give me a great deal of pleasure to have so done, but owing to having a great deal of sickness in my family since my return from Europe, I have been obliged to be in constant attendance upon those at home, and have not much time to attend to affairs elsewhere.

Believe me to be, yours sincerely,

HENRY DEXTER.†

* Dr. Capen is well known in New England society and literature. He is the author of a "History of Democracy," one volume of which has been published, and of "Reminiscences of Spurzheim and Combe." With the early advocates of Phrenology he had a familiar personal acquaintance, especially with Dr. Spurzheim, of whom he never speaks but in terms of the highest esteem and affection. He wrote and published biographies of Dr. Gall and Dr. Spurzheim, fifty years ago; was also editor and publisher of "Annals of Phrenology," which was published two years; and the publisher of the first Phrenological books produced in America.

† Mr. Dexter is one of the original incorporators of the Institute, and so a member of the Board of Trustees. Mr. L. A. Roberts, another of the Trustees, would have been present had he not been prevented by an engagement he could not postpone.

STATE ASYLUM FOR THE INSANE,
MORRIS PLAINS, N. J., *Nov. 9th*, 1882.

H. S. DRAYTON, ESQ.

DEAR SIR:—Your esteemed favor of the 8th inst., inviting me to be present at a meeting commemorative of the death of Doctor Spurzheim on Friday (to-morrow) finds me deeply in affairs connected with the close of our current year, and which will claim my presence at home. I, however, most fully sympathize with the object of the proposed meeting, and would gladly contribute anything in my power to render it interesting and profitable, and to forward the views and the teachings of the much and ever lamented Spurzheim. Surely, but for the knowledge we possess of the administration of human affairs, by general laws, I should be sorely perplexed to understand why such a *light* to the world, as this noble man promised to be, was so suddenly and forever extinguished.

Had his valuable life been continued after his arrival in this country a short period longer, and until a few or even one of his adherents had been taught his method of *unfolding* the structure of the brain, what vast progress would have been made before this, in the anatomy and physiology of that organ! For the want of such knowledge the science of mind, based upon the system of Gall and Spurzheim, has made only a halting progress, even its truth being still doubted, or altogether ignored by many men of all professions and of all ranks.

All this would have been different and far better, had his method of showing the anatomical structure of the brain prevailed in the minds of medical men at the time of his death and since. But, alas! alas! since the departure of its eminent author, it has remained one of the "lost arts." . . . .

Could another man be found in any country to manipulate brain tissue as did the magic hand of this great master, the world would rejoice with new expectation and delight. For one, I will not despair, and particularly after so much has been accomplished by others during the last

fifty years, by aid of the doctrines of Gall and Spurzheim.

With thanks for your kind invitation and with best wishes for the success of your proposed meeting,

I am very respectfully and truly yours,

H. A. BUTTOLPH.

After the reading of the letters, Mr. Drayton proceeded to deliver an address on the life, character, and work of Dr. Spurzheim. The following is a report of the address:

"Wisdom consists in the knowledge and application of truth." This, ladies and gentlemen, was a leading principle in the creed of that eminent man whose death we have met to-day to celebrate; and it was a leading principle which we find illustrated in every step of his life. At other times I have been at some trouble to present to the members of the class now in attendance on this session of the institution some features in the life of Dr. Spurzheim, and now, at the risk of repeating statements which have been made heretofore, and because it is fitting that something should be said in regard to his career, I propose to give you a brief review of his life.

John Gasper Spurzheim was born on the 31st December, 1776, in a little village on the River Moselle, Prussia, not many miles from Treves; he was born not very far from the village of Tiefenbrun, where his illustrious teacher, Dr. Gall, was born. A parallel is to be observed in the birth, in the early history, and in some of the circumstances which led these two men to the adoption of the profession of medicine, and which culminated in the discovery and dissemination of the science in which we who are here feel deeply interested. Both were born in a rural village, and both were intended by their parents for the Church.

Dr. Gall's father, a merchant, had means at his disposal for the liberal education of his son, and wished that he should become a minister or priest of the Church—the Roman Catholic. The parents of Dr. Spurzheim were also in good pecuniary circumstances—the father being spoken of as a prominent farmer—and they had designed their son for the ministrations of the Lutheran Church, with which they were connected, and provided fully for his education in that behalf. In Gall's case we find youthful inclination drawing him aside from the path marked out by his parents, and when old enough to choose for himself he selects medicine and goes to Vienna for the purpose of entering upon its study. Spurzheim, probably accepting the opinion of his father with regard to a pursuit, studied until he was about ready to enter upon the active prosecution of the ministry, when the fortunes of war turned him aside. The sudden occupation of his native village by a victorious French army led him to go to Vienna, and there he entered upon a course of study in medicine. When I look at these circumstances, ladies and gentlemen, I can not help thinking that there was something providential in them, that the great Overruler had a different design in respect to these men from the reasonable and worthy purpose of their parents, a design whose realization brought light and beneficence to the world. In the course of a few years the strange doctrine which Gall had begun to proclaim is brought to young Spurzheim's attention; his curiosity is aroused, and he attends a lecture, and is interested sufficiently to pursue the subject further, and in a few years, when about ready to enter upon the practice of his profession, he joins Dr. Gall as an assistant. A most needed assistant he was; the scientific world needed just such a man; the new science of mind especially needed just such a man.

In 1805 began that famous tour through the chief cities and educated centers of Europe, which lasted two years or more, and extended to Paris, where Dr. Gall made his residence, and where Spurzheim remained until 1813 or 1814, when, concluding that the world at large needed him, that his mission was that of an apostle of those truths which he had already

done much to interpret, he crossed the English Channel. Several years are spent in Great Britain; everywhere he meets with success; everywhere he impresses scientific men with those wonderful truths concerning the human brain which have revolutionized science, especially the anatomical department. When we candidly examine physiology, we find it impressed with truths which Spurzheim taught; for whether they are acknowledged or not, the anatomy of the brain to-day and the physiology of thought are largely debtors to his investigations and teachings. Across the sea was growing rapidly a young Republic; it was becoming important, and claiming the attention of the world, not only by reason of its marvelous growth so far as population was concerned, but also on account of the development of its literature and its science. There were some Americans who years before had visited Paris, and heard the new lights speak on their chosen theme, and they had announced to their friends in America the new philosophy and Spurzheim felt that he was called to this new field as an apostle to spread the true knowledge of phrenological principles. He said himself that he wished to visit America "to study the character and genius of its people, to teach the doctrines of Phrenology."

The steamship was unknown in those days, so he came in a sailing vessel. The voyage lasted six or seven weeks—a short space of time in that period for crossing the Atlantic—and he arrived in New York in the early part of August. His objective point was Boston, but New York was then the general port where foreign arrivals were disembarked. After a few days spent in this city, he starts for Boston, but on the way, discovered as it were by the scientific gentlemen of New Haven, he is required to stop there and to illustrate his method of examining the brain. There professors and students of Yale College indicate a deep interest in him, as Professor Silliman said they were in love with him. On the 20th of August he arrives in Boston, and there immediately proceeds to work. He was a man of powerful frame, had inherited a strong constitution, and being temperate and careful in his habits, he was led to draw too much upon his constitutional energy. Probably he had not taken sufficient time to recuperate after the trials of a long sea-voyage. Perhaps the warmth of his welcome led him too far in response to the demands upon his time, and thus we may account in part at least for his sudden death. He gave several courses of lectures, and had others planned out for delivery in and near Boston; his time was filled up with engagements, mind and body being exercised almost constantly in one way or another. He visited institutions of learning, public and private asylums, jails, schools, and other places, the many eminent men in all walks of life who were drawn toward him, making constant demands upon his time, and thronging his lecture hall. Thus I would intimate how much demand there was made upon his time and strength, and why in so short a time after his landing on American soil he died. It was in the midst of a lecture that he was seized with faintness and unable to proceed, and retiring from the platform he went to the couch from which he never rose. There is a parallel between his death and that of Gall. In 1828, only four years previous, soon after delivering a lecture, Dr. Gall had a paralytic stroke which terminated his life. When it was announced that Spurzheim was seriously ill, the city was moved, and later, when it was announced that his spirit had passed away, there was a burst of regret; the prominent men of Boston vied with one another in expressions of respect and grief, and immediately met together in solemn convention to arrange for his burial. The old South Church was the scene of his funeral, and crowds were unable to obtain admission. Dr. Capen in his 'Reminiscences" speaks thus of the scene in Boston at that time:

"The decease of Spurzheim cast a gloom over the city not to be described by language. We have never known a death which seemed to excite so univer-

sal and sincere a feeling of grief. The citizens of Boston and vicinity had seen and heard him. They had met him, and had been delighted with his conversation. They saw that he was a man, eminent both for his learning and virtues, and they regarded his death not only as a public calamity, but a personal bereavement. They felt that they had lost a noble and powerful friend, one who had made human nature his study, and held in his willing hands the keys of wisdom, and of earthly happiness in his teachings. They had been charmed by his manners and love, and inspired by his language."

Prof. Follen, who delivered the funeral discourse, thus eloquently alluded to the impression made by the departed scientist upon the hearts of the people:

"We have welcomed him at our firesides, we have seen him surrounded by our children, and the hearty applause he drew from these little hearers, who listen with their hearts and judge by their affections, has convinced me that the charm which had attached us to the successful lecturer, was not the spell of a great name, or of talent, learning, or eloquence; that the light which shone in his countenance was not the reflection of many lamps or of admiring eyes, but that it was the spirit of truth and goodness within which lighted up his face, and gave life and meaning to every sound and every motion. And of all this power of eloquence, by which words became pictures to the eyes and music to the ear, of all those bright manifestations of a mind that had searched into the kingdoms of nature and the institutions of man, that had studied the wonderful architecture of the human frame, in order to reach the more mysterious resources of the mind; of all these powers and charms, which, but a few days since, excited, engaged, and delighted so many of us; of that fullness of thought and action, embodied in a frame which nature herself seemed to have designed to be a stronghold of life and death—is there nothing left of all this? nothing but what is inclosed in the narrow case before us?"

And these men of Boston went further in expressing their respect and esteem for the stranger; not only did they follow him to the grave, but they did not deem their work done until a noble monument had been erected over his remains to mark their place.

Gentlemen, how impressive was that occasion, how wonderfully conspicuous in itself as a record for history, that outburst of feeling in Boston! Think of a man, a stranger who had been here scarcely three months, producing so great an influence upon the people that his death should have, as it was stated by one of the Boston newspapers, "the effect of a public calamity." Can you find its parallel in modern history?

But what had this Spurzheim accomplished? what had he done for science? for society? for man?

While following in great part the teachings of his master, Gall, he directed the current of observation into new channels, Gall had rejected the old philosophy of the mind; would have nothing to do with the metaphysicians of the past; their views he regarded simply notions and untenable. Their division of animal intelligence into instincts in animals and understanding in man; of the human mind into understanding and will, and the subdivision of the understanding into attention, memory, judgment, and imagination, and of the will into inclination, propensity, desire, and passion; he looked upon as unnecessary. But Spurzheim availed himself of the teaching of the past, and adopted it, so far as he deemed it true or useful, into his philosophy. Gall admitted several different faculties, but thought them all to manifest the same modes of action, and, therefore, denied the possibility of classing the mental powers into kinds according to their distinctive nature; Gall was unacquainted with the special faculties as subjective elements of mind, not being able to find out organs for the powers which philosophers considered such, and observed men in action, and named the organs according to the strength of the manifestation of perception, feeling, and propensity.

Actions, according to Spurzheim, seldom

result from the operation of a single power, and often proceed from abuse of faculties; hence he claimed that no organ should be named after an action and certainly not after the abuse of its functions. Spurzheim sought to define the essential nature of faculties in their subjective relation to the mind, and to analyze their influence upon character in both positive and negative phases; and he therefore looked into their functional effect as factors of co-ordination in the production of mental expression.

He appears to be the first of the philosophers to realize thoroughly the magnitude of the principle, that in order to understand the true nature of mind in its connection with the brain and physiology, function must ever be related to structure and structure to function; and in his teaching he impressed this, and in all his examinations of the brain always made use of it to reach the best results. To use the language of Dr. Andrew Combe: "It was the cautious application of this principle, the principle of invariably associating function with structure, that had enabled Dr. Spurzheim, in conjunction with Dr. Gall, to establish the identity of parts altogether dissimilar in appearance, and therefore generally regarded as different; to demonstrate that what was supposed to be the optic thalami in birds, were in reality the bigeminal tubercles, only enlarged in size, in proportion to the greater size of the nerve to which they give origin; to prove the existence of the posterior lobes in the mammalia, to many of which they were denied by Cuvier and others, who regarded only the mechanical situation of the parts; to prove that the identity of any part must be determined by its function."

The emphasis of this principle has been of exceedingly great value to the world; it has rendered the observation of anatomical structure in all its departments of life practical and thorough. The ethnologist owes much to him on this score for the help it gives to classify the races of men; the observer in zoology owes as much to it for his classifications in the animal kingdom; the physiologist is indebted for the light it has shed upon his investigations. There are other considerations which are worth our notice at this time, and which should be mentioned if only in brief, especially as some have thought there were no very valuable truths derived from his teaching. We remember that remarkable controversy in Scotland when Professor Gordon, the teacher of anatomy in the University of Edinburgh, and who represented the state of general scientific knowledge in his department at that day, decried in bitter terms the teachings of the phrenologists and would not admit the fibrous structure of the cerebrum even when Spurzheim showed it in Gordon's own lecture-room, and who denied that the spinal column was intimately related to the cerebrum by direct processes. Spurzheim proved that there were continuous fibers and diverging fibers; that the diverging fibers had relation to the lateral parts, and brought them into functional co-ordination, and showed how the converging fibers were related to the convoluted parts. He showed that what was generally believed in regard to the optic nerve, that its origin or its termination lay in the thalami, was untrue; that it extended posteriorly, communicating with the quadrigeminal tubercles and other parts. He showed the relation of the cerebellum to the spinal process and the cerebrum; and defined the province of the corpus dentatum. But especially, ladies and gentlemen, are we indebted to Spurzheim for the brilliant classification of the organs which made a science of mind practical, and adapted to use in every-day life. He insisted upon the utility of his teachings, and availed himself of every occasion to show the nicety of their application; as Dr. Abernethy once expressed it, he proved "how by the help of his doctrines, virtue can be shown her own image, and vice its own deformity". further, he showed how habits, yes, faults in character, can be corrected, how men could be improved and refined and elevated; how society could be harmonized,

how happiness could be promoted. There was no department in human life in which Phrenology, according to Spurzheim, had not its uses. Readers of character owe him for the development of a most valuable method of estimating development. It was he who pointed to the wonderful grouping of the organs by nature, their arrangement in classes according to a general property; he showed how regions predominate one over another; that character is made up of combinations of faculties; that organs co-ordinate with organs in the expression of special traits; that one organ could scarcely act independently, and that we must appreciate the general strength or weight of character first before we proceed to analyze it, or point to separate faculties which exert the greater influence upon it.

On page 39 of this same book, Dr. Capen's "Reminiscences," we find a series of resolutions which were unanimously adopted by the Boston Medical Association, on the 14th of November, 1832, one of which I will read, as it expresses in a paragraph what I would say concerning the practical uses this great master always sought to make of Phrenology: "*Resolved*, That we recommend to our fellow-citizens the opinions of the deceased on the improvement of our systems of education, and especially what relates to the development of the physical powers and moral dispositions, and, as they can no more expect to hear them from the lips of our lamented friend, that they lose no time in making a practical application of them to the existing state of our institutions for the culture of the human mind."

Until his time, patients in our insane asylums were treated brutishly; there was no well-organized system of care; they were handed over to the mercy of an irresponsible keeper, because they were thought incurable as a class, and it did not matter much how they were treated. Time would fail me, gentlemen, to go over the entire field of what Spurzheim did for humanity, and the hour reminds me that I have already occupied much time; but as I think of his work, and what he might have done here for the cause of truth, I can not but regret that his career was terminated in the very midst of his usefulness; yet that influence remains, and in a circle—it may be a narrow one to-day—his memory is treasured with grateful reverence. How fitting, then, that we should celebrate the day of his death!—how fitting that we should review what he did for the world and what he suffered! Well might the poet on the occasion of a meeting on the 31st of December, 1834, signalizing his birth, sing:

"His was the eye to scan
Clearly the mind of man
Through its dim sight;
His the hand to unroll
Boldly the mystic scroll
Of the deep human soul
Making it bright.

"His reaching wisdom taught
How the high dome of thought
Pictured the mind;
On that fair chart confest
Traced he each restless guest
Which in the human breast
Lies deep enshrined."

REMARKS BY MR. SIZER.

Fifty years ago to-day one of the great men of the world entered into rest. Fifty years ago to-day the world of science met with a loss which has not yet been filled or made good. At the end of fifty years we meet in memorial of the death of Spurzheim; no words which we can utter will add anything to his fame; he devoted his life to the human race, and his worth and work are treasured in the memory of men, and that memory will remain fresh as long as beneficence is a virtue, as long as goodness and wisdom shall be respected among men.

There is very little left to be said after the clear statement of Mr. Drayton; there is a great deal left to be felt; words uttered in reference to one whose life and good work were cut off in the midst of the hope of the world and of his usefulness, stopped at the very vestibule of his sphere in this new land which he had chosen for his field, are sad in the extreme.

I may perhaps pick up a stitch or two which Mr. Drayton has kindly left for me, and the first point I make is that on his way from New Haven to Boston he stopped at the city of Hartford; as was his custom he visited the schools, the asylums, and prisons; he paid a visit to the Connecticut State prison at Wethersfield, near Hartford, and examined many heads; he came across one white man and a negro, and made careful criticism of their developments, and after he had passed and examined twenty or thirty, he said to Mr. Haskins, the keeper, "I want to go back and look again at two heads which I examined"; he went back, and returning said, "They interest me much."

I hold in my hand the skull of William

Skull of William Teller.

Teller, a notorious sneak thief in the city of New York, and afterward a passer of counterfeit money in Hartford; he had been arrested and sentenced for fifteen years for passing counterfeit money, and while Spurzheim was there he examined his head and the negro's; he went back and re-examined these two heads, and said to Mr. Haskins, the warden, "I caution you to be careful in respect to these men, they are capable of anything; they will cause you trouble." This was in August. In the month of December, only a month after Spurzheim's death, William Teller and Cæsar Reynolds, whom Spurzheim had examined and advised that they be watched, committed murder on the person of Mr. Haskins, and were afterward executed in 1833 in the city of Hartford. I found this skull in a doctor's hands in Connecticut, and took a cast of it, and sent it to the JOURNAL, promising to send the biography if the editor would first send me a description of the character by Mr. Fowler. Mr. Fowler examined and described the cast of the skull, and made an engraving of it, and published it in the JOURNAL without knowing a word of its history; in which he says "he was a thief in the night, cunning, cruel, malevolent." I have thus presented to you one head at least in which Spurzheim was interested and which he examined.

Before he started for America, some one in Great Britain asked him why he visited America. He replied, "Shall I not see Dr. Channing?"—whose bust I take pleasure in showing you. These congenial spirits had met and blended across the water, and he came here with his heart tender toward Dr. Channing, who was one of the gentlest and richest characters in our American history. Dr. Howe, whose bust I show you, was a lover of Phrenology, and when he met Spurzheim he met him as a brother phrenologist, looked upon him as an equal. The great men of Boston and other places gathered around him with reverence, and listened to his new doctrines, and felt that in his presence it was good for them to be.

Here is the bust of old Dr. Caldwell, one of the richest intellects this country has produced, at one time president of the Transylvania University in Louisville, Kentucky. He studied in 1809 in Paris, under Spurzheim and Gall, the doctrines of the mind as revealed by Phrenology. He it was who brought it first in person to this country. He lectured on the subject in 1821, and taught it before his classes in the Transylvania University. It was with such men as Channing, Dr. Howe, the celebrated poet Pierrepont, and Horace Mann that he associated when he came to this country. Horace Mann was the father of the public school system in America; for twenty years he was superintendent of public education in

Massachusetts. The schools which he then established have become the models for the schools throughout the country. Mrs. Wells and I knew him intimately, also Dr. Caldwell, Dr. Howe, Pierrepont, and the rest of them. Of course we were youthful then, as they were the coadjutors or contemporaries with Spurzheim, and were his equals. I remember when Dr. Spurzheim's lectures were being published in the papers throughout the United States. As a boy of twenty I read carefully all the reports of those lectures in Boston, and from them I obtained my first ideas of Phrenology. To me Spurzheim seemed nearest, and though at a distance I looked at the character of Gall as I would look at a pyramid in Egypt as something grand, I have always looked on Spurzheim as an elder brother, as a gentle, tender, loving, womanly man. Children always smiled when he came into their presence; they turned their intense, inquiring eyes, expecting to hear something as from an elder brother. He could descend to the capacities of childhood, he could grapple with the philosophy which puzzled their grandfathers, he could live on a par with the middle generation and be the teacher of youth and age.

In 1869 I spent a month phrenologically in Boston; I went to the Medical College to see the collection which Spurzheim left to the keeping of his old friends, the Boston men-of-science of his time, and all around on the shelves and cornices were arranged the busts and casts constituting the entire collection. There is nothing in this country, perhaps, except our own, which compares with that for richness and amount.

Then I wanted to find the brain and the skull of Dr. Spurzheim; they are in Boston, and are kept so sacredly that only once a week is there any admission, and I went there and stood, and looked, and waited till the time had passed, and an obliging janitor told me that the doctor would not be in "before next week." The skull and brain of Spurzheim ought to be somewhere on exhibition where people who want to make a pilgrimage and see these remains of the great and good man can see them. The collection ought not to be on tall shelves where one can not study it without a step-ladder. I hope the public sentiment will be changed in reference to some of these things. Spurzheim did a good work in the old world, and was cut off in the very entrance upon his great work in the new, otherwise there would have been a thousand such men as Caldwell, as Channing, as Horace Mann, his glad and eager pupils, who would have transferred public sentiment and maintained a good impression. Dying as he did there were no able phrenological men except Caldwell to take up the matter. The Fowlers were young, they had not seen their twenty-fourth year, and the consequence was a new public sentiment on the subject of Phrenology had to be created. Could Spurzheim have lived twenty years longer, Phrenology would have been in all the colleges by this time; yet, it is working through individuals singly, and the public is coming to know something about it, but it ought to be in the institutions of learning so that one need not apologize for his belief in this, the most important topic that can engage human thought. As the mind towers above all other entities, so the study of the mind should be regarded as first, highest, and best.

Here is the bust of an excellent friend of Spurzheim, the Rev. John Pierrepont, the poet, who composed that beautiful "Ode to Spurzheim," which was written after his death and before the funeral obsequies, and was then sung by the Handel and Haydn Society; I will recite it as the close of my remarks.

"Stranger, there is bending o'er thee
Many an eye with sorrow wet;
All our stricken hearts deplore thee;
Who, that knew thee, can forget?
Who forget what thou hast spoken?
Who thine eye—thy noble frame?
But that golden bowl is broken
In the greatness of thy fame.

"Autumn's leaves shall fall and wither
On the spot where thou shalt rest;
'Tis in love we bear thee thither
To thy mourning mother's breast.

For the stores of science brought us,
For the charm thy goodness gave
To the lessons thou hast taught us,
Can we give thee but the grave?

"Nature's priest, how true and fervent
Was thy worship at her shrine!
Friend of man, of God the servant,
Advocate of truth divine,—

Taught and charmed as by no other,
We have been, and hoped to be;
But, while waiting round thee, brother,
For thy light—'tis dark with thee!

"Dark with thee!—no; thy Creator,
All whose creatures and whose laws
Thou didst love, shall give thee greater
Light than earth's, as earth withdraws.
To thy God the god-like spirit
Back we give, in filial trust;
Thy cold clay—we grieve to bear it
To its chamber—but we must."

MRS. WELLS.

I only want to pick up a stitch that Mr. Sizer has left. On the anniversary of Spurzheim's birthday, the last day of December, 1832, after his death in Boston, a Phrenological society was formed of which these men were among the first members, Pierpont, Channing, Howe Mann, and many others.

REV. MR. CLARK.

I shall be very glad to pay some tribute to one whom we regard as the exponent of a great truth. I am very glad to be here; it has done my soul good, and I doubt not it has done all good to turn

back and review the life and teachings of one who has done so much as did Dr. Spurzheim; and I wish that this audience was very much larger, that the inspiration of this occasion might be more universally diffused. I regard phrenological science as the science of the future, more especially than any other science. As has been remarked here to-day by these eminent teachers: the colleges, schools, and institutions of the country should recognize and teach it, but I think the time is near when the country will recognize it in its broadest sense. We to-day ought to be proud of the name of Phrenologist, and go from here prompted by this occasion, and its inspiring influences to do work for the advancement of that which shall make happier, better, and nobler, truer men and women of those who have embraced the principles of Phrenology.

MR. MACDONALD.

I will say, my friends, that I think one great drawback to Phrenology is the influence of the ignorant quacks who go about the country and mix fortune-telling and Phrenology together, and throw disgrace upon the science. Now this institution which is open here every year offers opportunity to people from all parts of the world to get thorough scientific instructions in regard to Phrenology, and thus there are some who become well informed, and carry a good influence wherever they go. When I think of the thousands of dollars that have been expended by private people and different governments in explorations to the North Pole, to find out whether there is a frozen sea or solid land thereabouts, I think it would be a great deal better for our Government or private individuals to explore the *poll* we wear upon our shoulders. Fifty years ago to-day Spurzheim was called to his reward; it was certainly a dark day to science; and this day we have met in commemoration or to grieve over his early death, and this is a dark, dull, and gloomy day, but to-morrow the sun will shine, this dark day will pass away, and the dark days that Phrenology has gone through have nearly passed away. It is our duty to do what we can to make Phrenology stand high, and if we strive in that direction Phrenology will see bright days and be recognized by the world.

The exercises closed with the distribution, by Mrs. Wells, of a number of small floral paintings on wood, cut in the form of an artist's palette, the design being the letter S intertwined with flowers of memorial significance and appropriate lettering. The illustration represents one of these paintings.

YULE-TIME IN SWEDEN.

AT the season when the sun-god gains his wintry goal and turns his fiery wheel, the Scandinavians long believed they could trace the personal rule and guidance of their deities, Odin, Berchta, and Freija. Then Winter wars with Spring, the north wind battles with the south wind; then Thor, the god of the thunder-storm, with Loki, the spring wind, "demolishes with his thunder-stone" the castle of the ice-king. The winter god, defeated, begins his retreat northward, and Freija, lovely spring goddess, commences her charming sway, and life and light and joy, as angel guests, return. Like ever-changing light and shadow, this eternal conflict of storm and sunshine, summer and winter, winds its gray and golden story through all Scandinavia's legend and song. But when Bethlehem's peaceful star arose, all the olden joy of the festive Yule-time seemed to gather and glow around it. As the shadowy gods of the past paled in its diviner light, the old Saturnalian revels turned to manger songs and Christmas carols, and the Christmas-tree, at "first fitted up during the twelve nights in honor of

Freija, the goddess of spring," now unfolded its glowing branches on the birth-day of Christ, "who had become the resurrection and the life." The ever green fir-tree, Spring's beautiful emblem, became the symbol of an eternal spring. The "burning lights" shadowed forth the "light of the world," and the gifts reminded us of the world's Redeemer, earth's best gift. Now the heavy-hanging, radiant Christmas-tree has taken deep root beneath Scandinavian snows and Italian suns on the world's steep mountain sides and winding river banks. Its golden fruit is gathered on the "Neva and the Po, the Mississippi and the Thames." The sweet song of the angels in the "Gloria in Excelsis" seems to echo like endless bird-carol through all the beaming branches of the Christ-tree wherever it unfolds its cheering green.

In the far-away kingdom of Sweden, four times as large as our own State of New York, and having about the same number of people in its larger area, the Julafred, or Yule-peace, is solemnly proclaimed by the public crier on the 24th of every December, and extends its benign sway from Christmas Eve to Epiphany. Public trials must cease, and private quarrels end, and he who disturbs the Yule-peace must have a threefold punishment. On the Yule evening grandfather's large shoes and the baby's small ones, with all the rest of the family shoes, are placed side by side in a row together, that on the coming year all may walk harmoniously in their daily path. Four-fifths of the people of Sweden have rural homes, the house often consisting mainly of one large room. On Yule night the floor is often covered with straw and strewn with twigs of spruce, pine, or juniper. Christmas night the family all sleep in one room, the children on the straw-covered floor, "to commemorate the fact that the child Jesus made his advent into the world on a bed of straw." This bed on the floor is called the "brother-and-sister-bed, or the Syskon säng." In the afternoon the whole family have gone into the bake-house and taken a thorough bath in a large tub, and put on their clean clothes—every one takes a bath then, if it is the only one in a year. The fire on the hearth must burn all night long, and the candle must not be put out; if it accidentally goes out some one in the house will surely die in the coming year. All the old pottery and silver vessels are brought out, and the silver coins, and placed upon the table, and the best clothes hung on the wall, that the Yule fire may shine upon them. Thus the silver will earn for the family good fortune and increase, and the clothes be preserved from moths. Some of the cups brought out have been used at many a marriage feast, christening, and burial. Some are mounted with brass, others with silver and gold; some have Runic inscriptions. Some of these cups belonged to the invading hordes from Asia, some were dug out of the earth. Many a brave warrior or viking of old may have drank out of the cups. The table on Christmas day is loaded with every comfort, and often spread and left standing. On the table is often fish, birds, and venison, dry mutton or mutton sausage, and wafers and cakes. A gay straw cock hangs from the ceiling over the table, and the family go singing to and from the meal. Every visitor must eat something, or he would take away the Yule joy.

At the end of the supper all join in a psalm. The first thing eaten is some rice, first carefully boiled in water and then in very rich milk. A large dish is placed in the center of the table, and each of the family have some of the rice on their plate; a little hole is made in the middle, and some butter put in, and sugar and cinnamon sprinkled thereon. Even at Rome, on Christmas day, the Swedes and Danes eat their rice. Roast goose, stuffed with apples and prunes, is a favorite dish on the Christmas table. A kind of ale, thought very excellent, is drank with the rice, and some is left on the table for the delight of the unseen spirit-guests—this is called "angel's ale. In many houses, here and there, are left about clothing, food, and tobacco, for the

"Tomte Gubbe," or little old man of the house, a kind of guardian genius or friendly elf, who is supposed, while he stays with the family, to keep everything all right; all must please him; if he goes, everything goes to ruin. In the Swedish stories he is described as "a little old man dressed in gray homespun, with a red nightcap and clumsy shoes."

Before the door pine-trees are planted, and a sheaf of unthreshed grain is fastened upon a pole and raised up from the roof, that the birds may rejoice in their good fortune on Christmas morning, and bunches of oats are placed on the roofs of houses, the trees, and the fences. Every poor man saves a penny or two to buy a bunch of oats for the birds on Christmas. It is a beautiful sight to see the pretty creatures flying round picking out the grain.

The cows have a dinner made of the same materials as the family dinner, and a bundle of the choicest forage. They are driven early to water on the afternoon before Christmas, that the next harvest may not be late, and each is given their supper with the words, "This is Julafton, my little one." The cows are great pets with the family; each one has been "christened" by striking it on the back three times with the branch of the mountain ash, and pronouncing the name. The names are often quite romantic. In one group of cows may be found the names of Rose, Gem, Ladybird, Snowdrop, and Welcome. The horses are given with their generous meal a drink of ale, that they may be lively going early to church next morning. The poultry have a "Jul-grüt," or pudding made of flour or rice and milk. The dog is unchained, and, for once, enjoys his freedom. The sheep, the goats, and the pigs get double the usual amount, and more than they can eat.

At nightfall the great room blazes with pine torches and candles. At ten or eleven is the supper. In the most pious homes, before sitting down at table and after rising from it, all the company stand an instant behind their chairs with their heads bowed, a silent way of asking the blessing of the great All-Father, and expressing their gratitude.

On every table is always some "Yule-boar," a kind of bread on which is represented a boar or ram. There is a large loaf of this and always a pig's head, or some part of a swine. "The boar was dedicated to Freija, the giver of light and sunshine, because it was said that that animal, by turning up the soil with his tusks, taught man to plow."

On Yule-night all must stay at home in Sweden, for the Trolls, or demons and witches, are thought to walk about then. The old men tell us the dead come out of their graves and go to the church on Yule-night. Almost every one stays in this night, but on Yule-day almost every one goes to the very early matins, beginning long before daybreak. Crowds of people are seen coming from the little hamlets, bearing in their hands and holding high their blazing pine torches. These are all thrown down in front of the church door in one glowing pile, their vivid light flashing back on the grey church walls in the early morning. The church is bright without, as torch after torch flashes forth from the glowing pile. Around the church Nature is in deep repose; the turbulent streams are frozen; the waves of the lakes upon which the summer sun played, strike no more on the pebbled shores; long crystal icicles hang from the mountain-sides and ravines; the rocks upon which the water dripped in summer appear like sheets of glass; the land is clad in a mantle of snow, and the pines are the winter jewels of the landscape. Bright as the church is without with the torches flashing on its sober walls, it is brighter still within. Each pew has its candle, there are candles upon the altar, and the chandeliers are all glowing their brightest. How the Yule-light streams and flashes from altar, pulpit, and pew! The priests have laid aside their usual black robes, and each has a long, flowing white robe with a large gilt cross upon its back. At the close of the service the men run

a race for home; he who reaches home first "will be the first to have his crops safely housed in autumn." St. Stephen's day, the day after Christmas, is also a great day of festivity; lively parties meet to join in singing, dancing, and other sports. "Before the amusements begin four maidens enter the room; two of them bear refreshments, the other two carry a tub, in which is planted a Yule-bush ornamented with tapers and gay ribbons. This is placed on the floor, and the four maidens form a ring around it, singing a song of welcome."

On Christmas evening often a loud rap is heard on the door. It is some mysterious, unseen visitor, who throws in the Julklapp, or Christmas-box, inclosed in countless wrappings. The name of the person for whom it is meant is on the outside. Sometimes an elegant bracelet will be wrapped up with ever so many papers, and put in a monstrous bag; a costly brooch, or a great straw boot, or some precious gem, inclosed in an earth-en-ware hen. All kinds of queer people, in the most grotesque disguises, will appear and disappear; some on horseback, some on crutches. They leave their gifts, and depart as suddenly as they came. It is said that very extravagant ladies, too fond of dress, may have an elegant over-dressed doll given them covered with flounces and feathers; a too loving young couple may be presented with a pair of young turtle-doves. "Flower, fruits, and sweetmeats, Yule-gifts, and burning wax-lights," brighten and cheer the homes of the wealthy in the larger cities and towns, where the Christmas-tree is weighed down with treasures.

The greatest of all events in a Swede's life is marriage, and the Swedes have many curious superstitions connected with courtship and marriage and child-life. If a youth and maiden eat of the same piece of bread, it is believed that they will fall in love with each other. We give here a few of the curious superstitions we have read:

When a child is born the fire must not be suffered to go out until the babe is baptized, otherwise the trolls will change it for another. Before christening, a child should always have a spanking, to give it a good memory; its head must be held up high or it will be bashful. If it cries at the baptismal font, it will have a musical voice. If it sleeps the night after it has been baptized with its mother, in the dress in which it was baptized, it will be religious when it grows up. If the mother's wedding-ring is placed in its first bath, it will be rich when it grows up. A fresh-laid egg placed in the bath will make the child's skin fair; a red cloth placed therein, will give it a blooming complexion. As soon as a child is born a book should be placed in its hand, to make it quick to learn.

Most every Swede can read and write, and the poorest cottage has its books. Twenty thousand Swedish children have to walk four miles to school every morning, and return the same distance at night, education is so highly prized by all. With all their superstitions, the Swedes are very intelligent. They are great lovers of Nature; their poets' songs are full of flowers and birds, and these are woven into their legends and stories. They have the most beautiful bird-legends concerning our Saviour. "When he was hanging upon the cross a little bird perched upon the wood, twittering, 'Svala, svala honom!—console, console him.' Hence she was called svala, swallow, and in memory of her pity for the Saviour, it was ordained that blessings should always attend those who protected her. The turtle-dove hovered over the cross with her mournful note, 'Burri, burri!'—that is, 'Byrie, Lord! Lord!' Since that time the dove has never been joyful, but wings her flight through the world, repeating her sorrowful cry, 'Burri, burri, burri!' Another bird hovered over the tree, crying, 'Styrk, styrk honom!'—'Strengthen, strengthen him!' Hence she was called styrk (stork); and in remembrance of her affectionate sorrow, the gift was bestowed upon her of bringing peace and happiness to the households where she is permitted to build her

nest undisturbed. The stork is a welcome guest throughout Sweden; it is considered a pious duty to cherish her. The bulfinch, or cross-bill, is said not only to have pitied the Saviour, but with its strong bill to have endeavored to pull out the nails which held him to the cross, and the red marks ever since upon its beak are the stains of sacred blood."

Nowhere in the wide world is there found a more simple, heartfelt faith in the world's Redeemer, than in the quiet homes of Sweden. There on this new Yule morning, how many will sing these words of Runeberg's beautiful Yule-psalm, to which no translation can do justice:

"Högt skall då klingo cittrors Gud
Och toners offer skönt till Gud
Från harposträngar stiga,
Och jag få till min frälserman
Min tröst, min fröjd, min brudgun sann
Mig hallo innerliga,
Sjunga, sjunga,
Jubilera
Triumfera,
Houom prisa,
Som mig vill altt godt bevisa."

LYDIA M. MILLARD.

IGNORANCE AND CRIME.—Illiteracy, in the strict sense in which statisticians use the word, has an obvious relation to crime. A person who can neither read nor write begins the battle of life at a disadvantage. His opportunities of earning an honest living are limited, and he naturally tends to idleness, the parent of crime. Moreover, he is shut off from many of the helping and elevating influences which his fellow-men enjoy, and thus they push beyond him and leave him more hopelessly in the dark. Naturally, therefore, the army of common criminals is largely recruited from the ranks of the illiterate. Of 478 convicts admitted to the Eastern Penitentiary last year, 195 were almost wholly untaught, 79 of these being absolutely illiterate. If we compare these figures with the percentage of illiterate persons in the entire population, we shall find that the proportion is a very large one.

It is this obvious relation of illiteracy with crime that has called our common schools into existence. Not for the sake of the individuals, but in the interest of the mass, the community undertakes to educate the individuals. It does not and should not undertake to make them professors and philosophers, or to give them all that is called a liberal education; it simply affords them an opportunity of acquiring so much rudimentary knowledge as will enable them to get on in life without a resort to crime, and to acquire for themselves more easily the general information which every citizen needs

A TRIBUTE TO RED HAIR.

GLADSTONE and Reade, of British fame,
To the long list of gold have claim.
And Wendell Phillips' hair was gold,
And fiery as the truth he told.

Greeley, the editor-in-chief,
In youth's bright morning wore the sheaf
That marks the forceful temperament,
And puts flame into thunder sent.

Grant, before old age with snow
Had touched his locks, wore the red glow
That crowns so many sons of praise,
Whose genius won the wreath of bays.

It is the treasure nature showers
On those who win her richest dowers.
Cato, the orator of old,
Had hair whose shining threads were gold.

And the immortal Cicero
Had golden locks, the classics show.
Sappho, the fairest of the fair,
Wore a rich sheaf of golden hair.

Within the golden candlestick
Of fame, a halo round a wick
Sheds light tinged with a lustre red—
The light comes from a golden head.

There goes a lad whose cheeks are fair,
His head is crowned with auburn hair.
Don't laugh, but think what Bulwer said
Of his own radiant locks of red.

Red stands for resolution, grit—
Was ever coward crowned with it?
It is the torch that lights the way
Of leadership that wins the day.

GEORGE W. BUNGAY.

ALGÆ.

The sea-weeds grow where wonders sleep
In buried mystery;
They tell us nothing from the deep,—
They hold thy secrets well, O sea.

OUR knowledge concerning the forms of life existing in the ocean is scattered and fragmentary. The organisms gathered from the sea, though freighted with wonders, disclose but incomplete histories. That the conditions of life of land and marine animals and plants differ essentially, is evident to the most superficial observer, but the border-land of ocean-life has hardly yet been explored.

FUCUS—NATURAL SIZE.

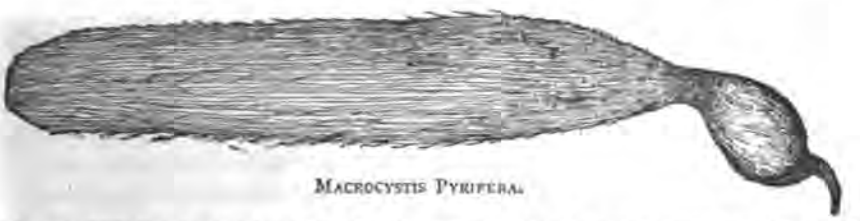
Sections here and there of the narrow line of coast encircling the continents and islands, the fossils gathered by a few sounding-lines, the meager information gleaned from the fisheries—the wandering sea-weeds, and we have the heading of the few ocean chapters disclosed to view. The volume that holds the history of the inhabitants of three-fourths of the earth's crust has hardly yet been opened.

Ocean vegetation consists of simple organisms, careless in habits of growth and tenacious of life, compared with the "herb of the field," which requires many favoring conditions for perfecting its beauties of flower and wealth of fruit. Some sea-plants germinate in the depths, though probably not more than a few hundred feet below the surface, where they cling to the rocks and are nourished only by the sea-water. Other varieties afford no evidence of ever having been fixed, but drift with the tides and currents. The submarine world teems with gigantic forms of vegetable life, vast areas of Algæ, individual specimens of which exceed in magnitude the pines of the Yosemite, exist off the coasts of the tropic and warmer temperate zones. Of these, a few diminutive isolated fronds only have found their way into cabinets and herbals. There is no authentic written history concerning their germination, habits of growth, and duration of life. We can only trace a few generalities from the scattered tribes found on the surface.

The Algæ belong to the lowest form of vegetable life, being composed of one only of the five elementary plant tissues —the cellular. Sometimes in transparent specimens the unassisted eye can discern the vesicles adhering together, giving them the appearance of strings of minute beads. The saline waters also yield up their ingredients to their wandering pensioners, and sea-weeds are often rigid and hardened from receiving these solids into their cells; but there are no organic distinctions as in higher forms of vegetation. Irregularly formed *thalli* usurp the place of leaf, and the extensive family of Fuci is furnished with air vesicles, which probably also contain sporous matter. (See illustration.) These air-vessels are round or oblong, rigid and smooth, or flaccid and slimy, as in the coarse rock-weeds found covering the rocks and pebbles of our shores. These marine plants never grow on the shore above the limits of the tide-line. At that point a higher order of saline vegetation commences.

During the late summer and early autumn months the shores of New En-

gland are particularly rich in vegetation. Every shallow laid bare by the outgoing tide teems with vegetable life. Many species of the Fucus, Gulf-weed, lie idly along the surface of the calm waters. Purple, green, and delicate pink kelps rest on the sands, waiting to be lifted up by the incoming waves. Other varieties, with extensions radiating in all directions from a common center, and terminating in minute air-vessels, give no indication of other than a wandering life. These expand their many-hued laminæ at a sufficient depth to be entirely submerged, and during the bright noonday hours, when the sun-rays are vertical, they appear like fringed silken balls, resting, or rolling slowly along, a short distance below the surface; while others of coarser texture float on the wave like flattened disks. The Sargassum, which forms the famed Grassy Sea in the wide Atlantic, is a vegetable radiate.

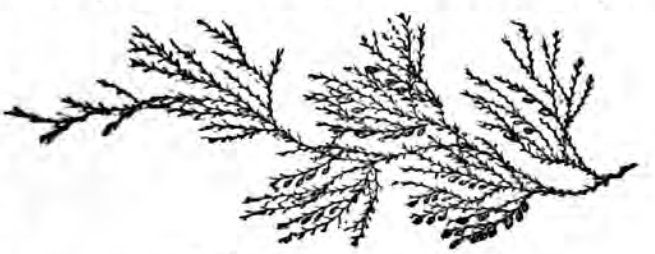


MACROCYSTIS PYRIFERA.

Some of our most delicate and fragile varieties are found in profusion and perfection only after a storm, but they bear no trace of bruise or abrasion on the minute branches and *thalli*.

The Pacific Ocean is peculiarly rich in wonderful and gigantic forms of marine vegetation. Perhaps they sprang into life on the cliffs of a submerged continent, but they bring no roots to the surface, nor is it clearly defined that the Algæ are possessed of these appendages. A species of *Macrocystis* (see illustration), found drifting in the temperate zones of this ocean, bears fronds upwards of three hundred feet in length. The plant consists of a central extension, or stalk, three and four feet in diameter. This sends out numberless rigid, stem-like formations, each one surmounted by an oblong air-vessel of firm texture. At the upper extremity of this vessel the tissue flattens into an extensive leathery frond, smooth and narrow. The margin of these fronds appear to be furnished with deep serratures, which a close examination discloses to be small laminæ, probably sporous. A perfect growth of this plant will extend many hundred feet along the surface of the ocean, and the voyager will be many days passing through a single area. A similar species, destitute of air-sacs and marginal laminæ, is found in the same latitudes. The Straits of Magellan abound in this plant. It impedes the course of the navigator, and again its long arms push him from the rocks, and save him from being dashed thereon.

A gigantic radiate—the Laminaria—grows in the South Atlantic to such an extent as to encircle the islands with an almost impassable girdle, and the seal-hunter tells marvelous tales of the perils encountered from being entangled in its masses.



SILVER SEA-WEED. NATURAL SIZE.

The superstructure of the ocean isle is laid on the sea-plants that cling to the summit of the coralline foundation. These gather tributes from the *débris* of the ocean, until the green-encircling reef fringes the moat of the volcanic isle.

Marine vegetation, taken collectively, is of but little use to man, though in a few localities it is, and has long been, of some importance. During the continental wars of Europe, Great Britain manufactured large quantities of soda from the sea-weeds gathered on the coast. Several species of *Fucus*, and the *Chorda filum*, whose long ropes entangle about the boats of the North Sea islanders in their coastings, were especially valuable. Sir J. Smith informs us that this industry was carried on to such an extent that the shore-lands increased in value, and even the Government was essentially aided by the duties paid on the soda manufacture. Sea-plants also furnish a few medicines and dyestuffs, but there is no evidence that ocean vegetation forms the food of any of its animal creations, although possessing neither noxious or deadly qualities. It is true that the floating Algæ teem with myriads of living creatures, but they receive from the plant a refuge only, and not life-sustaining nutriment.

The starving tribes of the countries bordering on the Southern Ocean mingle a species of sea-weed with their food, but rather to increase the quantity than the quality of it. The great mass of ocean vegetation, and a knowledge of its uses, are "hidden in the abundance of the sea." The Algæ, though wonderful and beautiful, probably wrought their important task in the early geologic eras. Hugh Miller says, "The most ancient period of whose organisms any trace remains in the rocks, seems to have been, prevailingly at least, a period of *Thallogens*." He tells us also that wherever the lowest zones of life have been detected, the rocks abound in the remains of Algæ, so abundantly in some cases as to form beds of coal several feet in thickness. Many of the existing species have their exact representatives folded away in the rocky pages of the fossil records.

If the Algæ have outlived their history, and drift around the diminished oceans as useless weeds, we may rest assured they performed an important part in the economy of creation. Their portraits in the galleries of the Lower Silurian declare to us that the first known period of vegetable life was a period abounding in Algæ.

ANNIE E. COLE.

A GREAT PHILOSOPHER'S OPINION ON AMERICA.

IN spite of his reserve and inconspicuous conduct while in this country, Mr. Herbert Spencer was not permitted to get away from it by the newspaper man before he had given some expression with regard to his views on America. He was frank in pointing out some of our faults as a people, and cordial in the expression of wonder at what we had accomplished in the spheres of progress; and saw in the future, as in the past, an unprecedented development with respect to the outcome of the great social and political problems which now press upon our attention for their resolution. He said:

"No one can form anything more than vague and general conclusions respecting your future. The factors are too numerous, too vast, too far beyond measure in their quantities and intensities. The world has never before seen social phenomena at all comparable with those presented in the United States. A society spreading over enormous tracts, while still preserving its political continuity, is a new thing. This progressive incorporation of vast bodies of immigrants of various bloods has never occurred on such a scale before. Large empires composed of different peoples have, in previous cases, been formed by conquest and annexation. Then your immense plexus of railways and telegraphs tends to consolidate this vast aggregate of States in a way that no such aggregate has ever before been consolidated. And there are many minor co-operating causes unlike

those hitherto known. No one can say how it is all going to work out. That there will come hereafter troubles of various kinds, and very grave ones, seems highly probable; but all nations have had, and will have, their troubles. Already you have triumphed over one great trouble, and may reasonably hope to triumph over others. It may, I think, be reasonably held that both because of its size and the heterogeneity of its components, the American nation will be a long time in evolving its ultimate form; but that its ultimate form will be high. One great result is, I think, tolerably clear. From biological truths it is to be inferred that the eventful mixture of the allied varieties of the Aryan race forming the population will produce a more powerful type of man than has hitherto existed, and a type of man more plastic, more adaptable, more capable of undergoing the modifications needful for complete social life. I think that whatever difficulties they may have to surmount, and whatever tribulations they may have to pass through, the Americans may reasonably look forward to a time when they will have produced a civilization grander than any the world has known."

THE CULTIVATION OF BEAUTY.

BEAUTY is superior fitness, as a Darwinian would say, and in this respect, too, the pre-eminence of the ancient Greeks was probably the outcome of their general physical and mental superiority to their fellow-men, though they themselves believed in the existence of a chemical pan-cosmetic. In the trial of the arch-quack Cagliostro, it came out that, during the twelve years from 1765–1777, he had realized three million francs from the sale of his "Recipe for Beauty," a recipe which has been more eagerly searched for than the philosopher's stone, or the secret of longevity. Andreas Cisalpinus made the notable discovery that an ointment of crushed locusts and mistletoe-juice would treble the charms of the fairest woman. "What must I do to become very beautiful?" the damsel in "Don Quixote" asks the enchanted Moor's head. "*Que seas muy honrada*—be very continent," replies the head. Paracelsus recommends meadow-dew, gathered in the morning while the May-moon is on the increase; and Montaigne inquires into the habits of the most well-favored tribes of every country, but confesses that the problem is rather an evasive one, the coast-dwellers of Sweden being as distinguished for their comeliness as the highlanders of Arragon, and the Normandy cider-drinkers not less than the Tuscan wine-drinkers. His only general rule, however, still holds good: that outdoor dwellers are never wholly ill-favored, nor indoor workers altogether lovely; and we might say the same of alcohol drinkers and total abstainers; the schnapps-worshiping natives of the Tyrolese highlands make amends by their active outdoor life, as Lowell factory-girls by their teetotalism. There is a good deal in race though. "*Angeli sunt; non Angli*," Pope Stephen III. wrote more than a thousand years ago to Archbishop Cuthbert, who had sent him a batch of Anglo-Saxon neophytes, and a trace of the same angelic features may still be recognized among the little ragamuffins of many a Schleswig-Holstein coast-village, where men subsist on brandy, cheese, and sour rye-bread. Their neighbors, the Pomeranians, are a manful, if not celestial, generation, and, in spite of their dreary moorlands, very fond of outdoor sports. But farther east Nature succumbs to art, and the northern Russians are about as outrageously unprepossessing as indoor-life and a combination of all vices could make the image of the Creator. Extremes meet though, and their Emperor has the honor of commanding twelve regiments of the most godlike men of the present world—the lance-cuirassiers of the body-guard, recruited in the highlands of Lesghia and Daghestan. Nearly all the natives of the

Caucasus have that fatal gift of beauty which made their land the favorite hunting-ground of the harem-agents, and this gave the Czar a pretext for treating it as a Turkish dependency.

But no social degradation could counteract the combined influence of the Caucasian climate, hardy habits, temperance, and frugality, for the Circassian mountaineers are teetotalers by religion and vegetarians by preference — figs, honey, barley-cakes, and milk being the staples of their diet. They are physically self-made men, for their language proves that their ancestors were Turanians—first-cousins of the owl-faced nomads of the Mongolian steppe. — *Popular Science Monthly.*

THE FOURTH INTERNATIONAL CONGRESS OF HYGIENE.

[FROM OUR SPECIAL CORRESPONDENT.]

TO those sanitary reformers who realize that sanitation, to be thoroughly effective, must be international in its character, the great gathering which lately took place in the capital of the Swiss Republic will seem full of promise for the future. More than four hundred members, and these representing twenty-five different nationalities, met at Geneva to hold the Fourth International Congress of Hygiene, in the month of September. Dr. F. Formento, of the New Orleans Board of Health; Dr. Jerome C. Smith, Dr. G. Grant, Dr. John F. S. Gray, of New York, were among the Americans present. Unfortunately, both in the United States and in England the work of these Congresses is not well known. Perhaps this may be due to the fact that, as French is the official language of the Congress, its popularity has spread more easily among the Latin races. In any case, while England and America were but poorly represented, with one or two exceptions, the following nations sent a great number of delegates: Algeria, Austria, Belgium, Brazil, Bulgaria, Basutoland, Denmark, England, Germany, Greece, Holland, Hungary, Italy, Mexico, Ontario (Canada), Portugal, Poland, Roumania, Russia, Servia, Switzerland, Spain, Sweden, and Turkey.

Perhaps it may be necessary to explain that the First International Congress of Hygiene was held at Brussels eight years ago, under the patronage of the King of the Belgians, and it was then resolved that these Congresses should be renewed every two years. The second gathering was a most brilliant success. It coincided with the great French International Exhibition, and the Government lent a hall at the Trocadero Palace for the general meetings and committee-rooms at the Tuileries for the morning sittings of the sections. Banquets, entertainments, and excursions of every description, and a very fair amount of publicity in the

French press amply rewarded the delegates from the eighteen nationalities represented on this occasion. The third Congress was held at Turin, two years ago, King Humbert himself presiding at one or two of the sittings; and finally the fourth Congress at Geneva.

A full account of the proceedings will be published as soon as possible; and as we are promised two stout volumes and some thousand or more pages of close type, it is scarcely necessary to say that our limited space renders it utterly impossible to do justice to so vast a subject. Yet there are one or two features in the debates that stand out with such prominence that they at least can be noticed. First and foremost was the great speech specially prepared for the Congress by M. Pasteur, on the attenuation of virus. Doubtless you have already received, perhaps by telegraph, some account of this remarkable study. The pride that Frenchmen take in all that M. Pasteur does, has led the Government to grant him $10,000 to facilitate his researches. To the Germans, therefore, who professed to disbelieve some of his experiments, on the ground that he could not afford to kill so large a number of chickens, M. Pasteur proudly replied, that the generosity of the French Government had enabled him to proceed without counting the cost. Indeed, the number of animals which have been immolated to enable M. Pasteur to acquire complete control over the four separate microbes which he now cultivates, must represent a small fortune. The four microbes are those of chicken cholera, of charbon (the *bacillus anthracis*), of typhoid, and the fourth—recently studied and described for the first time before the Geneva Congress—the microbe of the saliva in hydrophobia. Each of these microbes, derived from diseases so different, is subject to the same law. In each case their virus can be attenuated by the action of the oxygen in the atmosphere, and a culture, ultimately obtained, so far modified in its virulence that it will serve as a vaccine and protective against the disease in question. Such, in a few words, is said to be the all-important result of years of study, and the sacrifice, by inoculation, of hundreds of animal lives. But, if animals have thus suffered, their martyrdom has not been in vain; and it is their fellow-animals, and not human beings, that thus far have benefited from the knowledge acquired. M. Pasteur was able to announce that the vaccine against charbon which he has made had been applied to 400,000 sheep and 20,000 bullocks, with the result of reducing the death rate from this fearful disease, to 1 in 300 among the sheep and 1 in 2,000 among the cattle.

M. Pasteur's speech lasted nearly two hours; but if we give simply some account of his study with the microbe of hydrophobia, it will convey an idea of what has been attempted. In February a child died at Paris of hydrophobia, and M. Pasteur inoculated a rabbit with the saliva taken from its mouth after death. The rabbit died in three days, and in its blood M. Pasteur found a new microbe. A few days later another person died of hydrophobia at the hospital of La Pitié, and more rabbits were inoculated with the saliva of the patient, taken both before and after death, and all the rabbits died; some from genuine hydrophobia, others from purulent, and others from septic disorders. At first M. Pasteur thought the microbe he had discovered was the special cause of hydrophobia; but, as he subsequently detected the same microbe in the saliva of persons who had died of other diseases, he was compelled to admit that the microbe in question only accompanied, and was not in itself, the poison of hydrophobia. Though this was disappointing, yet for all practical purposes the results attained were very important. By cultivating this microbe in veal broth M. Pasteur found it retained its virulence; and his assistant cultivated eighty generations of the microbe taken from the saliva of the patient who died from hydrophobia. The eightieth generation killed rabbits as rapidly as the first. But these were cultivated in closed tubes. In open tubes, on the

contrary, the virus, yielding to the purifying effects of oxygen, lost its vitality so rapidly that it was impossible to seize it in its attenuated form. It was either quite dead or still too virulent. M. Pasteur then hit upon the expedient of mixing his veal broth with some rabbit's blood, and in this mixture the life of the microbe was prolonged from about twelve to nearly fifty days. By taking the microbes during the last ten days, when their vitality is at a low ebb, and breeding from them new generations of a weaker nature; and from them again, when reduced by the action of air to a still lower condition, breeding yet another generation, M. Pasteur finally obtained a virus which, when inoculated into rabbits or guinea-pigs, no longer killed, but acted as a vaccine. After an inoculation of the attenuated virus, the animal could with impunity be inoculated with the virulent virus. Nor is there any reason to doubt but that the principle which has enabled M. Pasteur to prepare a vaccine for charbon, for chicken cholera, for typhoid, and for hydrophobia, may be extended to many other diseases.

It can be readily imagined with what enthusiasm the enunciation of this brilliant prospect was greeted by the members of the Congress. For days the conversation ran on microbes, every movement was accompanied with speculations as to the number and nature of the microbes set in motion; while the hotel-keepers, quick to follow the bent of public thought, promptly introduced as the favorite dish of table d'hôte dinner a *Poularde à la Pasteur*.

Dr. Paul Bert, the atheist Minister of Public Instruction, in M. Gambetta's Cabinet, made the next greatest sensation of the Congress. It is as a man of science, and, above all, as a vivisectionist, that M. Paul Bert has acquired a world-wide renown. His tenure of office was but a passing and perhaps unfortunate interruption of those studies that will hand his name down to posterity. Yet it must be confessed that M. Paul Bert's speech on the influence of altitude had no special relation to hygiene, though most appropriate in such a mountainous country as Switzerland. The illness known as "mountain sickness" experienced on reaching high altitudes, Dr. Paul Bert ascribed to the want of oxygen, and described how he has produced its every symptom on himself and on his friends in his own laboratory in Paris. The aeronauts, Sivel and Crocé-Spinelli, joined in these experiments, which consisted in entering a sort of diver's bell, where the air was gradually rarified so as to imitate that of high altitudes. Thus the ordinary symptoms of "mountain sickness," that is, the failure of sensibility, the inability to hear, and sometimes the loss of sight, were produced. But these symptoms, however urgent, are at once remedied when the oxygen bag is applied to the mouth. On one occasion, Dr. Paul Bert was watching Crocé-Spinelli, who was within the bell. He thought he was about to kill himself; he had all the appearances of asphyxia, and his face was quite black. At the moment that Paul Bert had determined to interrupt the experiment and rescue his friend, Crocé-Spinelli put the oxygen tube to his mouth. In an instant he recovered, and his face resumed its ordinary complexion. On leaving the bell Crocé-Spinelli said: "I wanted to wait until I had completely lost my sight, and it was only when I was quite blind that I took the oxygen; my sight was restored immediately." It was on the strength of these experiments, often renewed, that the two aeronauts determined to visit, in a balloon, altitudes which had never yet been reached, and there make interesting meteorological observations. The results are well known. During Dr. Paul Bert's absence, and against his advice, they went up with an insufficient supply of oxygen. In their efforts to economize this small supply, they waited just a moment too long. On stretching his hand out to grasp the tube of the oxygen bag, Crocé-Spinelli was paralyzed, fainted, and died. The story of the death of his friends, told with

much feeling and emotion, deeply moved the audience, but there was much to cheer in the conclusion of the speech, as it demonstrated the utility of such studies.

From La Paz, in the Cordilleras, some 12,000 feet above the sea level, Dr. Paul Bert obtained the blood of animals acclimatized to this high altitude. He found that, whereas the blood of animals of the same race living on the sea level, only absorbed 10 to 12 per cent. its weight of oxygen, the blood of the same race when acclimatized to La Paz absorbed 18 to 20 per cent. of oxygen. Thus, as we live in a climate where there is less oxygen, our blood gradually acquires the property of absorbing a larger proportion of oxygen, and thus the equilibrium is maintained. Therefore, Dr. Bert concludes that when the central fire abates and the air that surrounds us reaches the profound depths of the globe and the atmospheric pressure diminishes, the life of the human race will not be extinguished as rapidly as is generally anticipated. Our descendants, like the inhabitants of the Cordilleras, will change in constitution as the barometric pressure decreases; and, though the time will probably come when life will be impossible, yet the end is not so near as we might conclude if we only rely on our present powers of resistance.

The contagious character of phthisis, the prevalence of blindness, the German "holiday colony," by which the unhealthy children of the poor of large towns are sent to spend their holidays in the country, were among the other subjects discussed at the general or afternoon meetings of the Congress. In the morning the Congress was split up into five sections, and these groups had to debate upon no less than fifty-one different sanitary problems. But of all these questions, that which led to the most earnest debate—a debate, indeed, which was prolonged over three days—related to the disposal of sewage. In this discussion it was plain to see that the Congress was divided into three parties. The first objected to draining into sewers, preferring cesspools; while the most enlightened members of this faction advocated the pail system. The second faction, on the contrary, urged that everything should go to the sewer, and Dr. Varrentrap, the medical officer of Frankfort, was its most able advocate. He pointed to his own town, which is undoubtedly the best example of good drainage in Europe. The third party advocated a separate canalization for the reception of foul matter, and the application to these separate iron pipes of a pneumatic suction which, by producing a vacuum, drew away all the sewage at once to a depot some distance outside the town. This system has been introduced in France by M. Berliez, in Holland by Capt. Liernur, and found at the Congress its best advocate in the person of Dr. Van Overbeck de Meyer, Professor of Hygiene at the University of Utrecht. Of course the example of Memphis and of other towns in the United States was often mentioned in the course of the various arguments; but, in spite of all, in spite of mountains of statistics, no final decision was adopted, and we fear that but few converts were made. Undoubtedly cesspools were condemned by the majority, but opinions remained divided as to the best system of drainage.

In the same section there was also a very interesting debate on the permeability of walls. It is not generally known that if we allow a difference of temperature of one degree centigrade, there passes through an ordinary wall per square meter about 245 litres of air per hour. From this the question arose as to how far it was safe to block up the pores of a wall, by means of paint, papers, wooden or enamel panelings. Might not the pores of a wall act as sponges to absorb miasma and germs? On the other hand, it would not be safe to check the ventilation that takes place through the porosity of the walls, unless the ventilation of houses was very much improved, especially at night-time. It was suggested that Mr. J. B. Orr, an English chemist, had perhaps hit upon a happy medium.

He had invented a distemper called Duresco, which excluded damp, but allowed air to pass. A brick scooped out and painted with duresco would retain water, as in a saucer, but it was possible to blow through this brick even where the water could not pass. Thus in dealing with the questions of ventilation and of dampness, we must in future take into consideration the porosity of the walls and the velocity of the air in traveling through them.

Another member of M. Gambetta's Cabinet spoke at the Congress. Dr. A. Proust, who had held the portfolio of the new Ministry of Fine Arts, read a paper on the pilgrimage to Mecca and its influence on the spread of cholera; while, a little later on, Dr. Formento urged that an International Maritime Code should be adopted, so as to restrict yellow fever to those countries where it is an endemic disease. Aided by the facility and rapidity of modern means of communication, the yellow fever had already reached districts where formerly it was utterly unknown. Yellow fever, Dr. Formento urged, may be classed among the preventable diseases; but, to be efficacious, the preventive measures should be based on a thorough knowledge of all the circumstances which develop yellow fever in the countries where it is endemic, that is, the general and local sanitary conditions of those countries where the fever first breaks out. The ships, which are the habitual medium for the spread of yellow fever, should be the subject of special study, so that we may ultimately discover what method of construction, of ventilation, what sanitary conditions, are best calculated to prevent or, at least, to diminish the chance of infection while they are stationed in ports where yellow fever is prevalent. These very practical suggestions were all the more applauded as Dr. Formento spoke in the most admirable French. At the afternoon sitting, the President of the Congress, Dr. Lombard, of Geneva, anxious to pay a special compliment to the United States, invited Dr. Formento to take a seat by his side on the platform with Dr. Pasteur, Dr. Paul Bert, and the most honored guests of the Swiss Republic.

All this serious work was relieved by evening receptions, banquets, and the most hospitable entertainments. One whole day was devoted to an excursion round the Lake of Geneva. The Government provided a magnificent steamer. The water-cure establishment of Eoian les Bain gave a breakfast; and the town of Montreux, the winter resort of Switzerland, gave a banquet. When the Congress returned on board they found the whole coast line, for a distance of more than three miles, brilliantly illuminated. Bengal fires burnt high up on the mountains, lighting in red and green every prominence. From the gardens rockets shot up, and the whole shore blazed with the fire of artillery salutes. No monarchy would have organized a more gorgeous display, or have given a more brilliant reception than that provided by the spontaneous outburst of feeling on the part of the Swiss Republicans. Well might M. Marc Heridier, the Premier of the Canton of Geneva, while addressing the Congress, exclaim that "Liberty was the natural ally of science."

In the grand old city of Geneva, so long the cradle of European freedom, delegates from all nations, subjects of almost every known form of government, met harmoniously day after day. The sublime aspirations of sanitary science seemed to lift every one far above the blighting prejudices of race; German and French mingled amicably together, Russian and Pole shook hands, Bulgarian and Turk sat side by side; one and all praised Switzerland and the Swiss Republic, and every hand was raised to applaud the eloquent Italian Senator, Dr. Pacchiotti, when, in an outburst of Southern enthusiasm, he exclaimed:

"Happy Switzerland! If Europe followed your example, if the milliards which all the nations are madly spending to feed their armies and construct their weapons of death, were devoted to education, public works, and hygiene, Europe would in twenty years become a

strong, educated, happy, and vast Switzerland."

The love of humanity outshone political predilections, and the Fourth International Congress of Hygiene, moved by the free air of the Swiss mountains, forgot for the moment the narrow divisions drawn by frontier lines.

The Fifth International Congress of Hygiene to be held in September, 1884, will also be the guest of a free people. It will meet at La Hague, and we are promised a warm welcome from the brave Dutch, who in times gone by fought for the freedom of Europe by overthrowing the thralldom of Spain and resisting the tyranny of Louis XIV.

ADOLPHE SMITH.

GENEVA, SWITZERLAND.

HOW CAN THE BRAIN REST?

I AM not very much of a physiologist, and at the risk of incurring a smile of pity or derision from those who consider themselves learned in the science of Physiology, I will state that, in its present imperfect state, I have not very large respect for it. Now, there's Anatomy; you can know something for certain about it; the number, size, weight, color, texture, and situation of the bones, muscles, cords, tendons, and different organs of the body can be demonstrated, and, of course, inferences can be drawn regarding their uses and treatment in many particulars. In others there has been a great deal of guess-work done, and in no regard have guesses been more prolific than regarding the brain, unless it may be the much-abused stomach and liver.

The question asked at the beginning is one that has many times presented itself for my consideration. For many years past there has been a vast amount of preaching to people about over-working their brains; and as I lay down trying to take an hour's rest, and, in accordance with my physician's requirements, working tremendously hard to stop thinking, the thought came to me—and I had to think it—why not stop breathing to rest the lungs?

The chain of thought which followed may not be original. I do not know. It was new to me, and affords me great consolation; for I must confess this idea of stopping thinking to rest the brain has always been repugnant to me.

We breathe with the lungs, but the lungs do not produce the air we breathe; they simply breathe it, and that without any conscious volition on our part, excepting at times when we find it beneficial to refresh our lungs by drawing in an extra quantity.

Some say we think with the stomach, and perhaps dyspeptics do. Ordinarily, however, I suppose we think with the brain, but the brain does not produce the thought we think. It simply thinks it, and that, usually, without any conscious volition on our part.

Now, let us carry the parallel farther: Suppose a person of large lung capacity confined in a small room. The air of the room soon becomes vitiated and injurious to the lungs. Shall we say to that person, "You have used your lungs too much. You must stop breathing and let them rest"? It seems to me such a proceeding would hardly be more absurd than for us to say of persons who have exhausted the brain in a certain round of thought, that they must stop thinking. What do we say to persons whose lungs have become weakened or diseased by breathing the same air over and over? We tell them to breathe fresh air, not to stop breathing.

The world is as full of thought as it is of air. The one is appropriated by the lungs, the other by the brain. Now, suppose a person of large brain capacity, confined by circumstances to a limited range of thought. The brain will be-

come restive, weakened, diseased. What should the remedy be? Not less thought, but fresh thought—all the thought the brain chooses to think—just as we give a change of air to the lungs, and all the air they will breathe. Not dead, vitiated, unclean, dark, and cheerless thoughts, not thoughts that have been through and through the brain till it has extracted all the good they could furnish, but live, fresh, pure, hopeful, new thought, from which the brain can gather to itself strength and sustenance, just as we would give to the lungs air fresh from heaven, and not confine ourselves in dampness and darkness and foul miasm, and then hold our noses for fear it will hurt us to breathe.

And now, believing I have made plain my meaning, be it right or wrong, I will not illustrate further. From this time on, until I shall hear some more feasible plan than I have yet heard for doing it, I shall not try to stop thinking in order to rest my brain.

It may be objected that the brain sleeps and the lungs do not, but I believe even on that point physiologists differ, and I shall take the benefit of the disagreement.

CELIA B. WHITEHEAD.

A PHYSICIAN'S MEMORANDA.

CAUSE OF NERVOUS DISEASES.

MOST writers on this subject attribute the great increase in the number of nervous patients to "mental worry" from one cause or another. While this is to some extent true, I am firmly convinced that a majority of such cases owe their origin to the use of alcoholic stimulants and tobacco. Dr. Hammond has taken occasion to mention fourteen different nervous diseases caused by the habitual use of alcohol, and there is hardly a country practitioner with the scantiest practice who can not confirm his statement. Both alcohol and tobacco act first on the nervous system, and the other affections that usually follow are mere consequences of the nervous disorder. Paralysis, the most fatal of nervous diseases, claims over one-half of its victims from the army of smokers and drinkers. Sleeplessness and the so-called nervous dyspepsia of the present day are also in a large percentage of instances due to the use of one or both of these poisonous agents, and the list might be extended almost indefinitely.

SUDDEN DEATHS.

Whenever a person dies suddenly disease of the heart is usually thought to be the cause. This, however, is an erroneous idea, an autopsy most frequently revealing *congestion* of some other vital organ—notably the lungs or brain. Most cases of congestion occur in middle-aged and elderly people, during the first cold weather, the chilling of the extremities causing the blood to leave the surface and settle on the internal organs. Persons of a rheumatic habit also add a considerable number to the list of sudden deaths, the metastasis or translation of the disease from some other part of the body to the brain proving speedily fatal. Bright's disease often terminates in sudden death, and that too in many instances, without the patient ever having any idea that he was diseased. Patients with dropsy of the chest frequently fall dead while attending to their usual business and without any warning. Certain conditions of the blood leading to the formation of clots cause sudden death, and many other causes might be enumerated, the heart in most instances being found in a perfectly normal state.

CANCER OF THE TONGUE FROM SMOKING.

In a recent number of *The Tribune Medicale* M. Deslonde calls attention to a hitherto undescribed affection of the

tongue caused by the habit of tobacco-smoking, asserts that it may exist for several years without detection except by the aid of a microscope, and that its usual tendency is to degenerate into cancer of the tongue. In confirmation of M. Deslonde's statement, the late United States Senator Hill, in a letter to a brother of the writer, attributed the malady which terminated his life, after long agony, entirely to the habit of smoking. Dr. Gross, the eminent surgeon who attended him, concurred in his opinion.

THE INSANITY OF INEBRIETY.

In the trial of criminal cases the courts have nearly always ruled that inebriety could not be held as an excuse for crime, and even gone so far as to consider it an aggravation of the offense. If there is more perfect dethronement of the reason in actual insanity than there is in certain cases of inebriety, close scrutiny has never enabled me to detect it, and many astute observers in the medical profession are arriving at the same conclusion. To hang a man for the commission of a murder while he was inebriated, the habit having been inherited from a drunken ancestor, or being born with a peculiar condition of the nervous system always ending in the most helpless inebriety, is nothing else but legal murder. We pity those born with deformed bodies. Would it not be just also to pity instead of condemn those equally unfortunate with deformed mental attributes? Inebriety is a disease; one, too, over which the poor victim has no more control than he has over his neuralgia or rheumatism. He wishes to be cured, but there is only one method that cures—shutting up the liquor-shops, and thus depriving him of the means of gratifying his diseased propensity.

L. H. WASHINGTON, M.D.

REMOVAL OF EIGHT INCHES OF LARGE INTESTINE WITH RECOVERY.

[The following account of a remarkable surgical operation—which is similar in its nature to recent performances by that world-famed surgeon, Dr. Billroth, of Germany—was furnished at our request, it having been incidentally mentioned to us. Mention of it was made at the time by the editor of the Rondout (N. Y.) *Courier*, and considerable local interest was awakened by the altogether unexpected recovery of the patient.—ED. P. J.]

ON December 30th, 1869, I was called to see J. W. W., a man about forty years of age, residing in Kingston, N. Y., who had been suffering from a direct inguinal hernia, or rupture, for ten days, and was then in a state bordering on collapse, with much pain and fecal vomiting.

An examination of the tumor disclosed an odor of putrefaction, and I informed the family that the only possible chance for the temporary relief of the patient was in a removal of the *dead* portion of the intestine—to which they consented.

The tendency to collapse was so great that instead of using anæsthetics, I administered stimulus and proceeded to operate, making an incision through the integument, superficial fascia and intercolumnar fascia, then divided the conjoined tendon and passing through the transversalis fascia with the utmost caution, lest the epigastric artery should be unnecessarily injured, and then separating the peritoneal sac from the surrounding tissues. Upon opening this a fœtid, purulent fluid and a large fold of strangulated intestine were found. Enlarging the abdominal opening and the opening in the peritoneal sac, to facilitate the withdrawal of the intestine, I excised the deceased portion with the mesentery a little beyond the line of demarkation. The vomiting ceased immediately.

Unexpectedly finding the strangulation involved, not the ilium, but a part of the cæcum and a part of the ascending colon, I, contrary to the usual course, did not ligature or close the intestinal canal, but, after carefully cleansing the wound of the purulent and fecal matter,

retained the returned bowel by the application of an "adjustable pouch truss," thereby also controlling the contents of the bowels and rendering a drainage-tube unnecessary. The portion of intestine removed measured *eight inches*.

The "pouch" was daily cleansed and the wound also carefully dressed, using antiseptic applications. I now had, as it were, an improvised surgical rectum and anus. The opening through the coverings, which resulted from the removal of the intestine, constituted a sinus between the distal ends, which sinus served the temporary purpose of the absent intestine.

Adhesive inflammation, properly modified by an opiate treatment, provided an aponeurotic investment, spreading as a fascia to the sinus and answering the double purpose of muscular and mucous tissue—*i.e.*, a substituted intestine.

At the end of the seventh week the first natural movement of the bowels occurred, and was repeated at irregular intervals to the fourth month, when the opening through the abdominal parietes approximating the intestine returned to its proper vermicular action. The patient now resumed his usual occupation, that of farm overseer.

The progress of the case was witnessed by Surgeon John Wales, of Rondout, and N. B. Ingram, late Surgeon of the United States Navy. EDGAR ELTINGE, M.D.

Brooklyn, N. Y.

KITCHEN LEAFLETS, No. 12.

NEW DEPARTURE—BILLS OF FARE.

HAVING gone over considerable ground in the articles which have found place in the JOURNAL for 1882, I think it will prove an acceptable change from the customary line of presenting dietetic matters, if I shall endeavor to frame each month a list of articles suitable for the three regular meals which society insists upon eating daily. I am decidedly at one with those reformers who claim that two meals a day are better than one, but as "Custom's the world's great idol" I deem it expedient to formulate a third or light supper. To prescribe an order of eating which shall be sufficient to meet all the demands of nature, at first sight appears to be a difficult task if food chiefly of the hygienic order is to be prescribed; but the reader who may not be familiar with the subject is assured that the resources of hygiene are extensive. Some dishes which I may indicate, while not belonging to the strictly hygienic class, will be given in the lists simply for the accommodation of those who can not from long-established habit or inconvenience adapt themselves entirely to the improved system of food and cookery.

It is a principle of nature that sudden changes are harmful; and therefore it is not well for one who has been accustomed to eating in the old-fashioned way to abjure it suddenly; but let the change be made gradually, so that organs may have time to adapt themselves to the new method and the result will be gratifying. I have known persons who have been eating liberally of flesh food and rich dishes, to be quite broken down by adopting suddenly a farinaceous and fruit diet, and the effect of this illogical and badly advised course was to disgust them, and drive them back to their old table habits and to the aches, catarrhs, humors, and other besetments incidental to disturbed function.

The variety of recipes furnished in the course of last year is sufficient as a foundation for the bills of fare which may be given hereafter; new dishes, when added, will be definitely described, and such hints as my own experience shall warrant, so that the practical end which I have ever had in view in conducting this department shall not be lost sight of.

BREAKFAST.

Oatmeal Porridge. Stewed Potatoes.
Poached Eggs.

Graham Gems. Baked Apples. White Bread.
Crust Coffee.

DINNER.

Macaroni Soup.
Roasted Beef,
or Browned Parsnips.
Baked Potatoes. Stewed Tomatoes. Cauliflower,
Graham Rolls, or Bread. White Bread.
Corn-meal and Apple Pudding.
Cambric Tea, or Cold Water.
Catawba Grapes.

SUPPER.

Graham Gems. Pilot Crackers.
Stewed Prunes.
Sponge Cake. Cambric Tea.

STEWED POTATOES.

Peel and cut into small, uniform pieces, as many potatoes as may be needed. Have ready enough boiling water (slightly salted) to cover them; boil until done. Skim them out of the water into a dish, and pour milk gravy over them (made of a pint of boiled milk, into which has been stirred a tablespoonful of flour previously dissolved in a little cold milk). Cold boiled potatoes can be served in the same way.

BAKED APPLES.

Take apples of uniform size, cut out the cores, and drop sugar in each one; pour a little water over them, and bake until tender in a quick oven.

MACARONI SOUP.

Break one-quarter of a pound of pipe macaroni into small pieces of an inch in length; place them in one quart of boiling water, and let them cook an hour; then add two cups of strained stewed tomatoes, and just before serving pour in half a cup of cream or milk. The cream or milk can be omitted if not liked.

ROASTED BEEF.

The best pieces for roasting are sirloin and small rib pieces; cross-rib pieces are solid and juicy and fit for pot-roasts, which are preferred by some. Have most of the bone removed, and skewer the meat into a shapely form and put it into the pan, and after it is placed in the oven, pour a cup of boiling water over the meat and let it trickle down into the pan. This checks the escape of the juices and facilitates the thorough heating of the meat before the upper surface dries. Do not sprinkle salt on it, as that tends to harden the fiber. Baste frequently with the water and juices. Allow about a quarter of an hour for baking to each pound, if it is preferred rare—more if preferred well-done.

Remove the meat, when done, to a hot dish, skim all the fat off the drippings, add a cupful of boiling water, boil it up once, and send to the table in a gravy-boat; that is, if gravy is desired. Some prefer only the juice that runs into the dish when the meat is cut.

NOTE.—For cooking meats well and economically, the use of a steam apparatus is advised; such, for instance, as that devised by Mr. Warren, of the English army, convenient modifications of which are to be procured here.

The covered roasting-pans lately introduced are a great improvement upon the old method. In using them no basting is required, the meat is more evenly cooked, and the juices of the meat retained.

When roasted in a pot, pour enough hot water in to cover the bottom of the pot, and cook until tender, adding a little water as it boils off. Brown the meat in its own juices, turning it frequently, so as to make all sides alike, and watch carefully to prevent burning.

WHITE BREAD.

This bread is better made with milk than water, using one pint and a half for a large loaf. At night take half of the milk and *warm* it—do not boil it—then pour it into the bread bowl, adding one teaspoonful of salt and two tablespoonfuls of home-made yeast, or one-third of a good yeast-cake dissolved in a little warm water. Stir in flour until the dough is as stiff as it can be stirred with a spoon; cover, and leave in a warm room until morning. Then add the other half of the milk, previously warmed; knead, mould, and put into the baking-pan. Now let it stand about one hour and a half, then place in a moderate, steady oven.

STEWED PRUNES.

Take the desired quantity, wash them in several successive waters until they are thoroughly cleansed, then let them soak overnight and cook them in the water in which they have been soaking; add enough hot water to cover, *i.e.*, about two pints of water to one pint of prunes. Cook slowly and gently about two hours in a covered pipkin. Sweeten with sugar to suit the taste. French prunes do not require sweetening, Turkish do.

GOOD YEAST.

It is not always easy to procure good yeast or leaven at the grocers, and, as a general thing, bakers' yeast is not much affected by the housekeeper; therefore I have prepared a recipe by which yeast of excellent quality can be made at home, and the bread-maker will have the satisfaction of knowing that it contains none of the adulterants so commonly found in the leavens of commerce.

1 pint bowl of hops.
1 quart of boiling water.
4 potatoes.
2 tablespoonfuls of white sugar.
2 tablespoonfuls of salt.
1 pint of white flour.

1 good yeast cake dissolved in a little water; or,
2 large (iron) spoonfuls of home-made yeast.

Put the hops in a pot and place it on the stove. Pour the boiling water on them and let them simmer; peal the potatoes and boil them; let the hops simmer all the time the potatoes are boiling. Put the sugar, salt, and flour in a stone jar; mix them together, then mash the potatoes finely and add them; strain the boiling hop-water, and pour it in the jar; mix well and, when cool, stir in the yeast. Set away in a cool, dry place. One large (iron) spoonful of this preparation is enough for two medium-sized loaves of bread. It will keep about four weeks in cold weather, and should be covered from the air.

REMARKS.

Oatmeal porridge is best made with the pinhead, Schumaker's A, or Canada B varieties. See JOURNAL of March, 1882, for recipe.

See JOURNAL of May, 1882, for Graham Gems.
" " Nov., " Poached Eggs.
" " Aug. " Baked Potatoes.
" " Feb., " Cornmeal-and-apple pudding.
" " July, " Cauliflower.
" " Aug., " Crust Coffee.
" " Sept., " Stewed Tomatoes.

Cambric Tea is made simply with hot water and milk.

MIRA EATON.

NOTES IN SCIENCE AND AGRICULTURE.

New Points in Lightning Rod CONSTRUCTION.—In the report of the lightning rod conference which was lately held in England, and composed of representatives from the Meteorological Society, the Royal Institute of British Architects, the Physical Society, and the Society of Telegraphic Engineers, the following rules as laid down by the conference are interesting: The minimum dimensions of rods are: Copper—rope, $\frac{1}{4}$ inch diameter; round rod, $\frac{3}{8}$ inch; tape, $\frac{1}{8}$ inch. Iron—round rod, $\frac{5}{10}$ inch. The weight of the last named will be 35 ounces to the foot, while none of the copper materials need exceed 7 ounces to the foot. The conference gives its adherence to copper as the cheapest and best material for the purpose which a lightning rod is intended to subserve. The rod recommended by the conference has no terminal points, but the rod itself is carried to the full height, and then simply beveled off at its summit. Some distance below the upper terminus, say about a foot, a copper ring is soldered, which carries three or four needles of copper 6 inches long, and tapering from $\frac{1}{4}$ inch in diameter to as fine a point as possible; and it is recommended that these points be platinized, gilded or nickel-plated. The purpose of this modification of the usual plan of surmounting the tip of the rod with points, is stated to be to give the rod the greatest possible electrical conductivity, while the points below will effect the silent discharge, as with the usual arrangement. Gilding or platinizing of the points is preferable to nickel-plating, in towns or cities, because of the corrosive action of sulphurous gases always present where large quantities of coal are consumed, and which would, it is thought, speedily destroy the thin coating of nickel.

Respecting the area protected by a lightning conductor, the report contains the interesting statement that, save in two doubtful cases, there is no recorded instance of a building being struck within a conical space the radius of whose base is equal to the height of the rod. The last estimate conforms to the view generally entertained by scientific men on the subject.

Coal Mining at Great Altitude.—Among the coal mines being developed in New Zealand is one situated near the town of Westport, on the west coast of the Middle Island, which is distinguished by two remarkable, if not unique, features—the thickness of its coal seams, which range from 6 ft. to 53 ft. 6 in. in thickness, and the fact that these enormous deposits are placed, and can be easily worked, at an altitude of from 800 to 3,000 feet above sea level. Some of these seams are exposed on the faces of the cliffs, and can be reached with the greatest of ease by tunneling. Besides the comparative immunity from ordinary accidents which this remarkable disposition of coal affords, there is the further advantage that the mines are absolutely safe from floods, and almost, if not quite, secure from the risk of explosion from fire-damp. There is the further advantage that the coal can be loaded on board ship by gravitation, the danger and expense of hauling the coal up a deep perpendicular shaft being entirely avoided.

A Curious Fir Tree.—Switzerland has its old chestnut trees on the banks of Lake Leman, and the ancient linden of Fribourg, the history of which is said to go back to the time of the conflicts with Charles the Bold. M. Louis Piré, President of the Royal Botanical Society of Belgium, has found a fir tree in the forest of Alliaz, Canton of Vaud, which he believes to be still older than the linden of Fribourg, and considers it entitled to be regarded as the oldest and most remarkable tree in the canton, if not in the whole confederation. It is growing near the baths of Alliaz, at the height of about 1,300 feet above the hotel, and 4,500 feet above the sea. surrounded by a forest of firs, which it overtops by more than thirty feet. The trunk of this tree is ten metres, or a little more than thirty feet, in circumference at the base. At about a yard from the ground it puts out, on the south side, seven offshoots, which have grown into trunks as strong and vigorous as those of the other trees in the forest. Bent and gnarled at the bottom, these side trunks

soon straighten themselves up and rise perpendicularly and parallel to the main stem. This feature is not, perhaps, wholly unparalleled, but another most curious fact is that the two largest of the side trunks are connected with the principal stem by sub-quadrangular braces resembling girders. These beams have probably been formed by an anastomosing of branches, which, common enough among angiosperms, is extremely rare among conifers; but it has been impossible to ascertain the manner in which the ingrowing of one branch into another has been effected. The adaptation by which a limb, originally destined to grow free and bear foliage, has been converted into a living stick of timber, is a strange one, and affords a new illustration of the power of nature to fit itself to circumstances. The space between the rough flooring formed by the growing together of the offshoots, at their point of departure, and the girder-limbs, is large enough to admit of building a comfortable hermit's hut within it. —*Popular Science Monthly.*

A New North American Rose.—Dr. George Engelmann describes, in the *Bulletin of the Torrey Botanical Club*, a new species of rose that appears to present peculiar botanical and horticultural features. It was discovered by a party of botanists, consisting of Dr. Perry and Messrs. M. E. Jones and C. G. Pringle, while they were riding along a road skirting the shores of All Saints' bay, in Lower California. Forming as it did a most conspicuous and agreeable feature in the arid landscape, with its finely divided foliage and showy pink or white flowers, it at once attracted the attention of the whole party. It has been named *Rosa minutifolia* by Dr. Engelmann, who describes it as "a most striking and lovely species, distinguished from all other roses by its minute deeply-incised leaflets." The species is quite peculiar among its American congeners, and even among the roses of the old world, so that it is difficult to determine its true position. As seeds have recently been collected, we may hope to soon see the plant in cultivation.

Is Glucose Harmless?—The *Detroit Free Press* discourses on this topic in its customary vein:

"At a hearing on the subject of glucose before the sub-committee of ways and means the manufacturers were represented by half-a-dozen agents and attorneys, who assured the committee that glucose is entirely harmless. So are slate pencils harmless, if eaten moderately, as many a school-girl can testify; and so is marble-dust harmless when sprinkled on strawberries and cream under the name of pulverized sugar; and so is clay harmless, as the North Carolina dirt-eaters know full well; and so is chiccory harmless, especially when poured out of a coffee-pot and taken with brown sugar and skimmed milk for breakfast at a country tavern. Now, the simple and undisputed fact is that glucose is comparatively useless for any purpose under the sun except to mix with other substances, to the end that under the name of honey, sugar or some other standard article, it may be sold for several times as much as it costs. If glucose is such a very nice thing to mix in with molasses or syrup, why not offer it for sale for that purpose and see if any human being will buy a pint or a pound of it to stir up with honey or sugar for his own use? Let glucose and oleomargarine be sold for just what they are and nobody will find fault; but why should counterfeit sugar and counterfeit butter be allowed any more than counterfeit money?"

The Size of the Molecule.—De Heen has calculated, on the basis of the capillary phenomena, the diameter of a molecule of water, and finds it to be about seventy-five ten-billionths of a millimeter. The number of molecules of water contained in a cubic millimeter would be about twenty-five trillions (*Vide Annal. de la Soc. Scient. de Bruxelles*). In preparing attenuations of such a substance the twelfth decimal would contain twenty-five molecules to each millimeter, the thirteenth two or else three to each millimeter, and in the fourteenth, three-quarters of the vehicle would be destitute of the attenuated substance.

A Simple and Pleasing Experiment.—Take an argand lamp chimney or other tube. Tie a piece of rubber sheeting over one end of it, stretching it moderately tight. To the center and top of the rubber sheeting affix, by means of mucilage, a small bit of mirror about the size of a small tack head. Darken the school room as dark as possible and by means of a mirror placed outside of an aperture in a shutter, reflect a ray of sunlight into the room. Hold the end of the lamp chimney in this ray of light, and a small, bright spot will be reflected on the wall. Put the mouth to the open end of the tube and utter a sound. The spot of light breaks into a curious band; utter another sound and a different band of light is thrown upon the wall. Sound the notes of the scale, and each tone produces a different band of light, and observe that the same band is always produced by the same tone. Have two tubes prepared, and have a boy (whose voice has changed) and a girl sound the same tone. Observe that there is an octave difference in their voices. The vibrations here made visible are simply the vibrations which have produced the tones.—*N. Y. School Journal.*

How to Clean Pens.—A writer in a German paper states that it is a custom in offices in that country to have a sliced potato on the desk in commercial houses. The esculent is probably employed in the raw state, and is used to clean steel pens, and generally acts as a pen-wiper. It removes all ink-crust, and gives a peculiarly smooth flow to the ink. He also states that the Hamburg clerks pass new pens two or three times through a gas flame, and then the ink will flow freely.

CHARLOTTE FOWLER WELLS, *Proprietor.*
H. S. DRAYTON, A.M., M.D., *Editor.* N. SIZER, *Associate.*

NEW YORK,
JANUARY, 1883.

OUR WORK AND OUR COUNTRY'S NEED.

SOME NEW-YEAR REFLECTIONS.

AGAIN the leaves of a new year's volume of the PHRENOLOGICAL JOURNAL AND SCIENCE OF HEALTH are opened and the reader finds therein the promise of another twelvemonth's course upon a broader ground of assurance than when 1882 brought in its first number.

We feel encouraged by the prospect of a more extended field of action in 1883, an increasing influence, a wider usefulness; for, during the past year, the literature which we have been disseminating has made its way into new places and found a welcome in new circles, even from people who were accustomed to regard Phrenology askance, as something mysterious or doubtful or dangerous, something it were best to have little to do with; but now, having looked within its covers, they exclaim with candid warmth: "The JOURNAL is engaged in a noble work. We never supposed it to be such a publication as it is. It ought to be read by everybody in the land."

We are striving to help in the great work of human progress, true moral progress, and it certainly would be strange if, after forty-four years of persistent endeavor, some effects would not be apparent and permanent in the life and character of our people. We believe that our constant teaching and admonition have aided in bringing about many changes in the methods and habits of Americans in their every-day life, in their eating and drinking, in labor and rest, in education and social usage. We believe that we have given a strong impulse to the cause of temperance and moral reform, and have contributed not a little to the practical organization of the many enterprises which have the intellectual improvement of the people everywhere in view. Little was known of the public lecturer until the phrenological apostle appeared, and in school-house and church and meeting-house proclaimed the doctrines of his man-exalting science. The success attending his mission drew after him a flock of platform-walkers, representing every ology and ism, and in this way a vast amount of scientific and other information has been poured upon the land, and hundreds of thousands have been awakened to a realization of new truths and higher modes of personal usefulness.

No influence in behalf of *home* education has been stronger in this country during the past forty-five years than the teaching of the phrenologists. This proceeds from the very nature of phrenological doctrines, which appeal to the individual and provide for his self-improvement first, and, next, for its reflection in his life and relations with others. While the physical sciences direct the intellectual attention to matters without, the science of mind directs attention to the conditions within and seeks to develop

the self-nature and harmonize the action of its faculties and powers.

Phrenology recognizes the fact that individual growth and elevation must precede social and State development, and, therefore, to build up a community of orderly, mutually helpful, and solidly progressive people, each person must be cultivated in the exercise and practice of those higher sentiments which rule in a sober, righteous, and godly life.

We believe that if there were a thousand earnest and competent men and women working among our people, guided by the light of Christian truth and phrenological principles, a marked improvement in moral and physical tone would be the result in the course of ten or fifteen years. Our vast area offers an abundant harvest to many thousands of such workers, but we should be thankful indeed were there but one thousand. If seventy-five thousand lawyers and sixty thousand or more physicians find scope for their special callings, certainly the phrenologist need have no fear of an early crowding in the walks of his profession. Moreover, if our population has need of so vast an army of lawyers to mend the broken and disjointed relations of public and private life, and so many physicians to repair the damages of sickness or accident, certainly there is wide room for the teacher whose mission is to show how, by obedience to the laws of human being, laws written in the organization of each person, the ills, moral and physical, which have made the lawyer and physician a necessity, may be, in great part, prevented.

The best work done in any field of human amelioration is that accomplished by personal effort. Next to that is the work done by good literature. Hence, if a thousand phrenologists, well-appointed and earnest, are not to be had, there are the books and periodicals of phrenological science which are available to public demand; especially the periodicals whose repeated appearances deepen impressions and establish convictions in the mind of the reader, out of which permanent good may come.

Half a million copies of the PHRENOLOGICAL JOURNAL AND SCIENCE OF HEALTH, broadly distributed monthly, might compensate in a great measure for the want of the thousand earnest, pushing men the country needs, and we are ready to supply that half million copies monthly. Let the demand come. We should gladly welcome it; not as the expression of a grand "literary" success, but as the practical manifestation of a great mental awakening among the people, a realization of need in matters of the highest importance. Was there ever a time in the history of the American nation when the teachings of phrenology, physiology, and hygiene were more needed by society in general? The wonderful enterprise of the people has been exhibited more in developing the resources of the country than in the evolution of methods for physical and moral improvement; society has been so much absorbed in its outside work that it has forgotten or neglected its inner and human duties. Emigration is bringing hundreds of thousands of foreigners to our shores, and these are to be assimilated and absorbed if there is to be a harmonious body politic. The great questions which our tremendous agricultural and industrial interests press upon our statesmen and economists add to the social problems which the foreign influx has created, and there have been several

sweeping measures of national legislation within the past twenty years, the outcome of which, in practice, has proven full of difficulty. We are, as a people, in a transitional period fraught with many dangers, social and political. Now to resolve these questions and to remove these difficulties—in a word, to pass safely through this period of transition the moral sense of the population must be enlightened, the virtues of sympathy, forbearance, and co-operation must be made active and powerful, and selfishness, egotism, and dogmatism must be restrained. Phrenology has a mission to perform in this. We have already said that it has done much, but the astonishing growth of the country has outstripped the labors of its few disciples, and its accomplishments, valuable and important as they are, have been much modified in essential character and effect by extraneous influences. Yet, advantage may be taken of conditions as they exist, their intelligent appreciation giving to the scientific missionary special capability for successful work and making phrenological literature particularly serviceable. What greater object is there than that of moulding a nation's character and influencing a nation's destinies? The work that aims to improve men, to expand their character, to develop their higher faculties, to increase their usefulness, has a direct bearing upon the State and can be mighty in its results. Is it presumptuous to say that this high calling is that of the true phrenologist? A thousand noble men and women are ready to answer out of the depths of personal experience, No. A multitude of men and women in the East, West, North, and South would enthusiastically hail the appearance of a thousand phrenological teachers, or rejoice to know that five hundred thousand copies of the PHRENOLOGICAL JOURNAL AND SCIENCE OF HEALTH were distributed monthly throughout the land.

Reader, is this an impossible accomplishment? We think not, if you would lend a hand in the effort to attain it. And why not help? Among the resolutions you have made to guide your course during 1883 must be one that has regard to doing good to others according to your opportunity, and by communicating a knowledge of the principles of self-government, of self-protection against the ills, moral and physical, to which man is exposed, you will not fail to do good.

A NATIONAL CHARACTERISTIC OPTIMISTICALLY CONSIDERED.

THE eminent representative of "synthetic philosophy" and evolution, who so modestly spent a few months in the United States last year, very gently referred to a most salient fault in our civil and private relations as a people when, in reply to the question of a newspaper reporter, he said that he had noticed a want of the practice of justice between men in their private and corporate capacities. To use his own discreetly chosen words: "Probably it will surprise you if I say that the American has not, I think, a sufficiently quick sense of his own claims, and at the same time, as a necessary consequence, not a sufficiently quick sense of the claims of others—for the two traits are organically related."

As a matter of duty we have touched upon this subject from time to time in this part of the PHRENOLOGICAL, and indicated certain particulars in which our lack of a sensitive appreciation of

the rights of others manifested itself. And we have attempted to apologize for it on the ground of the enterprise and progress and activity of the people, so absorbing the forces of the mind that there was little room or time for the full operation of the moral faculties in general, much less of the tender, scrupulous sentiment of conscientiousness in particular. The physical energies of the people were kept at work in all sorts of undertakings, commercial and industrial, to carry into effect motives of acquisitiveness, appetite, and ambition, and the strength of the vital organism was so absorbed in this work that the upper sentiments of kindness, sympathy, reciprocity, respect for oneself and others, and scrupulous fairness, had little life or stimulus. Forty years ago our champion of optimistic philosophy wrote in a letter to Thomas Carlyle: "Only when I see how much work is to be done, what room for a poet, for any spiritualist, in this great, intelligent, sensual, avaricious America, I lament my fumbling fingers and stammering tongue." Since that time, notwithstanding great strides have been made by our nation in material prosperity, the moral standard of the people has not advanced sufficiently to render that lament altogether inappropriate now. We complain of the cruel greed of monopolies; of the power wielded by rich men in carrying out purposes damaging to private interests, and often whole communities; of the unscrupulous measures of factions having control of civil offices; of corporations which manipulate the necessaries of life and the wages of industry, according to their desire of pecuniary profit, but forget that all these are but expressions of individual propensity, a bent of character of which each of us will, in candor, avow himself possessed in some degree. The community, the corporation, but expresses an aggregated moral sentiment; the great monopoly but inflicts a great wrong on society, which exemplifies in a colossal fashion the selfishness which in a small or pigmy proportion is illustrated in individual life.

Mr. Spencer thinks that our plan of government, our civil institutions, are too much in advance of the intellectual and moral status of our population, hence the incongruities and abuses which are so apparent everywhere. But could a true lover of free government wish them otherwise? Will not their influence be educational, reformatory, elevating? A system which is only at the level of the people can have little of stimulus, little of instruction in it; but that in which is crystallized a lofty ideal of progress, must exert an influence upon the people at large for their elevation, their moral and intellectual enlightenment. Call the American Constitution a "paper" thing, if you will, Mr. Spencer; it can not be denied that the great minds which formulated its propositions possessed a prophetic discernment, and impressed it with the character of adaptation for a people whose history would be remarkable for rapid development.

LOOKOUT.—"If a few more women will just invent a few more medicines, and have their portraits published with the advertisement thereof, the daily paper will soon look like a photograph album." Thus saith a worthy neighbor of ours whose sphere is the illustration of an important phase of Christian doctrine, and we heartily echo the sentiment. At the

same time we fear that our worthy neighbor now and then indulges in a practice which somewhat encourages the daily newspaper to add the feminine portraits to the numerous advertisements of "medicines" alleged to be the invention of the presumed originals of the portraits. For we notice in the pages of that worthy neighbor, certain paragraphs more or less "displayed," making very pointed allusions to the virtues of certain decoctions, bitters, tonics, restorers, etc., and these paragraphs only lack the portraits hereinbefore spoken of, to bear some resemblance to that common accessory of nearly every household, and rather cynically referred to as a "photograph album."

Our Mentorial Bureau.

To Our Correspondents.

QUESTIONS OF "GENERAL INTEREST" ONLY *will be answered in this department. But one question at a time, and that clearly stated, must be propounded, if a correspondent shall expect us to give him the benefit of an early consideration.*

IF AN INQUIRY FAIL TO RECEIVE ATTENTION *within two months, the correspondent should repeat it: if not then published, the inquirer may conclude that an answer is withheld, for good reasons, by the editor.*

TO OUR CONTRIBUTORS.—It will greatly *aid the editor, and facilitate the work of the printer, if our contributors generally should observe the following rules when writing articles or communications intended for publication:*

1. *Write on one side of the sheet only. It is often necessary to cut the page into "takes" for compositors, and this can not be done when both sides are written upon.*
2. *Write clearly and distinctly, being particularly careful in the matter of proper names and quotations.*
3. *Don't write in a microscopic hand, as the compositor has to read it across his case, a distance of nearly two feet, and the editor often wants to make changes and additions.*
4. *Never roll your manuscript or paste the sheets together. Sheets about "Commercial note" size are the most satisfactory to editor and compositor.*
5. *Be brief. People don't like to read long stories. A two-column article is read by four times as many people as one of double that length.*
6. *Always write your full name and address plainly at the end of your letter. If you use a pseudonym or initials, write your full name and address below it.*

WE CAN NOT UNDERTAKE TO RETURN UNavailable *contributions unless the necessary postage is provided by the writers.* IN ALL CASES, *persons who communicate with us through the post-office should, if they expect a reply, inclose the return postage, or what is better, a prepaid envelope, with their full address. Anonymous letters will not be considered.*

CONSTITUENTS OF FOOD.—It is the nitrogen in food which contributes most to the manufacture of muscle in the tissues. The lime, or calcium, phosphorus, and sulphur, combine to manufacture bone. The carbon, or fatty part of food, of course goes toward the composition of the fatty parts. The brain and nervous system require nitrogen, carbon, phosphorus, the last being the most important principle, as its purpose is to supply mental activity. In proportion as the amount of phosphorus is reduced in the food eaten, there appears a lack of nervous energy and power.

BRIGHT AND DULL PEOPLE.—*Question:* Why is it that some persons who seem to be intelligent in conversation, are yet very dull in learning at school? G. W. N.

Answer: The dull ones at school are so for one of several reasons. They may be immature in intellect, the brain not having reached that degree of development which facilitates the co-ordinate exercise of the faculties. They may be very active temperamentally, and restless under the restraints of school discipline, preferring the field and woods, or employment in a store, or a trade. As they grow up many show to good advantage in average society, for the reason that they have gathered a great deal of information. They pick up knowledge here and there. Their true way of learning is in active life, while, as it were, they are running. They generally dislike to be confined to a desk or a chair; books have no charm for them, unless specially related to subjects which interest them when knocking about. They are intelligent in conversation, because they know what they are talking about; they have seen and heard for themselves. They have their disadvantage, however; they are not as full and accurate in their statements as the school-bred, studious fellow. A man who reads and studies books gets a more general view of a subject; learns its different sides and applications, because he gets the results of the study of several persons, while the mere observer in affairs dependent upon himself may see but little more than one side or phase of it.

APPEARANCE OF THE EAR.—*Question:* What is denoted by the difference of appearance in the human ear; some are very conspicu-

ously placed on the head, while others appear compressed or even sunken? E. H.

Answer: Constitution and structure have to do with this—the ear generally corresponding with the type of organism, being large or small, according as the person is large or small. People of large frame, strong, bony structure, usually have large, prominent ears. Persons of fine grain, small bone and muscle, usually have small, delicate ears. The constitution of the cranium, however, it must be admitted, has something to do with the projection of the ear; for instance, the development of the internal auditory apparatus, the cochlea, may be especially large, and so form a projection behind the ear-lobe, and give to the lobe an appearance of being sunken or compressed.

PRONUNCIATION.—E. M.—If you will refer to a copy of "Webster's Unabridged Dictionary," or to any good dictionary which contains the modern and classical names, you will find the pronunciation of most of the proper names given. We should be glad, if we had time, to write you personally, but the number of your inquiries precludes it. Most of the terms mentioned are French, but as they are in very common use, especially by the writers of the day, probably some friend, whose reading has been liberal, would give you the pronunciation of them. We would add, that it would be exceedingly difficult for us to express in English terms such names as Bois de Boulogne, etc.

INHERITED CHARACTER.—*Question:* In a family the mother has brown eyes, golden hair, a clear, fresh complexion; the father blue eyes, light hair, and fair complexion; part of the children inherit the color of eyes from the father—only two from the mother; which of them will have the most decided character?

W. M. D.

Answer: The mere inheritance of hair and eyes may not indicate special organic characteristics. If you had given us some clue to the quality of the hair and the facial contours, we should have been able to answer your question with some degree of exactness. We are inclined to think that the mother, in this case, possesses the more pronounced character, and the children who have inherited from her the larger number of traits, express the more pronounced dispositions. The sanguineous elements of temperament appear to predominate in both these parents, giving them an active, vivacious, excitable tone of mind.

SLEEPLESSNESS.—E. A. D.—The cause of your infirmity lies in over-exertion. It may be that you study too much after eating your supper, which it is not well for any one to do. Light reading, pleasant discussion, and home diversions are best after eating the night meal. If people, generally, would defer their heartiest meal until after the hard work of the day, they would find more comfort in their digestion and sleep the better.

[*Several answers must be deferred to our next number.*]

What They Say.

Communications are invited on any topic of interest; the writer's personal views, and facts from his experience bearing on our subjects, being preferred.

THE PHRENOLOGICAL JOURNAL for December is full of the style of matter which makes this publication so prosperous and insures it so wide a circle of readers. It is a speaking proof that the promises which the publishers make for the coming year are certain to be fulfilled.—*Columbus, O., Herald.*

A BOSTON GIRL'S OPINION.—Although I have taken your magazine only a year it has made itself indispensable. I have carefully preserved every number—call them "my dear old Phreno's." G. H. T.

PERSONAL.

PROF. HENRY DRAPER, the Astronomer and Chemist, son of the late Prof. John W. Draper, died suddenly of pleurisy at his residence in this city on November 20th, last. He had attained the highest eminence as a man of science, and was distinguished especially as a photographer of the heavenly bodies, having made the discovery, after long and very expensive observation, of oxygen in the sun. In this department of scientific investigation he had no superior, and will be greatly lamented not only by the University, with which he was so long connected, but by the scientific world.

THURLOW WEED, the widely-known journalist, died November 22d, last, at his residence in New York. He was in his eighty-sixth year. Few men of political connections in America have exerted a more important influence in their day than Mr. Weed did while editor of the Albany *Evening Journal.*

EX-SENATOR HENDRICKS, whose near death was announced not long ago, has quite recovered, and certain eminent M.D.s of Indianapolis are said to be in an unpleasant state of mind on account of mistaking a boil for gangrenous erysipelas.

PROF. MARIA MITCHELL, the teacher of astronomy in Vassar Female College, has reached her sixty-third year. She is said to have almost perfect health, and to be as vigorous a worker as ever in her life.

WISDOM.

"Think truly, and thy thought
Shall be a fruitful seed."

LIVE with mean people and you will think life is mean.

To boast of your learning is to confess ignorance.—*D.*

THE best ornaments of a house are the people who frequent it.

HUMANITY is, of all graces, the chiefest when it doesn't know itself to be a grace at all.

HAPPINESS consists chiefly in contentment; so when we wish to be happier we are no longer happy.—*D.*

PEOPLE seem not to see that their opinion of the world is in great part a confession of character. We can see but little beyond what we are, and, if we err, we also suspect others.

KILL time to-day, and, to your sorrow,
He'll stare you in the face to-morrow;
Kill him again, in any way,
He'll plague you still from day to day;
Till, in the end, as is most due,
Time turns the tables, and kills you.

MIRTH.

"A little nonsense now and then
Is relished by the wisest men."

DON'T throw away your old flour barrels. They are useful. It has been found out that an ordinary flour barrel will hold 678,900 silver dollars.

A MOTHER who fondly put the query to her young son: "What would you do without a mother, Tom?" was dumfounded with the reply, "Do as I like, ma."

QUEER epitaphs are numerous, but one of the queerest is this, taken from a stone at Chidwell, England:

"Here lies me and my three danghters,
Brought here by using Seidlitz waters;
If we had stuck to Epsom salts,
We wouldn't have been in these here vaults."

A PRETENTIOUS person said to the leading man of a country village, "How would a lecture by me on Mount Vesuvius suit the inhabitants of your village?" "Very well, sir; very well indeed," he answered. "A lecture by you on Mount Vesuvius would suit them a great deal better than a lecture in this village, sir."

Library.

In this department we give short reviews of such NEW BOOKS *as publishers see fit to send us. In these reviews we seek to treat author and publisher satisfactorily and justly, and also to furnish our readers with such information as shall enable them to form an opinion of the desirability of any particular volume for personal use. It is our wish to notice the better class of books issuing from the press, and we invite publishers to favor us with their recent publications, especially those related in any way to mental and physiological science. We can usually supply any of those noticed.*

TUNIS: THE LAND AND THE PEOPLE. By the Chevalier de Hesse-Wartegg. With Twenty-two Illustrations. 12mo, pp. 302. Cloth. Price, $1.75. New York: Dodd, Mead & Company.

The operations of the French on the African coast, in behalf of its colonial rights and the recent passage-at-arms in Egypt, have drawn the attention of the reading public to the South Mediterranean countries, and made books descriptive of those countries and their semi-barbarous peoples quite necessary as part of the book-seller's stock. The book, as above entitled, deals with one of the most interesting of the North African States, and has been prepared by one who spent some time among the people, so that he speaks "at first hand" of manners and customs and the physical characteristics of the country. The style of the author is refined and picturesque, in harmony with his oriental, and, as we might say, mediæval subject, for the architecture, habits, civilization of the Tunisians represent the past of five hundred years ago rather than the present. He sketches the Government and its high officials, the strangely organized and accoutred army, the city of Tunis, with its grotesque jumble of buildings, streets, and population. Of social life there he presents a picture with many details very interesting, because of their odd strangeness in comparison with what an American is personally conversant. He says, in one place, "Perhaps the entry of the French has made a difference, but it is as yet impossible to report about the 'season of Tunis,' to describe sports, toilets, etc., for there is no 'society,' and not society's most important and influential element—woman. She is in the harem; in these prisons lined with gold she is born, and lives and dies in the same place. Public life does not exist for her. No man ever sees her except her husband and her nearest relatives, and her husband sees her and makes her acquaintance only after marriage! It is a great breach of good manners to ask an Arab after his wife and children, and he would look at the question in the same light as we should if anybody asked us about our wives' most delicate secrets, or the amount of our debts, or some other private matter."

We are given interior views, nevertheless, of the life of women in and out of the harems, and many points which a social reformer among us would find specially valuable to emphasize an argument on the subjection of woman.

Interest is added to the book by the description of the ruins of those ancient cities, Carthage and Utica, once so powerful in Mediterranean affairs. Twenty illustrations accompany the text, and contribute much to the book, which in other respects is a creditable piece of typography and binding.

ON SLIGHT AILMENTS: Their Nature and Treatment. By Lionel S Beale, M.B., F.R.S., Fellow of the Royal College of Physicians, Professor in Kings College, London, etc., etc. Second Edition, Enlarged and Illustrated. 8vo. pp. 283. Philadelphia: P. Blakiston, Son & Co.

The name of the author of this convenient and valuable book is sufficient to stamp its character. It is addressed to the medical profession, and will, of course, be best appreciated by the trained physician; but the manner of it is simple and clear, employing but few learned terms, so that a person of average education can understand the explanations given of the common derangements of organic functions to which all, scarcely without exception, are subject. Prof. Beale believes that people should generally have good health, and it is only on account of the prevailing ignorance of the simple laws of health and of simple methods for the relief of slight ailments, that the great majority suffer from diseases of varying degrees of severity. He supplies a considerable stock of information with regard to the causes of disease as found in the common habits of society, and indicates the *rationale* of disturbance. The more common symptoms attendant upon ailment are defined and clear expositions of diagnoses here and there made. These features constitute, in our opinion, the most important part of the work for the lay reader; the suggestions with regard to treatment are of a nature which render them the property of the physician. There are some good hints which we would have the doctors read, with regard to instructing their patients in what is proper for them to do in the way of eating and drinking, dressing, exercise, etc., so that sickness may be prevented, and, when cured, the man or woman will be saved from falling into the same old errors.

GEORGE RIPLEY. By Octavius Brooks Frothingham. 12mo, pp. 321. Cloth. Price $1.25. Boston: Houghton, Mifflin & Co.

Mr. Frothingham had a pleasant task for his cultivated pen, in the preparing this life of one whose character and work long ago made him a prince in the domain of literature. Without unnecessary preamble, we are introduced to the early life of Mr. Ripley, and given actual glimpses of him as a student through those clear impressions of the intellectual and moral character—letters addressed to his parents and intimates. In fact, Mr. Frothingham does not attempt to draw a picture of his eminent subject, and, in language of fulsome eulogy, such as we too often meet with in biographical works, set forth his traits of disposition and the excellence of his ability as a *litterateur*, but rather lets the work of the man speak for itself. So we are invited to read the character of Mr. Ripley in the language of his correspondence while at college, in the divinity school, in the ministry, at Brook Farm, in his contributions to American literature, in his social leanings, in his home-life, in his *critiques* and opinions on topics of interest in science, economics, religion, etc. A hard-working literary man, Mr. Ripley leaves no books with his name on the title-page, although in the course of his forty years of labor as a magazinist and literary critic, he produced enough to fill many an imperial octavo. It is always interesting to the American reader to have reference made to that singular experiment, "Brook Farm," in which the men who were the glory of our literature thirty years ago participated; and the active share which young Ripley took in that undertaking, properly occupies a good proportion of the volume. We are told how the *Dial* was founded by Ralph Waldo Emerson, Margaret Fuller, and Mr. Ripley, and of his subsequent misfortunes in periodical management. Of his later work, "The American Cyclopædia" is a not unworthy memorial, testifying to his industry, erudition, and exactness. He was gentle as a critic, indulgent to aspiring youth, yet clear and discriminating as a judge, and performed services which, if not conspicuous in pretension, have nevertheless made American literature his permanent debtor.

LITTLE FOLKS IN GREEN. New Fairy Stories. By Henrietta Christian Wright. Illustrations in Color, by Miss Lydia Emmet. Small quarto, cloth. Price $1.75. New York: White & Stokes.

The publishers just named are certainly adventurous in bringing out this class of juvenile books, their peculiar character of illustration making them necessarily expensive. Yet we doubt not that when fairly known, these books will be in good demand, their superiority for the entertainment of the child-mind being evident on examination. The stories in this book are not without elements of good, and although there is much that the philosopher would call "nonsense," yet it is not flat, insipid nonsense. The pictures are full-page designs, and excellent specimens of color press-work.

A YOUNG VAGABOND. By Zelotes. R. Bennett. 16mo, pp. 265. Cloth. Price $1. New York: J. S. Ogilvie & Company.

An "interesting" and "wholesome story"

for boys, to use terms which Rev. Edward Eggleston employs in the brief introduction which he has written for it. And further, as he says, "one of the boys' stories that will not make vagabonds, and that is much."

The style and incidents of the volume are well adapted to interest the young, and the haps and mishaps, pranks and mischiefs of Joe Gilbert at home, at school, and elsewhere, have so much the flavor of naturalness, that we can scarcely see how any boy who reads the book can help being fascinated by it, and impressed, too, by the good teaching that percolates through it without being too conspicuous.

YOUTH: Its Care and Culture. An Outline of Principles for Parents and Guardians. By J. Mortimer Granville. With American Notes and Additions. 12mo, pp. 167. Price, $1.00. New York: M. L. Holbrook & Company.

The object of the writer is "to expose certain fallacies which prevail on the subject of child-management and education," and "to indicate in suggestive outline the principles which should guide parents in the care and culture of youth." He adopts the principles of heredity and development as fundamental to any true system of culture, and drawing from those principles the apothegm that "self-improvement is impossible," proceeds to insist upon the necessity of external aids to raise the organism to a higher level than its own. Among those external aids he specifies a careful training of the senses, the hygienic culture of the body, the development of the "higher elements of the organic constitution, so that they shall perpetually restrain the lower." The importance of symmetrical and robust physical development to a successful human life is discussed from several points of view, and occupies the larger part of the book, and properly so, as happiness and success in this mortal life of ours are in the main dependent upon our physical capacity. A weak body is not likely to carry to perfection the purposes of life.

PUBLICATIONS RECEIVED.

WAYSIDE FLOWERS. Original and contributed poems, arranged by Ellen E. Dickenson; illustrated by Julia C. Emmet. Small quarto, illuminated covers, ribbon-tied. Price, $1.75. Messrs. White and Stokes, of this city, are the publishers of this very beautiful arrangement of poems and oil prints, descriptive of flowers of the field and wood; among them the Mayflower, the witch-hazel, the arbutus and wild rose, water lily, harebell, and buttercup, daisy, of course, etc. It is unique in its neatness and beauty, and a charming addition to the drawing-room table.

THE LONGFELLOW CALENDAR FOR 1883; with selections for every day in the year. It has an excellent portrait, a view of Mr. Longfellow's home, the Belfry of Bruges, a picture of Evangeline, and a picture of Priscilla, all handsomely printed in colors. The selections are carefully chosen, and form a not inconsiderable compilation. Price, $1.00. Published by Messrs. Houghton, Mifflin & Co., Boston, Mass.

MEDICAL BRIEF. A monthly journal of practical medicine, adapted to this busy, nervous world of ours. Published by Lawrence & Son, of St. Louis, Mo.; said to have the largest circulation of any periodical of its kind in the country.

THE INDEPENDENT has renewed its weekly comings, and is as fully charged as ever with news and seasonable thought. A strong article on the "Passion Play in New York" occupies a prominent place in the Number under our eyes. It sharply and properly censures those who would attempt to put upon the stage so blasphemous a representation.

THE SCHOLAR'S COMPANION, published by E. L. Kellogg & Co., of New York, is an excellent little paper for the school-boy and school-girl, being replete with matters of lively interest to them, and containing many bright things in the way of readings, declamations, sketches, and so on.

OUR MONTHLIES. Among the prominent Monthlies, current numbers of which have been received, are *Lippincott's Magazine*, which contains a variety of reading of the usually refined tone; the December issue of *Harper's*, in which the wealth of illustration is very marked. The countries on the Pacific coast receive the lion's share of attention. A very interesting description of Havre, an important sea-port of France, liberally illustrated, also adds to the attraction of the Number.

THE SYSTEM OF MENTAL PHILOSOPHY. By Asa Mahan, D.D., LL.D., author of "The Science of Intellectual Philosophy," etc. Chicago, S. C. Griggs & Co.

HAND-BOOK OF HOMEOPATHIC PRACTICE. By George M. Oxford, M.D., member of the American Institute of Homeopathy, etc., etc. Chicago, Duncan Brothers.

DR. CUNNINGHAM'S LECTURES on the Physiological Laws of Life, Hygiene, and a general outline of diseases peculiar to women, and treatises on diseases in general, etc. Indianapolis, George F. Borst & Co.

BATTLE-GROUND of the Spiritual Reformation. By S. B. Brittan, M.D. Price $2.00. Colby & Rich, Boston.

ATLANTIS; the Antediluvian World. By Ignatius Donnelly. Illustrated. Messrs. Harper & Brothers, New York.

More extended notice of the five above entitled works may be given in future Numbers of the PHRENOLOGICAL JOURNAL.

GIVEN AWAY

TO THE

Phrenological Journal.

This publication is widely known in America and Europe, having been before the reading world forty years, and occupying a place in literature exclusively its own, viz.: the study of Human Nature in all its phases, including Phrenology, Physiognomy, Ethnology, Physiology, etc., together with the "Science of Health," and no expense will be spared to make it the best publication for general circulation, tending always to make men better physically, mentally, and morally. Parents should read the JOURNAL that they may better know how to govern and train their children. Young people should read the JOURNAL that they may make the most of themselves. To each Subscriber is given

THE PHRENOLOGICAL BUST.

This bust is made of Plaster of Paris, and so lettered as to show the exact location of each of the Phrenological Organs. The head is nearly life-size, and very ornamental, deserving a place on the center-table or mantel, in parlor, office, or study, and until recently has sold for $2.00. This, with the illustrated key which accompanies each Bust, and the articles published in the JOURNAL on "Practical Phrenology," will enable the reader to become a successful student of Human Nature. One of these heads should be in the hands of all who would know "HOW TO READ CHARACTER."

TERMS.—The JOURNAL is now published at $2.00 a year (having been reduced from $3.00), single numbers 20 cents. When the Premiums are sent, 25 cents extra must be received with each subscription to pay postage on the JOURNAL and the expense of boxing and packing the Bust, which will be sent by express, or No. 2, a smaller size, will be sent by mail, post-paid. To those who have the Bust, or prefer it, we will send the new Book Premium, "ANATOMY OF EXPRESSION." Send for Circular.

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Its Anatomy and Philosophy.

By SIR CHARLES BELL, K.H.

With numerous Notes, and upwards of Seventy-five Illustrations. Price, $1.50.

We take great pleasure in announcing the offer of this great work as a premium to subscribers to THE PHRENOLOGICAL JOURNAL for 1883. A new and special edition on fine and much heavier paper has been prepared, and it is offered to all who subscribe for 1883, and send, in addition to $2.00, the subscription price, 25 cents extra to pay postage on the JOURNAL and the Premium Book. This edition contains all of the original illustrations and notes designed by the author, with additional notes and illustrations by the editor of THE PHRENOLOGICAL JOURNAL. Previous to the publishing of this edition the English edition was very rare, commanding a high price, and could only be obtained by the few.

The work considers Expression in all its details as affected both by anatomy and by mental characteristics. The following from the Table of Contents will show something of its scope:

The Theory of Beauty in the Countenance; The Form and Proportions of the Head and Face; Beauty and its Sources; Campar's Facial Line; The Changes from Infancy to Age; Characteristic Organs of Man; The Form of the Lower Animals; Theories of Ideal Beauty; The National Peculiarities in the Form of the Head; Expression in the Countenance; The Influence of the Mind upon the Features; Bodily Conditions and Mental Operations; Blushing; Muscles of the Face; The Forehead and Eyebrows; The Nostrils; The Lips and the Cheeks; The Eye; The Beard; The Expression of Pain in Man and in Animals; The Expression of the Human Countenance in Laughter, Weeping, Grief, Pain, Convulsions, Fear, Terror, Despair, Admiration, Joy, Jealousy, Rage, Madness, Demoniacs, Death; Expression in Reference to the Body; What are Emotions? The Emotions Modified by Controlling Expression; The Study of Anatomy; The Uses of Anatomy to the Artist, etc.

WE PUBLISH BELOW A FEW OF THE MANY NOTICES OF THE PRESS.

"The republication of this work at the present time is opportune."—*Tribune.*

"In its present beautiful form it will no doubt meet with a hearty reception, and become as popular as the original 'Anatomy of Expression' was in the days of its gifted author."—*Brooklyn Union.*

"The work is valuable to all who would examine the subject of expression with care and profit."—*Portland Transcript.*

"The subject is thoroughly analyzed, and the result presented in a clear and impressive manner."—*Pittsburgh Leader.*

"The value of such a work as this to those who employ themselves, either professionally or occasionally, in sketching human features, can scarcely be overestimated."—*Witness.*

"We assure our readers, both scientific and unscientific, that they will find the book a most readable and instructive one. Not only the transient and permanent effects of the various emotions upon the human countenance, are treated, but also the effects of the emotions upon the faces of animals."—*Am. Artisan.*

"Students of Phrenology will find it precisely in their field."—*North American.*

TERMS.—The JOURNAL is now published at $2 a year (having been reduced from $3), single numbers, 20 cents. 25 cents extra must be received with each subscription, to pay the postage on the Premium Book and JOURNAL, which is now sent to all subscribers prepaid. AGENTS WANTED.—Liberal Cash Commissions and Premiums to Agents are offered. Send for Terms. FOWLER & WELLS, Publishers, 753 Broadway, New York.

THE PHRENOLOGICAL JOURNAL AND LIFE ILLUSTRATED.

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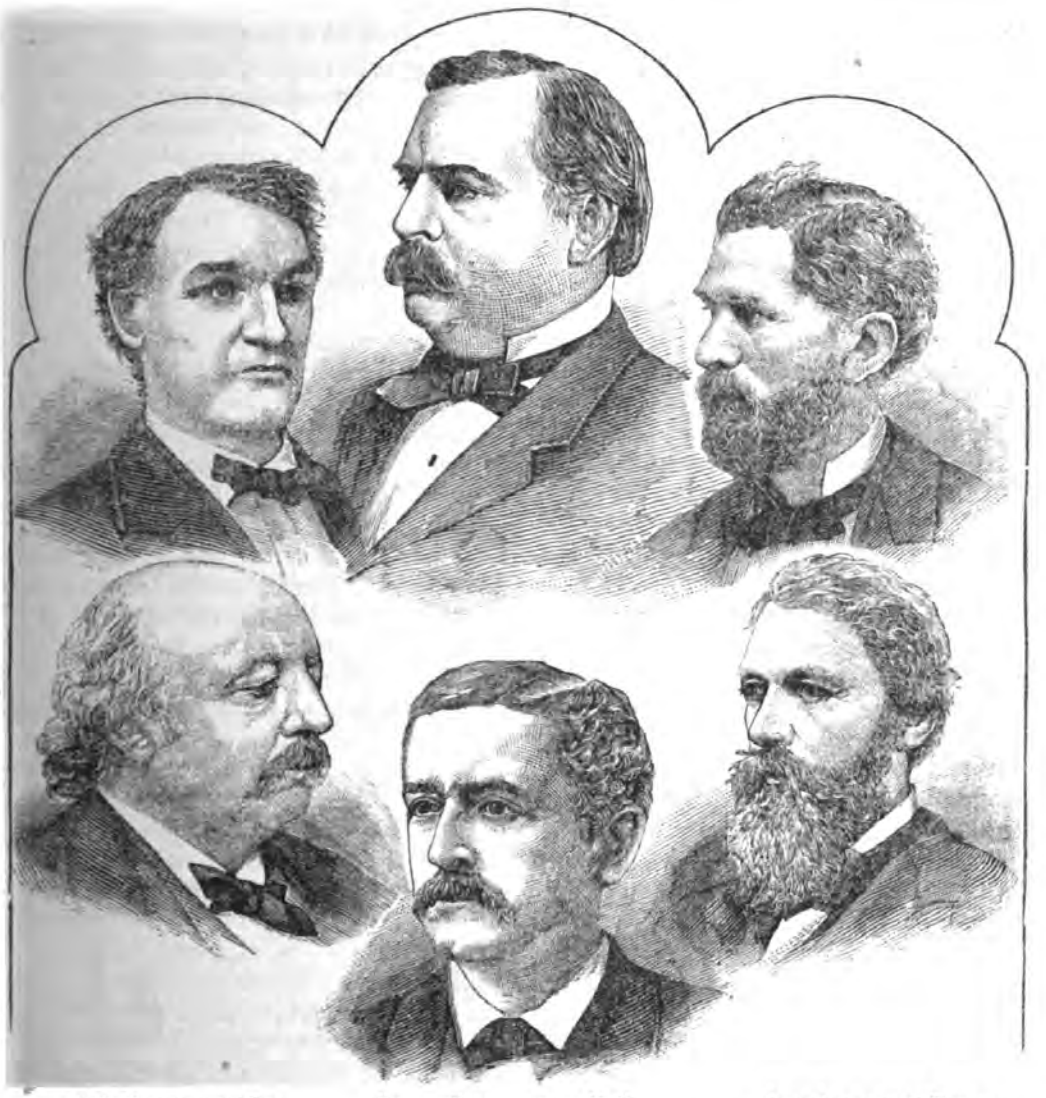

J. G. CARLISLE, OF KY. GROVER CLEVELAND, OF N. Y. JOHN IRELAND, OF TEXAS.
BENJ. F. BUTLER, OF MASS. HUGH S. THOMPSON, OF SO. CAR. GEN. GEORGE STONEMAN, OF CAL.

SOME NEW GOVERNORS.

SOME NEW GOVERNORS.

(SEE PORTRAITS ON PRECEDING PAGE).

THE results of the fall elections in those States, especially where the place of Governor and Congressional seats were matters of contest, have surprised the nation. Fifteen of the States voted for Governors, and thirteen elected the candidates of the Democratic party. The two exceptions are New Hampshire and Nebraska—a small minority, indeed, as compared with the population and importance of States like New York and Pennsylvania, where majorities swelled into such grand proportions, that it is only too evident that disaffection had spread widely in the ranks of the Republicans. In those States where new legislatures were elected, twenty-two in all, a similar expression of popular inclination in behalf of Democratic representatives was general, and for the next two or three years, at least, that party may be expected to be in the ascendency. Have the people grown tired of Republican ministrations? Has the character of the Republican service lost that tone and repute which once commanded respect and support? A great change has been wrought, a great popular demonstration of discontent has been made, and we trust that the revolution so quietly brought about by the ballot will be salutary to the country. It may be interesting to the reader to view some of the new Governors as presented through the medium of photography and the engraver's art; and the group contains six portraits, comprising Mr. Benjamin F. Butler, of Massachusetts; Mr. Grover Cleveland, of New York; Mr. H. S. Thompson, of South Carolina; Mr. Carlisle, of Kentucky; Mr. John Ireland, of Texas; Gen. George Stoneman, of California.

We find in these a variety of temperament, quality, and organization, variety enough for the illustration of the many-sidedness of human character in its better phases. One may pass, while reflecting upon their characteristics, "from grave to gay, from lively to severe"; for we can note in two or three of the faces salient points of gravity, even sternness, and in others types of cheery good-nature, and even of happy off-handedness.

GEN. BUTLER has been so many years a public man, that it is scarcely necessary for us to say more than a passing word with regard to his peculiarities. He has a strong organization, and is well sustained by superabundant vitality. He is emphatic, positive, aggressive, imperative; a man of sharp perceptions; of admirable language. His ripe and prompt intellect is backed up by great energy. He has that force which is prompt to put into action any plan or purpose suited to the hour.

Mr. Butler was born at Deerfield, N. H., on the 5th of November, 1818. At twenty he was graduated from Waterville College, Maine, and a few years later addressed himself to the study of law at Lowell, Mass. He took an active part in politics on the Democratic side early in his professional career. In 1853 he was elected to the Massachusetts Legislature, and in 1859 to the Senate of the same State. On the opening of the late Civil War Mr. Butler promptly offered his services, and was assigned to prominent command. He rendered good service on the coast and in the Gulf of Mexico and the Mississippi. During the six months following the capture of New Orleans by Farragut, he administered the affairs of that city with great vigor. Afterward he was given important commands. In 1866 he was elected by the Republicans a member of Congress, and was returned to his seat several times afterward. In 1871 he was nominated to the office of Governor of his State, but without success.

HUGH S. THOMPSON, South Carolina's new Governor, has a fine endowment;

the quality is high, the temperament even, the cerebral organization much above the average in symmetry and power. He shows good culture, a well-rounded intellect, with refinement, taste, spirit, and readiness of judgment, besides those sympathetic qualities which make a man esteemed and loved in his circle. He should be a good reader of character, and by no means wanting in power to adapt himself to others. He has excellent mechanical judgment. He would have made a good artist, or an architect of superior ability. He is well adapted to the law, and he ought to be a speaker distinguished for clearness of thought and grace of delivery.

Mr. Thompson was born about the year 1836, enjoyed the advantages of education, and his career has been chiefly connected with school interests. In 1876 he was made State Superintendent of Education, an office he has held ever since, and in which he has done much to improve the public school system of South Carolina. He has paid no less attention to colored pupils than to white, and his impartiality in this respect reconciled many Republicans to his promotion to the Governorship, which he secured by a majority of about 50,000 votes. He belongs to the younger generation of Southern politicians, and since the war has shown himself ready to accept the situation and help in the work of readjusting the social and political fabric.

In MR. GROVER CLEVELAND, we note a certain strength and steadfastness of character and breadth of intellectual view, which are much above the average. He can make use of his knowledge in philosophical or argumentative discussion, in a clear, methodical, and pointed manner. As an advocate he is self-poised and even, confident in himself, and impressive. He is not a man to waste time or words; when he speaks and when he acts, it is for a purpose and for a result. His is a judicial cast of intellect; a well-developed and powerful organization; one possessing great capability for promoting measures of public benefit.

Mr. Cleveland was born in Caldwell, Essex Co., New Jersey, March 18, 1837. He is of New England stock, his father having been a Presbyterian clergyman of Norwich, Conn. His grandfather and an uncle were also clergymen. After an attendance upon the common schools, his education was completed at the Clinton Academy in Oneida County, in this State, and he taught for a year in the New York Institution for the Blind. When eighteen years of age he commenced the study of the law in Buffalo, and in 1859 was admitted to the Bar. Three years afterward he was appointed Assistant District Attorney for Erie County. Although only twenty-five years old, he acquitted himself well during the three years that he held the position. In 1865 he was nominated by the Erie County Democrats for District Attorney, but was defeated by a small majority. During the next five years he devoted himself to his profession, becoming a member of one of the leading law firms of Buffalo. In 1870 he was persuaded to run for Sheriff of Erie County, and was elected. Upon retiring from this position he took up again the duties of his profession, and for years declined active participation in politics. But last fall, when a large proportion of the Republicans of Buffalo revolted against "ring" rule, he was nominated by the Democrats as their candidate for Mayor, and although he absolutely refused to make a personal canvass he was elected by more than 5,000 majority. As Mayor, Mr. Cleveland's administration has been marked by frugality, integrity, and dignified independence.

The personal appearance of Mr. Cleveland is thus described: "The upper part of his face is strikingly like that of General Hancock, and the resemblance would be more marked if his hair and mustache were gray. He is about six feet in height, weighs over two hundred pounds, and is rather bald. His face is a strong one, and his manner particularly frank and

winning. They say of him in Buffalo that he is a bashful man; that he begins an argument in court with visible reluctance, but when he has fairly entered on his plea he speaks with fluency and force."

The features of GEN. STONEMAN indicate the man of kindly nature, practical readiness, ambition, and pride. His is a mind well stored with facts, picked up from observation, and he shows, also, competence in the way of adaptation, suiting himself to the situation in which he may be placed; is not wanting in that *suaviter in modo*, which can accommodate itself to any class of associations. He has a pre-eminent knowledge of men, and can use it successfully.

General George Stoneman has been an army officer for forty years or more, although shortly after the close of the late war he devoted himself to agricultural pursuits in the "Golden State," where he had resided many years before, and in the early years of its settlement by that stream of Eastern men who were drawn thither by the discoveries of gold, he was prominent in its military affairs. He has been successful as a tiller of the soil, and made a good record as one of the Railway Commissioners.

MR. JOHN G. CARLISLE, the Kentuckian, is evidently a man of earnestness and sincerity. He is not overweighted with self-esteem, but is highly appreciative of honor and reputation. His is the mind which is capable of high development; his the intellect which takes on scholastic conditions readily. He remembers what he reads, rarely forgets any matter of interest; he should, therefore, be an admirable reasoner. He has large language and constructive ability; his broad head shows zeal and strength in action, thoroughness, power to organize, to direct, to conduct. His social sympathies are elevated. Such a man, we think, must aim to raise the standard of everything with which he has to do.

A resident of the same district thus speaks of Mr. Carlisle's early life: "The first time I met him he was a country boy on a farm just back of Covington. He was a pale, studious boy, working hard all day on the farm, and studying and reading by night. I visited his family several times, and I always found John sitting off in one corner with a big book in his hand. He was a quiet kind of a fellow, speaking only when spoken to. When he was about seventeen years old he started to teach school. He was rather shy at first, but in a few weeks his pupils all adored him. I was practicing law in the Covington district, and one of my friends was telling that young Carlisle was going to make a speech in the court-house that day on some land title. Both of us were friends of his family, and we took considerable interest in him. We determined to go to hear him make his maiden speech. The case was of a dry, hard, knotty character, full of legal subtlety, and I thought to myself, 'Johnny, old boy, you're in for a failure to-day.' There was hardly any one in the court-room except lawyers, and, considering the case and the audience, it must have been a most trying maiden effort. I can see Carlisle now as he stood up in the court-room, with a copy of the Revised Statutes in his hand. He had that same weary, studious look in his eyes, that same cold, passionless expression on his pale face that he has to-day. Without the least degree of nervousness, in a plain, calm, quiet way, he began his speech. You could see that he had mastered every detail; and the lawyers, as they grew more and more interested, moved their bodies forward, and hung on his words. I have no hesitation in saying that it was the best speech of the kind ever made in the Covington court-house. Without telling an anecdote or cracking a joke, there was something so winning in his voice and in his manners that the interest never flagged When he had finished, the lawyers all crowded around him, the judge shook him warmly by the hand, and Tom Jones, who happened to be in the court-room, told him he had a great future before him"

MR. JOHN IRELAND, of the Lone Star State, shows in his features many of those qualities which adapt a man for the life of the frontier. He has a strong, vigorous organization, a marked motive nature, strong will, much courage, and a thorough-going spirit generally. His is the character to take in the situation, to see the drift of circumstances. His is an inquiring mind, one that catches up information readily, perceives the relations of facts; he does not dwell in the realm of the mysterious or ideal, but notes what is due to expediency, what is practicable, what will pay.

He is a good man to take the lead in new enterprises, and he has ability to lead and to do. And it is doubtless largely owing to that off-handed adaptation to people and circumstances which he possesses in a marked degree that he owes the popularity which has elevated him to the governor's chair.

Mr. Ireland has grown up from a boyhood of a very humble character. With but an apology of an education he set out in life for himself, taking a place as stableman on eight dollars a month. Thus he is a thorough man of the people, and in the unpolished life of the Southwest his solid, practical abilities gave him advancement.

LANGUAGE: ITS ORIGIN AND RELATIONS.—No. 1.

DEFINITIONS.

THE noblest acquisition of mankind is speech and the noblest art is writing. The former eminently distinguishes man from the brute creation, the latter the civilized man from the uncultivated savage. These two departments—of speaking and writing — embrace the whole subject of language. Language then is of two kinds—spoken and written.

Spoken language or speech is the expression of the conceptions of the mind by articulate sounds.

By means of this faculty we are made capable of social intercourse, of enjoying the endearments of friendship and the communications of wisdom. Without speech we should have been solitary in the midst of crowds, excluded from every kind of knowledge but that which fell under our immediate notice, and should have been confined to the dull and tedious efforts of intimating our desires and emotions by signs and gestures. In short, without speech we should scarcely have been human beings.

Two things are essential to speech, viz.: mental conceptions and articulate sounds. The former are by far the most excellent, because they originate in and appertain to the mind, whereas the latter are merely the operation of certain organs of the body.

Written language is the art of representing by written or printed signs the articulate sounds of speech.

The use of speech as a medium of intercourse between man and man must necessarily be confined to those who are within the sound of each other's voices. It is true, communication may be had—as it often has been—between persons and places far distant by means of verbal messages delivered to a third party; but the facilities afforded by this plan are meager in the extreme, and the plan itself too inconvenient and expensive for general adoption. Hence the necessity for some means of communication independent of direct personal intercourse as well as of personal intervention.

Besides that, did we possess a spoken language only, we should have no means of learning the history of former generations or of becoming acquainted with the events of a by-gone age except by oral tradition. Neither would we have any means beyond that of transmitting the events of to-day or the history of our own times to posterity. To supply all these wants recourse must be had to durable visible signs.

Written language links generation with generation and epoch to epoch in an unbroken chain of progressive improvement. It unites the dead past with the living present, and both with all future ages. Without a written language where would be the wisdom of the past or the history of former States? The chain would be broken in all its links and every generation become an isolated and individual world, utterly cut off as if by an impassable abyss from its ancestors and from posterity. Without a written language all knowledge would be traditionary and all experience local. Man would never have emerged from barbarism, but would have run his little and comparatively insignificant round of existence the popular sport of ignorance and of error, uninstructed by science and unregulated by law.

The drawing of ideas into vision and of exhibiting the conceptions of the mind by legible characters may justly be deemed the noblest and most beneficial invention of which human ingenuity can boast, and one which has contributed more than all else to the improvement of mankind. It gives stability to thought, forms a cabinet for our ideas, and presents in imperishable colors a speaking portrait of the soul.

The desire of communicating ideas is peculiar to man and seems to be implanted in every human breast, and the pleasure which he derives from the interchange alone is not among the least of his blessings. In regard to these two most usual methods of gratifying this desire—that is, by sounds addressed to the ear or by marks or characters addressed to the eye (in other words, by speaking and writing)—we would here remark that the first owes the high state of improvement which it has attained to the invention of the last. To this too is its stability in a great measure due. Written language opened a door for the communication of information through the sense of sight in addition to the means already possessed through the sense of hearing. Written language, too, is the very life of science; without it no such thing as science could for a moment exist.

Some have considered speech as the substance and writing as the shadow which follows it. This figure, though correct in some respects, is not true in all; for written language is the most permanent, and therefore the most substantial. The language of the lips is as fleeting as the breath, but the language of the pen or of the types enjoys in many cases an adamantine existence and will only perish in the ruins of the globe. A spoken word may be forgotten, but a written word may endure as long as time itself.

There has been some speculation among learned men in regard to the rapidity of vocal utterance, and as to the proportion which exists between the speed with which words may be formed and uttered, and the speed with which the thoughts themselves are created of which the words are the vehicles. We shall here but briefly notice the opinions of two eminent philologists who take different sides of this question. Harris, the ingenious author of "Hermes," says: "Words are formed with an ease which knows no trouble or fatigue, and a speed which equals the progress of our very thoughts." Horne Tooke, on the other hand, says: "Words have been called *winged*, and they well deserve that name, when their abbreviations are compared with the progress which speech could make without these inventions; but, compared with the rapidity of thought, they have not the smallest claim to that title. Philosophers have calculated the difference of velocity between sound and light, but who will attempt to calculate the difference between speech and thoughts."

The brain, the organ of the mind, performs its operations by means of a subtile nervous fluid having some resemblance to electricity, at least in the celerity of its action. "As quick as thought" and "As quick as lightning" may therefore be regarded as equivalent expressions. The difference then in velocity

between thought and speech might be compared to that which exists between light and sound. And if the speed with which our words are formed and uttered does not "equal the progress of our very thoughts," speech at least follows thought as quickly as thunder follows the lightning.

The definitions above given, it will be seen, confine language exclusively to man; for no animal but man can give utterance to articulate sounds. The definitions of the word *language* which we have heretofore had have been somewhat vague and loose in their construction. For example, it has sometimes been defined in such a way as to include the sounds by which irrational animals express their feelings and affections—as the neighing of the horse, the barking of the dog, etc. Thus our oldest and best known lexicographer, Dr. Webster, says: "Language, in its most extensive sense, is the instrument or means of communicating ideas and affections of the mind or body from one animal to another. In this sense brutes possess the power of language, for by various inarticulate sounds they make known their wants, desires, and sufferings."

Our definitions also exclude that natural language which some grammarians attribute to the human species. Thus S. W. Clark ("Practical Grammar," page 15), after defining language to be "any means of communicating thought, feeling, or purpose," proceeds to divide it into natural and artificial; then goes on to say that "Natural language is common to all intelligent beings, and is understood by all without previous instruction. Smiling, frowning, laughing, and weeping are instances of natural language. Artificial language is invented by man." He then subdivides artificial language into spoken and written, and defines spoken language as consisting of "articulate sounds." How articulate sounds can be regarded as less natural than those which are inarticulate, we are at a loss to understand. We sometimes hear, too, of *the language of love, the language of grief, the speaking eye*, or such an expression as this, "*Actions speak louder than words.*" All of these, we presume, may be classed under the head of the natural language of Mr. Clark.

That kind of artificial language which consists of the signs by means of which the deaf and dumb communicate with each other is also excluded.

Neither does our definition of a written language admit of a hieroglyphical representation, as might that of S. W. Clark. He defines written language as consisting of "any artificial characters so arranged and combined as by common consent to represent thought and emotion." A hieroglyph or a picture may represent thought or emotion, may be made to convey ideas, yet this is not, in a strict sense, language. The written languages of all highly civilized peoples of the present day not only represent to the eye, and by that means convey to the mind, thoughts and emotions, but they also represent those vocal sounds by which their thoughts and emotions are expressed in speech. Nothing but an alphabetic representation of spoken sounds should properly come, and in a modern sense properly can come, under the name of written language. Our definitions have been purposely so framed as to exclude from spoken language everything but those articulate sounds which are formed and uttered by the vocal organs of a human being, and from written language everything but an alphabetic representation by written or printed characters of the sounds of articulate speech. To language as thus defined alone can grammatical principles be applied.

ORIGIN OF SPEECH.

In regard to the origin of spoken language or speech there has been much speculation as well as much diversity of opinion. One class maintains that speech was the pure gift of God; another that it was the invention of men; a third that it was both together—that is, that it was partly natural and partly artificial; while yet a fourth class asserts

that it was neither the gift of God nor the invention of men, nor yet both together, but that it was the result of man's organization. In the first class is to be found the celebrated lexicographer, Dr. Webster, and in the last a man even more celebrated in every department of human learning—the Baron Humboldt. The former thinks "that language was bestowed on Adam in the same manner as all his other faculties and knowledge, by supernatural power," and doubts whether without such supernatural aid man would ever have learned the use of speech so far as to form a language. The latter says, "Speech must be regarded as naturally inherent in man, for it is altogether inexplicable as a work of his understanding in its simple consciousness." J. Gould Brown is of the opinion that language is partly natural and partly artificial. In his "Grammar of English Grammars"—a monument of patient industry and the devotion of a lifetime to a single object—he introduces the following quotation from the Greek of Ammonius in illustration: "In the same manner therefore as mere motion is from nature, but dancing is something positive; and as wood exists in nature, but a door is something positive; so the mere utterance of vocal sounds is founded in nature, but the signification of ideas by nouns and verbs is something positive."

We hold with Humboldt that speech is inherent in man, was so from the beginning; that it is the result of his organization, and that the development of the innate faculty was all that was necessary to produce the result. When man began to exist upon the earth he was furnished by nature with a constitution perfectly adapted, both physically and mentally, to the circumstances of his situation. He was possessed of a physical organization, which, in common with those of other animals, required for its growth and proper development, and for its sustenance afterward in the highest state of healthful vigor and activity, a constant and unfailing supply of appropriate nourishment. He was placed in a region where such supplies could be readily obtained—say in a region where fruits abounded. He was endowed with senses of sight, smell, and taste to enable him to select that which was proper for him and to reject what might be prejudicial. He was furnished with hands to grasp it, teeth to masticate it, a stomach to digest it, and organs of assimilation to select from the mass and appropriate that which was essential, and other organs to carry away the refuse. When the proper time arrived, urged by hunger, all these faculties and organs would come into normal activity instinctively, and without previous instruction as to their uses. Man was also created with a mental and moral organization, and this was of such a nature as evidently designed him for association with his fellows. He was given social propensities to fit him for this and to make him desire it, and the gratification of which could be had only in the society of other human beings. Such intercourse is essential to his happiness and even to his existence. Many species of animals have this instinct, too, in common with man. But, unlike the other animals, man was given an intellect—a mind capable of originating ideas and a disposition to express them, to communicate them to others. He was also provided with a vocal apparatus for this purpose, and with ears to hear the vocal expressions of others, and thus receive communications from them. We can not conceive of a community of human beings where the desire to communicate with each other would not be felt. And, as in the case of a hungry man in a garden of fruits, even one so situated for the first time, nature calls into operation those faculties with which she has endowed him for the purpose of supplying his wants; so a number of human beings thrown together in society, having thoughts to communicate and desires to express, and vocal organs with which to communicate the one and express the other, would not long be at a loss how to bring these organs into active operation

and apply them to their intended use. It is not to be supposed that man came at once into possession of a copious language, such as appertains to nearly every nation upon earth at the present day. His vocabulary at first, no doubt, was very limited, neither did he come at once into possession of all the other appliances of a later civilization. But as he came at length to clothe himself and to live in tents and afterward in houses, and as society became organized, his vocabulary became more extensive and his language sufficient for all purposes of social and business intercourse. We have no doubt that his progress in language was quite equal to his progress in most other things.

Supposing, then, there to have been a time when there was no language, let us inquire what were the necessary steps taken to form one. Men could from the first give utterance to shouts of joy and cries of distress, as also to various other inarticulate sounds expressive of feeling or emotion; these latter being also common to the other animals, as they are still. These, accompanied by facial expression, gestures, or pantomime, or all of these together, were the only means they had of communicating with each other before words came into use. This is the "natural language" of some grammarians before referred to as being excluded by our definitions from any just claim to be called language. These sounds, however, have, some of them, crept in, have been given a written representation, and, in the grammars of most languages, are classed with other words of the same nature etymologically, though articulate, and called in English grammars "Interjections"; that is, words thrown in between and having no government or any proper syntactical relation to the other words in a sentence. In grammars of the German tongue these are called "*Die Aŭsrŭfwŏrter*," "the outcry words"; a term which even better describes the thing signified than the English. It would not be long, however, before the insufficiency of this natural language as a means of communication would become manifest and an attempt be made to hold converse with each other more understandingly by means of proper articulate sounds. What, then, would be the first steps toward introducing articulate words into common use, and what description of words would the first ones most likely be? Without doubt the giving of names to sensible objects would be the first thing done, and these names would be the first words used. Nouns, then, were the first parts of speech to be invented. We say invented, for those words just now spoken of as being classed with the Interjections were not invented, as we have seen, but come through an instinct common to all animals.

In the giving of names to things, what had man to guide him, or what led him to give to certain things the names he did rather than others? It is most natural to suppose that he would give to each object a name suggested by some quality, property, or mode of action pertaining to the thing itself, and the mention of which would indicate that thing. If the thing to be named was an animal or a bird, he would most likely if possible give it a name the utterance of which would produce a sound similar to the distinctive cry of that animal or bird. For example, hearing such a cry as "Cuckoo, cuckoo"—would not that at once suggest the name? And what more proper than to call the bird which says "Whippoorwill" by that name? Hearing behind him a hissing sound, a native turns around to see escaping through the grass a noxious reptile—what name would he give to that? We think it quite likely that in the first instance the serpent was called a "hiss"; for in all languages—ancient and modern, living or dead—so far as we have been able to discover, as the name of the reptile has come down to us, the word contains the sibilant sound. And whether we say *serpens* in Latin, *ophis* in Greek, *snake* in English, *seirph* in Welsh, *serpente* in French and Portuguese, *schlange* in German, *serpiente* in

Spanish, or *sare* in Chinese, we always begin with a "hiss," except in the Greek, and there we end with that. There may be exceptions to this rule, as there are to most general rules; but, if so, they are insignificant, and not of sufficient importance to affect it as a general principle.

The origin not only of terms designating sensible objects, but also of words to indicate certain actions or modes of action, those parts of speech we call verbs, is perhaps due to the operation of the same principle. Such at least was the opinion of Dr. Blair, who thought that when one kind of wind is said to "whistle" and another kind to "roar," when falling timber is said to "crash" and hail to "rattle," we may at once perceive a suggestive resemblance between the word and the action it is intended to represent. What they had to guide them in the invention of terms to express abstract ideas, or whether they had anything, it is of course now impossible to tell. The theory here put forth has been, it is true, combated by some who contend that names were given to things arbitrarily and without any reference to their qualities whatever. "The word 'fire,'" say these, "might have denoted the substance we call 'ice,' and the word 'ice' might have signified 'fire'; and a man scorched with fire or unexpectedly plunged into ice might utter a cry indicative of sudden and severe pain, yet the cry would be the same or nearly the same, but the sensations of heat and cold are widely different." This is hardly logical, for cries expressive of sudden and severe pain are much the same in all cases, without reference to the cause or causes which might have produced the pain; but to imagine terms invented, or names given to things without any ground or reason, is to suppose an effect without a cause.

JAMES COULTER LAYARD.

STUDIES IN COMPARATIVE PHRENOLOGY.

CHAPTER XII.

RACIAL CHARACTERISTICS—(*Continued.*)

AMONG European observers Prof. Broussais appears to view the Mongolian in the most favorable light, taking as the subject of his consideration the Chinese people as a whole,—a course which can not be regarded as unreasonable. He says that the Chinese nation is perhaps the best organized that we are acquainted with: it produces philosophers, theologians, and some really profound thinkers, but that their knowledge of the natural world, which can alone correct the notions of man, is imperfect; and whenever the Chinese intelligence quits the arts in which it excels, its operations are confined to the innumerable signs of a language too long for the life of man to comprehend, a philological condition whose semi-primitive form contrasts in a marked degree with the advanced synthesis of European literatures, and indicates a halt in the development of the intellectual faculties. "Should the day arrive when the Chinese nation, having reformed its language and thrown aside its prejudice, shall throw open its cities to free communication with the rest of mankind and send its children to be educated in our capitals and initiated in our acquirements, the progress of the nation will undoubtedly be rapid and immense."*

THE MALAY ORGANIZATION AND CHARACTER.

Passing now to a consideration of the Malayan family it may be said by way of introduction that this extensive group of tribes is related in origin to the negro and Mongolian types with

* J. G. Davey, M.D. See vol. xx, *Edinburgh Phren. Jour.*

probably a prior derivation from the Shemitic or Aryan stock. The variations or shadings off from the typical Malay found on the peninsula of Malacca, in the Javanese, Madurese, Acheenese, and Tagalas are very numerous.

The islands of the Indian and Pacific oceans, from the Andamans on the east, to Easter Island on the west, and from Formosa and the Hawaiian islands on the north, to New Zealand on the south, are largely inhabited by tribes in whose physical organization and mental qualities Malayan characteristics abound; but it is in the Malay archipelago and the peninsula that the man is found whose organization is the subject of our analysis, as there the racial type exists in the greatest purity.

High Type Malay (Javanese Prince).

Like the Mongolian, the Malay is nearly beardless; the hair on the face may be permitted to grow long, but it is almost always thin; the complexion is darker than that of the Chinaman, being of a very uniform copper or reddish brown; the hair and eyes are black, the former being usually straight and coarse, standing quite erect when cut within two inches of the head. In physiognomy there is a similarity to the European cast of countenance, especially in the development of the forehead, but the difference between the man of Europe and that of Southern Asia is distinct enough on examination. The head is of large average breadth, as compared with its length, or mesocephalic, the occipital region being much elevated and projecting but slightly beyond the line of the neck, so that the back of the head appears short and square, not rounded as in the Mongolian, or projecting and conical as in the negro. The mouth is large, the jaws somewhat projecting, with thick but not puffy lips; the nose quite flat, with nostrils well dilated; the eyes are nearly straight, with eyelids somewhat approximating, but with less drooping of the upper lid than occurs in the Chinese; while the face is not as broad as the yellow man of the North, although the cheek bones are wide and prominent.

Dr. Pickering says: "The profile has

appeared to me usually more vertical than in the white race; but this may be owing in part to the mode of carriage, for the skull does not show a superior facial angle.

MALAY SKULL.

A more marked peculiarity, and one very generally observable, is the elevated occiput and its slight projection beyond the line of the neck. The face in consequence, when seen in front, appears broader than among Europeans, as is the case with the Mongolian, though for a different reason. In the Mongolian the front is depressed, or the cranium inclines backward, while in the Malay it is elevated or brought forward."*

Prof. S. G. Morton thus describes the Malay cranium from several specimens in his collection: "The forehead is low, moderately prominent, and arched; the occiput is much compressed and often projecting at its upper and lateral parts; the orbits are oblique, oblong, and remarkably quadrangular, the upper and lower margins being almost straight and parallel; the nasal bones are broad and flattened, or even concave; the cheek bones are high and expanded; the jaws are greatly projected, and the upper jaw, together with the teeth, is much inclined outward, and often nearly horizontal. . . . The facial angle is less than in the Mongol and Chinese."†

Temperamentally, the Malay organization is superior to the Mongolian in the active sense; the osseous framework is comparatively light, the bones and muscles having but moderate yet compact development, while the nervous system exercises a strong influence and contributes to that quickness of observation and celerity of movement for which the Malay peoples are generally distinguished. Inferentially, the anterior or intellectual lobes of the brain are well developed, although the entire cranium is not as large as the Chinese skull, its proportions, as derived from the examination of sixty-six male specimens, being stated by Wallace to be: of width to length as 70 to 92; of height to length as 72 to 90. Their internal capacity measured by the weight in ounces of sand which they could contain in the encephalic space ranged from 60 to 91. Mr. Wallace's measurements of thirty-eight male negroes indicated: range of internal capacity, from 66 to 87 ounces; ratio of width to length, 64 to 83; of height to length, 65 to 81.*

It should be stated that Mr. Wallace's Malay specimens covered a wide range of geographical distribution, being derived from races inhabiting Sumatra, Java, Madura, Borneo, and Celebes, and indicating, as he says, an "enormous" variation. On the Malayan peninsula we doubt not he would have found purer specimens of the family.

In the general outline of the head the typical Malay indicates a relation to the Caucasian type, for which he is probably

MALAY SKULL. (POLYNESIAN BRANCH).

indebted to an impression upon his original stock derived from Aryan or Shemitic sources. The forehead is well rounded,

* "The Races of Man and their Geographical Distribution."

† "Crania Americana," ed. 1839.

* "The Malay Archipelago." A. R. Wallace.

narrowing upward from the eyebrows, but making a large angle in profile, with a horizontal line. Hence the intellectual development in association with an active temperament is susceptible to civilizing influence in a good degree; while in original power it can not be said to equal the Mongolian, yet in manifestation it has shown more of the elements of executiveness and enterprise in novel directions than the latter. There is much breadth between the ears, with less development in the temporal region, as compared with the Mongolian head, but there is relatively greater height in the mid-coronal parts; and the cautious and approbative faculties are prominent influences in the Malay disposition.

The contour of the back-head has been already described; it indicates a comparatively small volume of brain in the occipital lobes and, consequently, no great strength of social instinct, or of family affection. The negro, with a smaller brain, as a friend and father is much more attentive, kind, familiar, and affectionate. The Malay's idea of society appears, for the most part, to be founded upon his intellectual appreciation of its general expediency, his desire for protection, and the respect of his equals. Mr. Wallace writes: "When alone, the Malay is taciturn; he neither talks nor sings to himself. When several are paddling in a canoe they occasionally chant a monotonous and plaintive song. He is cautious of giving offense to his equals. He does not quarrel easily about money matters; dislikes asking too frequently even for payment of his just debts—will often give them up altogether, rather than quarrel with his debtor. Practical joking is utterly repugnant to his disposition, for he is particularly sensitive to breaches of etiquette or any interference with the personal liberty of himself or another."

He further says that "the higher classes of Malays are exceedingly polite, and have all the quiet ease and dignity of the best-bred Europeans." In another place he writes: "The intellect of the Malay seems rather deficient. They are incapable of anything beyond the simplest combinations of ideas, and have little taste or energy for the acquirement of knowledge. Their civilization, such as it is, does not seem to be indigenous, as it is entirely confined to those nations who have been converted to the Mohammedan or Brahminical religions." This impression is quite out of harmony with that of Sir Stamford Raffles, who says: "They have a regular government and deliberative assemblies; they possess a peculiar language and written character, can generally write, and have talent for eloquence; they acknowledge a God, are fair and honorable in their dealings; crimes among them are few, and their country is highly cultivated; and yet these people, so far advanced in civilization, are cannibals, upon principle and system."*

Low Type Malay (from Prichard).

In fact, the character of the Malay is many-sided, in correspondence with his

* "Life and Public Services of Sir S. Raffles."

probable mixture of descent and organization; the elements of civilized and savage stocks are associated in his nature. He shows on the one hand a mild, deaceable, industrious disposition, with decided talent for commercial enterprise, especially on the sea, and for mechanism; is grateful for kindness shown him, and nice as regards a point of honor—no other class of people in India equals him in these respects. Europeans who treat him well usually find in him a faithful and attached servant. On the other hand, he shows in certain relations a ferocious, vindictive nature; is merciless toward enemies and strangers, and capricious and passionate often toward his friends. His sensibility to insult or mistrust is so quick that he is often excited to atrocious deeds without good warrant for their commission. That state of malevolent frenzy which is called "running amok" from the word *amok* (which signifies to kill), is due to extreme excitement on account of supposed insult or grievance done them by others. When a man has determined upon this desperate step, he inflames himself still further by taking opium, and drawing his sharp creese, rushes into the street, crying "*Amok, amok*," and every one he meets is assaulted with fury, until he himself drops from exhaustion, or is struck down. It is said that such outbreaks of deadly passion were rendered more frequent under the harsh and severe treatment of their old Dutch rulers, but under a kind and judicious Government they were greatly reduced, and the natives changed into a very different class characteristically.

WINDOWS OF CHARACTER.

LIKE a cathedral illuminated, character reveals itself through many windows. Some men are more transparent than others, for the distributive and penetrating power of personality varies with individuals. Some, like the cathedral, are luminous with commanding beauty, vocal with music, and shed an atmosphere of warmth and fragrance about them. The savor or flavor of others is so subtle and elusive that you can not at first detect it. The melody of some shrinking souls is so quiet that you do not catch it. There is no speech nor language; their voice is not heard; yet their influence goes out through all the earth and their words to the end of the world. Some vainly seek to veil the windows and to shut in the incense and the song. They fancy that spirit can be caged, pent in by bar and bolt, by hasp and clasp of self-restraint and silence. But it is impossible for one to thus stand guard over himself and hide the revelation of his inner life. Character is self-revealing, as ointment on the hand, Solomon says, betrayed itself. Whether we will or not, this spiritual efflux, call it character, influence, deportment, or whatever you choose, will disclose itself.

What some have termed "the magnetic sphere" of a person is this physical, mental, and moral atmosphere we are to analyze. It belongs to a person as inevitably as the light belongs to the sun, or odorous sweetness to an orange-grove.

The importance of understanding all that goes to make up one's bearing can hardly be overestimated. To old or young, to peer or peasant, this knowledge is a key to success anywhere. "Prepare yourself," says Chesterfield, "for the world as the athletes used to do for their exercises; oil your mind and your manners, to give them the necessary suppleness and flexibility; strength alone will not do." Noble manners are not bred in moments, but in years, as Bishop Huntington has said. They come "of goodness, of sincerity, of refinement. The principle that rules your life is the sure posture-master." The bloom on the peach and the golden hue on the corn come from maturity within and not through human art. So we can get out of life and character no more than we put in. The external

refulgence is measured by the inward illumination.

The Eye, the Voice, the Hand, and the Step are four prominent windows out of which unconsciously or designedly every one's personality shines. Windows vary in size and in clearness or transparency, and so with these avenues through which the soul's life hourly pours. The principles that we are to examine remain the same in all the diversities of application.

THE HUMAN EYE.

The great engineer Stephenson was once asked the mightiest power in nature, and he said that it was a woman's eye, for it would send a man to the ends of the earth, and that same eye would bring him home again. Some eyes are so liquid and deep that Emerson fitly calls them "wells into which one might fall." Others, he says, have no more expression than blueberries. Some are asking eyes, some assertive, some prowling, some full of bayonets. "The eyes of men converse as much as their tongues, with the advantage that the ocular dialect needs no dictionary, but is understood all the world over. Each man carries in his eye the exact indication of his rank in the immense scale of men, and we are always learning to read it. The reason why men do not obey us is because they see the mud at the bottom of our eye."

It is said that gamblers rely more upon the expression of the eye of their opponent to discover the state of the game than upon anything else. Bushnell tells of a preacher he knew whose eyes were "six-shooters," keen, gray, individualizing, loaded with thought and emotion, and leveled directly at each hearer in turn. There was no special merit in the style or substance of his speech, but his penetrating eye made every one feel that eye-bolts were shooting surely and swiftly into the very soul. Of some eyes Shakespeare says:

> "They are the books, the arts, the academies
> That show, contain, and nourish all the world."

Brutes are kept at bay by the eye. The tamer and trainer govern, by a glance, creatures that could easily crush them did they know their power. So the human eye is at once a weapon of defense and assault of incomparable power. "Next to the voice in effectiveness," says Cicero, "is the countenance, and this is ruled over by the eyes." In Delsarte's system there are seven hundred and twenty-nine expressions of the eye, grouped as follows: normal, indifferent, morose, somnolent, contemptuous, deeply reflective, surprised, and resolute. But, as in music, so here, the chromatic scales and gamuts of expression beggar all description. Darwin's work on the "Expression of the emotions of Men and Animals" is a helpful treatise.*

The matter of facial expression is a copious subject, and will find fuller treatment further on. We have space in this paper to consider but one more of the avenues through which one's character and personality find outlet, that is

THE VOICE.

This is regarded by many as the truest index of character. The mouth has two thousand one hundred and eighty-seven well-defined phases of expression, thrice those of the speaking eye. The lips are "curved and channeled with the memorials of a thousand thoughts and impulses." In the beautiful phrase which Wordsworth applied to the mountains, it may be said the lips "look familiar with forgotten years," recording, as they do, the history of the life of which they are the instrument of expression. Here, however, we trench on the domain of Physiognomy. It is the voice itself, rather than its mechanism, that we have to do with. This is "the key-stone which gives stability to all the rest," says Dr. W. M. Taylor. Effective utterance gives force to feeble thought, "while careless, hesitating, and indistinct speech will make the finest composition fall flat and powerless on the listener's ear." It was the inward life that gave the speech of Christ that mysterious power it had over

* *Vide* Thwing's "Drill-Book in Vocal Culture and Gesture," pp. 91–111.

men. "Never man spake like this man," they said. As was said of another, "His words were thunder because his life was lightning."

As we contrast the sparkle of the eye in a vivacious, intelligent youth, with the vacant stare of a microcephalous idiot, so we may set over against each other the indistinct, muffled, and reluctant tones of a person who is shamming, or trying to conceal truth, and the clear, clean, frank tones of another who speaks with the emphasis of conviction.

The masterful power of Mirabeau, it is said, was in his larynx. "He ruled tumultuous assemblies, not by the lightning of his thought, but by the thunder of his throat." But there was a vehement soul beating below his throat and larynx that revealed its passionate emotion in tones that electrified an audience. Speaking of the witchery which the voices of certain dramatic artists possess, M. Legouvé, of the French Academy, says: "It seems as if there were a little sleeping fairy in their throat, who wakes as soon as they speak, and, touching them with his wand, kindles in them unknown powers. The voice is an invisible actor concealed in the actor, a mysterious reader concealed in the reader, and serves as blower for both." That hidden fairy that sleeps in the singer, actor, or orator is emotion. Only what is *in* the soul can come out of it. As Prof. Mathews justly observes: "The magnetic force must saturate one's own spirit before it will flow out upon those around him—an invisible efflux of personal power which radiates like heat from iron; which attracts and holds an audience as a magnet draws and holds steel-filings."

A lecturer once asked a hearer at the close of the lecture: "What did you think of my train of thought?" "It lacked only one thing." "Pray what was that?" "Your train only needed a sleeping-car!" A drowsy heart will inspire sleepy tones, to lull, like poppy-juice, those on whom they fall; whereas an electric nature makes a man a magician, like Antiphon at Athens, who affirmed that he could heal mental diseases with words, or, like the modern psychologist, who works similar marvels by a word. The fiery invectives of Burke made Warren Hastings feel for the time that he was "the most culpable being on earth." Philip of Macedon said of Demosthenes: "Had I been there, he would have persuaded me to take up arms against myself."

A glowing, ebullient nature not only sets "logic on fire," producing what is called eloquence, but often exerts a more commanding power over a hearer. Mere oratorical eloquence we can admire, analyze, and criticise, but with a magnetic vocal delivery we are spell-bound in spite of ourselves. This function of the voice will be again referred to in a paper on "Magnetic People."

The other two indices of character, the hand and the step, will be considered next month.

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PROMINENT PHRENOLOGICAL CHARACTERISTICS OF ALEXANDER THE GREAT.

TO most persons biography possesses a charm superior to many other kinds of literature. In following the periods of a great man's life, or even that of an obscure but remarkable individual, the mind of the reader is constantly on the alert with expectation for fresh disclosures, and the attention becomes absorbed in proportion to the importance attached to the performances of the person under review. This is obvious in fiction, although the reader may hardly ever forget that the story recounts the deeds of valor enacted by an imaginary hero. Indeed there are many who would prefer the narrative of a fictitious person

in the form of a novel to that of an eminent poet, statesman, or orator. The tribulations of "David Copperfield" have drawn tears of pity from the eyes of thousands who would manifest a very slight disturbance of their feelings or sympathies over the memory of real transactions, and perhaps pronounce an authentic biography dry and uninteresting. To those who relish the study of human nature, however, the case assumes a very different aspect. To the phrenologist especially biography and autobiography appear of commanding importance, and no circumstance is too trivial to arrest his attention, for he is deeply assured that every thought, word, and deed arises from some state and combination of the mental powers, and he is vigilant at all times to penetrate the motives of others, and to determine if possible the faculties that produce the effects he is examining.

The life of Alexander the Great is one of peculiar attractiveness, exhibiting the career of a most extraordinary man, one whose insatiable ambition made war and conquest the supreme objects of his life.

The matters upon which we rely in the attempt to investigate the phrenological characteristics of Alexander are few, and their record conflicting. Critics differ widely respecting his character, and dispute many of the circumstances relating to his history. The English notes to the translation of Plutarch's life of the conqueror often contradict the biographer, and other authors are cited whose statements tend very much to perplex the attention, and render a decision doubtful or difficult.

The present criticism is constructed upon the facts furnished by Plutarch and his language reproduced (or, more correctly, the English translation) with the admonition to the reader that he must not expect more than an approximation to the truth, since the facts in the life of Alexander are not related and described by himself, but by one who lived and wrote several hundred years after the transactions occurred and their author had been buried. Allowance ought therefore to be made for the biographer's statements, for it is highly probable that when Plutarch preserved the heroic actions of Philip's great son and held them up for the admiration of remote ages, he never for a moment imagined that his words would be tested in the phrenological crucible, nor the productions of his imagination examined under the searching lens of Gall's philosophy.

In the introduction to the life of Alexander, the biographer says: "In this volume we shall give the lives of Alexander the Great, and of Cæsar, who overthrew Pompey; and as the quantity of materials is so great, we shall only premise that we hope for indulgence, though we do not give the actions in full detail and with a scrupulous exactness, but rather in a short summary, since we are not writing histories, but lives."

Alexander was born at Pella, 355 years B.C., and we are informed that he was of low stature. Plutarch says "his birth occurred in the month of July, and that he was fair, with a tinge of red in his face and upon his breast. The statues that most resembled him were those of Lysippus, who alone had his permission to represent him in marble. It seems to have been the heat of his constitution which made Alexander so much inclined to drink, and so subject to passion." From this description and other particulars stated to have been related by Aristoxenus, there is satisfactory reason for asserting that Alexander possessed a large proportion of the vital, combined with considerable of the motive temperament, producing such an organization as results in ambition, executiveness, perseverance, a love of power and conquest, and the capacity for physical enjoyment and activity. Plutarch expressly states that the conqueror was swift of foot; and many instances are mentioned in which he played a conspicuous part in field sports, and he subjected himself to exposure and severe physical training. The reference to drinking is significant, for it was this depraved appetite that blasted the life of Alexan-

der and laid him in a drunkard's grave. Among the first exploits of this remarkable youth is that recorded of his taming the famous horse Beucephalus. The act itself and the surrounding circumstances all appear characteristic and indicate a bold spirit as well as keen observation. The story acquires additional interest from the entertaining way in which Plutarch tells it. He says: "When Philonicus, a Thessalian, offered the horse named Beucephalus in sale to Philip at the price of thirteen talents, about $12,500, the king with the prince and many others went into the field to see some trial made of him. The horse appeared extremely vicious and unmanageable, and was so far from suffering himself to be mounted that he would not bear to be spoken to, but turned fiercely upon all the grooms. Philip was displeased at their bringing him so wild and ungovernable a horse and bade them take him away. But Alexander who had observed him well, said, 'What a horse are they losing for want of skill and spirit to manage him!' Philip at first took no notice of this, but upon the prince's often repeating the same expression and showing great uneasiness, he said: 'Young man, you find fault with your elders as if you knew more than they, or could manage the horse better.' 'And I certainly could,' answered the prince. 'If you should not be able to ride him, what forfeiture will you submit to for your rashness?' 'I will pay the price of the horse.' Upon this all the company laughed, but the king and prince agreeing as to the forfeiture, Alexander ran to the horse, and laying hold on the bridle, turned him to the sun; for he had observed, it seems, that the shadow which fell before the horse and continually moved as he moved, greatly disturbed him. While his fierceness and fury lasted he kept speaking to him softly and stroking him; after which he gently let fall his mantle, leaped lightly upon his back, and got his seat very safe. Then, without pulling the reins too hard or using either whip or spur, he set him agoing. As soon as he had perceived his uneasiness abated and that he wanted only to run, he put him in full gallop and pushed him on both with the voice and the spur. Philip and all his court were in great distress for him at first, and a profound silence took place. But when the prince had turned him and brought him straight back, they all received him with loud acclamations except his father, who wept for joy, and kissing him, said: 'Seek another kingdom, my son, that may be worthy of thy abilities, for Macedonia is too small for thee.'"

This narrative plainly indicates the possession of large Combativeness, inspiring boldness and courage, with the addition of Self-esteem, producing self-assurance and confidence. It also furnishes evidence of acute powers of perception, in the fact that Alexander realized the situation of affairs and observed that the horse's shadow caused him much uneasiness. He also displayed caution in his treatment of the horse, and as he was able to ride the animal successfully, it may also be fairly inferred that the organ of Weight was well developed, which would help the horseman to keep his position in the saddle; this last idea is elsewhere confirmed.

Another circumstance is mentioned by the biographer which implies well-developed intellectual powers. "Ambassadors from Persia happened to arrive in the absence of his father, and Alexander received them in his stead, and gained upon them greatly by his politeness and solid sense. He asked them no childish questions, but inquired the distances of places and the roads through the upper provinces of Asia; he desired to be informed of the character of their king, in what manner he behaved to his enemies, and in what the power and strength of Persia consisted. The ambassadors were struck with admiration and looked upon the celebrated shrewdness of Philip as nothing in comparison with the lofty and enterprising genius of his son." The above passage exhibits that sagacity which is the product not only of much intellect, but of a large head with consider-

able Secretiveness, conferring shrewdness, and Approbativeness, conferring politeness. It is also worthy of remark that Alexander enjoyed the benefits of education imparted by Aristotle and other eminent tutors. Such instruction as he received would assist in the production of wisdom superior to his years.

The following quotation is equally characteristic with the last and noteworthy: "He was twenty years old when he succeeded to the crown. 'Demosthenes,' said he, 'called me a boy while I was in Illiricum, and among the Triballi, and a stripling when in Thessaly, but I will show him before the walls of Athens that I am a man.'" It appears from this language that Alexander felt his dignity assailed, and Self-esteem and Approbativeness thus offended, called forth the above threat, and excited Combativeness, Destructiveness, and Firmness, to resent the insult. The part of the sentence, "I am a man," forcibly illustrates the mortified action of Self-esteem; and the identical words are reported as having been used by the Indian chief, Black Hawk, to General Jackson. When Jackson attempted to humiliate the chief, he rejected the offered indignity, and in the attitude of Self-esteem, replied: "I am a man." The coincidence alluded to shows the similarity in the modes of action of the faculties under similar causes of excitement.

Powerful Self-esteem and Love of Approbation are further attested. "It was not all sorts of honor that he courted, nor did he seek it in every track, like his father Philip, who was as proud of his eloquence as any sophist could be. Alexander, on the other hand, when he was asked by some people whether he would not run in the Olympic races (for he was swift of foot), answered: "Yes, if I had kings for my antagonists." This instance is paralleled by one related by Dr. Gall, of a young woman in moderate circumstances, who possessed such an inordinate amount of Self-esteem, that she would condescend to converse only with persons of a rank superior to her own. Alexander would only compete with kings. Approbativeness and prodigious Self-esteem would produce such a manifestation. "He disliked wrestling," probably because his great Self-esteem rendered the familiarity of his competitors obnoxious to him.

It appears, according to Plutarch, that "Alexander's only fault was his retaining so much of the soldier as to indulge in a troublesome vanity. He would not only boast of his own actions, but suffered himself to be cajoled by flatterers to an amazing degree." These manifestations are the offspring of Self-esteem and Approbativeness, faculties that controlled their possessor to a great extent. Under the influence of these two powers, inflamed by Combativeness, Destructiveness, and strong drink, Alexander murdered his life-long friend, Clitus, who once averted a blow that might have slain the great warrior. Clitus taunted Alexander with the significance of his victories compared with those of Philip. Such a wound to Self-esteem was atoned for by homicide.

No qualities were more conspicuous in Alexander's character than intrepidity and executiveness, indicating great Combativeness and Destructiveness. The following paragraph places this conclusion beyond doubt. Alexander was very nearly being cut in pieces by the Malli, who are called the most warlike people in India. "He had driven some of them from the wall with his missile weapons, and was the first man that ascended it. But presently, after he was up, the scaling ladder broke. Finding himself and his small company much galled by the darts of the barbarians from below, he poised himself and leaped down into the midst of the enemy. By good fortune he fell upon his feet; and the barbarians were so astonished at the flash of his arms as he came down, that they thought they beheld lightning or some supernatural splendor issuing from his body. At first, therefore, they drew back and dispersed; but when they had re-collected themselves, and saw him attended by only two of his guards, they attacked him hand to hand, and wounded him through his armor with their swords and spears, notwithstanding the valor

with which he fought. One of them, standing farther off, drew an arrow with such strength, that it made its way through his cuirass, and entered the ribs under the breast. Its force was so great that he recoiled, and was brought upon his knees, and the barbarian ran up with his drawn cimeter to dispatch him. Peucestas and Limneus placed themselves before him, but the one was wounded and the other killed. Peucestas, who survived, was still making some resistance when Alexander recovered himself, and laid the barbarian at his feet. The king, however, received new wounds, and at last had such a blow from a bludgeon upon his neck that he was forced to support himself by the wall, and there stood with his face to the enemy. The Macedonians, who, by this time, had got in, gathered about him, and carried him off to his tent." The circumstances related in the preceding graphic description leave no room to suppose that Alexander was wanting in courage. Indeed, his valor exceeded his discretion in this contest, and other cases are cited that announce great Combativeness, with less Caution.

"When Alexander's army reached the Granicus, many of his officers were apprehensive of its depth, and some thought a proper regard to the traditionary usages with respect to the time should be observed, for the kings of Macedonia used never to march out to war in the month of Dæsius. Alexander cured them of this piece of superstition by ordering that month to be called the second Artemesius. And when Parmenio objected to his attempting a passage so late in the day, he said: 'The Hellespont would blush if, after having passed it, he should be afraid of the Granicus.' At the same time he threw himself into the stream with thirteen troops of horse; and as he advanced in the face of the enemy's arrows in spite of the steep banks which were lined with cavalry well armed, and of the rapidity of the river, which often bore him down or covered him with its waves, his motions seemed rather the effects of madness than sound sense. He held on, however, till by great and surprising efforts he gained the opposite banks, which the mud made extremely slippery and dangerous. When he was there he was forced to stand an engagement with the enemy hand to hand, and with great confusion on his part, because they attacked his men as fast as they came over, before he had time to form them." Here, as previously, we perceive great Combativeness, Destructiveness, Firmness, and Self-esteem, not restrained by the exercise of proportionate Cautiousness. Plutarch suggests "that his motions seemed rather the effects of madness than of sound sense." His motions, however, seem to have been the legitimate offspring of tremendous courage, and an unconquerable spirit of aggression, determined upon the subjugation of his enemies at almost any risk. That he was not prone to great imprudence—the absence of Cautiousness—appears from the next quotation. Caution asserted itself in hesitating about the course he should pursue after he had stormed and subdued Halicarnassus and Miletus. "After this," says Plutarch, "he remained in suspense as to the course he should take. One while he was for going with great expedition to risk all upon the fate of one battle with Darius; another while he was for first reducing all the maritime provinces; that when he had exercised and strengthened himself by those intermediate actions and conquests, he might then march against that prince." In this irresolution Cautiousness exercised a salutary influence, and on other occasions produced a judicious regard for personal safety, but seems to have been less than Combativeness and Hope. True to his mental organization, even when warned of treachery he manifests no anxiety although at the mercy of one who might have sent him beyond this life without much suspicion. In such circumstances on the bed of helpless sickness his courage or combativeness did not forsake him. "Parmenio sent him a letter from the camp advising him 'to beware of Philip, whom, he said, Darius had prevailed upon

to take him off by poison.' As soon as Alexander had read the letter he put it under his pillow without showing it to any of his friends. The time appointed being come, Philip, with the king's friends, entered the chamber, having the cup which contained the medicine in his hand. The king received it freely, without the least marks of suspicion, and at the same time put the letter into his hands. It was a striking situation, and more interesting than any scene in a tragedy; the one reading, while the other was drinking." Besides moderate Cautiousness and full Secretiveness, Friendship, Benevolence, and Conscientiousness would operate to cherish confidence and trust in another.

Whoever has carefully read the life of Alexander and considered the extent and magnitude of his enterprises, will freely admit that he must have been a man of no ordinary intellectual capacity, to conceive such stupendous campaigns and execute them with success. "It must appear," says the "Encyclopedia Britannica," "that he possessed not only capacity to plan, but likewise to execute the greatest enterprises which have ever entered into the mind of any of the human race. He seems to have been given to the world by a peculiar dispensation of Providence, being a man like none other of the human kind."

Unfortunately there are no relics extant of Alexander's own compositions, except a few scattered remarks of sententious brevity attributed to him. If history is to be believed, however, the splendid eulogy above may be deemed well merited. Plutarch quotes Alexander as saying or writing to Aristotle: "For my part, I would rather excel the bulk of mankind in the superior parts of learning than in the extent of power and dominion." "It appears also to me," says Plutarch, "that it was by Aristotle rather than any other person that Alexander was assisted in the study of physic, for he not only loved the theory, but the practice, too, as is clear from his epistles, where we find that he prescribed to his friends medicines and the proper regimen. He loved polite learning, too; and his natural thirst for knowledge made him a man of extensive reading. The Iliad he thought, as well as called, a portable treasury of military knowledge; and he had a copy, corrected by Aristotle, which he called the 'Casket copy.' The love of philosophy which he was either born with, or conceived at an early period, never quitted his soul." It is very evident that such language as this ascribes uncommon intellectual powers to their possessor; and in connection with the whole story of his life it must be conceded that Alexander, in point of intellectual endowment, was among the favored few of his own or any other period. Before commencing his expedition into Persia, he consulted the oracle. Darius says he had no more money than would maintain his army for a month. "However, though his provision was so small, he chose at his embarkation to inquire into the circumstances of his friends; and to one he gave a farm, to another a village, and to another the revenue of a borough. When in this manner he had disposed of almost all the estates of the Crown, Perdiccas asked him what he had reserved for himself. The king answered, 'Hope.' Such was the spirit and disposition with which he passed the Hellespont. As soon as he had landed, he went up to Ilium, where he sacrificed to Minerva, and offered libations to the heroes." The preceding passage apparently indicates large Benevolence, considerable Hope, Veneration and Wonder. Benevolence, undoubtedly, was one of Alexander's strong faculties; but I think we shall perceive that it would be more just to ascribe to him moderate Acquisitiveness and full Benevolence, acting in concert with great Self-esteem and Approbativeness. There are many instances reported in which he dispensed gifts on a scale truly colossal. That the conqueror possessed great Hope, is most reasonable to infer, for, without such a stimulating power, even his thirsty ambition would have lingered in tranquil content or moderate success, notwithstanding the energy imparted by Com-

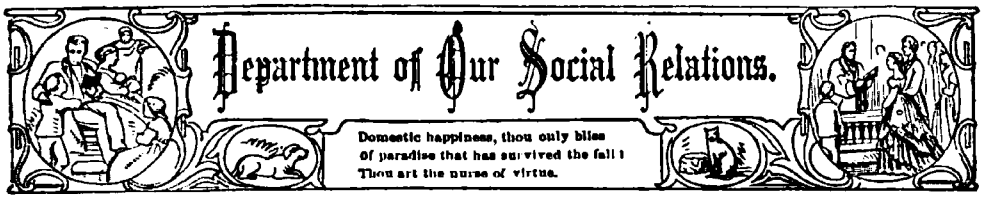
bativeness, Destructiveness, Firmness, and Self-esteem. There is abundance of testimony to assure us that Hope was very active. Sometimes Alexander appears to have acted more under the influence of his religious sentiments than the Intellectual powers, and it appears probable, from all the evidence, to suppose his organs of Wonder and Veneration were both large. This being the case, and imbibing, as he did, the superstitious traditions of his countrymen, these faculties would, in such conditions, incite him to fanatical devotion and worship of the gods.

"It is certain he imputed the murder of Clitus, which he committed in his wine, and the Macedonian's dastardly refusal to proceed in the Indian expedition, through which his wars and his glory were left imperfect, to the anger of Bacchus, the avenger of Thebes. And there was not a Theban who survived the fatal overthrow that was denied any favor he requested of him." This passage proves the strong influence of the religious powers, while the intellect, otherwise energetic, was unenlightened by a truly religious philosophy. The next citation will assist in explaining the latter part of the preceding sentence: "When he made his appearance before Thebes, he was willing to give the inhabitants time to change their sentiments. A battle was fought. The city was taken, plundered, and leveled with the ground; thirty thousand were sold for slaves; six thousand were killed in the battle. It is said the calamities he brought upon the Thebans gave him uneasiness long after, and on that account he treated many others with less rigor." The generosity referred to was the result of Benevolence and Conscientiousness. His conscience afflicted him for the cruelties he practiced. He first wounded and then endeavored to assuage the pain. The faculties that produced the soldier were more energetic than those that constituted the philanthropist; but after the animal propensities had satiated themselves, more beneficent principles of humanity succeeded.

"On his days of leisure, as soon as he was risen, he sacrificed to the gods, after which he took his dinner sitting." It seems certain that Alexander had large Wonder and considerable Veneration; but, withal, it is hard to believe that he could quiet his conscience by inflicting upon Bacchus his own misdemeanors, as Plutarch relates he attempted. Alexander was also a believer in dreams, omens, and prognostications, all showing the influence of the faculties designated. He made a visit to the temple of Jupiter Ammon. Plutarch says, "It was a long and laborious journey, and beside the fatigue, there were two great dangers attending it: the one was that their water might fail in a desert of many days' journey; and the other, that they might be surprised by a violent south wind amidst the waste of sand, as it happened a long time before to the army of Chambyses. The wind raised the sand and rolled it in such waves that it devoured full fifty thousand men. These difficulties were considered and represented to Alexander; but it was not easy to divert him from any of his purposes. Fortune had supported him in such a manner that his resolutions were become invincibly strong; and his courage inspired him with such a spirit of adventure that he thought it not enough to be victorious in the field, but he must conquer both time and space." The activity of some of the faculties that enter into the composition of this narrative, expounding the actions of Alexander, are justly interpreted by Plutarch. He explicitly indicates great Firmness and Combativeness, denominating their combined action, resolution and the spirit of adventure. Besides these powers, Self-esteem, Approbation, Destructiveness, and Hope would contribute powerful support to the others.

[*Conclusion in March Number.*]

THERE'S many a trouble
Would break like a bubble,
And into the waters of Lethe depart,
Did we not rehearse it,
And tenderly nurse it,
And give it permanent place in the heart.



IN PROPORTION.

"WHEN one has passed through the Red Sea, it doesn't seem hard to cross a brook."

The voice was sweet, and each word clear-cut and musical. The tone was convincing also. It would never occur to one of her hearers to question or contradict a statement made by that serene, lovely woman, whose white hair told of age with which comes wisdom, and whose face, placid and smiling as it was, spoke eloquently of varied and vital experiences of life.

Her companion, young in years, still younger in the experiences which count more than years, impatient, impulsive, strong in desire, weak in self-denial and self-control, shrinking from her slight trouble as if it were really an ovewhelming affliction, regarded her with reverential wonder. To her, though the metaphor was plain enough, it was a hard saying, and its truth one she was slow to learn. The two stood at the antipodes, yet in the path where the feet of one had trodden, those of the other might follow. It is in our failure to comprehend the proportions of things that we find much of the misery of our lives. We are blind to the fact that things are to be measured and valued, not wholly by themselves, but relatively and comparatively. This comparison is simple enough in theory—in fact, it is almost instinctive—but in practice we fall lamentably short of our principles.

The child whose doll is broken, or whose picnic is spoiled by a rain-storm, cries its young heart out over a sorrow and disappointment, as great as the young heart can possibly endure. Yet the mother's sympathy, tender and sincere as it is, does not for an instant consider the trouble a great or vital one. The heart-breaking trial to the child is an insignificant trifle to the woman. To one, life seems crushed and darkened by what is in reality, and to the other of no more consequence than the passing of a cloud over the sun. Yet the difference is wholly between the relative and the absolute, the positive and comparative.

Nothing can be truer than that "each man thinks his own load the heaviest." This may probably be accounted for by the fact that we can more fully feel our own suffering, while our natural selfishness inclines us to give it our supreme consideration.

But one grand mistake lies in allowing our lives to be governed more by sentiment and emotion than by judgment and reason. To think, to speak, to understand as a child in our childish days, is natural and legitimate enough, but when we become men we are reasonably expected to put away childish things. We walk over wider areas; we look into remoter spaces; we have a past from whose accumulated experiences we can learn lessons for the present and the future, and possess an acquaintance with men and things which should give us a truer and broader estimate of both. With increased years come, or should come, discernment and judgment, the ability to analyze our personal experiences, and test them, not by our own emotions, but by the great laws which underlie all human life and govern every individual existence.

"A brook and the Red Sea." The thousand annoyances of life, the little delays and small disappointments and trivial losses and slight hurts—hard to bear, perplexing, vexatious—what are

these when measured with the great griefs of life, those which blanch the hair and bow the figure; make youth old and age desolate? Surely, it is well for us to make some distinction in our complaints and regrets between those tiny ripples which break about our feet, and the tumultuous billows which submerge and threaten to drown us in their rush and roar. Yet we make even this passage safely when it is required of us. As our day, so we find our strength, and, if we choose to have it so, our wisdom also.

As we grow older, we smile pathetically at our distorted and disproportionate views of life's troubles, ideas gradually outgrown and discarded. So many matters that disturbed and distressed us have vanished into thin air, hardly to be recalled even by an effort of memory; so many disappointments which seemed utterly unendurable, have been borne long enough to prove them the greatest possible blessings; so many deprivations and afflictions have taken from us only those things for whose loss we are richer; so many storms of weeping have but "left the vision clear for stars and sun," that it must be a small and stubborn soul who, with every passing year, can not attain unto greater peace, acquire greater patience, feel greater confidence in all coming days, and find greater strength to bear whatever they may bring.

CAROLINE B. LE ROW.

HER THIRTY-FIFTH BIRTHDAY.

[There are some good points in the following sprightly sketch which will commend it to the reader. Our neighbor the *Home Journal* is responsible for its first appearance.]

AMANDA looked fresh and pretty this morning, with a knot of green leaves in her hair. She looked young, too, but when we had all kissed her, and she had thanked us for the modest gifts on the breakfast-table, some one chanced to ask, "By the way, how old are you today, Amanda?"

"Thirty-five," she replied, promptly. "I have exactly reached middle-age, today, and stand on the summit of life. Now I begin my descent into the vale of years."

We all laughed. Amanda could pass for twenty-five anywhere, if she would.

"Do you care much about being so old?" inquired Calypso, feelingly.

"Oh, dear, no," said Amanda. Then she pursued in the argumentative tone she likes. "It is commonly thought that an unmarried, middle-aged woman is the most unattractive and least picturesque object on the face of the earth. But I assure you half the interesting women have reached middle-age, if they would confess it, and whatever we may appear to the outside world, I am convinced we are in the very zenith of our happiness and usefulness, too."

Well, Amanda is more and more useful every day, and if she says she is happy, who shall dispute her?

"Could you develop your views a little?" asked Epaminondas.

"Thank you," said Amanda, radiantly. "I am so glad to have an opening. I could preach a discourse with a dozen heads on the advantages of middle-age. The chief ones, however, are that we are, probably, in our best physical condition, and have attained a considerable measure of common sense."

"O-o-h!" gurgled Calypso, "what a false generalization about the health, because you happen to be so well yourself. Most women lose ground every year after twenty. Look at me! What shall I be at thirty-five?"

"Much better than you are now, I hope, principally because you will have more of that good sense of which I spoke. You know there is an insidious little draught from that east window, yet you sit with your back to it this moment. You have a cough, and I have not, but I

should not dream of sitting there, nor will you at thirty-five, for, if you do not sooner learn the necessary wisdom, you will not live to that age."

"Ah!" said Calypso, rather sulkily, "how weary, flat, unprofitable and stale."

"Then," continued Amanda, unabashed by criticism, "girls from twenty to twenty-five want to do everything. Parties, balls, the theatre every other night, are necessary recreation. If they like walking, they must walk ten miles. If they like music they must practice six hours a day, and that nature is indeed poor which has only one or two tastes. All must paint and carve and do Kensington work, and read German. Then there are the real duties which they must do or die. Of course girls deteriorate. But by and by, generally between twenty-five and thirty, they are so reduced that they perceive their errors and begin to mend. I think most women with average good sense, reach fine condition by the time they are thirty-five, and ah, what a thing it is to be perfectly well!"

"Yes?" asked Calypso, rather enviously.

"Do you suppose it is really so very bad to sit in a little draught, Calypso?" returned Amanda, solemnly. "Twenty years ago I read Herbert Spencer's 'Education.' I have forgotten it all, except that he made me feel that the one unpardonable sin for a girl was to sit in a draught."

"How well do you feel?" pursued Calypso.

"Well enough to walk all day, and enjoy the free, vigorous motion in the clear air; well enough to wake happy when the sun streams into my eastern window. I used to wake with a headache and a coated tongue, and had not even vitality enough to refresh myself with a sparkling cold bath. But then, poor soul, I was young and had not learned how to live."

"Ah!" sighed Calypso. "You boast of good luck. Everybody can't be well."

"Not everybody, but most people. Common sense is the chief thing."

"In what does your remarkable common sense consist, my love?" asks the mother of the family, whose yea is yea, and who knows naught of sarcasm.

"Oh! in patience to wait for the best things, in realizing that the half is better than the whole, in knowing that the things best for other people may not be my best things, and in understanding my limitations."

"Well, child," quoth Epaminondas, "what are your limitations?" Amanda lifted her eyebrows.

"Dear brother, do you not see that the knowledge of each must have cost me a battle, with tears and groans, and blood and scars? Shall I tear open the old wounds for unsympathetic eyes? Suffice it to say, for instance, I now know I shall never paint a picture like Raphael, nor write an oratorio like Mendelssohn, nor a song like Burns, nor even sing one like Jenny Lind. Do I not love Raphael, and Mendelssohn, and Burns, and Jenny Lind, as well as when I kept enviously wondering how they did it?"

"The hardening of the heart that brings irreverence for the dreams of youth," murmured Calypso.

"No, my pet," replied Amanda, softly. "It does not harden your heart to find that it takes more courage and power to serve in the ranks than you used to suppose it took to be commander-in-chief. The more worthily you fill your place in the ranks, the more immeasurable your reverence for the commander-in-chief, for you realize how far above you he stands. Truly, Calypso, there is nothing so inspiring as to do your very best, and then find that thousands of the most commonplace people about you can do still better. It makes the universe so much fuller and richer than you thought." There was a pause; then Amanda went on. "One blessed thing about being thirty-five is, that you know more than you once did. At twenty, when I tried to be useful in the sick-room, I generally made the patient worse. If I wished to reform the erring, I began by exasperating him. My motives are no better now than they

were then, but you all know I succeed better. As for enjoyment, I enjoyed 'Buy a Broom' when I was a child, and now I enjoy the 'Seventh Symphony.' I shudder to think there was a time when I did not feel the attraction of the Mona-Lisa, and Calypso will admit that she is not old enough yet to understand the charm I find in 'Dürer's Melancholia.' I always loved Shakespeare, but there was a time, and that not many years ago, when Wordsworth was a sealed book to me, and I have not always known that Emerson had any better message for us than Carlyle."

"Well, Amanda," said Epaminondas," if you go on at this rate, consider what you will be at sixty. Thirty-five will not be the summit after all."

"I suppose not," replied Amanda. "Everything will be better at sixty; only I may not have such abounding health and strength, and for this year, at least, I mean to consider thirty-five as the very acme of bliss and opportunity."

Later in the day, when Amanda was not present, Calypso, who has had her trials, ventured to remark, "Amanda is blessedly balanced, and since her lot is just what it is, it is a mercy that she isn't very sensitive, for I suppose if she were she couldn't be so contented."

It was the mother of the family who replied to her, and oh, how gentle was the tone in which she "snubbed" her. I doubt if Calypso will ever again refer to sensitiveness.

HARRIET E. PAINE.

THE AE WEE ROOM.

It's years sin' last we left it—oh, sae weel's I mind the day!
My hair was broon an' bonnie then, that's noo sae thin an' grey.
Wae's me! for a' the years hae had o' gladness an' o' gloom,
They've gi'en me naething dearer than my ae wee room.

Sae weel's I mind the wee bit hoose—the burn—the bonnie yaird—
The lauchin' o' the bairns ootbye upon the sunny swaird—
The summer scents of thymey knowes an' clover leas in bloom
The breezes brocht at e'enin's to my ae wee room.

It had but little plenishin'; the wa's were unco bare;
But John was young, an' I was young, an' Love was wi' us there!
An' but-an'-ben my Johnnie wrocht an' liltit at his loom,
While I wad croon the owercome in oor ae wee room.

An' oh, the happy simmer e'ens for John, an' bairns, an' me!
Sic daffin' doon beside the burn—sic racin' ower the lea—
Sic pu'in' o' the gowans an' the bonnie yellow broom
To deck the shinin' dresser o' oor ae wee room!

The simmers noo are unco blae, the winters cruel cauld;
It's maybe that thae twa-three year I've grown sae frail an' auld.
But, eh, langsyne, though snaws were deep an' gurly skies micht gloom,
We aye had simmer sunlicht in oor ae wee room.

Noo John has land and hooses braw, an' mickle warl's gear;
An' we hae left the ae wee room for sax-an'-thretty year;
But through them a' I've missed the sangs he sang me at his loom;
For Love seemed left ahint us in oor ae wee room.

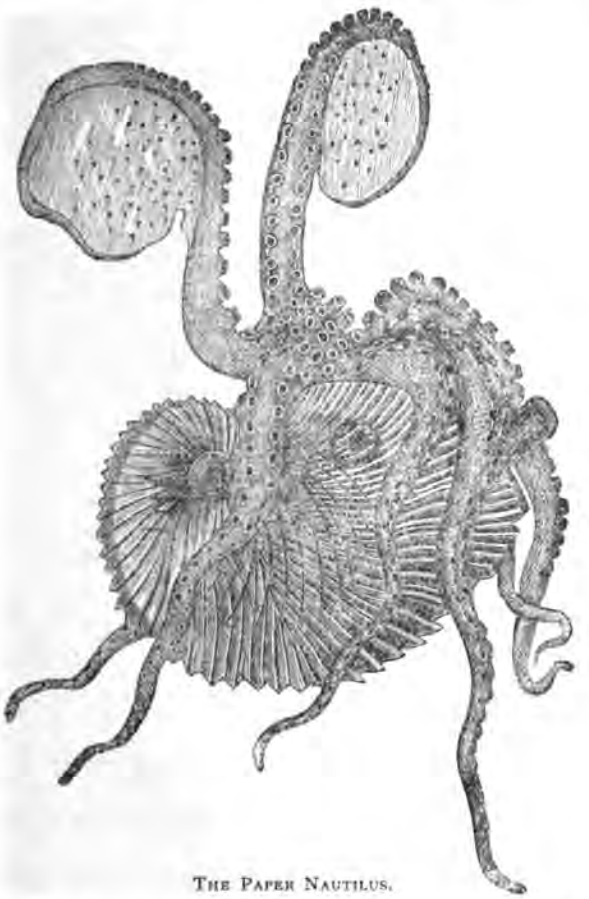
I've missed my bonnie bairnies, for the youngest dee'd ere lang;
The eldest sailed across the seas; the bonniest gaed wrang.
Oh! purses may be fu', I trow, an' hearts be unco toom.
We'd better keept oor bairnies in oor ae wee room.

There's Heaven afore us a', they say; but Heaven's ahint for me—
The wee cot-hoose, the bonnie yaird, the burnie, an' the lea.
The dreary muir o' cauldrife age has still a spot o' bloom—
The thocht o' puirtith's happy days in ae wee room.

E. CORBET NICHOLSON.

THE PAPER NAUTILUS.

THE ocean contains an exhaustless supply of living creatures, the study of which is replete with interest, so much is there of strangeness and novelty in their structure and habits. One of the most interesting families of the shell kind is that of the cephalopods, or head-foot animals, so called because the "arms" or "feet" surround the mouth. In the class of the mollusks the cephalopods occupy the highest place, and include the cuttle-fishes, nautili, argonauts, ammonites, all of which have a shell usually straight or curved, or coiled symmetrically. The nautili and argonauts only of surviving species have external shells. All have muscular arms or tentacles, and in some cases these are of enormous size, as in the "devil-fish" or octopus, specimens of which are seen in our larger museums of natural history. Some have fins, and all have the power of locomotion by forcibly expelling water from the gill-chamber. They generally have two large eyes, ear cavities, each containing an otolite; two jaws, and a fleshy, spinous tongue. The brain forms a ring encircling the œsophagus, seeming to indicate that its principal office is to preside over the alimentive function. The gills are either two or four in number, placed in a chamber into which water is admitted by a slit, and from which it is expelled through a "siphon" or funnel.



THE PAPER NAUTILUS.

The argonaut is commonly called the "paper nautilus," from the fragile nature of the boat-like shell in which the argonaut floats on the surface of tranquil seas. The shell is not chambered like that of the true nautilus, but has one spiral cavity, into which the animal can retire and be completely hidden. There is no muscular attachment of this animal to the shell, which is said to be peculiar to the female, who uses it for incubation, as a nest. Several species are known. They have eight arms, two of which are expanded into broad membranous discs, which were formerly believed to be sails, and the other arms were regarded as oars; but, though the fable of their raising these membranes to catch the wind for propulsion is given currency by the poets, it has long been known that the animal really propels itself by ejecting water from its funnel. When it desires it folds its arms retires within its shell, and sinks to the bottom; or, if attacked, it may quit the shell, and sink without it.

The argonaut shown in the engraving is the female, and as seen in the water under favorable conditions excites much wonder in the new observer. The male is an insignificant little chap. It is said by the naturalist that the female, when she becomes lonely, takes up the little male for a ride in her ship, and when she tires of his society, she pitches him overboard again, to shift for himself in the mighty deep.

In the tropical seas and in the Mediterranean, when the water is smooth and the weather fine, thousands of these creatures dot the vast expanse. The male argonaut has a worm-like body, resembling the arm of a cuttle-fish, and has no shell and no palmated arms, and is only about one-eighth the size of the female. According to Rang, the argonaut rises to the surface, shell upward, turning it downward when it floats upon the water; by withdrawing the six arms within the shell and placing the palmated ones on the outside it can quickly sink, thus explaining why the animal is so rarely taken with its shell.

TO SUCCEED AS AN INVENTOR.

MR. T. A. EDISON not long since had something to say in the *Christian Union* about what was needed to make a man a successful inventor. Of course, he spoke from his own experience, and among other statements were these:

"To succeed as an inventor, a young man must have a natural taste for mechanical pursuits; though not necessarily so much of a taste as to amount to genius. It has been my experience that men who have been successful in that line preferred, in their early boyhood, to work in a little shop, always planning and contriving on some mechanical device, and to do this to such an extent as to keep them away from their playfellows much of the time.

"The inventor must have a good constitution, for, if he is successful, he will often have to work long hours at a stretch without rest. I work with my assistants during the night, commencing at seven o'clock at night and working till eight or nine the next morning. I do not find this wearing on my health; in fact, do not believe that anything is wearing that you like.

"There must be continuity of work. When you set out to do a certain thing never let anything disturb you from doing that. This power of putting the thought on one particular thing, and keeping it there for hours at a time, comes from practice, and it takes a long while to get in the habit. I remember, a long while ago, I could only think ten minutes on a given subject before something else would come to my mind. But, after long practice, I can now keep my mind for hours on one topic without being distracted with thoughts of other matters.

"The reason why so many so-called 'inventors' fail is because they have not the power of analysis, and they are not

practical. For instance, a man will devise a machine for a certain object. He makes an enormously complicated affair and gets out his patent. After he has obtained his patent he finds there is no demand for such a thing; that is enough to kill him. And, if there is a demand for it, his want of practicability has made the machine so complicated that it can not be made a commercial success. The only test he can apply to himself when he is working, in order to see that he is on the right track, is common sense. Therefore, it would be well for him if he was not born with a silver spoon in his mouth. It will be a help, instead of a hindrance, if he has had to knock around the world and earn his own living, for he will have a better knowledge of what people need, and will know that the world does not pay for anything unless it absolutely wants it.

"Another reason for failure is that inventors work well enough while everything goes smoothly, but give up when they get 'stuck.' That is just the time when one should not be discouraged; at such a time the inventor should bring all his powers of patience and perseverance to bear on the matter in hand.

"For the young man who has, as I said in the beginning, a natural taste for mechanics, such a taste as amounts to any enthusiasm, the prospect for success as an inventor is good."

"GOOD ENOUGH FOR HOME."—"Why do you put on that forlorn old dress?" asked Emily Manners of her cousin Lydia, one morning after she had spent the night at Lydia's house.

The dress in question was a spotted, faded, old summer silk, which only looked the more forlorn for its once fashionable trimmings, now crumpled and frayed.

"Oh, anything is good enough for home!" said Lydia, hastily pinning on a soiled collar; and twisting up her hair in a ragged knot, she went down to breakfast.

"Your hair is coming down," said Emily.

"Oh, never mind; it's good enough for home," said Lydia, carelessly. Lydia had been visiting at Emily's home, and had always appeared in the prettiest of morning dresses, and with neat hair, and dainty collars and cuffs; but now that she was back again among her brothers and sisters and with her parents, she seemed to think anything would answer, and went about untidy and in soiled finery. At her uncle's she had been pleasant and polite, and had won golden opinions from all; but with her own family her manners were as careless as her dress; she seemed to think that courtesy and kindness were too expensive for home wear, and that anything was good enough for home.

There are too many people who, like Lydia, seem to think that anything will do for home; whereas, effort to keep oneself neat, and to treat father, mother, sister, brother, and servant kindly and courteously, is as much a duty as to keep from falsehood and stealing.

DO YOU SPEAK THE QUEEN'S ENGLISH?

FOR an educational article, we present the JOURNAL'S young readers an exercise in pronunciation. Some of our easiest, most common words containing short *o*, the Italian *a*, or the third sound of *u*, are constantly mispronounced even by quite well educated people.

We often hear persons ask, "What is the cost of this?" pronouncing the word as if spelled "cawst." Often, too, names like Laura are called "Laury." And nature is spoken of as "nāchar."

THE STORY OF DEMENTED JENNIE.

It was one of those soft, balmy days of February, in the Southland, that Ada and Laura Foster and their guest, Clara Cross, having discussed and extolled their morn-

ing rolls, coffee, and chocolate, decided to walk to the forest, along the creek, where the quay had been prolonged to give room for gentlemen's yachts.

Each took a basket to bring any fossil coral or moss they might gather. Ada and Laura bade their mamma good-bye, and all joyfully walked briskly across the bridge, along the way they had chosen. A queer raft of logs was drifting down the stream as they passed into the open country, and a swarm of moths was dancing in the sunlight. Clara Cross accosted the tiny creatures in her soft tones, saying, "Poor moths, you have come to offer yourselves a sacrifice to Jack Frost, who will arrive at early lamp-light."

Soon a cruel-faced youth driving a donkey appeared in view, but he did not disturb the coterie, he felt too much respect for the dog Asia, who calmly and decorously walked in the van. They crossed the street near "old Aunt Jennie's" house, trying carefully to pass without attracting her notice. Old Jennie is a monomaniac upon the subject of spirits, and talks constantly of ghouls and giaours, of spirit-birds whose eyries are in the clouds, and whose songs ring full to the inner sense, and of spirit-spiders who spin gossamer webs about the souls of men which prevent their reception of truth.

But, near the forest, they chanced upon the aged tatterdemalion, scrupulously clean, with a cochineal-colored hood upon her tangled head, chanting to herself, "What is Hebe to me or I to Hebe? Am I a giraffe or a camelopard? Am I not a Caucasian, come from Appalachian heights? Have I not trod Carthaginian sands and Asiatic shores? I have seen the Mandarin in his home, and the Byzantine halls have sheltered me. Why have I left those classic lands? Why forsaken even the ruins of the Athenæum and the Coliseum? Then I dwelt in fair Burgundy; and, sweeping past the Elizabethan shores, and the maelstrom's whirling depths, past the glittering lamps of the Aurora Borealis, guided only by the Pleiades I have come hither; wherefore? to what good?"

At this moment her caged mocking-bird broke forth into a wild and thrilling song. Sheltered by a clump of magnolias from her view, the trio watched silently the aged woman who listened with awe-stricken eyes to the joyful bird. When the last notes of the song trilled forth, she re-commenced her chant. "O thou genius who hast inspired a Mozart and a Mendelssohn, and that mightier Beethoven, pour into my longing soul some of thy wonderful art, that I may float off to some mission land to proclaim in song Gospel truths, without dogma or logarithmic creeds that foster only a frothy or frosty spiritual pride.

"I should willingly teach those street boys, offsprings of evil, who huzza and hurrah at me along the quay. Willingly would I go into the hospitals where brutal men with ruined health, the refuse of mankind, are gathered. But no, poor Jennie's rhubarb, fruits, and bouquets would meet only scoffing, and deeper wrong would be hers. For her the rural shade, whilst ruthless rumor whispers that pharmaceutic skill can not restore her shattered brain.

"Modern youths, forsaking hydropathy, practice allopathy, and prescribe colchicum and caoutchouc dissolved in camphene. Chlorine, too, is in great demand, and the whole race is becoming Epicurean. The old species of mankind is extinct, and by circuitous ways the race has reached the grand climacteric of bitterness. Great is Diana, and I am but a monad, docile and long-suffering. I do not improvise dogmatic tirades upon the duty of celibacy nor dolorous sonnets in doggerel rhythm to excite plebeian laughter. I have left the haunts where our modern Philistines throng. I reject the dogmas of Puseyism, and desire not the apotheosis of Swedenborg."

At this moment the forlorn woman caught sight of the girls and the dog; walking quickly away, she muttered: "Why that canine in these peaceful shades? He may be docile—sometimes these hirsute creatures are; yet I will seek my verdure-shaded cottage, to dream upon the beautiful nature that surrounds

me. Here are means of culture. Far from the concourse of men, far from the horrid din of the costly display of modern life; far from strife for office and the jargon of political issues." She passed out of hearing, and Laura, who had taken her notebook and jotted down the words of the monomaniac, drew a long sigh of relief as she exhibited the pages she had pencilled. "Pray tell me her history," said Clara Cross.

"I have always heard," replied Ada, "that Jennie, in her youth, was engaged to marry a professor in the University, who was very persistent in teaching his affianced the correct pronunciation of words. When dressed for the bridal she suddenly broke into ravings such as we have heard to-day. She is harmless, and keeps house alone, guarded only by a parrot who talks as absurdly as she; he always warns her of approaching footsteps, when she bars her doors, allowing only a few well-known women and girls ever to pass her portal."

The little party quickly tossed their gathered moss into the baskets and went home. Laura embalmed Jennie's story in a sonnet, but gave her manuscript to me.

AMELIE V. PETIT, PH.M.

HOW TO HAVE GOOD CITIZENS.

IT is remarkable, that while the ancient Greeks held very imperfect views of freedom in the State, their notions regarding the duties of citizenship were of a high order. In the family, the children were taught and trained with reference to those duties, and from their earliest years were made to understand that they belonged to the State. Yet the Greek republics were not democracies in our sense of the term. They were aristocracies resting on a very narrow basis of citizenship. In Athens only about 1 in 40 had any right to vote, and in Sparta only 700 of the whole population enjoyed this privilege. Yet every one knows how diligently Spartan and Athenian parents trained their boys for the duties of citizens, and with what grand and ennobling ideas of public service they inspired them.

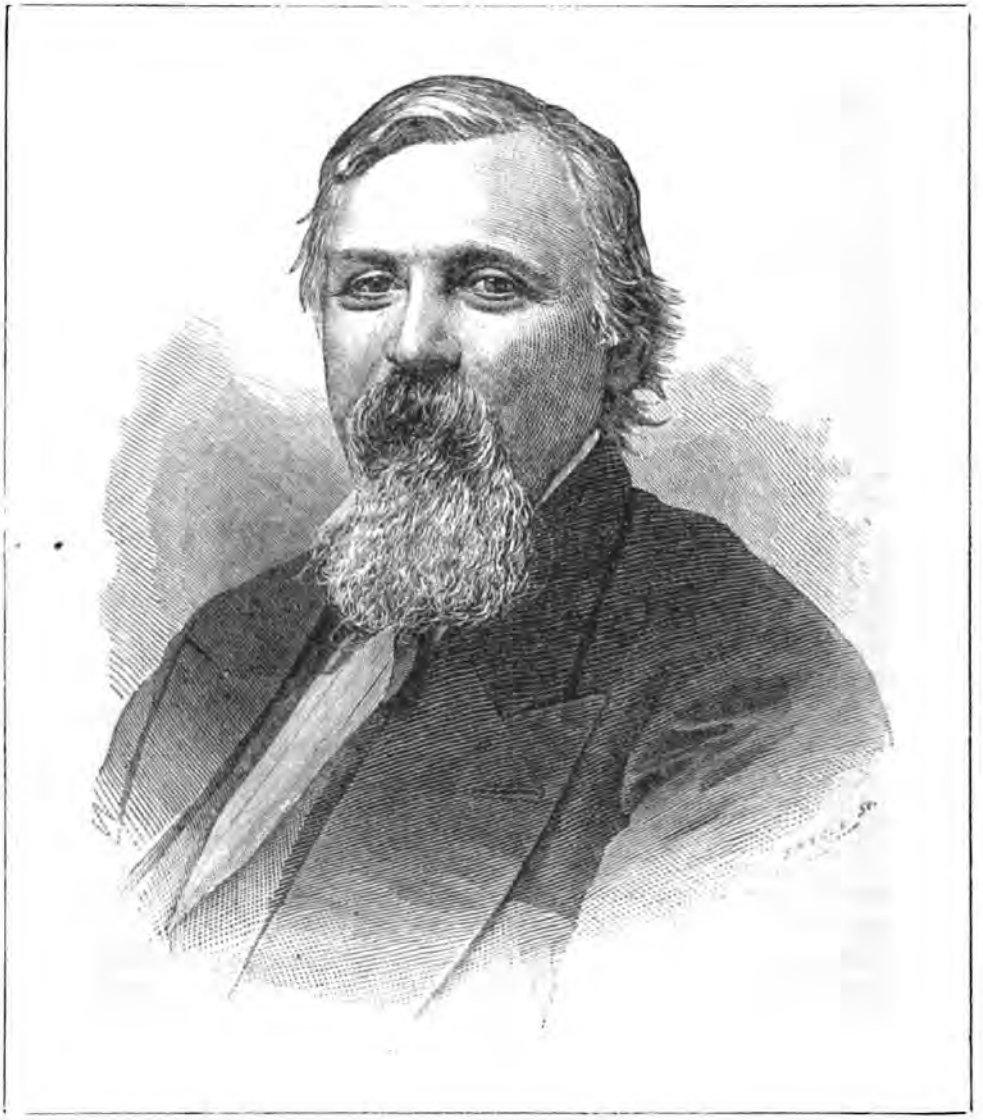
We have the true democratic idea of man's equality with his fellow; with us every citizen is a sovereign, and the training of our children should distinctly and constantly aim to prepare them for the high responsibilities of freemen and sovereigns in a free State. The duties and rights of citizens should be instilled into their minds from their early boyhood, till they were ready to take leave of the parental roof to act in wider fields.

Need any one be told that, strange and inexcusable as it is, this kind of instruction and training is rarely thought of in American families, and but slightly in our schools? Is it not a most discreditable and incongruous fact that our boys grow up with scarcely an idea of the duties and responsibilities which are to rest upon them as citizens? Have we a totally different race of mothers from that of the old Spartan matrons who charged their boys to return with their shields upon them, and who wrought into the texture of their souls the grand idea that they belonged not to the fireside of home, but to the camps and battle-fields of the commonwealth? Why is it that so few young men come forth from our homes breathing the inspiration of heroic self-consecration to the public welfare, or even knowing with any clearness the relation they sustain to the country that gave them birth or the institutions that protect and bless them?

The radical defect is doubtless in family education and training. The idea that boys are to be taught and qualified to serve the community and uphold and strengthen its institutions, seldom exerts any molding power in the midst of the sordid, selfish, and narrow conversations and plans of our average homes. The value of riches, the charms of beauty, the importance of getting on in the world,

and similar themes, are ever present, but not the thought that each one is a constituent part of this great and noble country, having a part to perform, duties to discharge, responsibilities to sustain as citizens, upon which the nation's greatness, true growth, and glory depend.

We have no lack of men willing to take office, draw salaries, wield influence and power, but we do lack men who have diligently studied and practiced the virtues, the wisdom, the enlarged public spirit, the devotion to the common weal, and the ardent love of free institutions, which constitute the genuine American citizen.



THE LATE X. A. WILLARD.

IT is appropriate to make some mention of the death of a gentleman so well known in American agriculture and dairy interests as Mr. Willard. This event oc

curred suddenly on the 26th of Oct., 1882, at his residence, Apple Hill Farm, near Little Falls, New York. He was born in Herkimer County, N. Y., in 1820, prepared himself for the practice of the law, which he entered in 1848, but about the year 1850 abandoned it for farming, buying the farm which he conducted till his death. In 1855–6 he organized the Farmers' Club of Little Falls, one of the first in the country. As secretary of the club he published his first work, "Essays and Discussions in Agriculture," in 1859, and in the same year wrote for the New York Agricultural Society a pamphlet on cheese dairying in Herkimer County. From 1856 to 1861 he was editor of the *Herkimer County Journal*, and from 1860 to 1862 canal collector at Little Falls. In the latter year his work on the associated dairies of New York was issued by the State Agricultural Society. From 1864 to 1868 he edited the agricultural department of the Utica *Herald*.

In the organization of the American Dairymen's Association he was one of the leading workers, and in 1866 he traveled extensively in England, Scotland, Ireland, France, and Switzerland in the interest of the Association, to observe the various methods of dairying. The results of his investigations were published by the Department of Agriculture at Washington, and produced great improvement in the manufacture of American cheese. In 1869 he was employed by the Royal Agricultural Society of England to write on dairy matters, and in the same year he became editor of the dairy department of the *Rural New-Yorker*. In 1870 he organized the New York State Dairymen's Association, of which he was President until he insisted on resigning. In 1871 he published "Practical Dairy Husbandry," and in 1876 he brought out his "Practical Butter Book," both of which works have become standard authorities. As an editor and writer on agricultural topics Mr. Willard became most widely known. He was also much sought for as a speaker at agricultural clubs and fairs, and especially at dairy conventions. His summaries and analyses of the vast business of dairying in this and other countries, his views of the markets, and his accounts of his own and other men's experiments have done a great deal to extend a knowledge of the best methods of dairying. He was a gentleman of refined and cordial manner, exhibiting at once the polish of education and the aptitude of practical experience. His writings are characteristic of the man, being marked by caution, accuracy and remarkable perspicuity of statement. In style they are ever genial and yet dignified in phraseology, and always exceptionally accurate.

As well shown by the portrait, Mr. Willard was highly organized; his features were symmetrical and smoothly moulded; his brain much above average in the size and harmony of its proportions. The mental temperament predominated, his strong intellectual faculties ever disposing him to the avocations of the student, observer, and thinker. He was a rapid executant, promptly conceiving methods of action, promptly appreciating what was needful in a given situation, and thorough-going in every undertaking. Originally endowed with a good vitalorganism his mental energy, nevertheless, tended to overdoing, and we think that his death was hastened several years by undue nervous activity, which too soon had drained the resources of his nutritive system.

THE NEW YEAR.

A YEAR renew'd, the thought renews
Of time's perpetual flight;
Beyond its bounds extends our views
To regions out of sight.

Time bears unnumbered myriads on,
Nor leaves behind their trace;
And we shall go as they have gone,
And others take our place.

Time deals us hours and days to use,
And notes how we improve;
But every day and hour we lose
Is register'd above.

But time shall end, to each how soon
Before its final close;
Some rest at dawn, and some at noon,
And some at eve repose.

MORALITY AND HEALTH.

TO strive for perfect health should be the first duty of a Christian. An earnest writer in the *Alpha* says: "Some one may demur at this and put a Christian character at the helm, but I maintain that we can not have the *best* Christian character without good health. Again, you may revert to some sick friend of yours who is so resigned to her lot, so sweet, so gentle, so lovely on her sick-bed. You envy her her heavenly frame of mind; would almost be willing to be sick yourself for the sake of making the same acquisition. Ah! but it is not the suffering which makes your friend so lovely. It is because she has learned to be patient with it. I think in every case of confirmed invalidism, where this happy resignation exists, could its developing process be shown it would be found that, previous to its attainment, the person had passed through a dark season of discontent, and perhaps fretfulness at the hard lot which only through strong effort was finally overcome. There is enough in the conflicting, stirring elements of the world to discipline the character if sickness never comes.

"The notion is prevalent that sickness is sent as a special dispensation of Providence, but that is a very unphilosophical notion. Good health is the result of our obedience to God's laws, and disease is the result of disobedience of God's laws. The following story is to the point:

"'An honest deacon, living in ——, frequently held a discussion with a physician belonging to the same religious society—the deacon declaring that all pains and diseases were produced by the mysterious ways of Divine Providence, and the doctor as sturdily declaring that they were produced by mankind themselves, by violating the laws of health. One evening the deacon ate heartily of buckwheat-cakes and sausages, and was seized during the night with a severe fit of colic. He sent for the doctor, who very promptly refused to go, sending him word that if God thought proper to afflict him, providentially, with the colic, it was his duty to grin and bear it and not complain; at all events, he thought it was not his place to give medicine that would interfere with the operations of Providence! In an hour or two the servant returned, declaring that his master could live only a short time if he did not obtain relief; and the physician, knowing that God's laws were just and inexorable, and that He would not suspend them to relieve a thousand deacons, thought his brother had been punished enough for his folly, and concluded to try the effect of a little medicine. As he entered the room he saw, at a glance, the nature and cause of the difficulty, and giving him a small quantity of tartar emetic, he soon found relief. The worthy deacon learned from sad experience to recognize God's laws for man's *physical* as well as man's *moral* government.'

"Do not let us make a pack-horse of Providence to carry blame that should rest on human shoulders."

MAKING A NEW STOMACH.

PROF. THEODOR BILLROTH AND HIS BOLD SURGERY.

WITHIN a few years the treatment of diseases has made advances of considerable importance, not so much in the matter of medication as in the introduction of new forms of surgical and mechanical treatment. One of the most conspicuous of these advances is the application of the surgeon's knife to pathological conditions of the digestive organs, which were until within two years regarded necessarily fatal or incurable. For instance, that dreaded evil, cancer of the stomach, has been shown to lie within the province of good surgery,

and a timely operation will be likely to afford the sufferer the much-longed-for relief and cure. The cancerous growth usually forms near the pylorus, or lower opening of the stomach, and often affects also the duodenum, or intestine into which the pylorus opens, and its effect besides that of acute pain is the diminution of nutritive supply to the body, because of its serious interference with the process of assimilation.

The surgeon to whom the credit must be awarded for first demonstrating that living human stomachs may be operated upon successfully for the removal of cancer is Theodor Billroth, of Vienna.

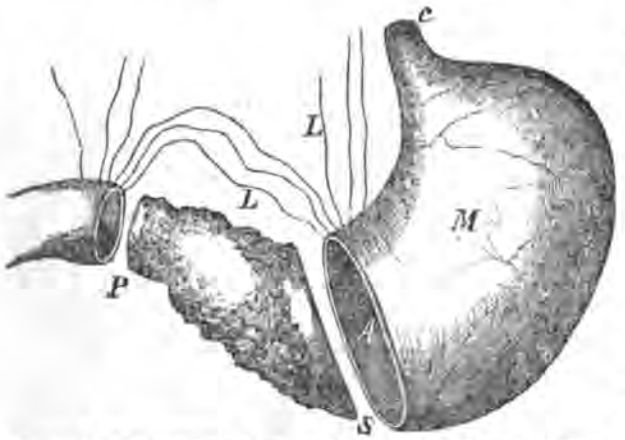


Fig. 2.—A, main incision; P, separation of the duodenum; P, S. the diseased part with Pylorus; d, the duodenum; M, the stomach; c, the œsophagal entrance; L, L, the first threads inserted.

By an incision eleven centimetres in length he opened the abdomen of a person suffering from a morbid tumor, uncovered the stomach, and excised the deceased parts of the digestive pouch which were fourteen centimetres (about 5.5 inches) long and twenty centimetres (nearly eight inches) in circumference. Prof. Gussenbauer had ten years before shown by experiments on animals that the stomach might be resected without special disadvantage to the act of digestion, and two years before Billroth's operation, one of the most celebrated French surgeons, M. Péan, had undertaken a similar one, as had also Dr. Rydygier in Culm in 1880, but in both cases the result was fatal.

The first operation Dr. Billroth performed was on a woman forty-three years old, who for some time had been troubled with disturbances of the digestive organs and who ejected the greater portion of a meal half an hour or so after she had taken it; finally she could not take anything but sour milk into the stomach without experiencing great distress. Her strength had become greatly reduced, and her debility and loss of flesh indicated the near collapse of the whole organism. The cause of all this was a cancer.

In Fig. 2 we have an illustration of the method of the operation, according to the very interesting account given by Dr. Anton Woelfler, assistant physician of the Vienna surgical clinic, in "Resections of the Carcinomatous Pylorus," published by W. Braumuller, 1881.

The whole plate represents a diseased stomach, the affected portion lying between D and S. Before beginning the operation the stomach was cleansed with warm water, about fourteen litres (about fifteen and one-half quarts) being used with the aid of a stomach pump. The operation commenced with the incision, as already stated. From the stomach the part P L S was removed, the end, *d*, of the duodenum was then attached to the opening of the stomach, which was reduced mechanically by incision as shown in Fig. 3, and closed by sutures of carbolized silk threads (4, 4, Fig. 2 and Fig. 3, *a*, *b*, *b*, *e*). The result was a new and well-formed stomach. On the first day following the operation nothing but bits of ice were given to the patient to reduce the feverishness; on the second day she received sour milk, later sweet milk, and still later on cocoa, tea, wine, eggs, biscuit, and meat. In eight days the abdominal wound was quite healed over, and on the twenty-first day the patient discussed with a good appetite a

veal cutlet and the next day a beefsteak. On the twenty-third she left the hospital. In the course of the following weeks the general state of her health had greatly improved and she moved about as formerly.

Several other operations analogous to this, made later in the same clinic, terminated fatally for want of sufficient endurance or vital stamina on the part of the patients. Dr. Woelfler writes in reference to the above related case, that three months after the operation the woman was enjoying an excellent appetite and able to digest any kind of food. Later we have since learned she was taken sick, probably because of too much confidence in her restoration and indiscreet habits of eating, and died; the cancerous malady showing itself as a constitutional affection. She, however, did not experience as much pain as before, and her term of life had been prolonged by the operation and it had been conclusively shown that such deep surgical operations are justified as not directly endangering life, and that they can re-establish the normal functions of the organism.

Professor Billroth, whose portrait accompanies this brief account of a most wonderful accomplishment, was born April 26, 1829, at Bergen, on the island of Rügen. After having passed through a course of collegiate training, he studied medicine and surgery at different universities and was appointed assistant to the celebrated Professor Langenbeck at Berlin, establishing himself there as Demonstrator in Surgery in 1856. The year 1859 found him in the place of Professor of Surgery and Director of the Surgical Clinic at Zurich in Switzerland. In 1867 he was called to a professorship at the University of Vienna, where he is now and enjoying the reputation of one of the most brilliant stars in European medical science. Professor Billroth is not only great in the field of surgery, but he is also an active writer and teacher in microscopic anatomy and general pathology, and has done much to improve the hospital system. His work on general pathology and therapy, which has run through many editions, contains in a series of fifty lectures a great deal of very interesting material for study. His "Investigations of Traumatic Fever and Accidental Wounds," Berlin, 1861, and also his "Forms of Vegetation of the Coccobacteria Septica," Berlin, 1874, may well be considered as the pioneer announcements in literature of Lister's method of treating wounds. He was the editor of the collective work, "Surgical Clinic," 1860–1870, published in 1872; "Experiences in the Field of Practical Surgery," in 1874; "Surgical Letters from a Field Ambulance at Weis-

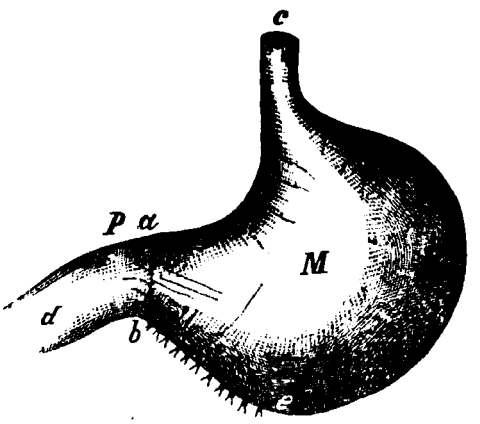


Fig. 3.—a, b, the seam made between the duodenum, d and the stomach, M; b, e, seam on the stomach; P, new opening between stomach and duodenum.

senburg and Mannheim," and also of a voluminous manual of general and special surgery, published in co-operation with Professor Pitha at Vienna. Last year he published for the benefit of the Association of the Red Cross at Vienna his excellent manual on nursing, the valuable contents of which as well as the easy and pleasant style in which it is written, make it of very superior value to society.

The main principle which is distinctly set forth in all of Billroth's books is that surgery can not be separated from the practical study of the internal and general processes of the human body, since disease of the external parts must always be related to affections of the internal organs. The old Indian Sanscrit work, "Ayur

Veda," (Life Knowledge), by Susrutas, claims that true therapeutics is a study of the whole being, and compares the physician who lacks the knowledge of surgery to a bird without wings. The new medical schools are slowly returning to that old principle, and the energetic, progressive, and creative spirit of Professor Billroth has contributed much toward that return.

MASSAGE, OR HAND TREATMENT.

A WRITER in the Michigan *Medical News* epitomizes this method of treating some diseases in the following manner:

"'Massage,' from the Greek *masso* (I knead or handle), is a term now generally accepted to signify a process of treatment usually applied with the hands, such as friction, kneading, manipulating, rolling, and percussing the external tissues of the body, either with some curative or palliative object in view. Its application should in many instances be combined with passive, restive, or assistive movements, and these are often spoken of as the so-called Swedish movement cure. There is, however, an increasing tendency on the part of scientific men to have the word 'massage' embrace all the varied forms of manual therapeutics, for the reason that the word 'cure,' attached to any form of treatment whatsoever, can not always be applicable, inasmuch as there are many maladies that preclude the possibility of recovery and yet admit of amelioration.

"According to the requirements of individual cases, massage may be of primary importance or of secondary importance, of no use at all, or even injurious. Concerning the extent of its usefulness, it may with safety be said that, at tolerably definite stages in one or more classes of affections in every special and general department in medicine, evidence can be found that it has proved either directly or indirectly beneficial, or led to recovery, sometimes when other means had been but slowly operative, or apparently had failed altogether. In view of these facts, it need hardly be said that those who would properly understand and apply massage should be familiar not only with the natural history of the maladies in which massage may be applied when left to themselves, but also with the course of these affections when treated in the usual approved methods, so that improvements or relapses may be referred to their proper causes. Moreover, they should know something about the methods of others who have any claim to respectability in their manner of applying massage, so as to compare them with their own. And yet all these qualifications may fail if the operator has not in addition abundance of time, patience, strength, and skill, acquired by long and intelligent experience.

"The subdivisions under which the various procedures of massage have been described can all be grouped under four different heads, viz., friction, percussion, pressure, and movement. Malaxation, manipulation, deep rubbing, kneading, or massage, properly so called, is to be considered as a combination of the last two. Each and all of these may be gentle, moderate, or vigorous, according to the requirements of the case and the physical qualities of the operators. Some general remarks here will save repetition: 1. All of the single or combined procedures should be begun moderately, gradually increased in force and frequency to their fullest extent desirable, and should end gradually as begun. 2. The greatest extent of surface of the fingers and hands of the operator consistent with ease and efficacy of movement should be adapted to the surface worked upon, in order that no time be lost by working with the ends of the fingers or one portion of the hands when all the rest might be occupied. 3. The patient should be placed in as easy and comfortable a position as possible, in

a well-ventilated room, at a temperature of about 70° Fahr. 4. What constitutes the dose of massage is to be determined by the force and frequency of the manipulations and the length of time during which they are employed. A good manipulator will do more in fifteen minutes than a poor one will in an hour, just as an old mechanic, working deliberately, will accomplish more than an inexperienced one working furiously. Friction has been described as rectilinear, vertical, transverse or horizontal, and circular. It has been stated, and very properly, that rectilinear friction should always be used in an upward direction, from the extremities to the trunk, so as to favor and not retard the venous and lymphatic currents. But a slight deviation from this method I have found to be more advantageous, for though in almost every case the upward stroke of the friction should be the stronger, yet the returning or downward movement may with benefit lightly graze the surface, imparting a soothing influence, without being so vigorous as to retard the circulation, and thus a saving of time and effort will be gained. The manner in which a carpenter uses his plane represents this forward and return movement very well. Transverse friction, or friction at right angles to the long axis of a limb, is a very ungraceful and awkward procedure. It has been introduced on theoretical considerations alone, and may with safety be laid aside, for the method already spoken of, together with circular friction, will do all and a great deal more than rubbing crosswise on a limb can do."

As an illustration of massage applied, we quote an English physician, Dr. J. M. Granville, who states, as the result of long experience and careful study of this subject, the following:

"1. I have rarely failed, in a fairly large number of cases, many of them of several years' standing, to bring the cerebro-spinal and sometimes directly, at others in secondary circuits, the sympathetic ganglia under control, by the application of my percuteur [instrument used in percussion], over, or in mechanical relation, through the adjacent tissues, with those ganglia. 2. I have in no instance failed to produce activity of the bowels, even in cases of previously obstinate constipation; and in many instances I have succeeded within a short period of restoring the periodic evacuation of their contents without recourse to drugs. This success alone places the method on a footing of value in daily practice. 3. I can now, as the result of my recent experiments, propagate the vibrations I produce along the trunks and into the branches of most of the principal nerves from centers of origin, or call them into action reflexly through the different nerves connected with those centers. In limited paralysis, and even in circumscribed sclerosis, this percuteur is of the highest therapeutic power. 4. I can nearly always arouse torpid centers to action, and thus pave the way for their restoration to states of normal activity. Since it is physiologically certain that nutrition depends on exercise, and every part of the organism feels in proportion as it works healthily, it is a great thing to be able to act thus directly on the nerve-centers, which are the seat of energy. 5. I can subdue the exaggerated reflex irritability of revolting subordinate centers and replace them under the control of the higher centers, even in cases of lateral sclerosis."

INDIGESTION AND DISEASE.

THE important relation of indigestion to many diseases which people suffer is not sufficiently realized. Difficulty in breathing, occurring spontaneously, as on slight exertion, may be caused by indigestion. Asthmatic paroxysms in those disposed to such attacks are frequently brought on by the same cause. Many of those who suffer greatly from asthma may nearly or quite escape from attacks of the disease by the adoption of a carefully regulated diet which shall insure

the complete digestion of the food. Persons who in vain have traveled from one end of the continent to the other, to find a place where they would be exempt from asthmatic attacks, have finally found relief at home by carefully regulating their diet.

Indigestion causes alterations in the general nutrition of the body, which are manifested in various ways, among which are the following: Anæmia, or a depraved state of the blood, involving a deficiency of the red globules of the blood, and causing persons thus affected to be unnaturally pale, especially about the lips; decay of the teeth; grayness of the hair; excessive liability to inflammation, from slight causes, of the mucous membranes, especially the eyes and throat; to which may be added, in cases of those predisposed to such affections, liability to gout and rheumatism, and affection of the lungs or kidneys. Consumption has frequently been regarded as due in many cases to long-continued derangement of the digestion, whereby the general nutrition of the system had become impaired. Premature grayness of the hair may frequently be due to indigestion, and if the indigestion is removed, and a healthy condition of the digestion brought about, the hair may, in some instances, become restored to its original color. It is much better to seek a restoration of color in this way than by using "hair restoratives," which injure the hair, and sometimes poison the whole system. The alarming prevalence of the decay of teeth among our people, both old and young, is probably largely due to indigestion. The inflammation of the mucous membrane of the throat, known as "clergyman's sore throat," is a product of indigestion, and the removal of the cause by the adoption of a suitable dietary, exercise in the open air, and observance of the laws of health generally, will be the best treatment for it.

Indigestion is the cause of various alterations in the skin manifested by general coldness or chilliness, especially of the extremities, by changes in its color or texture, which may be earthy or sallow in tint, or dry and coarse, and by various eruptions, among which are the well-known eczema, acne, impetigo, and nettle rash. Most of the cases of skin disease affecting children are best treated by attention to the diet, making the diet easily digestible, and sufficiently limited to insure complete digestion.

The causes of indigestion may be due to the food or the condition of the stomach. The food may be defective in quality. There may be excess or deficiency of the normal ingredients, saccharine, starchy, albuminous, or fatty, or some of the naturally indigestible materials which form a part of all food. The food may be introduced in an indigestible form on account of defects in the cooking of it, or imperfect mastication, or from its having undergone putrefaction or fermentation, which arrests the functions of the stomach. Imperfect mastication of food is a very common cause of indigestion among Americans. A large part of our people eat in a hurry, and swallow their food before it has been thoroughly masticated and mixed with the saliva of the mouth. Warm, new bread and pies are especially hurtful when hastily eaten. Eating too much is probably the most common of all causes of indigestion. The secretion of the gastric juice in the stomach seems to be proportioned to the amount of material required for the nourishment of the system. Food taken in excess of this amount acts as a foreign substance undergoing fermentation and putrefaction, and occasioning much disturbance in the system.

Much may be done for the cure of indigestion by eating very abstemiously of suitable food, thoroughly masticated, taking exercise in the open air, breathing pure air, and observing the laws of health generally. The amount of food should be reduced until the quantity is reached which the stomach can digest without evincing any symptoms of indigestion. This amount may, in some cases, be found to be one-third or one-half of the quantity usually eaten by those suffering from indigestion.

HENRY REYNOLDS, M.D.

HOW THE BRAIN *DOES* REST.

EDITORS OF PHRENOLOGICAL JOURNAL:—In your January Number there appears an article from a correspondent, criticising the well-known fact of "Brain-Sleep"; and expressing some very remarkable ideas on Physiology.

It is evident that our friend has something to learn of that extremely interesting science, *Modern* Physiology, or she would not attempt to discredit facts too well known to be in doubt. A perusal of Flint's "Text-Book," or Michael Foster's "Handbook" on the subject, would make the matter clear.

Nothing is better settled than this, that every function of the body is carried on by the wearing out of tissue-cells; that is, that each cell, say of the brain, has its own work to do, the production of nerve-force—thought, for example—and this work soon wears it out, the cell lasting, perhaps, only a few hours, after which it becomes senescent and feeble. From time to time, each in its turn, the aged cells die, are broken down, and carried out of the body by the sewerage mechanism, the excretions; new cells growing up to take their places in the economy. While any organ is very active, these effete, moribund cells are apt to accumulate faster than new cells can be produced; hence when these senescent elements become sufficiently numerous, they tend to clog the wheels of life, and their presence is a hindrance to those cells which are capable of working. Functional activity, then, perforce slackens, the active cells becoming less numerous, we have what is known as "weariness" or "fatigue," which is merely Nature's call for all hands to take a "rest," during which, the new cells replace the old, and the body regains its normal state. If we could do without rest, our body would be an example of that old fallacy, "perpetual motion."

Sleep may be defined as "the cessation of the functions and activity of the brain," and all parts of the body share in this inactivity, directly or indirectly. The most exaggerated example of bodily and brain rest is "hibernation," when for months the heart beats only a few times per hour, and breathing is almost imperceptible.

In our nightly sleep, however, the changes are less, being merely due to exhaustion of the tissues generally, but especially those of the brain. The pulse and respiration are slower, and the internal muscular tissues are more or less at rest, the voluntary muscles, as a rule, being entirely so. Secretion is almost *nil*, while all tissue changes, and the animal heat, are lessened, as might be expected.

Experiments show that our brains are comparatively bloodless during sleep, that is, comparatively "dead" or "lifeless," if you choose to say so. Our deepest sleep comes at the end of the first hour, showing that the brain activity takes a certain time to quiet down.

During infancy, when the body has nothing to do but to grow, and the waste of the body is merely that due to the metabolic processes of nutrition, we accordingly find life to be made up of eating and sleeping only.

In adult years one-third of our time should be passed in sleep, while in old age, when repair is slow, more time is required for sleep, hence we find that many of the cases of extreme old age have been those where the later years of life were almost entirely passed in bed.

During sleep, the kidneys excrete less uric and phosphoric acids, proving that nerve-tissue disintegration is lessened at that period. The converse is seen in diseases of these organs, when the waste products accumulate in the blood, from their incapacity to throw them out. Under these circumstances, we have a morbid drowsiness, as if nature desires more sleep, so that, the general waste being lessened, the kidneys may have more time to get rid of the "back work" which has accumulated for them to do.

In cases of insanity, again, we see the

effect of too much blood on the brain; here the organ can not become bloodless enough to rest, so we have the familiar "insomnia." Alienists well know that one of the most favorable symptoms, in mania, is the gradually returning power to sleep. This "insomnia" also aids in keeping the insane so thin and ill-nourished as they notably are.

In China, criminals are sometimes executed by deprivation of sleep, dying in horrible suffering, with mania, in nineteen to twenty days.

Let us remember that all the body takes its sleep, but some people find difficulty in seeing when the heart sleeps, as it beats on, day and night, during a long lifetime; still our hearts usually sleep longer than our brains.

Experiments show that a heart averaging seventy beats per minute, takes $\frac{857}{1000}$ of a second of time, from the beginning of one beat to the beginning of the next one, and that of this $\frac{857}{1000}$ second, about $\frac{386}{1000}$ second is passed in *entire rest* to the heart. Then .386 x 70—rest per minute, or 27.02 seconds per minute; 27.02 x 60 — rest per hour, or 27 minutes 1.2 seconds per hour, (1621.2 seconds); 1621.2 x 24 — rest per day, or 38928.8 seconds per day are equal to 10 hours 48 minutes 28.8 seconds per day, and there are few people who sleep 10 hours every day.

The same is true of the lungs, where it can be similarly shown that their work does not take all their time, in fact less than half, viz., 28 minutes in an hour, and longer than the heart, and therefore still longer than the brain. The same is true of all the organs, which rest when not needed, having then only a drowsy, slow, vegetative life.

These facts teach us that rest is as necessary as work, and that, *cæteris paribus*, "as a man rests so does he work"; that is, good, sound sleep, and plenty of it, gives a man a new brain; too little rest leaves him with an old, effete brain, whose work is of similar quality. Americans are too apt to do this. We become gray ten years earlier than our English neighbors, live too fast, enjoy (?) poor health, and are prematurely exhausted, and sent to the grave through our own folly and carelessness.

N. B. SIZER, M.D.

KITCHEN LEAFLETS, No. 13.

ANCIENT BREAD—WORK OF THE YEAST-PLANT—BILL OF FARE FOR FEBRUARY.

HOMER, in his poem describing the wanderings of Ulysses, makes allusion to bread as being "the strength of man." The bread the ancient minstrel alludes to was of a very different character from the dainty, white production of the modern baker, for it was made of the coarse wheat or barley meal which the primitive mill of the early Eastern peoples turned out, and contained all the substantial nutriment of the grain, with probably all the bran, as the fine bolting-cloth of the nineteenth century grist-mill had scarcely its crude analogue at that early time. I am not sure that in Homer's time the Greeks were acquainted with the use of leaven, although the Hebrews appear to have been makers of fermented bread far back in their history, even prior to the deluge. Tradition has it that two travelers into the far East learned the art of making leavened bread and brought it to Bœotia, whence it spread through Greece and westward. The scientific character of the fermenting process was not learned until about forty-five years ago, although two hundred years ago chemists recognized the rapid accumulation of the yeast globules into groups of three or four, but they had no idea that the ferment was due to the growth of living matter, a minute plant whose cells are but the one-twenty-five-hundredth of an inch in diameter. The growth of the yeast-plant is dependent upon the albuminous elements of the meal or flour, and consequently it repre-

sents a loss of essential or life-sustaining property in the meal proportioned to the extent of the fermentation. Permitted to go on, the result is putrefaction and the complete destruction of the meal; but arrested at the proper time by baking, the result is the spongy, acceptable loaf of bread produced by the skillful baker. It is in setting the gas-swollen mass in the oven to bake, at the right moment, which constitutes the chief difficulty in making leavened bread, and here we have one reason for the scarcity of successful bread-makers. The whiteness of bread is largely due to the fermenting process, as it destroys the gluten cells, which for the most part contain the albuminous constituents of wheat, and impart the yellowish tinge to good flour. The yeast-plant feeds upon the sugar of the cells, evolving while it grows carbonic acid and hydrogen, and these gases penetrating the dough in the effort to escape are caught among its particles and so expand the general mass. While the bread is in the oven the heat drives out these gases, which combine and form alcohol, the odor of which is evident enough in every bakery. It was estimated by Prof. Liebig, that in the bake-shops of Germany upward of twelve million gallons of alcohol were produced and lost annually. This alcohol itself is a proof that the use of yeast or leaven is destructive of a good part of the bread material, as its production is dependent upon the decomposition of the albuminous principles; and in full recognition of this fact some chemists have sought to supply the loss by inorganic compounds of phosphorus, soda, etc.

Many of the JOURNAL readers know that most delicious rolls and biscuit can be made without any ferment, and by a simple procedure, which has been several times detailed in these columns; but so long as the professional baker holds sway in society and people want a mass of feathery substance, rivaling the snow in whiteness, the *saccharomyces cerevisiae*, or yeast-plant, will be employed and human tissues suffer deprivation of normal sustenance.

BREAKFAST.

Graham Porridge. Browned Potatoes.
Boiled Eggs.
Bread-Griddle-Cakes. White Bread.
Stewed Fruit. Broma.

DINNER.

Tomato Soup.
Boiled Codfish, Egg Sauce. Boiled Potatoes.
Baked Sweet Potatoes. Celery.
Graham Bread. White Bread.
Fruit. Apple-Taploca Pudding.
Cambric Tea or Cold Water.

SUPPER.

Gluten Gems. Graham Crackers.
Apple Sauce.
Angel Cake. Hot Water and Milk.

GRAHAM PORRIDGE.

Make it in a smooth iron pot. Have the water boiling briskly and slightly salted. Sift the Graham flour into the water with the left hand, and stir with the right. When well mixed, place the pot on the back part of the stove, and let it simmer for about two hours, or until the mixture is about the consistency of jelly.

BROWNED POTATOES.

Peel cold, boiled potatoes, and cut into neat slices one-fourth of an inch thick. Slightly oil a griddle or frying-pan, lay each slice on it; cover closely until brown on one side, then turn and brown on the other; covering again to prevent them from becoming dry and hard. Mashed potatoes can be sliced and browned in the same manner. Serve warm. They are very palatable.

BREAD-GRIDDLE-CAKES.

Save all the bits and crusts of bread, whether they are toasted or not, until you have a supply sufficient to make about one quart of crumbs. Pour enough of boiling water upon them to soak them thoroughly, and let them stand until perfectly soft; then beat them until they separate into small particles; mix with them four tablespoonfuls of flour; then add milk enough to make a thin batter, and one beaten egg. Mix well together, and bake in cakes, on a hot griddle.

BROMA.

Take half a pint of milk and one pint of water; set it on the stove to boil. Dissolve four teaspoonfuls of broma in a half-cupful of boiling water, and stir it into the boiling milk and water. As soon as the mixture has boiled up remove from the stove. Sweeten to suit the taste.

TOMATO SOUP.

Scald and peel good ripe tomatoes; add a little water, and stew them one hour; then strain

them through a coarse sieve. Stir in a little flour previously dissolved in cold water, or toasted biscuit crumbs. Then boil five minutes, and serve.

Boiled Codfish.

Lay the fish in cold water slightly salted for half an hour before cooking. Remove from the water, wipe dry; then wrap in a clean linen cloth dredged with flour, and place it in the fish-kettle, with cold water enough to cover it. Sprinkle a little salt in the water. Let it boil briskly. A piece of cod weighing three pounds will be cooked in about twenty-five minutes from the time the water fairly boils.

Egg Sauce.

1 Hard-boiled egg, cut in small pieces.
2 Table-spoonfuls of butter.
1 Heaping table-spoonful of flour.
1 Beaten egg.
1 Tea-cupful of milk.
1 Tea-cupful of boiling water.

Mix the flour and butter together, until it is of the consistency of thick cream; add the milk and beaten egg, then the boiled egg, and lastly the hot water. Boil about one minute, and serve. Chopped parsley can be added if liked, also another boiled egg.

Apple-Tapioca Pudding.

1 Tea-cupful of tapioca.
6 Large apples.
1 Tea-cupful of sugar.

Wash the tapioca well and soak it overnight, in abundance of water (about one quart). In the morning put it in a farina-boiler and set on the stove, and heat until the tapioca is dissolved. Prepare the apples as for sauce, adding the sugar; then place a layer of apples in a greased pudding-dish; then a layer of the soft tapioca; then apples; then tapioca. Place the pudding in a slow oven and bake two hours. Cover the dish to prevent the pudding from drying on the top.

Angel Cake.

The whites of eleven eggs.
1½ Tumblers of powdered sugar.
1 Tumbler of flour.
1 Tea-spoonful cream-tartar.
1 " vanilla extract.

Beat the eggs until very light; sift the flour three times, and then mix the cream-tartar with the flour, and sift for the fourth time. Mix the sugar with the whites of the eggs, and beat with the egg-beater. Now add the flour slowly and gently, stirring meanwhile; and lastly, add the extract. Do not stop beating or stirring until ready to put in the pan (the stirring promotes lightness). Bake in a moderate oven, and when done, turn the pan upside down until it is cool; then loosen the edges. Do not grease the pan. Use medium-sized table-glasses or tumblers. Two persons are required to make the cake well, as the ingredients should be stirred constantly until it is ready for the oven.

Remarks.

See Journal of Nov., 1882, for Boiled Eggs.
" " of Aug., " " " Potatoes.
" " " " " Baked "
" " of May, " " Graham Bread.
" " " " " Gluten Gems.
" " of July, " " Graham Crackers.
" " of Jan., 1883, " White Bread.

Sweet potatoes are baked in the same way as Irish potatoes, only a longer time is required.

MIRA EATON.

NOTES IN SCIENCE AND AGRICULTURE.

The Javanese Death Valley a Myth.—Another romantic tradition has been refuted by Dr. Otto Kuntze's discovery that the lethal capacities of Pakamaran, the renowned Javanese Death Valley, are as utterly fabulous as the Norwegian Kraaken or Richard of Gloucester's hump. It is no longer permitted to us to believe that the effects of the subtle poison given off by the "Deadly Upas Tree" have bestrewn that dismal vale with countless carcasses of savage beasts, serpents, and birds, or that a certain death awaits any foolhardy traveller attempting to cross it; for the eminent German explorer has paid Pakamaran an exhaustive visit, and reports it to be as healthy as any other part of the island. In the way of corpses, he did not see so much as a dead fly within its precincts. He describes it as a small circular depression in a gorge of the Dieng Mountains, about seven square metres in size, and forlorn in vegetation. It is approached by two footpaths, winding downward from the hills by which it is surrounded. By one of these paths Dr. Kuntze entered the Death Valley, despite the entreaties of his guides and servants, one of whom repeatedly strove to hold him back by force, and, having traversed Pakamaran in every direction, quitted it by the other path. The natives had assured him that he would find the valley choked up by skeletons, as even the swiftest birds flying above it would drop down stone-dead, slain by its poisonous exhalations. In vain, however, did he look about for a single bone; nor could he detect the least unpleasant odor. Dr. Kuntze pronounces Pakamaran to be an imposture, the offspring of ignorance and superstition. Unable to dispute his sentence, we are bound, not altogether without regret, to relegate the death-dealing vale to the limbo of exploded myths.

Jewish History in Pompeii.—An important painting has been found at Pompeii, and placed in the Naples Museum among the Pompeian frescoes. It represents the Judgment of Solomon, and is the first picture on a sacred subject, the first fragment either of Judaism or Christianity, that has been discovered in the buried cities. The picture is five feet six inches long, and nineteen inches in height, and is surrounded by a black line about one inch in width. The scene is laid upon a terrace in front of a house adorned with creeping plants, and shaded with a white awning. On a dais (represented as being about four feet high) sits the king, holding a sceptre, and robed in white. On each side of him sits a councilor, and behind them six soldiers under arms. The king is represented as leaning over the front of the dais toward a woman in a green robe, who kneels before him with disheveled hair and outstretched hands. In the center of the court is a three-legged table, like a butcher's block, upon which lies an infant, who is held in a recumbent position, in spite of his struggles, by a woman wearing a turban. A soldier in armor, and wearing a helmet with a long red plume, holds the legs of the infant, and is about to cleave it in two with his falchion. A group of spectators complete the picture, which contains in all nineteen figures. The drawing is poor, but the colors are particularly bright, and the preservation is excellent. As a work of art, it is below the average Pompeian standard, but it is full of spirit, and drawn with great freedom. The bodies of the figures are dwarfed, and their heads, out of all proportion, large.

"Pinching in" for Fruitfulness.—A practical gardener makes the following statement:

"Last year, as a test of a frequent practice among growers of melons and squashes, I pinched the ends of the long main shoots of melons, squashes, and cucumbers, and left some to run at their own will. One squash plant sent out a single stem, reaching more than forty feet, but did not bear any fruit. Another plant was pinched until it formed a compact mass of intermingling side shoots eight feet square, and it bore sixteen squashes. The present year, a muskmelon plant thus pinched in, covers the space allotted to it, and it has set twenty-three specimens of fruit. The pinching causes many lateral branches, which latter produce the female or fertile blossoms, while the main vine produces only the male blossoms. The difference in favor of the yield of an acre of melons treated by the pinching process may easily amount to 100 barrels."

Sewing Machines in Germany.—Germany is producing sewing machines more cheaply than any other country on the globe, and these machines are provided with all the modern improvements, such as loose pulley, automatic bobbin winder, shuttle ejector, tension, liberator, etc.; while most of the old American companies refuse to introduce those essential improvements on their machines. In consequence of this fact, German machines are very often preferred. For instance, the Wheeler & Wilson machines still have the bobbin winder on the stand under the table. For this reason some dealers do not want them. German machines of the Singer pattern are sold in Berlin at from $10 to $12 wholesale, complete with all the improvements. A Berlin correspondent of the American *Sewing Machine Journal* says that the only way to introduce American machines in Germany is for American manufacturers to "branch out" as the Singer Company has done. The only competitor who has made himself felt by the German manufacturers is the general agent of this company, whose success is attributed to their method of disposing of machines in a way to create a demand among consumers, thus compelling local dealers to supply them. The general prices for machines in this country are entirely too high, and should be reduced, so that the public and not agents will have the most benefit.

St. Jacob's Oil.—According to Dr. Squibb the very much advertised, and high testimonialized thing is a feeble and badly made aconite liniment, consisting mainly of water, ether, alcohol, turpentine, and a small proportion of aconite, with red coloring matter. Its whole function is to make money for the enterprising merchants who own it, and in this it is by no means a delusion and a snare.

To Prevent House Plants from Freezing.—Those who have window plants can not always keep the temperature of the room sufficiently high at night to make sure that no harm will come to them by frost. On severe nights it is well to cover them at night, either with a sheet or with newspapers. It is not difficult to arrange a covering by the use of strings and sticks to hold the papers up above the plants. A canopy of this kind will prevent the radiation of heat from the pots and the plants, and be of great service. A small kerosene lamp with a chimney placed under the plant-stand is a good protection also. In a collection of plants some will be much more severely injured by freezing than others; but nearly all, if not too much exposed, will soon recover, unless suddenly warmed. When the plants are found to be frozen, make the change to a higher temperature very gradual. Remove them to a room where the air is but a few degrees above freezing, or if this can not be done, warm up the room where they are very gradually. In moving frozen plants it must be done with care, as in their frozen state they may be readily injured. Sometimes the newer shoots will fail to recover, while the leaves of the older wood will resume their natural condition. When this occurs all those parts that fail to recover should be removed—cutting back with a sharp knife to a sound portion of the stem.

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A SUCCESSFUL LIFE.

ONE of the most distinguishing characteristics of the human mind is its capacity for development, and, consequently, for improvement. In every condition, be it that of the wild and filthy New Zealander, or the childish and lazy Bushman, or the fierce Sioux, or the ignorant Esquimau, or the cultivated German, man exhibits susceptibility to training and education, and power of advancement to higher degrees of intellectual and moral expansion. In civilized countries, to be sure, he shows the most unequivocal evidence of the greatness of his mental faculties by the sway he wields over nature, and by the readiness with which those faculties respond to well-devised methods of culture. In some instances the capabilities of the human intellect have been so grandly illustrated by occasional achievements in literature and art and science, that the question is naturally prompted, Is there any limit to human development? Is not man designed to reach a stage of ultimate perfection in this world or the next?

We think that men are sent into this world to prepare for a higher and purer state in another, and that preparation is made chiefly through the cultivation of the higher faculties—those of the moral and intellectual—upon whose development the realization of any degree of true happiness in this life is dependent. Admit this, and what then? Does a survey of civilized man to-day indicate that the great majority are pursuing a course of life conducive to their mental elevation? In other words, are the different callings of men so prosecuted and their daily habits so ordered, that they advance from day to day in thought, feeling, aspiration, and purpose?

The masses of society are employed in manual labor. From seven o'clock in the morning until five, six, or seven in the evening the factory, the shop, the workhouse, the mine, absorb their strength, and then we find them using their evening leisure, not in exercises of profit to mind and body, but rather in foolish games or practices wasteful of their earnings and destructive to both physical and mental integrity. The majority of those whose pursuits are "professional," and who are favored in having at their command the time and means for self-culture, are also found making use of their spare hours in ways detrimental rather than beneficial, indulging their inclinations to ease, the demand of an abnormal appetite, or the desires of unregulated social feelings.

Such, in brief, is the "situation" which society at large presents, and its contemplation, with eyes which have been cleared of prejudice and the petty selfishnesses of sensuous life, leads inevitably to the conclusion that the masses do not understand human nature, have but narrow views of the purpose of life, and labor and strive vainly through weary years, or waste gold-

en opportunities and compass their own discontent and failure. It can not be that the human organization is so constituted that improvement and elevation are necessarily rare, and happiness the property of a very few elect persons. No; we believe that God is kind, beneficent to man, and that he has endowed him with faculties and powers sufficient for the attainment of high and noble ends, not as an isolated individual, but as a class and as a rule. The great Teacher of human perfection urged those who heard him not to labor for things which perish, but for that which endures eternally; not for animal gratifications, which in the end clog, weaken, and destroy, but for the enjoyment of the spirit; *i. e.*, the development and expansion of the moral nature, by which man is rendered brighter, stronger, and more efficient in the true work of life.

There are wrongs in the distribution of the physical means of comfort and happiness which we should gladly see righted, but we know that man is himself to blame for the distribution. There are some who suffer who should be glad; there are some who bask in the glow of luxury and excess who have no fitness for prosperity and can not appreciate it; but after all, as Sismondi puts it, "Suffering is the surest means of making us truthful to ourselves." And the great heathen philosopher, Aristotle, discerned excellent lessons contained in adversity, for its contemplation led him to remark: "Suffering becomes beautiful when any one bears great calamities with cheerfulness, not through insensibility, but through greatness of mind." More than two thousand years later our Longfellow echoed the same principle in the couplet,

"Know how sublime a thing it is
To suffer and be strong."

Religion and philosophy agree in the precept that existence on earth is given to men as a season of training and development; and this purpose is furthered by such an arrangement of our affairs that the moral and intellectual faculties shall predominate in their administration. Absorption in business may result in a man's financial prosperity, but with the getting of his wealth he is likely to get also a one-sided, selfish mental growth, and instead of an improved man we have a deteriorated, spoiled one, who is an obstacle to the true advancement of society. A shrewd observer has said: "In point of fact, artisans, merchants, and professional men in general, know as much, or often more, of moral, intellectual, and physical science, of religion and its practical power, and are purer in spirit, more Christian in temper and disposition at eighteen than at sixty." Granting this to be true in a large proportion of cases, what is the reason for it, if it consist not in the lack of proper culture, especially of the moral faculties? How many a man, after pursuing the rugged channels of material enterprise for a lifetime, has mournfully owned that his wealth gave him no true contentment; that the flowers of delight he thought to secure with money, turned to ashes when he stretched out his hand to take them! Too late he owned that the blessings of peace and harmony and love could not be purchased by gold; that the mere indulgence of the physical senses does not minister to happiness—

"True happiness ne'er entered at an eye;
True happiness resides in things unseen."

No; the physical nature must not be

permitted to get uppermost if we would attain "our being's end and aim"; we must live in the *upper story* of our mental organism, so far as motive and purpose are concerned, and keep ever in subjection those forces and impulses which enable us to put our design into practical operation. Our sympathies should be kept fresh and active, our self-respect and sense of duty should be ever alert and delicate, and our hopefulness should be steady. We should be trustful and yet circumspect; we should be watchful and yet courageous.

IS THE DRUNKARD UNFIT?

AN English savant with the name of W. Mathieu Williams has been discussing the temperance question, or rather the intemperance question, in a manner which puts it in a decidedly novel light. He belongs to the school of Evolution, and accepts the doctrine of the "survival of the fittest," considering the prevalence of alcoholic indulgence to be a practical illustration of the truth of that doctrine. The survival of the drunkard, he claims, "is purely prejudicial to the present interests and future progress of the race," and the sooner he kills himself off, the better, because the great multitude of his class are low in mental constitution, gross and brutal in tastes and habits, and their disappearance makes room for the temperate and deserving, whose lives are valuable to themselves and their fellows, and who promote civilization by their thought and work. However flattering this view may seem to the sober portion of society, it will not by any means please the large drinking part to be designated as a sort of modern representation of the primeval savage—notwithstanding the showings of criminal statistics; to which, however, very few drinkers pay any regard. We think that Mr. Williams' position is more unique than logical, but we should not on that account object to its having a pretty wide exploitation, so that alcoholic drinkers of all classes may know what one scientific gentleman coolly thinks of them. We apprehend that many would protest to being regarded in any scheme of philosophy as merely the automatic agents of a so-called law of existence, especially as under that law they would be regarded as unfit to live, yet possibly the preaching of such a notion would be found helpful toward the reclamation of not a few who should feel stimulated by its announcement to assert their humanity as possessing faculties of self-preservation superior to mere physical influence, and the ability to help themselves and others toward a higher level of intellectual and social action.

PUCK ON TOBACCO-USING.

ON a neighboring avenue within a rifle shot of our *sanctum*, there stands a well-carved figure of that little elf, Puck, whose roguish characteristics Shakespeare has immortalized in the "Midsummer Night's Dream." The little fellow in this "modern instance" is employed by a dealer in the various forms of tobacco so commonly used by the multitude, as a sign or advertisement, but we have noticed when passing that way certain peculiarities of gesture and expression in him which intimate a repugnance to the business for which he has been set out as an enticement; for instance, while his attitude at first glance is not unlike that of

the gentleman of dark complexion you will meet farther down town at the entrance of a store whose low front is hung with superannuated clothing, replete with blandishment and assurances of most liberal treatment if you will but walk inside and "deal," yet to the close observer the smile on his half-parted lips wears a cynical, half-sneering curvature, and while one hand offers to the passer-by a counterfeit bundle of the Virginia leaf, the other contains a pencil, and at his side hangs an artist's portfolio, on which is inscribed the significant legend: "What fools these mortals be." We wonder how many who enter that shop catch a glimpse of the little elf's commentary on their action? We wonder, too, at the audacity of the shop-keeper in flinging such a gibe in the faces of his patrons! to write each down a veritable Dogberry, even an ass!

VITAL STATISTICS AND PIE.—While scanning the columns of a morning newspaper lately, our eyes were arrested by two paragraphs, one relating to the births and deaths in New York City during the past year, and the other concerning the pie business of the City. In the first it was reported that the births numbered 24,767, the deaths 37,928, showing a remarkable if not astounding excess in the latter of 13,161. In the second, which we found on another page of the newspaper, it was stated that the consumption of pies in the city of New York was something colossal, quite beyond the conception of any person who had not investigated the subject, and as a single illustration in evidence the words of one manufacturer were quoted, viz.:—"Our present rate of consumption of flour alone is 6,860 pounds daily, representing at a rough estimate 25,000 pies. Our daily receipts are about $1,500. We employ 150 persons, and our weekly wages bill amounts to $2,400."

Whether this wonderful appetite of our citizens for cheap pies bears a relation to their low birth-rate and high mortality we are not presumptuous enough to assert, but we are inclined to suspect that "there's something in it."

THE TYPE-WRITER.

THIS magic little instrument, a few years ago, was regarded as a toy or a luxury for the select few. It was not then dreamed by the general public that it would ever become, like other "modern improvements," the sewing-machine, for instance, a world-wide necessity. Now that the enterprising manufacturers, Messrs. Remington, and the wide-awake firm, Messrs. Wyckoff, Seamans & Benedict, the sole agents, 281 and 283 Broadway, New York, have done so much to improve the type-writer, and to introduce it through all civilized countries, it has come to be looked upon as indispensable to those who have much writing to be done. The shorthand writer, when seeking a situation, is asked if he or she can operate the type-writer, and no better recommendation is offered than an acquaintance with and expertness in the use of the type-writer.

The speed of type-writing is about three times greater than ordinary penmanship; it is readable by a child, occupies not more than half the paper, and, in bulky parcels, costs but half as much in the mail. We have use for three constantly, and ten years' experience with them makes them seem imperatively essential to us. All our written descriptions of character are copied on the type-writer; nearly all our business letters are given, and much of our editorial work is done, by dictation to reporters, by whom the transcription is done on the type-writer. Nor are business men, editors, and scientists the only users of this wonderful time-saver and nerve-protector; not a few ministers compose their sermons upon it, and thus save themselves from two-thirds of the drudgery and brain feverishness incident to the slow, painful, and plodding method of ordinary chirography. To a minister or editor a type-writer is worth two months' vacation, or a trip to Europe annually.

Our Mentorial Bureau.

To Our Correspondents.

QUESTIONS OF "GENERAL INTEREST" ONLY *will be answered in this department. But one question at a time, and that clearly stated, must be propounded, if a correspondent shall expect us to give him the benefit of an early consideration.*

IF AN INQUIRY FAIL TO RECEIVE ATTENTION *within two months, the correspondent should repeat it; if not then published, the inquirer may conclude that an answer is withheld, for good reasons, by the editor.*

TO OUR CONTRIBUTORS.—It will greatly *aid the editor, and facilitate the work of the printer, if our contributors generally should observe the following rules when writing articles or communications intended for publication:*

1. *Write on one side of the sheet only. It is often necessary to cut the page into "takes" for compositors, and this can not be done when both sides are written upon.*
2. *Write clearly and distinctly, being particularly careful in the matter of proper names and quotations.*
3. *Don't write in a small hand, or in pencil, as the compositor has to read it across his case, a distance of nearly two feet, and the editor often wants to make changes and additions.*
4. *Never roll your manuscript or paste the sheets together. Sheets about "Commercial note" size are the most satisfactory to editor and compositor.*
5. *Be brief. People don't like to read long stories. A two-column article is read by four times as many people as one of double that length.*
6. *Always write your full name and address plainly at the end of your letter. If you use a pseudonym or initials, write your full name and address below it.*

WE CAN NOT UNDERTAKE TO RETURN UNavailable contributions unless the necessary postage *is provided by the writers.* IN ALL CASES, *persons who communicate with us through the post-office should, if they expect a reply, inclose the return postage, or what is better, a prepaid envelope, with their full address. Personal matters will be considered by the editor if this is done. Anonymous letters will not be considered.*

CLIMATE AND HEALTH. — *Question:* Does climate have much effect, generally, upon the health, even of invalids, where the laws of health are observed?

Answer: Climate does exert an important influence upon the health. For instance, one who is accustomed to a warm climate suffers to some extent, no matter what may be his mode of life, when his residence is changed to a cold region. The European goes to Africa and finds that, notwithstanding the most vigorous and enduring constitution, the tropical sun and the miasm of the marshes are dangerous to his health. Of course, one who is conversant with hygienic principles, and exercises them in his every-day experience, can bear changes of climate better than one who lives carelessly, and can hope to pass successfully through that transitional period called "acclimatization."

Nearly every State of the Union has its "paradise," so it is difficult to say which is the most conducive to longevity. We have seen statistics which would make it exceedingly difficult for us to conclude whether in the West or South or in the Middle States, the best climatic conditions prevail. In some parts of California, it is said, the people never die; there are very aged ones in Florida, New York, New Jersey, Pennsylvania, Virginia, Missouri. One may go into the savannas of Mississippi and Louisiana and find some very old people. Even amid surroundings which defy all hygienic law, people may be found who have lived beyond the average span of life. Constitution, then, is the first element in longevity, hygienic conditions the next.

EARACHE.—L. D. W.—The treatment of earache depends entirely upon its cause. It may be due to functional trouble, like indigestion, liver derangement, splenic disorder, etc. It may be due to nervous disease. We could not advise without knowing the cause.

ERUPTIONS ON THE FACE.—J. B. M —In most cases the cutaneous eruptions which people suffer from are due to their irregular habits, especially habits of eating. They use such articles of food as tend to disturb the digestion and induce a torpid condition of the liver, and throw the system into a morbid state generally. As a consequence, the excretory ducts become filled up with morbific matter, and the skin indicates the deranged state by the eruptions, a large class of which is called acne.

KEEP A CLOSED MOUTH IN SLEEP.—H.—You must exercise your will for the purpose. It is difficult, of course, to overcome a habit of sleeping with the mouth open, but perseverance will accomplish it. We know this ourselves by experience, having inherited the tendency to sleep with lips asunder. Now the opening of our mouth during sleep awakens us. If you can not do it in any other way, get a piece of sticking-plaster and fasten the lips together until they get accustomed to close acquaintance.

IMPEACHMENT.—W. S. M.—Yes, Mr. Johnson *was* impeached, but after a protracted Senatorial trial the charge was not sustained.

[*Several Answers must be deferred to our next Number.*]

What They Say.

Communications are invited on any topic of interest; the writer's personal views, and facts from his experience bearing on our subjects, being preferred.

SELF-ESTEEM.—*Editor of the* JOURNAL: Permit me to say a few words relative to the article on "Self-esteem," in the December Number of the JOURNAL. The author of that article thinks that "Self-esteem" is not the proper term for designating the organ of the brain assigned to that faculty, and suggests a change of the name. He says: "I should like to substitute *control* for 'esteem,' so that it would stand Self-control. Perhaps I may be mistaken in my understanding of this faculty, but as I view it, 'Self-control' would have been more applicable, and would more forcibly represent the peculiar property of this faculty or power of the brain." Although Self-esteem may not be the most significant name that could be given, yet I think it better than "Self-control." "Control," as here used, meaning restraint, power, authority, or government may define the nature of this faculty to a limited extent, but I think the very essence of it is excluded, which is Appreciation of Self. Self-esteem or Self-regard is an innate faculty of the mind, and every one who has a due endowment of this faculty must be conscious of the mental state imparted by it. Also, it is recognized by God, as in the command, "Love thy neighbor as thyself." It is universally a most powerful sentiment, and when largely developed and unrestrained by other faculties, leads to much incongruity of character.

Self-esteem is designed to impart dignity, self-respect, self-reliance, and independence of character, and I agree with Mr. Noyes that it gives the power to use all the other faculties to the best advantage, and also that B having less intellect, but more Self-esteem than A, may be the superior man.

It seems to me that self-control, like egotism or dignity, is only an attribute of the faculty of Self-esteem, or perhaps the product of a combination of faculties, and not in itself a primitive element of mind.

Yours truly, JESSE B. MOWRY.

Chepachet, R. I.

"THE PHRENOLOGICAL JOURNAL AND SCIENCE OF HEALTH pursues the even tenor of its way, always freighted with timely and sensible articles on almost all subjects that relate to mind and body. No difference whether you believe in phrenology or not, you will always find an amount of valuable information and practical suggestions worth your money, and its articles will always be found in the line of sound morals and practical religion."—*Christian Standard.*

PERSONAL.

MRS. MARIA APPLEY, a lady who died recently in Morristown, New Jersey, is said to have been nearly 105 years old.

THE Hon. Josiah Quincy, who has been for more than half a century one of the most prominent figures in business, social, and political circles in Boston, died at his residence in Wollaston in December last, at the age of nearly eighty-three years.

DR. H. D. SCHMIDT is another American who differs from Prof. Koch, of Berlin, that tuberculosis is due to a living organism, or the bacillus. Dr. Schmidt is a careful microscopist, and claims to demonstrate that the bacilli of Dr. Koch are simply fatty crystals.

GAMBETTA, the eminent French politician, died about midnight on the 31st of December, from blood-poisoning, the result of an accident which occurred some time before. Thus has closed a most remarkable career. He was an ardent Republican, with the greatest of expectation for the future of France, and that country will miss the stimulus of his restless energy.

THE head of Jefferson, on the ten-cent postage-stamp, is from a statue by Hiram Powers; that of Jackson, on the two-cent stamp, is also from a bust by Powers; Franklin, on the one-cent stamp in blue, is after a profile bust by Rubricht; Hamilton, on the thirty-cent stamp in black, is after the Cerrachi bust; and Commodore Oliver Hazard Perry, on the ninety-cent stamp, is after Walcott's statue.

WISDOM.

"Think truly, and thy thought
Shall be a fruitful seed."

IF evil be said of thee, and it is true, correct it; if it be a lie, laugh at it.

GREATER than men is man, and he is the greatest of men who most faithfully lives for man.

WHEN a man has not a good reason for doing a thing, he has one good reason for letting it alone.

THE power of a man's virtue should not be measured by his special efforts, but by his ordinary doing.—*Pascal.*

IF as much care were taken to perpetuate a race of fine men as is done to prevent the mixture of ignoble blood in horses and dogs, the genealogy of every one would be written on his face and displayed in his manners.—*Voltaire.*

THE grand old Book of God still stands; and this old earth, the more its leaves are turned over and pondered, the more it will sustain and illustrate the Sacred Word.—*Prof. Dana.*

ALL my experience of the world teaches me that in ninety-nine cases out of a hundred the safe side and just side of a question is the generous and merciful side.—*Mrs. Jameson.*

MIRTH.

"A little nonsense now and then
Is relished by the wisest men."

"Patrick, were you a minor when you landed in America?" asked the naturalization officer. "No, your honor; I was a bricklayer."

"I SAY, Jenkins, can you tell a young tender chicken from an old tough one?" "Of course I can." "Well, how?" "By the teeth." "By the teeth! Chickens have no teeth." "No, but I have."

A MAN took his seat in the barber's chair; he asked the barber if he had the same razor he had used two days before. Being answered affirmatively, the patient man said: "Then give me choloroform!"

A GOOD old Quaker lady, after listening to the extravagant yarn of a person, as long as her patience would allow, said to him: "Friend, what a pity it is a sin to lie, when it seems so necessary to thy happiness."

A YOUNG fellow asked another at a ball if his girl was there. "Yes," said he. "Do you see that girl dressed in pink?" "What, that splendid woman with such magnificent eyes? You don't say so. How lucky you are!" "Just so. Of course I am. Well, my girl is the next one to her."

AN Irishman took a Yankee friend to church with him on Christmas day. The music was magnificent and the decorations gorgeous. On their way out of the church he asked the Yankee how he liked it. "Why, it beats the devil!" said the down-easter. "That's the intintion," dryly remarked the gentleman from Tipperary.

"Do you mix anything with your candies?" he asked, as he laid his money down and picked up the package of gum-drops. "Well—ahem—a little glucose perhaps." "Anything else?" "Perhaps a little clay." "Any chalk?" "Only a very little—not enough to speak of." "It is of no interest to me, you know," continued the stranger; "but I was wondering why you didn't have your candies made at a regular brick-yard, of the regular material, and have something you could warrant to your customers."

Library.

In this department we give short reviews of such NEW BOOKS *as publishers see fit to send us. In these reviews we seek to treat author and publisher satisfactorily and justly, and also to furnish our readers with such information as shall enable them to form an opinion of the desirability of any particular volume for personal use. It is our wish to notice the better class of books issuing from the press, and we invite publishers to favor us with their recent publications, especially those related in any way to mental and physiological science. We can usually supply any of those noticed.*

ATLANTIS: THE ANTEDILUVIAN WORLD. By Ignatius Donnelly. Illustrated. 12mo, pp. 490. Published by Harper & Brothers, New York.

The author has made use of an old topic, one whose romantic and legendary associations in themselves could furnish much material for conjecture and speculation. He has chosen it, however, not as the *point d'appui* or vantage ground of a novel or a poem, but for the purpose of serious, logical discussion; with the view to formulating a definite theory. He attempts, as indicated in the opening of the work, to demonstrate the proposition, "that there once existed in the Atlantic Ocean, opposite the mouth of the Mediterranean Sea, a large island, which was the remnant of an Atlantic continent, and known to the ancient world as Atlantis; that Plato's description of this island is veritable history"; that Atlantis was the seat of man's growth from barbarism to civilization, and there he became great and powerful, and sent colonies, with its learning in art and industry, east and west; was, in fine, the true antediluvian world, the Garden of Eden, and the *situs* of ancient Greek and Oriental myths, and of much that is related in the Old Norse legends, and it finally was overwhelmed in a terrible convulsion, a few only of the inhabitants escaping to carry the tidings of the catastrophe.

Mr. Donnelly exhibits a deal of ingenuity and patience in working out his purpose, and the mass of data which he has brought to bear is certainly very persuasive. But whether a reader is convinced or not by the author's argument, he is sure to be interested by the style and general matter of the book, and to rise from its perusal with not a little archæological and ethnological information.

Starting with the narrative of Critias as written by Plato, he appeals to geology; to volcanic phenomena; to the testimony of vegetation; to the Bible account of the deluge, and to the diluvian traditions of nations, savage and civilized; to the architectural remains of ancient people in both hemispheres; to racial similarities, and even to cranial analogies; citing the habits of ancient Europeans and Americans with

respect to compressing the head in infancy. He shows some ingenuity in the attempt to reconcile the Mosaic account of the Garden of Eden with his theory that it existed in Atlantis, but we suspect that the scholars who have been at such pains to trace out the locality in Chaldea, or at the head of the Persian Gulf, will not be easily induced to give up their impressions.

The references to Ancient America, with their numerous illustrations of Peruvian, Central American, and Mississippi relics and monuments, are specially interesting. He who is fond of studying the art and learning of ancient times, will find the volume a very agreeable compilation of some of their better features.

LECTURES ON THE PHYSIOLOGICAL LAWS of Life, Hygiene, and a General Outline of Diseases Peculiar to Females, etc. With 77 illustrations. By H. S. Cunningham, C.M., M.D. 12mo, pp. 425. Price, $2.00. George F. Borst & Co., Indianapolis, Indiana.

In this neatly printed volume we have an addition to the list of manuals for the home and private treatment of sickness and accidents. The author claims such practical efficacy for his methods that "to those residing at a great distance from a physician this book will be invaluable, as it will teach how to relieve the sick, save time and trouble, and possibly the expense of a medical practitioner." This is a consummation which we devoutly wish could be found indeed in a treatise on family medicine, but we do not expect its realization until society shall have become instructed in the principles of physiology and hygiene, and perhaps—as may be added—in the little practical necessity there is for using the compounds of the chemists. Dr. Cunningham says many things that are sensible, especially with regard to measures for preventing illness. He would have the young grow up to maturity and become healthy and useful men and women, but he appears to us to be a little over-sanguine in his capability to show how this can be done. A broad field is covered by the book; we have something of magnetism, psychology, phrenology, physiology, anatomy, hygiene, materia medica, therapeutics, and other departments incidental to medicine. And to touch upon such subjects in a single volume of average duodecimo size, an author could not be expected to go into much detail.

THE GOLDEN HORN; or, Fatal Exchange. By Rev. Joel Wakeman, D.D., Author of "The Way to Jesus," "Uncle Buel, and His Friends," etc. 12mo, pp. 457. Price, $1.50. Published by S. J. Buck, Son & Co., Lewisburgh, Pa.

A carefully written sketch of life, the incidents of which find common enough analogies in the every-day experience of American society. Dr. Wakeman is an earnest laborer in behalf of social reform, and what he has written in the way of books has the practical end in view of stemming the tide of vice and building up a better condition among men. He gives "The Golden Horn" to the public in the hope that it may "arrest the attention of the young men of our country who are so liable by their social habits to be drawn into the great maelstrom of intemperance." There is no want of vivid coloring to the book, but the author does not over-draw the picture of the terrible work of alcohol as it is done directly under our eyes. His portrait of the farmer who turned tavern-keeper is a powerful delineation.

THE SYSTEM OF MENTAL PHILOSOPHY. By Asa Mahan, D D., LL.D., Author of "The Science of Intellectual Philosophy," etc. 12mo, cloth, pp. 286. Published by S. C. Griggs & Co., Chicago.

Dr. Mahan has been known so many years as prominent in American education, and for special studies in the laws of thought and language, that a new volume with his name on the title-page is a sufficient warrant of its good quality. Having experience as an instructor in the upper walks of scholastic life, he is appreciative of the practical needs of the student, and his aim in the preparation of this book, as in others of his publication, is to furnish substantial help toward the acquirement of sound information. It is true enough that the treatises in mental philosophy generally used in our schools and colleges are too elaborate and extensive for the youthful mind, and the majority of them are made up of the repetition of time-worn propositions and personal speculations thereupon. Dr. Mahan would reduce the whole subject to a compact form, so as to enable the student to grasp its principles and apply them intelligently; and he is terse and direct in statement, with a tendency to dogmatism, which is a natural outcome of his long experience as a teacher, and the head of a most useful Western college. He adheres to the old subdivision of the mental functions—intellect, sensibilities, and will—and makes out a good case, as the lawyers say, on such a basis.

We must, however, admit in some cases his assumptions of personal conviction to be led to his conclusions; we must accept his appeals to common-sense as a faithful guide, although it sometimes is the case that such "common-sense" is but another designation of the writer's personal consciousness, which may differ in quality and degree from that of another, and as a consequence be productive of a line of impression quite divergent.

PUSSY WILLOW, and Other Child Songs. Words by Henriette Cushing. Illustrations by Gertrude Clement. Music by S. E. Farrar. Illuminated Covers. Price $2. New York: White & Stokes.

A very pretty book for children this certainly

is, and decidedly superior to the old-fashioned toy-books which are scattered so plentifully over the retail book-seller's tables in the holiday season. With the assistance of an elder sister or brother, or if mamma can spare a few moments from household duty, to play the simple music set to the verses, the little poems can be made very charming to little ones. The designs are generally well drawn and expressive, the coloring well done, the subjects being of the kind which please children.

PUBLICATIONS RECEIVED.

A DECENNIAL REVIEW, connected with the annual report of the President of Union College. This appears to be a frank expression of the affairs financial and other of the old Schenectady institution. Now that its difficulties have been adjusted, as we are informed, and the President has been sustained by a vote of the trustees, we can account his detail of management as worthy of our confidence. We believe most heartily in some of the sentiments which he makes in this "Review," that healthy educational enterprises need substantial endowment for their independent and successful perpetuation, and progress in any direction of desirable knowledge is always hampered or retarded when there is a lack of means, or permanent provision. We infer from the spirit of the report that the President is a progressive man, but associated with a board largely made up of gentlemen of the old fogy, if not narrow, class.

A GUIDE TO COLLODIO-ETCHING. By Benjamin Hartley. This is a description of a simple and inexpensive method of duplicating sketches and studies made by artists and amateurs. Full practical details of the method are given, so that those who know nothing about photography will be able to carry it into effect. Illustrations of the process, showing various effects, are furnished. Published by the Industrial Publication Company of New York City.

ANNUAL CATALOGUE OF THE MORGAN PARK MILITARY ACADEMY, near Chicago, Ill., for the academical year commencing Sept. 12. Capt. E. N. Kirk Talcott, principal.

THE AMERICAN KINDERGARTEN and other Papers. Price, 25 cents. Published by the American Kindergarten Society, New York. Describes the nature of Kindergarten teaching and its development in this country.

DIVORCE. By Margaret Lee. Price, 20 cents, paper. New York: John W. Lovell Co. The spirit of the work is indicated by the motto at the head of the first chapter: "Beyond is all abyss." It is written in a rather high-toned style, yet is a very fair presentation of life as we find it in the better class of our own society. Divorce is so very common a thing among Americans that we suppose a book of this kind will find numerous readers.

THE HOMILETIC MONTHLY (Messrs. Funk & Wagnalls) for January, contains ten sermons Among the preachers are Dr. Charles F. Deems, Dr. Talmage, Spurgeon, the younger; the late Dean Stanley, and Dr. Joseph Parker. There are two valuable articles on the making of sermons; Henry Langsdell, D.D., describes "A Week's Preparation of a Sermon," and Dr. Howard Crosby's "Light on Important Texts," and the "Homiletic Studies in the Book of Hebrews," by Mr. Hughes, will be of much service to readers of the monthly. "The Sermonic Criticism" is fresh and instructive. "Preachers Exchanging Views" contains a number of well-selected letters on the practical side of ministerial work.

THE POPULAR SCIENCE MONTHLY for January supplies a good table of contents, its more noteworthy titles being, "The Great Comet of 1882," "Scientific Philanthropy," "Bodily Deformities in Girlhood," "Curiosities of Superstition," "The Influence of Education on Observation," "Scientific Farming at Rothamsted," "Sketch of Professor Henry Draper," with a portrait. We like the tone of "Scientific Philanthropy," and believe, with the writer, that pauperism can only be controlled by a well-formulated system based upon practical data, that the promiscuous, beedless charity of the day is but increasing the evils of mendicity and crime.

CURRENT FALLACIES ABOUT VACCINATION. A letter to Dr. W. B. Carpenter, by P. A. Taylor, M.P. This comes from E. W. Allen, of London. The anti-vaccinationists are earnest people; they are distributing very broadly pamphlets of this kind.

THE CONSTITUTIONAL AMENDMENT MANUAL. Contains argument, appeal, petitions, forms of constitution, catechism, and general directions for organized work and constitutional prohibition, by J. Ellen Foster, Superintendent of the department of legislation of the W. N. C. T. U. A practical and suggestive book; contains a full argument, and reasons for the amendment by States and the National Government, and answers to popular objections. Price, 25 cents, paper. J. N. Stearns, publishing agent, New York.

SEVENTEENTH ANNUAL REPORT of the Consumptives' Home, and other institutions connected with a work of faith. By Charles Cullis, M.D. An account of the operations of a charitable institution of considerable extent, which is dependent upon the support of the benevolent. Price, 25 cents. Willard Tract Repository, Boston and New York.

AMERICAN INSTITUTE OF PHRENOLOGY.

Institute Extra.

Devoted to the Interests of the American Institute of Phrenology.

No. 12.] FEBRUARY. [1883

THE INSTITUTE.

THE act incorporating the AMERICAN INSTITUTE OF PHRENOLOGY was passed by the Legislature of the State of New York, April 20, 1866, with the right to hold real estate to the amount of one hundred thousand dollars; to collect and keep for public exhibition a museum of busts, casts, skulls, and portraits illustrating Phrenology and Physiology; to instruct pupils, grant diplomas, etc.

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By action of the Board of Trustees, FOWLER & WELLS have been appointed financial and business agents. All communications should be addressed

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CLOSING EXERCISES OF THE SESSION OF 1882.

OPENING REMARKS BY NELSON SIZER. VICE-PRESIDENT.

The time has arrived, friends of the class of '82, to bring our pleasant relations as teachers and pupils to a close. We suppose you have, in respect to this glad, hoped-for, yet dreaded hour, mingled emotions. When the student thinks of entering upon a course of study, nothing is to him so full of hope as the thought of the completion of it—and yet when the day comes that he must close his tuition, and go out into the world with his knowledge, he feels, I fancy, not unlike the young man who has been hoping for the morning that counts him twenty-one years of age, with anxiety and almost with impatience—but when the clock strikes the hour of his majority, he feels like Atlas, as if the world were on his shoulders, and he wishes he could shrink back into the juvenile estate again. Now we suppose that you come to this hour with anxious pleasure—and yet there is a regret mingled with your joy.

So far as I know, everything has gone smoothly during your sojourn with us, and I will say here and now, that I never have had relations with a class that cost me so little nerve-wear as this. Perhaps it was because we have a few of the old students here who have gone over the course and know how to "coach" the rest and save them from impatience.

It is customary for us on this occasion to say something, although we have been speaking a good deal to you for the last six weeks. I believe this is my eighty-fifth appearance before you as a speaker, and yet there are many things I would be glad to say to you—and one last thing, for fear I shall forget it when I come to speak again—what you need now is not *theory*, that we have given you without measure with a hearty fullness of purpose to teach you every principle on which character-reading by Phrenology depends. What you want now is *practice*, constant contact with all sorts of cases.

You will make practical phrenologists in proportion as you devote yourselves with aptitude to the study of the practical part. You can not make a machine that will read character. One might as well undertake to paint a portrait from measurement of face, or by estimated quantity of paint. To be sure, the portrait must embody the measurement, just as the judgment of character embodies the size of the organs, but the shading, and expression, and artistic finish come

only by care, and practice, and skill. The best of art and the best of music can not be measured by the square foot, nor bought by the yard, it is valuable for the *soul* that is in it. So in Phrenology, you must learn to be practical, and bring into use with facility and skill the knowledge you have already acquired.

It is customary, I have said, for those who have been your teachers to say a few words of cheer in this last hour, and we also invite the students to give expression to any thought or feeling they may have. Sometimes we have some gems in the way of little speeches, that do us a great deal of good to read over when the authors have gone away, perhaps a thousand miles, to a field of work.

We invite Mrs. Wells, first, to give us any views she may desire to communicate.

ADDRESS BY MRS. WELLS.

MEMBERS OF THE CLASS OF 1882: By your presence here you give evidence of a desire to learn, and not only to learn for its own sake, but a desire for information respecting the working of mind—really the highest knowledge—such as can be usefully applied in every calling and in every study.

Some persons apply themselves to study for the sake of an education, imbibing knowledge as a sponge does the liquid in which it is plunged, and with as little purpose or choice in selecting. I believe all of you have a purpose in view in your pursuit of Phrenology, as applied to mind and character, and I congratulate you on your selection, and wish you success in making useful to yourselves and others, the lessons you have learned here.

Having no secrets to be withheld from you, and no motive for so doing if there were any, we have endeavored to teach you all we could (in the limited term) of the science and its art, and you are now to pursue your studies by a practical application of what has been learned here. We have told you of Phrenology; its history, philosophy; its ups and downs, trials and triumphs, obstacles and their overcomings; its sad and its funny aspects, for we wish you to feel interested in the cause, and identified with us in its elevation and progress. Bear the burdens it brings, remembering that your predecessors are acquainted with the same rugged road.

While Spurzheim was in America he so endeared himself, personally, to those with whom he came in contact, that he was thereby enabled to place Phrenology far in advance of the position it had previously held, and, sincerely mourned and honored, as he was by all, he may have done more for it by his death than he could had his life been prolonged.

Be you all Spurzheims. Appropriate the mantle falling from the risen teacher; be lovable and gentlemanly, as he was, willing to teach, always letting fall the good and appropriate words.

And now the semi-centennial mile-post of Spurzheim's death has past, but his works have followed him. Although he has left us he is with us, and has left enough for us all to do. Yes, even though you do not go into the field to teach and lecture, you can be teaching the A, B, C's of Phrenology in the every-day walks of life, therefore do what you can, and without having to ask whether or not you are recognized as having done this or that. The world will be all the more ready to give credit if you work for the achievement of an object rather than for applause.

Work for the *cause* and you will then have the consciousness at the last, as well as all along your career, of having been "good and faithful," which consciousness will be a source of joy to you.

Now we must say to you, Fare ye well, in the hope to hear often of and from you, and believing that though separated physically, we are not disunited spiritually.

ADDRESS BY MR. DRAYTON.

LADIES AND GENTLEMEN: It is always with some feeling of regret that I answer the call to say a few words upon an occasion like this. I could express many reasons for that feeling of regret; one of the most obvious is, that the time has passed so rapidly since our first meeting several weeks ago when I joined in welcoming you here—I can scarcely realize the fact that the closing, or "commencement" day has come. And with you it is perhaps the same. No doubt you have been deeply interested in the work while with us, and earnest work makes time fly. I take it that the rapid passage of time is a good indication that one's industry is not only of an active, earnest, and absorbing sort, but that it is also of a useful variety.

I think it not altogether judicious as we have been acting in the capacity of teachers, to occupy much time now; it is your Commencement, and you know that the college professor during the exercises of Commencement sits in silence and listens to the students—it is the student's time to talk, to "talk back," if you will.

My honorable colleague who has addressed you so many times, and been with you here so often, has learned all about you, has read you through and through, and knows just what to expect. I stand here in a somewhat diffident and timid train of feeling, scarcely knowing what to expect from you—and I must beg you to be exceedingly gentle in your attempt to

"talk back" to me. He is, that worthy colleague of mine, a man who has ability to express a good deal of physical emotion at times, and I am afraid that you have gathered from what you have seen of me, that I am not profoundly versed in that direction; but I would intimate to you that there is a certain Biblical expression that might prove true—if you should attempt to use us roughly in the talking back—that "A little one can chase a thousand."

But, gentlemen, this is a great subject, this science of the mind. I often find myself standing a little apart, as it were, from it, contemplating it with awe, with a sense of presumption that I, a mere student of life, should attempt to deal with it in that practical way of the relation of a teacher of its principles. There are some who are inclined to sneer, in saying to us, "Who are you that dare to treat with so extensive a subject as mind, you can at the best know but little of it?" We answer: "We may know but little of it, but may we not learn more, and is it not our duty to impart to others what we may know of it, especially when we have the experience of nearly a century to prove that a little knowledge of so important a matter will have a beneficial effect?" The great philosophers who brought the science of mind to a practical shape by their skillful classification of the powers and faculties of the mind have instructed us, and we are but the reflectors of their wisdom.

The comet is a great object in the heavens; its train of fiery atoms spreads afar, covering hundreds of millions of miles in the infinitude of space. It is a vast object, and a most puzzling one; but it has a nucleus, in itself comparatively small and simple, and that can be studied by the telescope of the astronomer, and thus many of the characteristics of the celestial visitor can be learned. So all great subjects have simple fundamental principles; every great scientific subject starts from a comparatively small basis, and this may be learned, the principles may be explored, and become a key to unlock seeming mysteries. So, too, with this Phrenology of ours, I do not say that it deals with the *all* of mind, but it has classified in a scientific fashion the principles of mind; it has reduced to an available shape the grand science of humanity, and you can learn—any man of average intellectual capacity can learn—these principles, and, within his sphere, apply them for his own benefit, and the benefit of others.

There is an old story told of Michael Angelo, that when in the dim light of his studio he labored at the block, he often wore a lamp on his forehead attached to his artist's cap. The object of placing the candle there was that its direct rays should be reflected upon the object of his chisel, so that no shadow should intervene. Now the little moral that I wish to draw from this incident of history is, that in the application of the truths of mental science, what you have learned, you should not stand in the way of their direct radiation; that in your observation of others where you find it necessary to explain and delineate mind, you should not allow yourselves, your personal feelings, or motives, or prejudices, or partialities to interfere with, or in any way obscure your work. Cast yourselves aside; let the lamp of Phrenology burn brightly; speak from its revelations; Phrenology has as much of personal application as it has of application to others—and you will, of course, in your earnest endeavor to promote the welfare of others, help yourselves. The work of Phrenology is largely self-improvement, and in the improvement of self, and in the understanding of self which accompanies that improvement, you will learn more and more of the character of your fellows, and so will be better able to address and impress others.

ADDRESS BY MR. SIZER.

My friends, I have not one word that seems to me necessary to be said. Yet when I think who we are, what the occasion of our meeting, what we have been studying, what we are laboring to do, what we hope to accomplish; and when I think of the manner in which we are to work, what its rewards, what its hopes, its trials and its triumphs, I incline to inquire where on the face of this earth can be found a field more rich in all that should inspire the nobility of human nature, and make a man forget the things that are past, and press forward to those that are before? When I think of what other men do, useful though it be, and are proud in the accomplishment of it, I think we have a professional standing not second to any.

There are men who are proud of being jewelers; they use fine taste and talent, and produce excellent results, but you could put into a coal-cart on the 31st of December everything they have touched, or thought of in the way of business for the last twelve months; and if twelve months after he were to seek for the work he has done, for one piece of it, he would find that, like "the tail of the comet," it was scattered through immensity.

Let a man make that excellent article, the shoe; let him seek to clothe the human body, and we prize it when it is well done, necessary, of course, and it is a noble work to do well any of these useful things. When we rise a grade higher in the scale, and find men ministering to the aches and pains of human bodies, a leg is broken and the surgeon puts it in shape and sets the man walking, we call it a noble thing, but it relates

to the physical part of him. When the teacher labors to train the young idea to think, we find him rising a grade higher to the range of the human intellect, but that is not the topmost round of the human ladder; the emotions that make men immortal, and make them desire immortality, are more than mere intellect. Chemistry can excite all there is of a man's intellect. All the other natural sciences may absorb all of a man's intellectual ability, but the moment you rise in the scale and touch the faculties that hope and fear, that love and sacrifice, that aspire and believe (the faculties that really make the *man*), you have reached the rarest stone that glitters in the galaxy of life, then you have something above shoemaking, and clothes-making, and bone-setting; you have risen above chemistry; you have ascended to the great field where God's breath gives life to the soul, and makes us feel that we are not born to die, that we are of that which doth not perish. Friends, when you come to teach human minds; when you come to mould character and fit it for a higher life, and give it aspiration which the world can not satisfy, you have struck the key-note of the highest anthem that man will ever reach this side of the grave; you are teaching the best there is in life, the best there is on earth; you are doing the best of work that man can do this side heaven; and consequently, then, I say: "Who is sufficient for these things?" Any man is sufficient to anything which he aspires to do that belongs within the scope of human nature to do. We can work *at* it, even though we follow afar off, for we are on the right track, we have the right inspiration.

When I look at the worthies whose physiognomies are presented in these casts before us, I think of their struggles in the dark, their trials and their success; I think of the wonderful legacy which Gall and Spurzheim have given to the world; I think then of their worthy coadjutors and followers, those who entered the field after the captains had fallen in the work, and I feel proud to follow after them, though afar off. I feel inspired by the very presence of their image, and it may not be amiss to say that probably the spirit of the departed dwells among us with sympathetic tenderness, as in their life they brooded over the work which we are trying to accomplish by following in their footsteps. It may not be amiss to suppose that we are instructed by those who are departed, as guardian angels are said to do by those who are seeking to do the truth.

Mrs. Wells and I have been acquainted with all the great phrenologists except the organizers of it—Caldwell, Combe, Horace Mann, the Fowlers, Mr. Wells, on whose brow is now placed for this occasion the laurel, not greener and fresher than his memory is to us, worthily wearing it as he sought in life to wear the imperishable laurel of Benevolence, "Charity for all, malice toward none."

When we look at our painted illustrations, they seem dry perhaps; but when we teach a mental philosophy that can take the skull, this "dome of thought," this deserted palace of the human soul, and see in its form and structure the framework of the life that dwelt therein; when we can determine on the instant from the formation of a skull that may have been resting for ages, whether it walked forth with a white face or a black one, whether it dwelt among the Mongolians, or the Africans, or the Caucasians; when we can see the evidence of depravity, the history which the man's life wrought out when he lived; when we can look at a living man who may not have had the culture which would enable him to grace his proper place in the world, and can see justice and judgment, and the evidences of Godliness which is the chiefest thing of all; when we learn charity for the weak, and admiration for the worthy from this science of Phrenology, we are led to exclaim, "Who shall undervalue our glorious work?"

I remember in 1856 a reverend missionary from the Holy Land brought to me a skull, to tell him, if I could, of what nationality it was. I had studied the Roman head, and had the form of it stereotyped in my mind; and, on examining the skull, I instantly said: "This is a Roman skull." He then told me that he had found it in a vault that had been made under the city of Jerusalem. He was visiting the excavations with a party of friends, when their dog sniffed and scratched at a hole that was just about large enough for a dog to suspect game of hiding in it; and on their following his lead they found this skull, with rusting implements near it, that led them to suppose that it might have been a Roman soldier. On taking this skull into my hands, I instantly said it was a Roman; I have the cast of the skull in our collection. Now, if one can go back 2,000 years and see the character of a Roman soldier in the form of the skull, he has a science which reaches backward into history, as it reaches forward with hope to the future.

It is a great subject. Brethren, be faithful in it. I am certain you will be. We have the pleasure to-day of greeting some of our old students. Brother McDonald was with us fifteen long years ago; he has struggled in the field and labored well, and he has won his victory. If he does not show any laurels, we know he deserves them, and therefore we accord them to him. We expect others will ripen in this field, and when we, who have taught you, have ceased to teach, the world will need somebody to run this Institute; somebody to carry on to fuller achievement what those who have struggled their best to make it a success, have so near their hearts.

It remains now for us to congratulate you that you have been drawn to this, the great subject—human character—which lies at the base of human achievement and human hope, the vestibule of the life beyond. This life is simply a primary school, and those who take hold of mental philosophy and human character as a study; those who seek to elevate human life and make it richer and higher and brighter and better, are those who shall be at the last among those who will shine as the stars forever. The works of the earth perish with the using, but he who can impress the immortal part of man, shall do a work which the eternal years shall bless.

I now have the pleasure to present to each of you, in the name of THE AMERICAN INSTITUTE OF PHRENOLOGY, its diploma, which attests your faithful attendance upon a full course of instruction, hoping you will ever look back upon this hour and this token of our brotherhood with unmingled satisfaction.

After the delivery of the diplomas with an affectionate and pointed address to each, the students were called upon, and responded as follows:

DUNCAN McDONALD.

WORTHY TEACHERS AND CLASSMATES: It is almost sixteen years ago since I graduated at the American Institute of Phrenology. These sixteen years to me have been active and busy years, both in the acquirement of knowledge and the dissemination of knowledge that I have gained. When I graduated at that time, I made up my mind that I would spend three years in the field before I called it a failure, but Providence favored me so that I succeeded from the beginning. I intended at that time to spend forty years of my life in the field. Through the knowledge that I have since gained of hygienic methods of living, I now propose to spend fifty years of my life in the field, because I think my knowledge of hygiene will lengthen my life ten years at least. Professor Sizer certainly is an example of what a temperate and intelligent life will do toward prolonging it. Though it is almost sixteen years since he was my teacher, I must say that time has dealt gently with him; it does not seem to me to have recorded more than five years on his countenance. These years have taught me, through my contact with mankind, both in Europe and in this country, that there is a vast amount of human suffering all over the earth. People seem to be out of joint, as it were, with the laws of nature, violating these laws on every hand, ignorantly, and then suffering the consequences of transgressed law. So long as men dissipate, keep late hours, poison and weaken their systems through the use of bad tobacco, and worse whisky, catering to their passions; so long as the women of our land weaken themselves through tight-lacing, and failing to take exercise in the open air, living on food that is unwholesome, and spending their hours reading trashy novels, we can not expect the millennium to dawn.

There is a vast amount of interest taken in the arts and sciences, in manufactures and education, in literature, astronomy, navigation, and even a great deal of interest taken in warfare, so that we may slay our fellow-men more rapidly; but little attention, or at least not so much attion given to the improvement and lifting up of mankind as there should be.

It is a grand and good work to improve domestic animals, fruits, cereals, flours, and so on. The race-horse, compared with the inferior wild horse, shows what improvement will do. When "Flora Temple" became famous as a racer, her time was 2.40, the fastest time on record. Then we heard of a horse that made 2.20; now they are trotting a mile inside of 2.10, and I expect to see the day when a race-horse will trot a mile inside of two minutes.

The rose to-day is more beautiful, and there is a greater variety of roses than there was fifteen years ago; the strawberry is larger; the peach, when found on the island of Sicily, was small and tasteless and insipid. Through scientific culture it has been brought up to this grand, luscious, palatable, and tempting standard that we see to-day.

Now, if we bring to bear the science of phrenology, physiology, and hygiene upon the human family for a few generations, the average man would be stronger, physically, than now; and intellectually the world would produce higher types of manhood than Bacon or Webster; the average woman would be healthier, more beautiful, more intelligent, and the higher types of womanhood would rise far above anything the world has ever seen.

I am glad that there is such an agency for human improvement as the American Institute of Phrenology, and I would like very much to see some person of wealth become so interested in its welfare as to leave a legacy to sustain, build up, and support it. I am glad that the institution has such able and earnest teachers. I learned what I could sixteen years ago, have been learning from that day to this, and I assure you that I have learned a great deal during these six weeks that I have been here; and even if I only got three or four new ideas or new truths, I would feel repaid, because I value truth and science highly, and I feel like extending my hearty well-wishes to these teachers.

Professor Sizer has been with us early and late, through sunshine and storm, and has faithfully,

practically, and ably instructed us, and I will say to the students, Don't expect too much; don't get discouraged, but go out into life, and you will find the harvest is plenteous and the laborers few; work with your will, and you need not feel bowed down or humiliated because you are phrenologists, because some one who has never received instruction in the Phrenological Institute, and who knows very little about Phrenology, has brought disrepute upon the science, disgraced it, and disgusted the people. Remember that you are not to be classed among these; remember that you will leave this Institution having the latest and best ideas, and the most extensive knowledge that can be gained anywhere in regard to this science, so that you will carry with you a fund of knowledge that you can utilize in benefiting mankind.

I had more to say, but I see the hands of the clock admonishing me that I had better wish you all well, and bring my remarks to a close.

JAMES A. G. FRASER.

It is nearly ten years now since I first took an interest in Phrenology. My health had failed from too close application to study, together with an ignorance of how to live. My memory was so affected that much of what I had learned seemed to have left me entirely. I had studied Xenophon and Homer carefully, but I forgot Greek so completely, that after I had been at home for six months I took a Greek book that I had been able to read as fast as I could English, and I thought with as little effort, but found I could not read it.

There was in the house a Phrenological Almanac, published twenty or twenty-five years before, which gave me the address of Fowler & Wells, and I sent for a catalogue of books, and then for the "Self-Instructor," and "How to Read Character," and subscribed for the PHRENOLOGICAL JOURNAL, and the reading of the JOURNAL and books did more to aid me in regaining my health and mental strength than all medical men did or could do apart from Phrenology. It is now ten years since I have been able to apply myself closely to study for any length of time with success; and although I have not yet quite regained my health, if I had now the power to go back ten years in life, forgetting all I had learned, of myself and others, through Phrenology, and receiving instead all that a college education and ten years' experience in one of the professions could give me, I would consider myself a loser by the exchange. A number of my schoolmates of ten years ago are Bachelors or Masters of Art; some hold enviable positions in the professions, yet I would not part with my present knowledge of human nature for all that any of them have acquired since, and it is not because I appreciate a college education and professional knowledge less than others, but because experience has taught me to appreciate Phrenology and its kindred sciences more. And now that I have acquired a good practical knowledge of the science, and owe it all to this Institution, you can well realize that I feel much more thankful than I could begin to tell. There are scores of individuals all over the country who have thought of attending this Institute, but who hesitate and wonder if it would pay, and if the students in general felt satisfied with the results, and I wish I could say to every one of them, that if they have an average share of intelligence, they could scarcely fail to receive a hundred dollars worth of knowledge. If they lack intelligence, they need it all the more; if they are very intelligent, it will pay all the better.

P. E. KIRVEN.

TEACHERS AND FELLOW-STUDENTS: The hour has come for us to say our farewells as a class. Let us not permit ourselves to pass from this hall with a sad farewell upon our lips, and sorrow at parting in our minds; but rather let us revive the memory of how much we have to be joyful for.

We have been permitted to realize our hopes of attending this course of instructive lectures, and does not each of us feel better for having enjoyed this privilege? Are we not much better prepared to fulfill the duties of life, as sentient beings, be our calling what it may? Yes, we are truly much better qualified to march on with the grand movements of life, and to do our part in the vast arena of usefulness. The truths in which we have been instructed are of the greatest interest to us and greatest consequence to all mankind, and we should use every endeavor to disseminate the knowledge we have acquired. It is at least due of us to science, which has done so much for us, that we let our light shine and light the lamps of others, which will not diminish our light, but, on the contrary, every effort we make to teach others will brighten our own knowledge, and return us a twofold reward, by benefiting ourselves while we benefit others. Let us go to the work, and the more systematic our efforts, the greater the results and the higher our reward.

Let us not feel that we part as those who have no hope; we should rather rejoice to have met, and become interested in each other; and such an interest! We are as it were united in a precious fraternity, which we should regard as an inviolable brotherhood; let us cheerfully part, being sure to fondly cherish the relationships we have formed while here. Let us hope and expect to hear from each other as co-workers; let us look for, and rejoice to see the fruits of

each other's labors, as we journey life's pathway, having always ready a refreshing shower of truth to revive the precious plants we may find as the result of a brother sower's labors.

In this manner let us work to the end that we may, with the blessing of God, produce and reap abundant harvest, by co-operating in this great work in which there is boundless space for all our efforts, unceasing and united. Let us remember there have been many noble pioneers, who have done much labor when none bade them good cheer; they felled the forest of disbelief, and faced the hurricane of ridicule, and have sown many good seeds where the ground was but fallow before they had wrought in it. Shall we shrink from sowing in the fertile soil already prepared? Let us work and hope; the blessed time will come when many will "rise up and call us blessed" if we are only faithful in using the talents entrusted to our care. May God help us to help our fellows and improve ourselves. To our honored teachers I offer my heartfelt gratitude and thanks.

A. A. DRURY.

RESPECTED TEACHERS AND CLASSMATES OF 1882: Self-knowledge is the greatest of all, and "the proper study of mankind is man." The key to this storehouse is through the science that has been taught us here. "Know thyself" was the greatest and best maxim that the wise men of Greece could hand down to unborn generations; that maxim is still alive and being taught to-day, and, I believe, more thoroughly than ever before, through Phrenology. I came here and have studied for benefit to myself, and the hope of doing good to my fellow-men, and now, after having received the proper instruction, I hope to crown my efforts with success. I heartily express my thanks to our teachers for their efforts, and in their future labors wish them God-speed, and to my classmates, for all favors received, tender my earnest thanks.

I make no boasts, nor bind myself by any promises; when I have labored and succeeded there will be time enough for that. And now, in conclusion, I will repeat a verse of my own composition, which demonstrates my views of life from my own experience:

Some say it is mind that makes the man;
Others say all is fate, avoid it if you can.
I say, circumstances control all.
In this life we can but do our best,
And trust in God to accomplish all the rest.

F. H. AUSTIN.

WORTHY TEACHERS AND FELLOW-STUDENTS: My chief wish of late years has been to attend a course of instruction at the Phrenological Institute. To-day it is granted. I have learned more than I ever expected; truths which will enable me to understand my duty to God and my fellow-men.

I have children at home whom I shall try to bring up in the right way, which may induce many others to do the same.

Men have been honored for studying insects, dogs, and horses, while men like Gall, Spurzheim, and Combe were unappreciated among men perhaps, but not so in heaven.

The All-Seeing One recognizes the great work, and will give honor where honor is due.

I will do all I can to make the truths of Phrenology widely known, and can say, as I leave here, whether to enter the lecture field or in other positions, I know that Phrenology will be of everlasting benefit to me.

The worthy teachers have my sincere thanks for their noble efforts in this cause. My best wishes to my classmates, hoping they will not be daunted, but speak the truth and "try, try again."

RALPH J. GLUCKLER.

LADIES AND GENTLEMEN: This, as appearances indicate, will be our last gathering, it being the close of the session of 1882. As a participant in these exercises I would rather it were the beginning of the session.

It is about a year since I became acquainted with Phrenology and its principles, or I might say since I became enlightened. Soon after my attention was called to the science, I began a course of reading on the subject, and became deeply interested in it, so much so that I thought of it altogether, and devoted my whole time and thought to it. I became more and more deeply impressed with its great value to man, and regarded it, and still regard it in the light in which I received it, as a blessing. As I go forth into life I will endeavor to enlighten others, or at least to impart to them what my knowledge of the subject will enable me to.

I am very glad to have met with the students of this class, and am quite sure we can never forget our daily meetings. I am heartily thankful to our instructors for their many favors and for their endeavors to put us forward and set forth the principles of Phrenology as their experience and practical knowledge eminently qualified them to do.

Fellow-students, it now remains for us to take up the work, and endeavor to enlighten others as we have been enlightened, and to do as they, our instructors, have done, their utmost to elevate and broaden this great subject, and place it where it should be, highest among all the

sciences. We can all do what they have done—"our very best."

MRS. MARGARET E. ROBERTS.

WORTHY PROFESSORS AND TEACHERS: I feel that I have a very acceptable duty to perform to-day, namely, to show my deep gratitude for the excellent teaching that I have received here.

This six weeks' instruction has given me more solid, practical, common-sense knowledge of the mind than I could get elsewhere in a life-time, or in all the metaphysical works of the globe.

Doubtless the metaphysical imagination of the race has done more toward enlarging and ennobling the human capacity than any eloquent lives can tell; yet, they were only feeling their way in the dark. Hence their great and constant disagreement.

Phrenology is the great sun that illuminates our minds. The shining light penetrates the intellect, strikes the dark walls of the mind's sanctum, where a metaphysician had nothing but a dream to lead him there.

Phrenologists do not pretend to see the unseen nor to feel the unfelt. Phrenology does not pretend to know what mind is, only to affirm that it uses the brain for its manifestation. That it sends out its force through a material agency to different parts of the head and body, and through this guides, protects, and rules all.

This science of mind can foretell what a particular person will do under a particular circumstance, because it has a factor to work from that the other mental sciences do not take into consideration. They take only the subjective, the wandering of their own minds. We take as well the objective, and predict the future from the imprint of the past.

Phrenology is not a regular materialistic teaching. True, we find many low dwellings with only two stories, but we see as well the towering mansion, with its third story, and its skylight opening upward and outward; here we meet with the God-like man.

The divine sympathy and integrity are reaching out here, so that the weak hope and faith can see them, take courage, and forever rest in them.

To those grand and noble truths our worthy teachers have led us with a loving spirit and a gentle hand. We have been taught, not only the principles of the science, but how to apply them. The truths of Phrenology could be learned from books, but the practical application of the science we could only get in the Institute.

It is one thing to read character in a book, and quite another thing to see and hear Prof. Sizer reading it (with the person right here before us), and training the class to do the same.

We have had, too, from Prof. Drayton, the historical development of the phrenological truths.

We saw that humanity acted toward the truths of this science, the same as it acts toward all newly-discovered truth: with a closed eye and a cold shoulder. We need not wonder at this; one hand is to hold fast the treasures of the past and the other to be extended for the new, and by the co-working, the one with the other, we build and make progress.

We were interested in the history of the struggles and progress of the science in America, from Mrs. Wells. I, for one, am glad to know that a woman has so much to do with the advancement of Phrenology in this country, and hope that this young science will be well cared for, until it shall be wedded to the other sciences, and housed in the universities of the land.

We appreciate the other lectures that were given in this course. Dr. Sizer's, on anatomy and physiology, were excellent.

The other three gentlemen lecturers, Mr. Richards on idiocy, Dr. Ordronaux on insanity, and Dr. Gunn on magnetism, gave us truths that are worth remembering; especially that the human race ought not to have one idiot among them; that they are not God-made, but ignorance and sin-made.

I hope that as a class we will use our best efforts in broadcasting the good seed, that we and humanity at large may rejoice together in the great harvest of the future.

GEORGE A. SPRING.

RESPECTED TEACHERS AND CLASSMATES: The study of Phrenology has been a blessing to me. Three years ago I strolled into the Phrenological office to have my head examined; to find out what I was good for. I thought the price asked for the examination was rather high, but I concluded in a few minutes to pay the price, and see what Phrenology would say of me. The examination was so correct, and with such good advice and instruction, that I felt rejoiced that I did have my head examined.

After I read the book "How to Read Character," given as a chart with my written description, I resolved that I would devote some of my leisure time to studying it. The more I read, the more deeply interested I became, and I saw the great benefit that could be had by having a thorough knowledge of Phrenology. It was not long before I had all my friends laughing, and ridiculing me; some of them said that they pitied me because I was so foolish as to lose my time in such a study. They did not discourage me in the least, but gave me more de-

termination. At the same time, I told a doctor with whom I was acquainted, that I was studying Phrenology, just to see what he would say on the subject. He, like the rest, told me to give it up, as I was only losing my time, because it did not always prove true. I did not say anything, because I did not know enough on the subject to argue it, but I thought that it was strange that if it did prove itself to be true once, or several times, that it did not always do so; but finally I came to the conclusion that the fault could be laid on the phrenologist for want of ability as an examiner, and *not* on the science. So I did not take his advice, but went on studying, and making some observations; one of them was upon a friend, a watchmaker. I said to myself that he had small Individuality. It was some months afterward, that he asked me if I did not often look for a tool or anything, and could not see it, when it would be before my eyes. He said that such was often the case with him, and yet he had good eyesight. This, among other observations, convinced me that there was some truth in Phrenology.

About six months ago a *New York Times* reporter called upon an old phrenological bookseller to get some hints about books. One of the questions asked was, what was his opinion of cheap literature? The bookseller said: "Upon the whole, I think cheap literature is not the greatest blessing to what we call civilization. It makes the viciously inclined still more vicious, while the professedly good never need improving." Now, if cheap literature does not improve or reform those viciously inclined, what is it that we want? Ministers and priests have not succeeded in reforming their people as they might have done, and why? Because they did not understand the people to whom they were talking. If the minister does succeed in reforming some, say one in ten, he is generally satisfied, for he says that "many are called, but few are chosen." What is it that we want then, if cheap literature and preachers do not do the work as well as could be desired? We want competent phrenologists to lecture, to preach to every individual man and woman, and to tell mothers how to train up their children, and what trades or vocations they should follow. An upright and competent phrenologist—one who loves his science, will do twice as much to promote the happiness of mankind as any one else. I said that Phrenology has been a blessing to me. Since I had my head examined, and undertook to study Phrenology, it gave the impression that I had something worth living for; that I should do something for mankind. It has given me power to recognize God far greater than I had before. I am exceedingly happy that I have attended this course of instruction. I shall never forget the happy hours that I have spent with such worthy teachers, and I hope that their lives may be spared for many years to perform the grand mission of instruction.

FRANKLIN LA RUE.

TEACHERS AND FELLOW-STUDENTS: Our course is now ended, and we will soon depart for our different homes. We have had a pleasant time together, and I think we all have improved in the knowledge of our fellow-men since coming here.

We know more now than we did six weeks ago, and let us keep on improving by putting into practice what we have learned here.

I extend my best wishes to each and every one present, and hope they may all do well in this noble work.

SAMUEL GROB.

I must not apologize for being here a student of Phrenology as our worthy instructor, Mr. Sizer, says.

He has told you that Phrenology belongs to the Germans as a birthright, so I think I may well claim a part of it on that score. And if at any time I feel prouder than at another that German blood flows in my veins, it is when I can claim kinship with such men as Drs. Gall and Spurzheim.

I do not think it is necessary for me to descant on the nobility or the usefulness of the science of Phrenology. It has been done a great deal more fully than I could do it, and I think that no words of mine would add weight or force to it, but as Hiawatha said, when the ministerial commission had completed its work, "I shall go home and tell my people all about it;" so I expect to do after I leave this place. I did not intend to enter the field when I left the Institute last year, but waited for a second opportunity, in order to improve myself still further in the way of lecturing, and so fit myself for the lecture field. I do not know how fast I may be able to work, but I will promise to do all I can.

B. F. MILLER.

FRIENDS: It is with pleasure that I add my tribute of thanks to those who have been the teachers and promoters of this most valuable of all sciences—Phrenology. They have battled manfully against opposition and prejudice, and have silenced the batteries of the enemy on every field. They have labored often without pay, only such as a consciousness of the right gives.

When my attention was first called to the art of reading character, I was astonished as well as

highly gratified, and I hailed with pleasure the fact that character could be read, and we could be able to appreciate each other at our true value. Some may not like Phrenology, because their characters will not bear scrutiny; but to those whose motives are good, it is like the angel in the far horizon, beckoning men forward and upward forever.

A. E. F. MULLEY.

I commenced the study of Phrenology about six years ago. I bought the "Self-Instructor" and a small phrenological bust, thinking that from them I could learn all that there was to be learned on the subject; but after a few days I found that I had made a great mistake. My friends, this subject is a broad and extended one; as we go from here, I hope and trust that each will do his duty, and labor in such a manner that he will be respected by all who wish the science well. We each will have to meet with opposition, and at times obstacles will seem to be in the way, but let us not forget that God is on our side, and as long as He is for us, it matters not who is against us. For four years I thought of studying for the ministry, but the phrenologist has before him a wider field for usefulness. I tell you, my friends, the world wants earnest and well-meaning minds to represent and teach this noble science; hence, I am happy to say that instead of studying for the ministry I have been gleaning all that I could on Phrenology, as I intend to make it a life-pursuit, and feel proud of having my name on the list of the graduates of this grand Institute.

I must say that the time that we have spent together as teachers and students has been a happy time to me, and I trust that the professors of this Institution may be spared many years yet, in order to qualify men and women for this work of benefiting mankind by telling them how to make the most of this life.

I can not say much as to my plan of work yet, but you may rest assured that I shall waste no time, for the sooner we commence, the more shall we accomplish. Life is but short, and we each and every one must do all we can to help our race. I wish the students every success and prosperity, and I trust that we shall not forget our responsibility to God and our fellow-men.

J. OSGOOD.

PROFESSORS AND STUDENTS: I am a great lover of truth wherever I may find it, and that which gives me the most, of course, is the most beneficial. When I was a boy, I first got an idea of Phrenology, and through another school-boy I got a Phrenological work, perhaps the "Self-Instructor." That was my first step. I became deeply interested in it; ordered several books, one after another, and was a subscriber for the JOURNAL. Like many others, I was led into the *bump theory*, and never have had, in all the years I have been interested in the subject, such an understanding of Phrenology as I have now, of course.

I think Phrenology is of great benefit to every one in every vocation of life; it gives a man a better understanding of himself, and also of his fellow-beings. It is, undoubtedly, the best exponent of human nature and human character now extant; and I believe that Phrenology is one of the best exponents of the Bible. We have many commentaries, but there is nothing that seems to unfold and give us the understanding of the different characters of the Bible as Phrenology does.

I remember once, in my ministerial life, making a pastoral visit, where the lady of the house was a member of my church, and her husband was not. Yet the lady had a horror of death; seemed to dread and fear it; while the man, on the other hand, had no fear of it. This was a strange phenomenon to him; why his wife, being a member of a church, and a professor of Christianity, should have such a fear of death, while he, professing nothing, should have no fear.

Every phrenologist will very well understand that this did not arise from her lack of religious qualities, for very likely she had more of them than he did; but there was another faculty that was greater, undoubtedly, in the lady's head and that was the Love of Life. On the other hand, there are those who have little tenacity of life and pain, or sorrow, or some circumstance in life will make them feel as if they would rather give up their life than to continue in the struggle, while others are so constituted that "All that they have will they give for their life."

Sometimes, in discussing the text, "Love thy neighbor as thyself," I meet with contrary opinions. One says this is impossible. I have met members of the church in my private conversation with them, who stated to me that they believed this to be impossible. As a matter of course, if the animal propensities predominate over the moral, it is impossible for a man to "love his neighbor as himself."

Phrenology explains these contradictions very nicely. Some can walk by faith, not by sight; but another with large Perceptives and small Spirituality would prefer to walk by sight. Now, while my neighbor may not have the same faculties that I do, I am not to condemn him or his doctrine, simply because I can not understand it. Some live in the realm of Spirituality, some in their dreams dwell with the angels; there are others who can not even understand this, only facts seem to enlist their attention.

Success to the American Institute of Phrenology; may it ever have as able and worthy a faculty as it has at present, and may it ever continue as an honor to Phrenology, to America, and to society.

A. C. McLAUGHLIN.

TEACHERS AND FELLOW-STUDENTS: I will say something as regards my experience in Phrenology; how I became acquainted with it. I will not describe the merits of the subject, though I feel them.

I was very young when I came across a Phrenological chart, with the symbolical head marked on it, and I wondered how all those things could be placed in a man's head. It gave me a great deal of study in my juvenile days, but I did not hear anything more of the subject until about five years ago, when I got the address of some firm in Boston who dealt in Phrenological works. They sent me Combe's "System of Phrenology." I think I must have read that work six or seven times. I did not know the address of Fowler & Wells until a man came to call on me who was canvassing for periodicals and newspapers. Among other things he represented the PHRENOLOGICAL JOURNAL, and thus I got the address of Fowler & Wells, and sent for several other of the Phrenological works, and have never regretted it. I came down to the States to study the subject, simply because we have no accommodation for its study in Canada.

I will, in closing, repeat a few lines that seem to me applicable, and which should be an inspiration to us all:

> "Lives of great men all remind us
> We can make *our* lives sublime,
> And departing, leave behind us
> Footprints on the sands of time."

JAMES F. ROBERTS.

WORTHY TEACHERS AND FELLOW-STUDENTS: I have thoughts and feelings on the subject before us, but I am not able to express them as I would like.

I feel very grateful to the professors for what they have imparted to me. I know they have given instruction whose value we can not even estimate. I may not take the lecture-field, but I shall do all that lies in my power, whatever may be the field of my endeavor, to further the cause of the science we have studied here. And we should not let this closing day of the American Institute of Phrenology for the season of 1882, be the closing day for our studies; we should continue more earnestly in endeavoring to make ourselves familiar with this greatest of sciences—the culmination of sciences I may say, for as I have heard some one express, religion will be made more scientific by this, if not directly, by what will come out of it; and science will be made more religious, and they will converge and grow together.

Worthy professors, you who have labored in this great cause, rest assured that your names will be written in history. Mrs. Wells has devoted her life to this; her reward is sure. Professor Sizer, who has taught us so faithfully, has devoted forty years of his life to this science; his labor will not be lost.

This may sound solemn and sober to you, my classmates, but I am not one of those who, if I wished to, could express myself in a witty way; when I speak I must speak seriously—and my earnest wish for all the students with whom I have passed so pleasant a term, is that they should succeed in whatever calling they may follow, and especially that they may succeed in applying and practicing the truths of Phrenology.

I left my home in California with regret, to come here; the beauty of her sky seemed never so fair, and the grandeur of her mountains never appeared so marked as the day I left—I remember watching the sunset behind the Sierras, and wondering if I should rue my journey. I shall soon start for my home, which I hope to reach in safety; but all doubts as to the wisdom of my coming is dispelled, and naught but gratitude for the privileges I have enjoyed, and the knowledge I have gained will fill the homeward trip.

I am impressed with the importance of establishing a permanent home for Phrenology, and urge upon you all, the duty to aid in the accomplishment of this object. If we show the world that we mean business on this subject, we will succeed, and we will get help outside of phrenologists; others will help us, if we show them that we are in earnest.

Again thanking both teachers and students for their kindness to me, I will close with best wishes for you all.

B. A. LEONARD.

RESPECTED INSTRUCTORS AND MEMBERS OF THIS INSTITUTE: The session for this year has, during the past six weeks, brought to mind the fact, that if there is one feature of this science of Phrenology more remarkable than another, it is its perfect impartiality, and as we go out to teach its truths to the world, we must see to it that neither passion, nor interest, nor early education, nor predispositions of any kind, shall govern us to the exclusion of fully presenting the truth. In personal disposition and quality of mind, nothing else calls for a more philosophical

temper than does this science to which you have been giving your best attention. Truth, holy, immutable, eternal truth, should be to us of more value than all the crude doctrines and theories which have ever sprung up and been nourished in the soil of human credulity.

Harriet Martineau wrote these words in 1838: "When Spurzheim was in America, the great mass of society became phrenologists, in a day, wherever he appeared; and ever since, itinerant lecturers have been reproducing the same sensation in a milder way by retailing Spurzheimism, much deteriorated, in places where the philosopher had not been." And then she adds: "Meantime, the light is always going out behind as fast as it blazes up around the steps of the lecturer." We will not question if such *was* the fact, more than a generation ago; to-day, with an increase of numbers, society has become more delicately organized; consequently, the pursuit of science, literature, philosophy, and art has become more definitely the business of life with some; the restraints of imitation have been thrown off, and individuals think and investigate for themselves. In addition to this, graduates of this Institute, you are better prepared to shed light that shall blaze up around your steps, and continue to burn brightly long after you shall have gone to other places to shed light to others. It is your good fortune to live in a time when you can avow your perfect impartiality in science, morals, politics, and religion, and those who endeavor to prove Phrenology a falsity, are treading on dangerous ground, and every man of sense could warn them of the fact.

The fundamental principles of Phrenology are acknowledged by all men of science of the present day. They are capable of demonstration, and if an issue is made between Phrenology and Christianity, it will be unfortunate. There is no need of it. Phrenologists do not ask it; they make no such issue—nor have they in the past pretended that their science clashes with revelation; on the contrary, they have taken great pains to reconcile the two together. They have ever gone to the Bible for some of their strongest arguments. We know that this is an age in which people are in the habit of hearing both sides before they judge, and that they are faithful to truth when fully proved, even if it modify or destroy what has been to them a time-honored and cherished opinion. And you, as teachers, go forth to show that while no man can excel in the use of all the central organs of the brain, still you can tell each man, woman, and child what and wherein lies the excellence of each, to which they all may aim and secure a measure of perfection. Go forth, and to you is given the privilege of teaching what and whence are the activities, capacities, and fruits of the intelligent soul. And it is safely to be hoped that you may each be able to answer the demands of God in accordance with your several ability, and thus *fill the measure of your duty*. William D. Gallagher said these words:

"On the page that is immortal,
We the brilliant promise see:
'Ye shall know the truth, my people,
And its might shall set you free.'

"For the truth, then, let us battle,
Whatsoever fate betide;
Long the boast that we are freemen,
We have made and published wide.

"He who has the truth and keeps it,
Keeps what not to him belongs—
But performs a selfish action
That his fellow-mortal wrongs.

"He who seeks the truth, and trembles
At the dangers he must brave,
Is not fit to be a freeman—
He at best is but a slave.

"He who hears the truth, and places
Its high promptings under ban,
Loud may boast of all that's manly,
But can never be a man.

"Friends, this simple lay thou hearest,
Be not thou like either them—
But to truth give utmost freedom,
And the tide it raises, stem.

"Bold in speech, and bold in action,
Be forever. Time will test,
Of the free-souled and the slavish,
Which fulfills life's mission best.

"Be thou like the noble ancient—
Scorn the threat that bids thee fear;
Speak—no matter what betides thee;
Let them strike, but make them hear.

"Be thou like the first apostles—
Be thou like heroic Paul:
If a free thought seek expression,
Speak it boldly—speak it all.

"Face thine enemies—accusers;
Scorn ridicule, rack, or rod;
And, if thou hast truth to utter,
Speak, and leave the rest to God."

B. F. PRATT, M.D.

The following letter from Dr. B. F. Pratt, of Ohio, a graduate of the class of '75, would have been read to the class had it reached us in time:

FOWLER & WELLS, 753 BROADWAY, NEW YORK:

DEAR FRIENDS AND TEACHERS: Seven years have now passed since I graduated and started out from the parental roof which for so many

years has shielded and protected with fatherly care the grand old science of Phrenology; and as a child of your institution, I may have appeared cold and indifferent, and apparently to have forgotten the kindness received at your hands, but I assure you that not until death shall claim me for her own shall I cease to feel grateful to the publishing house of Fowler & Wells, and the American Institute of Phrenology. The past seven years have been busy years of thought and work for me, so much so that I have been neglectful of my friends and those toward whom in the rich storehouse of memory I shall ever cherish kind regards. Although many discouraging circumstances have surrounded me, I have tried to rise above them all, for my faith in Phrenology is as firm as the everlasting hills, and man does not possess the power to shake that faith for a moment.

I have introduced it into one Collegiate Institute, where it is now successfully taught, although at the time I first visited that school, the president said there was nothing to it. The people and the press are kind enough to pronounce my manner of presenting the subject superior to any they have ever heard. During the time I worked last year, there was no month that I did not clear, above all expenses, $100, and from that up to $280, and this year my financial success is reaching far above this. During my public work, I always find time to mention in the highest terms the firm of Fowler & Wells, and I have not forgotten the parting words of advice Mr. Turner gave us in regard to the sale of books, and you know as well as I, something of the work I have done in this line.

If I read the signs of the times rightly, Phrenology, in a quiet way, is making more rapid progress than ever before, and also hygiene, especially in its application to diet.

I wish you all a "Merry Christmas" and a "Happy New Year," and my best wishes go out to you for your happiness, and I hope that many years may yet be spared to you, that you may realize that your labors have not been in vain, and that you have received a reward which is more valuable than the wealth of the Indies. "The world has been made better because you have lived it." Good-bye for the present, and "God bless you," is the prayer of

Ever yours truly, B. F. PRATT.

RESOLUTIONS OF THE PHRENOLOGICAL CLASS OF 1882.

NEW YORK, *November* 14, 1882.

1. *Resolved*, That self-knowledge is the most valuable of all knowledge, as it points out our faults and the best means for correcting them, and enables us to put a proper estimate on our talents, and shows how to employ them to the best advantage; it likewise puts us on a higher plane of life, thus making us better and more useful members of society, enhancing our own happiness and contributing to the happiness of others.

2. *Resolved*, That Phrenology transcends all the other sciences in promoting self-knowledge, as it bequeathes to man the power of analyzing the human mind, by subdividing and classifying its manifold faculties represented in the brain, the organ through which mind acts, giving a conception of the characteristics of mind a hundred-fold more clear and scientific than it is possible in any other system of mental philosophy.

3. *Resolved*, That we will do all in our power to disseminate phrenological truth, hoping ere long that every home in our land may become acquainted with its Divine doctrines, and that this wave of knowledge will flow to all nations on earth, carrying with it enduring blessings.

4. *Resolved*, That the American Institute of Phrenology affords unequaled facilities, through its able corps of teachers and large collections of human and animal crania, casts, and paintings, for acquiring a thorough knowledge of the science. And that it is doing a noble and grand work by opening its doors for both sexes and teaching all who desire to learn.

5. *Resolved*, That we honor the memory of Gall, the discoverer and founder of Phrenology; and that of his faithful disciples, Spurzheim, Combe, Caldwell, and Wells, deceased. Also, that we appreciate and honor O. S. and L. N. Fowler for laboring so earnestly and unceasingly in this broad path of usefulness.

6. *Resolved*, That Mrs. C. F. Wells should have honor and praise for the life-long zeal she has manifested in the cause of Phrenology. And that we extend to her our encouragement and sympathy; that we shall endeavor to aid her as much as possible in causing a suitable fire-proof building to be erected for the American Institute of Phrenology; and hope she may live to see this object carried into effect.

7. *Resolved*, That we tender our thanks and gratitude to Prof. Nelson Sizer for his very able and practical instruction in Phrenology, and his attractive and faithful method of presenting the subject.

8. *Resolved*, That we express our regard for Prof. H. S. Drayton and our high appreciation of his lectures on the history of mental science and its progress.

9. *Resolved*, That we have received much instruction by listening to the able and masterly lectures of the following professors, who have treated on subjects which they have made a specialty, namely: Dr. Nelson B. Sizer on Anatomy, Physiology, and his most skillful dis-

section of the Human Brain; Dr. John Ordronaux on Insanity, its Diagnosis and Treatment; James B. Richards on Idiocy, and his admirable and humane system of Caring for and Educating Imbeciles; Dr. Robert A. Gunn on Magnetism, Mesmerism, and Clairvoyance, and how they may be employed to the advantage of humanity; and, also, that we have been greatly benefited by the excellent instruction in the science and art of Elocution by Prof. Frederick A. Chapman.

10. *Resolved*, That we commend to the public the PHRENOLOGICAL JOURNAL AND SCIENCE OF HEALTH as an instructive and interesting magazine, knowing by the perusal of its pages minds are made purer, bodies healthier, and homes happier.

DUNCAN MCDONALD, Class of '67, Cal.
JAMES A. G. FRASER, Class of '77, Can.
P. E. KIRVEN, Class of '81, Louisiana.
ANDREW A. DRURY, Maine.
B. F. MILLER, California.
MARTIN FRIEDERICK, New York.
OTHILIE BOUSSON FRIEDERICK, N. Y.
MARGARET E. ROBERTS, Pennsylvania.
FREDERICK H. AUSTIN, "
GEORGE A. SPRING, New York.
A. E. FREW MULLEY, "
FRANKLIN LA RUE, Ohio.
J. OSGOOD, "
A. C. MCLAUGHLIN, Canada.
SAMUEL GROB, Class of '81, Pa.
RALPH J. GLUCKLER, New York.
JAMES F. ROBERTS, California.
B. A. LEONARD, Class of '80, Mass.

CHARTER.

An Act to incorporate "THE AMERICAN INSTITUTE OF PHRENOLOGY," Passed *April* 20, 1866.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. AMOS DEAN, Esq., HORACE GREELEY, SAMUEL OSGOOD, D.D., A. OAKEY HALL, Esq., RUSSELL T. TRALL, M.D., HENRY DEXTER, SAMUEL R. WELLS, EDWARD P. FOWLER, M.D., NELSON SIZER, LESTER A. ROBERTS, and their associates, are hereby constituted a body corporate by the name of "THE AMERICAN INSTITUTE OF PHRENOLOGY," for the purpose of promoting instruction in all departments of learning connected therewith, and for collecting and preserving Crania, Casts, Busts, and other representations of the different Races, Tribes, and Families of men.

Section 2. The said corporation may hold real estate and personal estate to the amount of one hundred thousand dollars, and the funds and properties thereof shall not be used for any other purposes than those declared in the first section of this Act.

Section 3. The said HENRY DEXTER, SAMUEL R. WELLS, EDWARD P. FOWLER, M.D., NELSON SIZER, and LESTER A. ROBERTS, are hereby appointed Trustees of said incorporation, with power to fill vacancies in the Board. No less than three Trustees shall constitute a quorum for the transaction of business.

Section 4. It shall be lawful for the Board of Trustees to appoint Lecturers, and such other instructors as they may deem necessary and advisable, subject to removal when found expedient and necessary, by a vote of two-thirds of the members constituting said Board; but no such appointment shall be made until the applicant shall have passed a satisfactory personal examination before the Board.

Section 5. The Society shall keep for free public exhibition at all proper times, such collections of Skulls, Busts, Casts, Paintings, and other things connected therewith, as they may obtain. They shall give, by a competent person or persons, a course of not less than six free lectures in each and every year, and shall have annually a class for instruction in Practical Phrenology, to which shall be admitted gratuitously at least one student from each Public School in the City of New York.

Section 6. The corporation shall possess the powers and be subject to the provisions of Chapter 18, of part 1, of the Revised Statutes, so far as applicable.

Section 7. This Act shall take effect immediately.

ADVICE FOR STUDENTS.

THOSE who propose to attend the American Institute of Phrenology desire information on many points important to themselves; and to save them from anxiety and inconvenience, as well as to obviate the necessity of writing perhaps two hundred letters of explanation, we give here a general statement.

NECESSARY EDUCATION.

To secure success in practical Phrenology one does not absolutely need classical culture, but a good common school education is requisite, and the more general information one has, the better. The text-books noted on the last page of this pamphlet, it is desirable that each student should read before entering the Institute; but if not possible, the bust may be studied to learn the location of the organs, also "How to Read Character," to gain a general outline of the subject.

HOW TO GET TO NEW YORK.

In coming to New York you should purchase a through ticket if possible, and if you have a trunk or valise which you do not need on the way, get it checked.

Students should prepare the means for payment of tuition and their necessary expenses during their stay in New York, before they come. Those who can do it should bring their funds in drafts, then they are not subject to the danger of losing their money on the way. Those who bring money can have it deposited in bank while here, thus preventing the possibility of loss.

We advise students, after buying their passage tickets, to have only so much money within reach as will pay their current expenses on the way here. The balance, if not in form of draft, should be sewed into a pocket in the undergarment. Nor should students inform strangers who they are, where they came from, where they are going, or their business in New York. And on landing, if they have much baggage, should leave it in care of the railway, and come directly to our office, bringing the baggage checks with them. When they have found their boarding place, an expressman will take their check and deliver their trunk where it is to remain.

On landing at Jersey City from the West or South, retain your baggage check—pay no attention to agents on the train—and come to our office, 753 Broadway, cor. Eighth St. Walk from the ferry to Broadway, and take an omnibus for your destination—you need not take a carriage. If you come from the North or East, and land at the Grand Union Depot at 42d St., New York, take a street car which starts from the depot, and stop at 8th Street, and you are one block from our office. If you come into the city in the night, go to the Sinclair House, Broadway, corner of 8th Street, directly opposite our office.

ROOMS AND BOARD.

Boarding can always be obtained near the Institute at moderate prices. From four to five dollars a week usually cover the expense. Those who desire to live hygienically can do so. Some hire their lodgings and select the food they desire at restaurants. Sometimes hygienic students club together and take rooms, and procure their own food to suit themselves. Some have thus brought the cost of their living inside of three dollars a week.

We take special pains to aid students to find desirable quarters, and to facilitate any purchases which they may wish to make, or give them directions as to places of interest to be visited, and the proper way to make their stay in the city safe, pleasant, and instructive.

OPPORTUNITIES IN NEW YORK.

Students have free opportunity to become familiar with our extensive cabinet.

Our class sessions are so arranged that students can attend the popular lectures and other entertainments given in the city; they can visit museums of art and science, public libraries, or the criminal courts, penal and charitable institutions, and numerous other places and objects of interest.

ELOCUTION.

Our excellent course of vocal culture will aid students in strengthening the voice and learning how to use it effectively in public speaking.

OLD STUDENTS.

As an evidence of the value of the Institute course, we may mention that nearly every year one or more students return to take a second course, which is afforded to them at a nominal sum, and they are enthusiastic in praise of its value to them in developing new phases of the subject, and reimpressing and intensifying the old; besides giving a double portion of the practical part, so essential to success; and we notice the marked difference in second-year students, especially after they have been in the field, and learned to make practical their knowledge.

HEALTH IN NEW YORK.

Sometimes people feel afraid to come to a great city, thinking it may not be healthful. We believe that New York, with its present modern improvements for cleanliness and ventilation, is as healthy a place as there is in the land, unless it be some mountain-top. And most of our students maintain their health perfectly, and gain sometimes ten pounds in weight.

OUTFIT.

Some ask us in respect to outfit. Our reply is, that one can spend from fifty dollars to two hundred dollars profitably, in the way of outfit, or can start with a very little, and add to it as he has means and feels disposed. A man can start with nothing but his hands and his tongue to work with. He may start with ten dollars in the way of apparatus and material, but he would do better with fifty dollars. This matter can be discussed and explained fully while here, where apparatus of different kinds and amounts can be seen and estimated.

Those who contemplate visiting the city for the purpose of attending the Institute will do well to cut out and bring this article in their pocket for reference when about to reach New York, so as to avoid confusion and mistakes.

LIST OF GRADUATES, TO 1882.

We are often written to by persons in distant States to ascertain if Prof. —— is a graduate of the American Institute of Phrenology. Some persons whom we never before heard of have professed to be graduates of the Institute. The following list embraces the names of all the graduates up to and including the year 1882. All our students have a diploma, and it would be safe to ask to see the diploma of those who claim to be graduates.

	STATE.	CLASS OF
Abel, Miss Loretta	New York	1877
Adams, Elijah M.	Missouri	1875
Alderson, Matt. W	Montana	1875, 1879, 1880
Alexander, Arthur J.	Indiana	1871
Alger, Frank George	New Hampshire	1880
Anderson, Samuel H	Pennsylvania	1867
Arnold, Charles H.	Massachusetts	1870
Arthur, Willie P	New York	1874
Aspinwall, F. E.	New York	1872, 1873
Austin, Eugene W.	New York	1878
Austin, Fred. H	Pennsylvania	1882
Ayer, Sewell P.	Maine	1868
Bateman, Luther C.	Maine	1870
Ballou, Perry E.	New York	1872
Bacon, David F	New Hampshire	1875
Baker, William W.	Tennessee	1876
Baillie, James L.	Ohio	1831
Beecher, Eugene.	Connecticut	1870
Beverly, C. A., M.D	Illinois	1872
Beall, Edgar C.	Ohio	1877
Beer, John.	New York	1878
Bentley, Harriet W.	Connecticut	1881
Bell, James	New Hampshire	1881
Bonine, Elias A.	Pennsylvania	1868
Brown, D. L	Iowa	1872
Bonham, Elisha C.	Illinois	1875
Bousson, Miss O. M. T.	New York	1877, 1382
Brettell, Montague	Ohio	1875
Bullard, J. H.	New York	1866
Buck Marion F.	New York	1868
Burnham, A. B.	Wisconsin	1881
Candee, E. E.	N. Y., 1873, 1875, 1878,	1880
Campbell. H. D.*	New York	1874
Catlin, David C	Connecticut	1877
Chester, Arthur.	New York.	1870
Chesley, Egbert M.	No a Scotia.	1872
Chandler, G. E., M.D.	Ohio.	1873
Charles G.	Canada	1876
Chapman, May	Massachusetts	1879
Clark, Thomas	New Jersey	1874
Clarke, Rev. Jas. Eugene	Maine	1877
Collins, John.	Wisconsin	1878
Condit. Hilyer	New Jersey	1867
Constantine, Rev. A. A.	New Jersey	1875
Constantine, Miss Eliza	New Jersey	1875
Cowan, John, M.D.	New York	1870
Cook, J. R.	Ohio	1872
Curren, Orville.	Michigan	1873
Curren, Thomas	Michigan	1873
Curren H. W.	Michigan	1874
Creamer, Edward S.	New York	1866
Crum, Rev. Amos.	Illinois	1870
Daly, Oliver Perry	Iowa.	1868
Danter, James F., M.D.	Canada	1870
Davis. Wallace.	Pennsylvania.	1875
Detwiler. D. W	Pennsylvania.	1880
Dodge, Lovell.	Pennsylvania.	1867
Downey, Rev. T. Jefferson	Ohio.	1867
Dodds, Rev. David, M.D	Iowa.	1877
Duncan Ransom	Texas	1875
Du Bois, D. C.	Iowa.	1877
Drury, Andrew A.	Massachusetts.	1882
Eadie, Andrew B.	Canada.	1877
Emerick, Lycurgus	Illinois.	1876
Espy, John Boyd.	Pennsylvania.	18-5
Evans, Henry W	Pennsylvania.	1867
Fairbanks, C. B.*	New York.	1872
Fairfield, John C.	Pennsylvania.	1576
Ferry, A. L	Illinois.	1881
Field, J. H.	Colorado.	1866
Fleisch, Jacob.	Ohio.	1870
Foster, Felix J	Mississippi	1870
Foster, Henry Ellis.	Tennessee	1879
Fraser, J. A. G.	Canada.	1877, 1882
Freeman, Charles E.	Iowa	1880
Friedrich, Martin.	Pennsylvania.	1882
Gause, Miss Elva P.	North Carolina.	1875
Gaumer, Levi	Iowa.	1876
Gibbs, H Clarence.	Wisconsin.	1874
Gillis, Benjamin.	Missouri.	1875
Glückler, Ralph J.	New York.	1882
Goodrich, Geo. D.	Minnesota	1877
Guilford, Ira L	Michigan	1876
Granberry, Prentiss S.	Mississippi.	1873
Green, William R.	Pennsylvania.	1874
Grob, Samuel.	Pennsylvania.	1881, 1882
Hawkins, William S.	Connecticut	1866
Hamilton, Elliott A.	Michigan	1867
Haller, John S	Pennsylvania.	1868
Hardy, John N.	Wisconsin.	1870
Haley, William T.	California	1872
Hathaway. D. E.	Massachusetts.	1874
Hambleton, Harland E	Ohio.	1875
Hawley, Edwin N.	Ohio.	1876
Harriman, O. B., M.D	Iowa.	1876
Hasie, Geo. E. (Lawyer)	Mississippi	1879
Henderson, Francis M.	Illinois.	1867
Henderson, James.	New York.	1872
Hilleary, Louis N., M.D	Iowa.	1877
Hiser, E. W *	Indiana	1878
Hobson, A. Norman.	Iowa.	1869
Holt, Charles.	New York.	1875
Holt, Mrs. Miriam J	Texas	1876
Hoffman, Uriah J.	Indiana	1874
Humphrey, John C.	Alabama	1868
Hughes, Henry F.	New York.	1870
Hummel, Levi	Pennsylvania.	1876
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January, Charles P.	Iowa.	1879
Jennings, Alfred	Massachusetts.	1872
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Jones, John W.	Indiana	1868
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Kindig, David S.	Ohio.	1877
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Lane, Rev. John C.*	Missouri.	1869
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Leavitt, Levi R.	New Hampshire.	1870
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Leonard, B. A	Massachusetts.	1880
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McNeil, James.	New York.	1873
McCrea, James.	Illinois.	1873

* Deceased.

* Deceased.

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McLaughlin	Canada	1882
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Smith, Lundy B	Missouri	1874
Smith, Thomas William	Canada	1876
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Wightman, Charles S	Rhode Island	1872
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Wildman, Mrs. W. E	Ohio	1876
Winkler, Henry	Indiana	1877
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Wood, Elbert B	Kentucky	1879
Worrall, M. B	Ohio	1877
Wyscarver, T. J	Ohio	1874
Young, Henry	Ohio	1875

* Deceased.

FIELD NOTES.

MR. DUNCAN MCDONALD after fifteen years' successful work in the field, since his graduation in 1867, attended the course for 1882, and expressed great pleasure in going over the subjects again. He has returned to the Pacific States to renew his work, and can be addressed at San Francisco.

MR. JAMES MASON, of the Class of 1880, with his wife (Martha A. Scott, of the Class of 1881) has gone into the field, full of zeal in the good cause. We have great hopes that their united efforts will make a good mark wherever their labors may be employed.

DR. B. F. PRATT, of Ohio, Class of '75, is attracting large audiences and doing excellent work. Mr. E. E. Cander, Class of '73 and '80, is with him. Their field of effort is in Ohio, and we expect to hear of their continued success.

L. C. BATEMAN is still in the field winning golden opinions and doing the world good by his successful work.

U. J. HOFFMAN has become associate principal of the Normal School at Aurora, Ill., and will make his work felt to the good of the entire State by widening the knowledge, and enhancing the skill of the pupils as they become teachers.

IRA GUILFORD is doing excellent work in Michigan, and his frequent orders for books show that he is planting the science to stay and prosper.

WILLIAM MUSGROVE is settled in England, and his letters express much hope in view of the growing interest there.

H. E. FOSTER is working in the South with success, as we learn by the number of subscribers for the JOURNAL, and other orders he sends.

HOWELL B. PARKER is making Phrenology exceedingly valuable to the people in Georgia, by teaching the best school in the State on the principles of bodily and mental physiology.

We wish every county in his State, and in other States, had so good and capable a man at the head of their educational interests.

DR. D. G. DERBY is lecturing in Central Missouri, where his skill and experience ought to be in great demand.

DR. U. E. TRAER is lecturing this season in Iowa with his usual success. He may be reached by addressing him at his home, Vinton, Ia.

MR. MORRIS is doing a good business, as usual, in Iowa and other Western States. He is a great worker, and heartily in earnest in all he does.

MR. BATEMAN may be reached by addressing at his home, North Searsmont, Me. He is on a lecturing tour in Pennsylvania.

MR. HUMMEL is in Pennsylvania, and we frequently hear of his good work and success.

EDGAR C. BEALL, class of '77, is located in Cincinnati, O., cor. Eighth and Race Streets, and from all we learn, he is doing a good business, and the leading papers in that city speak well of him and his talent as a phrenologist. We have no doubt he will earn and win success.

REV. DAVID DODD, of the class of '77, is preaching in Iowa, and continues to find Phrenology a great aid to him in his ministerial and pastoral work.

FRASER, of '77, and OSGOOD, of '82, are together in Northern Ohio, lecturing; both are fully imbued with the reforming spirit of Phrenology, and they will make the subject respected wherever they go.

HENRY E. SWAIN, class of '70, is busy in Pennsylvania; and, as usual, is doing a large amount of good and acceptable work.

REV. GEO. A. LEE, class of '73, writes us from West Virginia, where he is settled over a religious congregation, and still finds, as he expected, great aid from Phrenology, in his work of teaching righteousness and leading men away from evil.

MAY CHAPMAN, class of '79, is in Pennsylvania and Delaware for the winter, and those wishing her services will consult the newspapers of those States as to her whereabouts.

A. B. KEITH, class of '77, makes his paper vocal with phrenological truth, and with his clear head and ready pen is doing work that will last.

WHO SHOULD STUDY PHRENOLOGY AND WHY.

IF mind is the centre and controlling force of human life, its study is of the utmost importance, and stands first in interest, since all talent, morals, and happiness result from its proper activity.

Phrenology offers the only practical solution of the human problem. Man is full of power and possibility; he must act, and for each person there is a path, which, in many respects, follows the exact line of no other. Its fundamental doctrine is, that each mental faculty is exercised by means of a portion of the brain, called its organ, the size and quality of which determine its power.

Phrenology shows how the bodily conditions influence mind and morals. It teaches the true system of Education, shows how to classify pupils, to develop and discipline each faculty, separately, and all collectively. Indeed, to Phrenology and Physiology mainly is the world indebted for its modern educational improvements, and most of its leaders in this department are phrenologists.

Phrenology teaches parents for what occupation in life their children are best adapted, and in which they can, and can not, be successful and happy. It also teaches parents the exact characteristics of children, and thereby how to manage and govern them properly; to what motives or faculties to appeal, and what to avoid; what desires to restrain, and what to call into action.

It is not alone to those who expect to follow Phrenology as a profession that the AMERICAN INSTITUTE of PHRENOLOGY opens its doors, and makes its appeal.

PRINCIPALS of public schools, and all TEACHERS should study the science to enlarge their knowledge of human nature and enable them to guide and instruct those committed to their care.

BUSINESS MEN who would judge strangers and customers, and know how to suit their treatment to every class, the slow, the cautious, the quick, the sharp, the erratic, the dishonest, should study Phrenology. He who can read mind will insure success in his calling, while those who must "eat a bushel of salt" with a stranger before he knows him, will fail.

THE MINISTER, lawyer, physician, merchant, teacher, parent, who can read character better than others, is the one who rises to distinction in his or her field of effort. Students who have been educated in this Institute, go back to their vocation and seem to themselves and others, to be in a new world. They have learned how to meet, please, and control, customers, pupils, clients, parishioners, patients, children, and neighbors, and they do good, and perform duty pleasantly and profitably.

As all business, science, and learning, and nearly all of human success and happiness grow out of the right action of the human faculties, the study of this great theme is the crowning field of effort; for how valuable soever may be the knowledge of those sciences which relate to outward things, engineering, agriculture, manufactures, commerce, they must all take place second to that which relates to the human mind itself.

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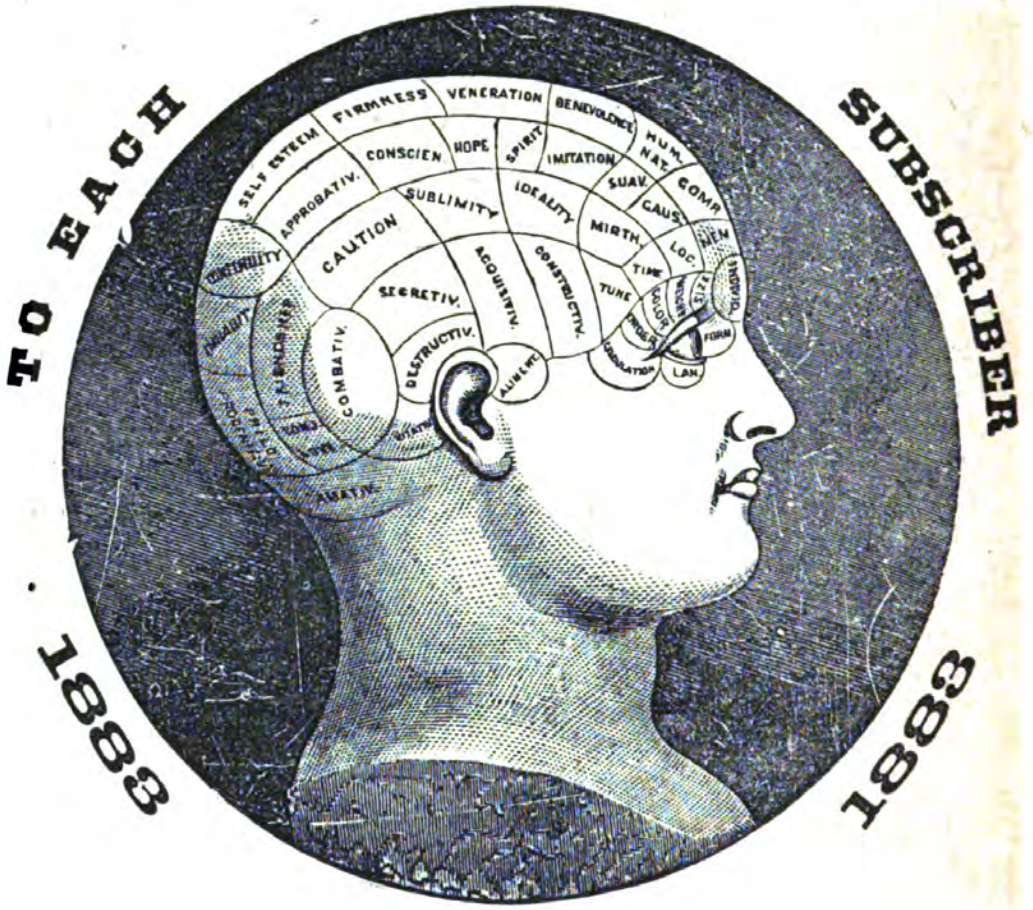

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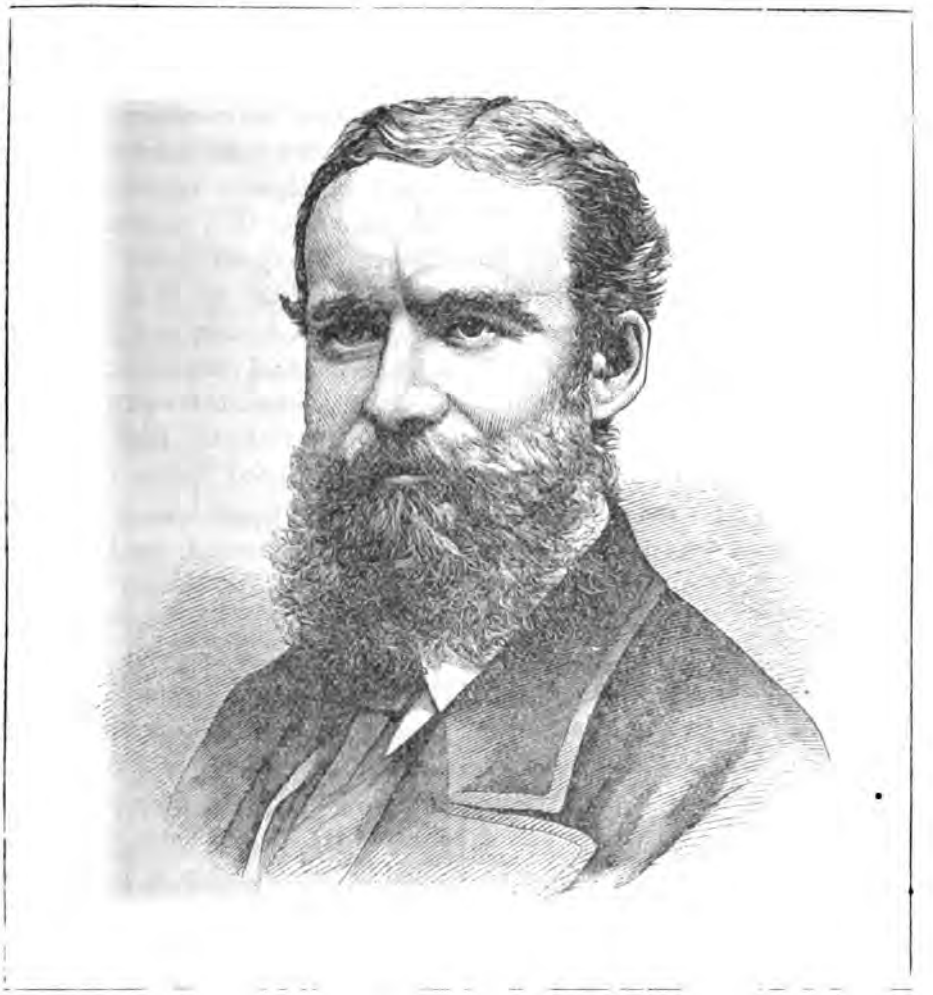
THE PHRENOLOGICAL JOURNAL AND LIFE ILLUSTRATED.

VOL. 76. 1883.

NUMBER 3.] *March, 1883.* [WHOLE No. 531.



SIR JOHN LUBBOCK,

THE BANKER-NATURALIST.

IN this portrait, the reader will observe health, contentment, strength, integrity, and satisfaction with self and with life. There is in this face an entire absence of everything like anxiety and worriment and care; it looks as if he had never been in a hurry in his life, that he had time enough, means enough, strength

and wisdom enough for every occasion. Rising above the face we perceive a massive head, large, broad, high, ample and well poised. The first view of the forehead would indicate that the perceptive organs located across the brow, were moderately developed, but the distance from the opening of the ear to the forehead is ample to give excellent development to the whole perceptive region, and to make him a man of facts and affairs, capable of taking in the particulars, understanding and enjoying details; yet when we see that the upper section of the forehead is massive, we recognize the reasoning, and theorizing, and comprehending faculties, as being stronger than those which merely relate to facts and things. In the central part of the forehead, that region which gives power of analysis, comparison, illustration, criticism, recognition of resemblances, conditions and peculiarities in respect to things and themes, is very strongly marked. Further outward from the center of the forehead are located the organs of Causality, lying in a line directly upward from the center of the eyeballs, about two-thirds of the way up to the hair. If ever there were a man hungry for knowledge, eager to gather and find out the value of facts, and trace facts to their origin, and phenomena onward to logical results, this is such a man. The upper part of the forehead, it will be also seen, is very broad, indicating large Mirthfulness, a keen sense of the absurd and ridiculous. Farther back in the region of the temple, there is very great breadth, showing strong artistic sense, a relish for the beautiful and imaginative, which aids in pursuing investigation. On the lower part of the temples, Constructiveness is seen to be enormous. He would have made a very fine mechanical engineer, and would have been an inventor of machinery and of processes for the accomplishment of desired results. Such a mind is exceedingly fertile and versatile adapted to make discoveries, to plan and control business, to comprehend law and its application to the interests of the public. This is a remarkably clear, strong, and comprehensive mind; he sees the end from the beginning, and while he is a theorist, a planner, a designer, and a superior manager of affairs, he is not regardless of the minutiæ; the details which to others might seem insignificant, to him would seem valid and valuable. The region of Acquisitiveness giving wideness to the head upward and forward of the top of the ear is large, and his pursuits as a banker, and his masterly ability in financial matters according with his developments and his philosophic talent, joining with his financial, would make him a good master of a public treasury. He is cautious enough to be watchful and guarded; he has a great deal of courage and energy; but he has a disrelish for that which is severe, or which appertains to wrangling and hard words. He would argue a point with kindly phraseology, but with logic that has crispness and grip which would convince opponents, while his manner would not give offense. His high top-head shows strong moral sentiment. He is upright, just, firm, dignified, hopeful; he is benevolent, sympathetical, and has the faculty called agreeableness strongly marked; hence he can give reproof, or show up a man's errors in a way that will not be offensive; he could tell one his adverse opinion about things in a way that would be easier to bear than is true of most strong men. He evidently is a social, loving,

friendly, hearty man, fond of children and of the family circle; a good talker with the advantage of always saying something when he speaks, and being ready to stop when he is through; we mean he does not repeat himself, nor reiterate his statements. This organization has a healthy appearance, as if he had a strong and hearty hold on life; and it also indicates strong moral health as well as sound judgment, and an easy state of mind in reference to his rights and interests and honor, and the power arising from self-sustained qualities; in short, selfhood and excellent manhood are represented in that portrait.

SIR JOHN LUBBOCK is a man rarely constituted, as the above description clearly enough shows, and as rarely eminent in three or four spheres each considered important by society; he is at once a distinguished banker, a learned scientist and prominent in the politics of his country. In each of these spheres he has made his reputation by practical effort and careful study, although he is indebted somewhat to the incident of birth for a "good start" in life. Born in London on the last day of April, 1834, of good family, his school training was surprisingly brief, for at fourteen years of age he was taken from Eton and placed at a desk in the banking-house of which his father was the head. There he applied himself with the assiduity of a naturally energetic disposition, and in a few years had mastered the details of the business, and showed himself not only competent for its general management in a close or private capacity, but reformatory and progressive in organizing and applying new methods for the simplification of the old routine in financial details, and elevating the standard of clerical capability.

Sir John William Lubbock, the father of our subject, was given to scientific observations in the hours of leisure, and earned no small reputation as an astronomer and mathematician. For many years he held the places of Vice-President and Treasurer of the Royal Society, and contributed not a little to its proceedings. It is apparent enough, therefore, how the present baronet obtained his bias to scientific study; although in his childhood he was drawn toward observations of quite a different nature from those of his father, as it was natural history which possessed particular fascinations for him; and after he became an enterprising business man he employed much of the time when the counting-room did not require his presence in the study of insect-life and archæology. His fondness for zoology has led him to close and minute researches, in the course of which he has made discoveries of importance, and contributed valuable data to the general fund of scientific knowledge. In the "Transactions" of learned societies, like the Royal and Linnæan, his name is conspicuous; and among the noteworthy of his papers are a "Monograph of the Thysanura and Collembola," a discussion of a group of insects, concerning which little comparatively is known, the "Origin and Metamorphoses of Insects," and "Wild Flowers considered in Relation to Insects." Some of his most interesting observations relate to bees and ants, the astonishing intelligence of which he has probably shown in a clearer light than any other observer. Many of the incidents which he has related have found their way into current literature, and been widely copied.

In his studies of archæology, Sir John has visited different parts of Europe, examining the remains of ancient peoples; especially in Denmark and Switzerland has he found material worthy of his interest. The work entitled, "Prehistoric Times as illustrated by Ancient Remains and the Manners and Customs of Modern Savages," is a compilation of these studies. According to a writer in the *Popular Science Monthly*: "His readings in the literature relating to modern savage life led him to a consideration of the

origin of civilization and of the manner in which customs, once all but universal in the infancy of the human race, became altered or narrowed down to the few rude tribes who may now alone possess them. These inquiries were originally given to the Royal Institution in the spring of 1868, and were afterward greatly enlarged and published in a work, 'The Origin of Civilization and the Primitive Condition of Man,' which has passed through five editions, and, like his former work on prehistoric man, has been translated into the French, German, Italian, Danish, Russian, Hungarian, Dutch, Swedish, and other languages. It has also gone through two American editions, and has given rise to considerable controversy, which has been called forth by the antagonism of some of its views to the prepossessions of a large proportion of its readers. It must have cost the author an enormous amount of labor, and is, aside from the theories it enumerates, a most serviceable work of reference, offering a nearly exhaustive array of facts which it would be impossible for any student to obtain for himself, drawn from a mass of authorities the mere list of which would fill a considerable space. In this work the Darwinian doctrine is applied in tracing the development of the social and mental condition of savages, their arts, their system of marriage and of relationship, their religions, languages, moral character, and laws."

Prominent among the labors of Sir John Lubbock as a Parliamentarian, is that in behalf of the preservation of the ancient monuments of Great Britain and Ireland, which found shape in the Ancient Monuments Bill, which passed a second reading three times, but was finally lost in the House of Lords. This bill was based upon the principle "that, if the owner of one of these ancient monuments wishes to destroy it, he should be required, before doing so, to give the nation the option of purchase at a fair price." Strenuous efforts were made by other scientists in aid of the measure, but without success, the ideas prevailing apparently, that the old monuments in general are not worth preservation; and that to preserve them was to interfere seriously with the rights of property.

Sir John himself bought two ancient sites to save them from threatened destruction: Avebury, whose temple was nearly perfect in the time of Charles II., and which was about to be sold for building lots after most of its stones had been broken up or carried off; and Silbury Hill, said by *Nature* to be "the grandest tumulus in Great Britain, if not in Europe."

Sir John was elected to Parliament when about thirty-six years of age, to represent the borough of Maidstone. In 1874, after a close contest, he was again returned, but in 1880 he lost his seat for Maidstone, and was returned a few days afterward by the University of London. He has made a good figure in Parliament as a working member, more distinguished, perhaps, for the merit of the measures he has introduced and supported than as a brilliant orator, although he has acquitted himself excellently in the latter capacity, and earned the reputation of a speaker who always has something to say that is well worth hearing, and the faculty of saying it well.

The amount of work that this gentleman has done in the several departments which acknowledge his eminence, could have been accomplished at his age only by means of the most indefatigable industry, and the most economical use of time. He has always been an early riser, and usually contrives to get three or four hours' work in the morning before breakfast. His career is an example of what can be accomplished in a life well spent. No doubt, says a writer, many adventitious advantages existed in his case, which poorer men do not possess. He had no anxiety as to bread; but, on the other hand, he does as much mechanical work every day as would entitle him to a very fair return for his labors. Besides, the calls of his public position make inroads on his time, of which the man who is his own master, by reason of his living in the by-ways of the world, has little idea.

THE RACE OF LIFE.

THE course was open, and the young athlete
With folded arms stood ready there;
No time had he his gathered friends to greet—
There lay the ordeal he must dare.
His well-knit frame spoke high for health and power—
His teeth were set, and in his soul
A purpose fixed, that from the starting hour
His aim should be a gilded goal.

Love was there, but he would not hear her voice;
And friendship strove his heart to keep;
'Twas all in vain, his heart had made its choice—
The world had golden fields to reap.
He cried, "I'll bear no ballast in this race—
Life's loves and cares I pass them by—
Yonder is the prize, be it mine to trace
The measured distance—or to die."

He cleft the air with spirits all aflame—
See him outdistance his compeers;
Jaded and worn, and yet his eyes proclaim
A swelling heart as conquest nears.
Cheers for the racer thunder to the sky;
His soul despised them, for he knew
They would have cheered him had he went to die—
All that he longed for was in view.

Ah, yes, he runneth well, who runs for gold:
He left behind life's purest joys,
The race was long, and he was growing old,
But still he heard the siren's voice.
Then came the end—he conquered in the strife—
Shook hands with Death, like all his kind—
He beat the record in the race of life,
And then—he left the prize behind.

WM. LYLE.

A FALL ON THE HEAD, AND A BAD TEMPER.

ALBERT DURER, the great artist, had to endure great griefs on account of the temper and conduct of his wife, Agnes, till he could bear it no longer, and at last was worn down, and sank under them. She now silently did everything to please and comfort him and recompense him for many long years of sorrow, and finally told him, in broken sentences, that she had, when a little girl, been playing one day in the garden with her little brother Johannes, who had put a small polished stone in his mouth, but finding afterward a beautiful bird's-nest, and holding in his breath for joy, he choked with the stone. His face became red, he sank down, kicked with his feet, and stared at her with glazed eyes. Agnes ran away in childish fear and hid herself, without raising any alarm; but her father, on coming home late, and missing the children, went to seek for them, and found Johannes dead in the garden. When they were carrying away little Johannes, Agnes looked sorrowfully from a window in the upper story of the house, and leaning over too far, fell out, striking her head on the pavement, and now made Albert feel the hollow in her head, which was even perceptible to the eye from a slight depression of the hair. She then began also greatly to complain that she did not hear well when the wind blew from the east. It then came to light by degrees that the wind seemed to her during many fine days and seasons, very often to blow from the east. This was probably a case of chronic inflammation of the envelopes of the brain, the sequel of the fall.—*Medical Record.*

[We infer from the complaint with regard to defective hearing, that the injury received was on the side of the head neighboring the ear, probably in the region ascribed to the organ of Combativeness. It would be interesting to know precisely where the "depression" existed.—ED.]

ON LANGUAGE.—No. 2.

ITS DIVERSITY.

EVERY one, even the most ignorant, is aware that there are many languages in the world, but the actual number is probably beyond the dreams of ordinary people. The geographer Babi enumerates 860 which are entitled to be considered distinct languages, and 5,000 which may be regarded as dialects. Adelung, another modern writer on this subject, reckons up 3,064 languages and dialects existing and which have existed. And this is without taking into consideration those minor differences and peculiarities of speech and language which distinguish the people of nearly every province; and these local diversities are almost infinite. Of the 860 languages enumerated by Babi, 53 belong to Europe, 123 to Asia, 114 to Africa, 417 to America, and 117 to Oceanica, by which term he distinguishes the vast number of islands stretching between Hindostan and South America. It is said that there are little islands lying close together in the South Seas, the inhabitants of each one of which, do not understand the speech of any of the others. The feature most worthy of note in the distribution of languages as here given, is, that the most highly civilized and enlightened quarters of the earth have the fewest, while continents peopled mostly by savages have the greatest number. Here we have Europe with its 53 languages, and America—that is, the America of the aborigines and including both North and South America—with its 417. This can be accounted for only on the supposition of the latter being sparsely inhabited by a great number of separate tribes, each having its own language, and being kept distinct from each other through want of intercourse, for which there were no facilities. But how is this amazing diversity seen to exist in all quarters to be accounted for? That is a problem which, to our mind, admits of an easy solution.

When the human race began to multiply and increase in number so as to press hardly upon the means of subsistence afforded by a limited area, they would be compelled to separate, to spread out from the common center—supposing there to have been but one center—and occupy more territory. Those withdrawing from the parent colony, would go out in families and in groups; sometimes they would swarm out like bees from a hive. Some companies of these emigrants, in search of the most favored spot on which to form a new settlement, would wander far from the original locality. These new colonies becoming in time crowded would also send out fresh swarms; until at last the race would become scattered to the uttermost parts of the earth, including the isles of the sea. The various groups migrating to different quarters of the globe, would find, each in its own locality, many things different from those found by others in other regions. Those who went to the North would find ice and snow, which those who went toward the Equator would never see. Differences of climate causing differences of natural productions, the animals and the vegetation of the Arctic regions differing from those of the temperate zone, and these again being different from the animal and vegetable life of the tropics. Thus names would be required for things in one part of the world which would not be heard in other parts, owing to the non-existence there of the things themselves. But there are many things, many physical objects as well as most abstract ideas which are alike common to all parts of the world. So philologists tell us that all languages contain words bearing marks of a common origin, and that there is a striking analogy between the terms which nations widely separated employ to designate the same things and to express the same ideas; which goes to show that these words, though in many cases dissimilar, have indeed been derived from the same root.

Again, those migrating to different regions, divided up as they were, and constituting distinct tribes and nationalities, often widely separated, and the facilities for intercommunication being of the most meager and primitive description, would have but little intercourse with each other. Under such circumstances, favored by climate and other exterior conditions of a superior character, some of these nations would progress more rapidly than others in the arts and sciences and in civilization generally, and their language would keep pace with their other improvements. Some people would improve faster and some slower; and they would not all progress in the same direction even when equally favored; this of itself would result in a divergence; while others, laboring under diverse circumstances, would retrograde and finally lapse again into their original barbarism, and their language with them. Says a late eminent writer: "We want no better evidence that a nation is falling back into barbarism than the decline of their language."

Under the circumstances as above related it is indeed difficult to see how any great degree of uniformity of speech could long be preserved, or how it would be possible to prevent diversity of language; especially when we reflect that in our own broad land where the facilities for easy and rapid transit are of the best, and our people always traveling, not to mention the facilities afforded by mail and telegraph, a remarkable difference often exists in the speech of people inhabiting different localities. There is a marked difference between the speech of a native of New England and that of a South Carolinian; between that of a native of New Jersey and that of a Virginian. And even in the speech of the inhabitants of States lying contiguous to each other there is a noticeable difference, and this difference extends not only to the pronunciation and to peculiarities of tone and voice, but also to the terms employed by each to designate the same things and express the same ideas. For example, what in Pennsylvania they call a "bucket," is in New York called a "pail"; a man of the last-named commonwealth says "draw," where he of the former would say "haul"; and such examples might be multiplied indefinitely. But a still better example of these minor diversities of language under circumstances the most favorable for its uniformity, is furnished by Great Britain; a tight little island, small in extent, completely filled with a teeming population, and "gridironed" with railroads. Not to speak of the differences in speech between an Englishman and a Scotchman, there are differences almost, if not quite as great among the English themselves. There is said to be a score or more of different dialects in England alone. The citizens of the metropolis differ in their speech from the inhabitants of the provinces, and the latter again differ from each other. Any one who has ever taken even so short a journey as from London into the heart of Yorkshire will be able to appreciate this.

It has been said that the language of every people is in accordance with their national characteristics; that it is an outward expression of an inward reality. Thus the French are a lively, gay, and a polite nation; their language is a lively and vivacious one, abounding in complimentary terms and phrases. The Germans are a more grave, sedate, and studious race, much given to philosophy and transcendentalism; accordingly we find their language more grave and solid, somewhat harsh and guttural, but more copious, its vocabulary more extensive, and its literature richer by far than that of any other continental tongue. The Italians are rather an effeminate people, but fond of the fine arts, of which music has been most assiduously cultivated. They are, or have been the acknowledged masters in this department. Their language is as soft as their own climate, and better adapted to the purposes of musical expression than any other. The English language is a composite one, possessing many of the features of the languages from which it is derived; just as the En-

glish nation is formed by a mingling and a fusing together of many different races, and possesses some of the characteristic traits of each. The same thing may be said of the relation which exists between the other nations of Europe and the languages they use, and no doubt the same principle prevails throughout the world. The causes which on the one hand combined to elevate some portions of the human race to the highest pitch of European civilization and enlightenment, and which on the other hand operated to depress other portions to a condition of barbarism, would also, doubtless, be sufficient to bring the languages of the former up to the present state of improvement, we will not say perfection, at which we find that most of the languages of Europe have now arrived; as well as to bring down the languages of the latter to the meaningless jargon of savages.

THE DISCOVERY OF LETTERS.

Whenever persons undertake to live in the neighborhood of each other, and to form themselves into a body politic for their common benefit, they must attend to the due administration of justice, engage in some sort of traffic, and from time to time enter into certain agreements among themselves for the promotion of their happiness and prosperity. These are principles which must necessarily come into operation, and the continued regular operation of which involves their very existence as a society. They must not only keep faithful records of all events in which the community is or may be deeply interested; but they must also provide for the notoriety and security of their bonds, as well as judicial decisions, marriages, testamentary bequests, and other matters of equal consequence. We may here briefly advert to some of the means resorted to for this purpose prior to the discovery of letters.

Before the discovery of letters and the invention of the art of writing, contracts consisted merely of verbal stipulations, and were usually made in public or in presence of many witnesses. When the patriarch Abraham purchased from Ephron a cave for the interment of the remains of his deceased wife Sarah, it was done in the multitude of all the people; "even of all that went in at the gate of his city." To perpetuate the memory of important events, monuments, usually of stone, were set up. From fragments of Sanchoniathan we learn that rough stones and posts were the first monuments of the Phœnicians; and Strabo relates that in the vicinity of Cadiz, huge masses of stone were formerly to be seen, which were said to have been raised to commemorate the expedition of Hercules into Spain. Like practices obtained among the savage tribes of our own continent.

As another medium of conveying a knowledge of historical facts, poetry was perhaps universally employed during the age preceding that of Herodotus. The most ancient poem now extant, that which Moses sang on the borders of the Red Sea, was made with a view to commemorate the escape of the Children of Israel out of Egypt. This was a pleasant and easy mode of transmission. Fathers, in their leisure moments, would rehearse in poetry to their children what had happened to their families and to their country, the children, prone to imitation and fond of the marvelous, would soon learn these poems by heart and begin to sing them to others. By this means, their national ballads, though often containing absurd and foolish tales, were rendered of indispensable use, and in consequence of the high estimation in which they were held, their authors received immortal honors. The first legislators delivered their laws in the form of odes or songs, both in order to extend their circulation and to preserve them from extinction. Thus it is said of Apollo that he published his laws to the sound of the lyre; by which it is meant that he composed them in verse and set them to music, so that they became generally known by being converted into sources of entertainment. Minos and Thales according to Strabo, and also Tueston, who was regarded by the Germans as their lawgiver, adopted the

same mode for the publication of the laws which they decreed. In fact there never has been a people altogether destitute of poets and of songs. If we turn to the history of the Egyptians, Phœnicians, Chinese, Greeks, or Mexicans, we find among them all poets and songs. Poetry was, in the early stages of the world's progress, among all nations, the principal vehicle of communication upon every subject of moment; even the most rude and savage nations to this day cultivate a kind of composition by means of which they perpetuate the remembrance of great and extraordinary events.

The Chinese, in very remote ages, before the reign of Fohi, employed small cords tied into knots, the several distances apart and combinations of which enabled them to call to mind events long past. The natives of Chili and Peru, when those countries were first discovered, it was noticed, acquired a knowledge of their history, the state of the public finances, astronomical observations and the like by means of their *quipos*. A *quipo* was a particular arrangement or knotting together of threads of various colors. Of a nature similar to this perhaps are the belts of *wampum* made use of by the North American Indians in the ratification of their treaties. These belts are made of small beads of different colors artfully strung together, and by their curious texture or in some such way, the Red Man is made acquainted with everything relating to the transactions in which they were given.

The first attempt made at writing was hieroglyphical. This was primarily, merely a rude representation of the object meant to be signified. Thus a figure of the sun was made to denote that luminary. A figure of a lion or of a dog meant the animal so pictured. In process of time, when knowledge increased, the attempt was made to express in this manner abstract ideas as well as sensible objects. These delineations were then more figuratively explained. Thus the figure of the sun, besides its original and more literal meaning, denoted glory, or genial warmth; that of a lion, courage; of a hare, timidity; of an ox, strength; of a stag, swiftness; of a dog, fidelity, and so on. Ingratitude was denoted by a viper; imprudence by a fly; wisdom by an ant; victory by a stork; a man universally shunned by an eel, which was supposed to be never found in company with any other fish. A still farther advancement in knowledge caused these delineations to become too voluminous, every new object or thing requiring a new picture. This induced the delineator to abridge the representation, retaining only so much of each figure as would express its species. For example, instead of a full and accurate drawing of a lion, only a slight sketch or more general figure of that animal was made, and for a serpent, merely a crooked line like the letter S.

As writing advanced from pictures of visible objects to symbolical hieroglyphs of things invisible, from this latter it advanced among some nations to mere arbitrary marks which stood for objects and ideas without any resemblance or analogy to the thing signified. Of this nature are the characters used to this day in China and Japan. In those countries they have no alphabet of letters or representation of simple sounds, but the characters used stand for things, actions, or ideas. The number of these characters must be immense, corresponding to the whole number of words employed in speech. It is estimated at from 70,000 to 80,000, and it is the work of a lifetime to learn them all. Very few even of their learned men know the half of them; and they think that great progress has been made, when after forty or fifty years of hard study, one has mastered 15,000 or 20,000 of them. The Chinese, Japanese, Tonquinese, and Coreans, though each speak a different tongue, use the same written characters.

They are thus able to correspond with each other, though one nation is ignorant of the spoken language of the others. This is indisputable evidence that the characters they use stand for things rather than for words, the same as the figures 1, 2, 3, etc., represent certain quantities

independent of the names by which these quantities are expressed in the speech of different nations, and which on being presented to the eye, are understood alike by all who have agreed upon the use of these figures and the value attached to each, whether English, French, Germans, or Spaniards, however much the speech of each of these people may differ from that of the others.

So far as we have yet advanced in the consideration of this subject, nothing has appeared having any characteristics at all resembling our letters of the alphabet, or which can properly come under our definition of written language. What we have been considering hitherto were signs for things, and not for the sounds by which those things are expressed in speech. Such writing had in it nothing of the phonetic principle. As knowledge increased, and with it the vocabularies of every spoken tongue, the ambiguity and tediousness of the aforementioned means of communication would become more and more apparent. It was now thought that if signs could be employed to represent not things directly, but the words by which the things are expressed in speech, a considerable advantage would be gained. This was simply an attempt to make a written representation of the sounds heard in the utterance of words. Here is where we first find traces of the phonetic principle. The change from ideography or thought-writing to phonography or sound-writing was a very great and important one; and one to which all the subsequent improvement in the science of written language is due. This was the first step taken toward the discovery of letters. In sound-writing many of the same characters, that is, of those previously in use, were employed, but they were now used to represent the most prominent sound heard in pronouncing the word, if a simple one, or the first sound heard, if it was a word made up of two or more sounds. It was now a sign for a sound, a mark for a word. This might very properly be termed an alphabet of words. As this improvement had worked so well, it was afterward thought that if words containing two or more sounds, that is, words of two or more syllables, could be divided up, and a written character made for each sound, a still farther advance would be made. This led to the taking of the second step in the new departure, the invention of an alphabet of syllables.

The progress in the art of writing, in the science of written language, was by degrees, and that perhaps by very slow degrees. When this stage of advancement had been reached; that is, an alphabet of syllables, which preceded an alphabet of letters; it is most likely that they stopped there for a long time, perhaps for centuries, before any farther advance was made. In fact, some rude, uncivilized peoples are stopping there still, having never gotten beyond this; for an alphabet of syllables is in use in Ethiopia and in some parts of India to this day.

By the invention of an alphabet of syllables the number of written characters was vastly increased. The characters in use before were made to serve as far as they would go, and as far as they were otherwise found to answer, but an additional number was required. In the progress of knowledge and in the general advancement of the race toward a higher degree of civilization, the number of written characters still continued to increase, until in time it became so great as to render reading and writing very laborious arts. This set men to thinking; led to investigation; and in the course of such investigations it was discovered that although the number of words in every language is indeed very great, yet the number of simple, elementary sounds, some of which enter into the composition of every separate word, is really very small. These elementary sounds are continually recurring and being repeated, and are combined in various ways in order to form the great variety of words which we utter in speech. Might it not then be possible to invent or to select from among those already in use, signs for these sounds, few in number, signs which could be com-

bined in writing as readily as can be the sounds themselves in speech, and by such combinations, when presented to the eye, make upon the mind the same impression and convey to it the same ideas as would be made upon it and conveyed to it when the combinations of sounds which they were intended to represent were heard in speech?

Yes: it was found to be possible; and not only possible, but practicable. And so the idea was acted upon, expanded and developed into a system of characters which represented, though not with entire accuracy, the elementary sounds of speech. Thus was taken the last step in the discovery of written language, the resolution of words and syllables into their ultimate elements, the simple sounds of which they are composed, and the selection of an appropriate sign for each; in other words, the invention of an alphabet of letters. This was the natural consequence, the legitimate result of the introduction long before of the phonetic principle. Without the introduction of this principle, no such result could have been achieved. And now, for the first time, have we anything at all answering to our definition of written language.

We have seen that all the changes and improvements previously made, resulted in an increase in the number of the characters employed in writing; but this last, best improvement of all, had the contrary effect of reducing the number to a very small compass. How many of the characters which went to form the alphabet of letters were taken from among those heretofore in use, we have at present no means of knowing. But that two of them, at least, were so derived, two which came down to it through all the changes and improvements in the methods of writing, from the first rude attempts that were made, we shall presently show. These two characters differ slightly in the alphabets of different languages, yet having the same, or nearly the same powers in all, enter into the alphabetic scheme of every written language, both ancient and modern. As to the great bulk of the characters formerly employed, they were now become supernumerary, like Othello, their "occupation gone."

One of the characters referred to is the first in the scheme, the first in all alphabets, by whatever name it may be called; in the Roman alphabet, which we use, the letter A. In order to give its history, we must recapitulate somewhat, go back a little. We have seen that the first attempt made at writing was hieroglyphical. A picture was made of the object to be represented; this, afterward, was given also a symbolical meaning. In course of time these pictures were very much abridged. Apis, the sacred bull, was an object of worship to the ancient Egyptians. It was represented in writing by a picture. This picture underwent the process of abridgment from time to time until at length nothing but the head remained. When the phonetic principle came to be introduced, the picture thus abridged was taken to represent the first sound heard in pronouncing the word Apis. It performed the same office also in the alphabet of syllables, for A is a syllable in this instance, as well as a letter. At length, when speech was resolved into its simple elementary sounds, and an alphabet of letters invented, assigning an appropriate sign to each, this character was still retained to represent the same sound it had before represented in an alphabet of syllables, and previously to that in an alphabet of words, for this was found to be a simple sound, one incapable of further reduction into other elements, it was itself an element. But this character had at one time a symbolical meaning also, which was—"a leader"—and it was therefore placed at the head of the letters of the alphabet as leading all the rest. Thus we discover that this character which, or its equivalent, stands at the head of every alphabet that ever was made by a civilized people, from the first one to the last, had its origin away far back in the shades of antiquity, in Egypt, before the pyramids were built, more than forty centuries ago!

The other character referred to in this

connection is the letter S. It has a history somewhat similar. In the first instance it was the pictured representation of a serpent. By the process of abridgment it became merely a crooked line. Then the phonetic principle was introduced into writing. As this character had before represented a serpent, this suggested the propriety of its employment to represent the sibilant sound heard in speech resembling the hiss of a serpent. It was accordingly so employed. In the alphabet of syllables it was taken to perform the same service, and in the alphabet of letters it was still retained with the same power, the sound which it represented being also a simple, elementary sound.

But the characters used in writing had even before this time become so abridged and otherwise changed in appearance as to bear but a very slight resemblance to their originals. This would naturally result from the introduction of the phonetic principle. As long as the characters stood for objects, they would be so made as to have some likeness or similitude to the thing signified; but when at length they were employed to represent sounds, but little care would be taken to preserve this similitude, for they would then stand for the sounds they were formed to represent in the relation of mere arbitrary marks, and in this relation one mark would answer as well as another. All their efforts would now be directed toward producing such characters as could be the most quickly and easily made, in order to simplify and facilitate as much as possible the process of writing. JAMES COULTER LAYARD.

LEON GAMBETTA.

THE portrait of this distinguished man, whose recent death has been a surprise to the people of all nations, is marked and peculiar. His body was massive, his bony structure as seen in the face was large and powerful, and he must have been, at his best, a man of remarkable muscular force.

The recent statement in the newspapers said to have been announced through the cable, that the weight of his brain was but thirty-nine ounces, we believe to be incorrect; his head, as well as his face and body, was evidently large; the base of the brain appears massive in the portrait, and there is apparently great length from the opening of the ear to the forehead. The back of the head seems heavy and broad, showing strong animal feelings, and a great deal of social force. The head, which we have seen represented by photograph in a more nearly front view, indicated width above and about the ears, hence his remarkable force of character, and that courage which was audacious, and gave him such mandatory influence among men of calibre.

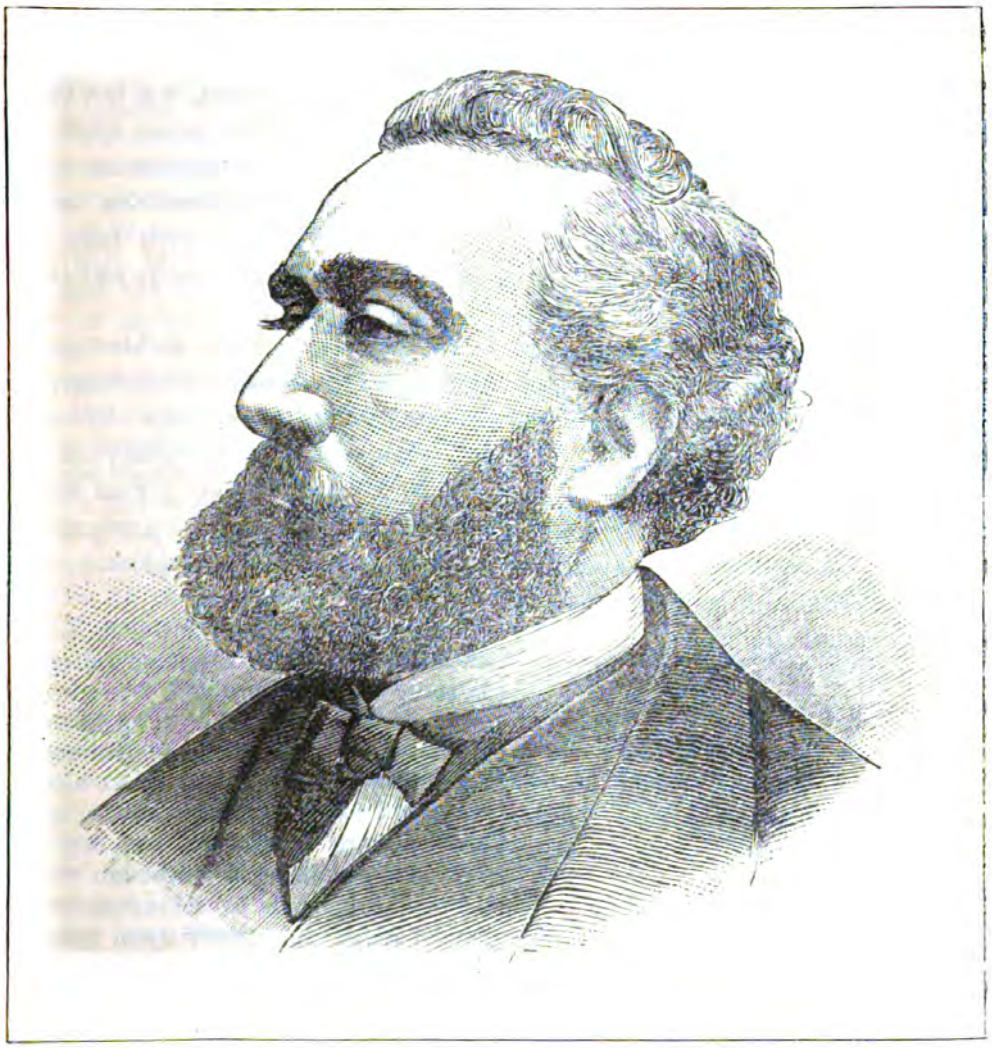
The way he carried his head indicates large Firmness and Self-esteem as well as decidedly large Approbativeness; hence, he was ambitious, self-willed, proud-spirited, feeling himself to be equal to his position, and superior to most of the men whom he met; this feeling of course originates in the elements of pride, ambition, and force.

Men may have intellectual capacity, and be too modest to appreciate it or to assume positions of influence where they are amply qualified by talent and learning to fill them well.

The great development of the head across the brow shows wonderful talent in the acquisition of knowledge, and in the ability to use readily the knowledge which the mind had stored up. The full-

ness of the head from the root of the nose up to where the hair meets the forehead was also very largely developed, indicating memory, power of analysis, the ability to understand and influence character, and impart what may be called availability of mind; what he knew, he could use, could organize it, or rather co-ordinate it in such a way as to make it, like the different parts of a wagon wheel, co-operate, each faculty giving strength to all the others; hence, his wonderful talent in the debate, to talk men into silence by a rapid and dominating iteration of his facts and arguments.

His head does not show so much broad originality, so much great capacity for administration, or for philosophic research and comprehension; he was rather a builder than an architect; an employer of facts and forces, rather than a generator and controller of facts and forces. If we may thus illustrate, he was a better fighting general than a commanding general; the former employing the forces, and wielding them practically, while the latter



plans the campaign, weighs the great causes and consequences, and prognosticates ultimate results. Many a man can take a regiment, as a colonel, and wield it as a lash, holding it well in hand, and making it invincible so far as its forces can be made so. Gambetta could have done that; he could wield political influence from the tribune, in the convention where he could be seen, heard, and felt, while he was not so well fitted to be the inner counsellor to devise ultimate results and to direct the efforts which, in combination, would lead to the object of final desire.

We judge he had rather large Benevolence; and that he had liberal sympathies, and a large-hearted spirit of amity toward the people of his own country, and also toward the human race.

His Language was well developed, but his powers of oratory depended more upon his great force of character, his prominent practical talent and memory, and the hot enthusiasm which made every element of his nature glow as with living fire. Sunlight which passes through a lens an inch in diameter will set fire to timber, if it be focalized. Gambetta had not so much talent, not so broad a character as some, but he had the power of focalizing his knowledge, his force, all that belonged to him, to a given point, and producing results then and there that were commanding; such talent is good in an emergency, when other minds are at a loss what to do, and in their slower methods are seeking for a solution based on first principles. He, like a circus rider, could seize the opportunity, and by gallant endeavor startle the cooler and calmer world, and win his success. Such talent can win success better than it can wear it; can win victories better than administer government. Such men are good in the disturbed conditions of political society where dash and determination are necessary, where dash and intuitive practical judgment are required to be brought at once into fierce action.

He had a great character, but it was not harmonious, poised, and always the master of itself. Such an organization is adapted to a storm at sea, or a hot battle where emergencies have arisen which are unexpected; or in the tumultuous struggles of parties and nationalities, in defense of themselves or their laws and usages which demand audacity and ready versatility of talent.

We think the brain was decidedly large through all the basilar region, which indicates practical talent, force of character, strong passion, and a certain self-forgetfulness which permits a man sometimes to do great things in an emergency when cooler natures are at a loss.

LEON GAMBETTA was of Italian origin on his father's side as his name indicates. Born in the little town of Cahors, in the south of France, he inherited from both parents a warm, impulsive temperament, possibly from his mother the ambitious sentiment which led him to the achievement of distinction. He first saw the light, as biographers say, although we are inclined to doubt the consciousness of the optical nerve immediately upon birth of the human infant, on October 30, 1838. The elder Gambetta was a business man and possessed of considerable means, so that Leon did not lack privileges of education. He was sent to a Jesuit seminary, but had not been there long before his restless spirit was found to be altogether averse to ecclesiastical methods of study and discipline. In the Lycée of his native town he showed a similar want of subjectivity, and later a trial of his father's warehouse proved too much for his love of freedom, for he ran away from home

and commenced the study of law in Paris. His extraordinary talent in speaking won friends among his instructors, and his father was persuaded to forgive him and to permit him to continue the line of study he had marked out for himself. He completed in two years the course necessary for admission to the French bar, but being compelled to wait two years longer before he could be admitted to practice, he employed that time in reading, and in writing essays for the newspapers on books, the theater, and art. As a young lawyer he enjoyed unusual privileges in having a place successively in the offices of two or three very eminent Paris advocates, that of M. Cremieux, especially, who had the largest circle of Hebrew clients of any lawyer in the French metropolis.

His political leanings were early indicated, and he was but thirty years of age when a conspicuous opportunity occurred for declaring them publicly—viz., the defense of the editor of *Le Rappel*, who had been prosecuted by the Government for supporting a movement in honor of a victim of the *coup d'etat* which gave Louis Napoleon his chief historical prominence. The boldness of the young orator astonished the Imperialists, and greatly encouraged the Republicans. The latter saw in this fiery-tongued young man a prophet and leader, and the following spring they elected him as their representative in the Corps Legislatif, although opposed by such men as De Lesseps and Thiers.

A year later the war with Prussia was begun, and when its melancholy *dénouement* in the surrender at Sedan exposed the capital to humiliation and destruction, Gambetta found himself in the place of Dictator practically. Escaping from Paris in a balloon, he collected six hundred thousand recruits to beat off the victorious Germans who beleaguered the French capital, but failed in the great endeavor, because mainly of the superior organization and equipment of the enemy, and partly on account of his own indisposition to accept the advice of men more experienced in military affairs than himself.

After the terms of peace were settled Gambetta went to Spain, and was there during the insurrection and outrages of the Commune. Afterward he was elected Deputy to the National Legislature in nine departments, and took his seat as representative of the *Bas-Rhin*. From that time to his death, he had been very actively employed as the leading agent or promoter of the new era in French affairs. His tongue and pen had a great part in the maintenance of the Republican system against the attacks of its many powerful enemies, and doubtless when Thiers was deprived of his power and McMahon made President, his energy contributed more than that of any other man to meet and conquer the crisis which the advocates of monarchy skillfully brought about in McMahon's term of office.

The past three years M. Gambetta had little connection with the administration of public affairs aside from his influence as the head of the well-known journal *La Republique Française*, which he founded about ten years ago.

FOUR WINDOWS OF CHARACTER.

[*Concluded.*]

THE hand furnishes us with a third index. I do not refer to the assumptions of Palmistry or Chiromancy, that is, divination by the hand. In the dark ages Paracelsus and others elaborated a system by which they pretended to find out one's destiny by examining the lineaments of the hand. Wandering gypsies still continue the imposition among the credulous and curious. The shape and texture of the hand and other physical features do, doubtless, reveal

something of the temper, the health and the employments of the possessor, but it is rather with the conscious and unconscious movements of the hand that we now have concern.

What to do with the hands is a difficult question with the callow youth and the untrained speaker. Their self-consciousness is shown by this form of embarrassment. As character is matured, some skill at concealment is gained, but after all, the motions of the hands, taken in connection with other acts, betray feeling and purpose to one who has studied their signs.

THE PANTOMIME

is a vivid illustration of the power of "pictures in the air" to reveal intention. In its rudest form, gesticulation was the silent language of barbarians. It is said that one could have traveled from Hudson's Bay to the Gulf of Mexico, centuries ago, by the help of the pantomime. Only six of 150 signs used by the Indians of that day need explanation. The oriental "winketh with his eyes, speaketh with his feet and teacheth with his fingers." Prov. vi. 13. Canova once held a silent interview with a Neapolitan by hand and eye alone. These quick motions of the hand form the alphabet of mutes. One of them will tell the story of a shipwreck, for example, so that an intelligent idea is gained of the thrilling scene. By "the talking hand" Greek audiences were held hour after hour, entranced by this form of mimetic art. The general use to-day of pen and type has made us poorer in certain resources of impressive speech.

CHARACTER IN GESTURE

is revealed in much the same way as in vocal tones. The positive man uses a vigorous downward motion as he uses downward inflections of voice in strong, assertive utterances; the apologetic person uses slower and less forcible gesture, as he speaks in quieter tones. The glowing imagination naturally indulges in descriptive gestures wider in range than those which accompany merely didactic speech. Mobility of the hand, as of the mouth, is not altogether a natural gift. Culture gives wonderful expressiveness, not only to conscious, but to involuntary motions of the hand, as to those of the head. Delsarte says that an educated man, wishing to look at an object on either side, will turn first his eye, then his head, and lastly, if needful, the whole body, but a clown turns with one motion and at one moment, eye, head and body. This whole matter is thus connected with the last point, viz.:

THE STEP.

Your coach is a deceptive index of your true condition in life, but by your "carriage" you are known and read of all men. It is more than a figure of speech when the Bible associates character with one's "WALK and conversation," and again, when it says, "having done all, stand." The drill-master's first command to the soldier is, "Stand well!" The apostle's last injunction is the same. God's special blessing is on the upright. Such are likely to be downright. Positive characters and weak ones are thus distinguished. The reveler reels, the miser stoops, and the voluptuary yawns, but the true man shows his inward disposition by his outward bearing. He stands, not as the pugilist or fencer, with one side advanced, as in a hostile attitude to give or take a blow, but *æquo pectore*, uniting self-possession and dignity with gentleness and grace. One's manner is more than his manners. The latter are acquired and are often so artificial that we call them mannerisms, and regard them offensive. But one's mien or air is inclusive of far more than those arts and artifices learned in the schools. The whole outward appearance, including the dress, goes to make up this atmosphere which one carries wherever he goes. His habits make his "habit," the garb in which and by which he is known day by day, a "second nature," as we say. His custom becomes a costume, which he rarely lays aside. As Dryden says:

"The habits are the same
We wore last year."
"When we strive
To strip them, 'tis being flayed alive,"

adds Cowper, with profound truth.

The wiry, nervous man moves with rapid gait; the phlegmatic man with heavy step, and so on with various temperaments. Then there are other principles that form a test, illustrated, for instance, in the stealthy, creeping movements of the thief, the halting step of the inquisitive, or the aimless walk of the day-dreamer. "I know that that man has been a soldier," said one. "How?" "I know it by his walk." He carried the trunk and shoulders steady and firm while the motion of walking brought into action the lower limbs. The turning in of the toes is not a favorable sign. Some associate it with mental weakness. A shuffling gait is another tell-tale sign of character. But to go into details would require a volume. A school to teach youth to walk, has been established in Philadelphia. A noble, graceful carriage is a more useful accomplishment than dancing. If shoemakers will only help the teachers of such a school by making sensible shoes, there might be hope of seeing here the graceful step one notices among the humblest Spanish peasants. But art will never impart the polish which true culture gives. It is the soul within that illumines the face, that gives a persuasive charm to the voice and perfection to gesture and to step. Here ethics and æsthetics unite. It is "by his personality," as Goethe says, that man acts on man. If one wishes to charm or to command by either of these functions it will be through the culture of the moral sensibilities, largely. By such a training, a person will come to wield by his walk and talk, his eye and his unconscious gestures, a power over his fellows alike masterful and beneficent.

PROF. E. P. THWING.

BRAIN-WEIGHT AND BRAIN-POWER.

[The following account of a remarkable man with a remarkable head was contributed to the London *Lancet*, by Dr. J. P. H. Boileau.]

ALTHOUGH the connection between the relative weight of man's brain and his intellectual development is very well known, and several illustrations of this connection have been published, I feel assured that the following notes of a remarkable case may not only well be added to the list of those already recorded, but that it is desirable that this should be done. It is the case of an officer who died at Netley last year, and I am indebted to a published memoir for some particulars of his life.

A Scotchman by birth and parentage, he received his early education in Edinburgh, and afterward went to Wimbledon School previous to entering Addiscombe, where his career was exceptionally brilliant. At the final examination there, he scored an unusual total of marks, gained the sword of honor and Pollock medal, and several prizes for specific subjects. On leaving Addiscombe in 1858, he proceeded to India, where he was employed altogether in civil duties. At the time of his death he was superintendent of the telegraph department. With no military distinctions, he was, nevertheless, one of the foremost men in his corps. Highly gifted intellectually, duty no less than inclination prompted him to cultivate his mind as a preparation for advancement, for he held strongly that no one is fit for highly responsible positions who fails to keep himself as far as possible on a level with current events, and with the thoughts, investigations, and discoveries of the day. His wide reading and tenacious memory made him a man of mark in any society. His opinions were his own, formed independently, expressed, if necessary, forcibly, and followed always

courageously. He was an exceptional man, and his large-hearted and wide-reaching sympathy won him admiration and love among high and low. His remarkable qualities were as conspicuous in his earlier as in his later years. He was a standard of conduct to his school-fellows, and when at Addiscombe the governor did him the extraordinary honor of making a private report to the Board of Directors of the East India Company, which was quoted by the chairman on the examination day. The reputation with which he started increased daily, and was sustained to the last. But the strain was too great. Exposure to a pernicious climate—and his physical strength led him to expose himself only too carelessly—for twenty-four years, with but eighteen months' leave, weakened a naturally magnificent constitution, and he was compelled to take furlough. His intellectual vigor, however, was shown nearly to the last, and only a few days before death he expressed his capability of undertaking difficult mental work. But a sudden change set in, and in a few days proved fatal.

During his stay at Netley he suffered from extreme debility, induced probably by intractable diarrhœa. A day or two before his death he complained of severe headache, and his axillary temperature rose from 101°–102° to 106° Fahr.

It is very much to be regretted that, at the time I was called upon to make the autopsy, I was not in possession of the facts narrated, for, had I been, the examination would have been more complete in many points. The diagnosis of the case was very obscure; but hepatic abscess was suspected, and it was to clear up this point that the examination was made. The severe headache, however, and the rise of temperature, pointed to some cerebral or meningeal mischief, and it was thought advisable to find out if such existed. For this purpose the cranium was opened.

ABSTRACT OF AUTOPSY (made not only with the full permission of relatives, but, I believe, by request).—Cranial bones very dense; dura mater extremely vascular; brain-substance generally firm and normal. On opening the left ventricle pus was observed in the anterior cornu; the origin of this was in the anterior part of the intraventricular portion of the left corpus striatum, which here was quite destroyed and broken down into soft shreds. Before dissection the brain weighed 26,130 grains avoirdupois, or 59·72 ounces. After examination, a portion of it, weighing 22,785 grains, was found to displace eighty-six cubic inches of water; the specific gravity was, therefore, 1·049. The lungs were perfectly healthy, with the exception of the lower lobe of the right. . . . .

The chief interest in this case lies in the great weight of the brain, and its high specific gravity, in relation to the highly gifted intellectual power exhibited by the individual during life. As this brain weighed very nearly 60 ounces, it exceeds that of all others usually quoted, with the exception only of Cuvier's, which weighed 64½ ounces, and that of Dr. Abercrombie, which weighed 63 ounces.* Sir J. Y. Simpson's brain weighed 54 ounces, and that of Agassiz 53·4 ounces. It is well known that the average weight of the adult male brain is under 50 ounces. The specific gravity of the brain I examined was 1·049, and this is as high as any recorded. From Professor Aitken's work I find that the average specific gravity of the brain is 1·036, and the highest specific gravity of the densest part of a brain ever taken by Professor Aitken, or any one else, I believe, is 1·049.

The weight of the brain in this case was, in the first instance, taken by the orderly corporal in charge of our microscope room, and recorded by him on the blackboard in the mortuary. I immediately verified its accuracy by weighing the organ myself, and I also verified the correctness of the weighing-machine.

* A case is recorded in the *British Medical Journal*, October 26, 1872, by Dr. Morris, in which a brain examined at University College, London, weighed 67 ounces. It was that of a bricklayer, who could neither read nor write.

The specific gravity was taken very carefully. Surgeon-Major Hogg, Army Medical Department, was present at the time.

The average cranial capacity of the adult male head is, I believe, about 90 cubic inches. Cuvier's is reported to have been about 118. In the case which I now record it must have been about 108.

THE OLIVE TREE.

THE olive tree came originally from the East. It has since spread to Attica in Greece, and is now cultivated on all the shore lands of the Mediterranean, in the Canary Islands, and in South Africa and America. Its wide-spreading branches, with their lanceolate, leathery, willow-like leaves, dark green above, and whitish grey beneath, add a picturesque charm to the landscape. It bears small, white, fragrant flowers, in short, dense clusters. The fruit is generally oval, the largest about the size of a pigeon's egg. It is sometimes black, or violet, or reddish, or green, and surrounded with a greenish white pulp. From most ancient times this tree has received divine worship. Among the Greeks it was sacred to Minerva, and was a symbol of chastity. Only the more chaste youths and maidens might gather and prepare the fruit. Among the Greeks an olive crown was the highest honor bestowed on the most deserving citizen, and the highest prize

THE OLIVE TREE.

given the victor in the Olympian games. The olive branch was the symbol of peace, and the conquered in battle, who came to pray for peace, brought an olive branch in their hand. The olive, like the orange, requires much care to bring it to its greatest perfection.

Those most fruitful and beautiful grow in the region around Mentona. There the mild temperature is favorable as well as in Rome and Naples. The thermometer there, through all the years between 1818 and 1870, fell below zero four times, then only for a few hours during the day.

The Olive Flowers and Fruit.

A French writer who visited this region says, "Many times I had looked with contempt upon the olive tree in my own country. I had seen the olives of the Provinces small, slender, homely; I was glad when a newspaper reported that a frost had destroyed all the olives around Toulon and Nismes, though the poor people had lost part of their means of subsistence—for I was delighted for once to have the disagreeable objects out of my sight. But when I came from Yurbi on foot to Monaco, and passed Cape Martin, my indifference and dislike were changed to the most enthusiastic wonder and admiration. They were more beautiful to me, those stately olive trees, than the noble old oaks as I first saw them in the wood near Fontainebleau. Mentona's olive is the unrivaled monarch of all the trees on the Mediterranean shores. In that delightful region, never chilled or blighted by the frost, it attains its most perfect beauty. Transcending all artistic rule, their curving, graceful, willowy branches ascend heavenward in fantastic forms, so unique, so capricious, so unlike all other trees.

"The winds play through the opening leaves. The sunbeams, now imprisoned in the upper caressing boughs; now coming and going with ever-changing glow; now illuming the dark green above, now lingering on the soft grey beneath, every moment giving some new bewitching charm; you leave the spot with a sigh, and come back to gaze again at the beautiful sight. One may wander beneath their shadows or view them from a neighboring height with ever-increasing admiration. In spring-time they look their loveliest, then the leaves wear their fairest, brightest green."

The olive blooms in April, and gives a luxuriant harvest once a year, yielding a most generous profusion of fruit. The oldest trees are even the most beautiful; they gather grace and charm with each new year, and are a great treasure to their owner. Of the ripe fruit a medicine is prepared, which is considered of great value. The fruit gathered before it is ripe, is often laid in layers of salt and vinegar, after being first steeped in lime-water, to soften and make more agreeable to the taste. These pickled olives are thought to give an appetite and help digestion.

The olive tree has a very strong astringent bark, and the leaves have also this property, and are thought very useful in checking or breaking up a fever. From the older stems exudes a kind of resin which has the odor of vanilla. This con-

tains a kind of crystalline substance, called olivin, much prized in all Italy for perfumery, and to give an agreeable flavor to tobacco used for smoking. The wood of the olive tree is capable of a most beautiful polish. Its greenish-yellow ground, with its cloudy spots and delicate veins, make it much sought for, for the finest work of cabinet-makers and turners. Most exquisite snuff-boxes and little ornaments are made of it. The wood of the root, in color and fine lines, has a close likeness to Florentine marble. It is so valuable in commerce and industrial art, that its cultivation in many parts of southern France, Italy, and Spain, is the chief occupation and support of many people.

Some of the most wonderful trees of this species in the world, are found on the Mount of Olives. On the summit of the mountain is a square plot of ground, enclosed by a rough wall of stones, where are eight enormous olive trees of very great antiquity; the people of the neighborhood say that they were there at the beginning of our era, and their site is that of the "Garden of Gethsemane," over the brook Kedron, where Jesus often resorted. The trunks of these trees are of great size, they have become splintered and shriveled with age, and are great curiosities as vegetable productions.

The olive with the best cultivation becomes a tree forty feet high. The oil is contained in the pulp, not as in other fruits, in the nut or kernel. To extract this the olives are first bruised by a millstone, then put into a sack, and then into the trough of a press for the purpose, which, by means of turning a strong screw, forces the stronger juice out, which is called virgin oil. This is received in vessels half filled with water, from which it is taken off and set apart in earthen jars. Several coarser kinds are obtained afterward by adding hot water to the bruised fruit."

The olive is cultivated south, as far as Cairo, and north to the middle of France. The Chinese olive bears very sweet flowers, with which tea is flavored.

The broad-leaved American olive grown in Virginia, is from thirty-five to forty feet high. Its wood is hard, its fruit palatable, and the flowers very sweet. England is too cold for the olive, though sometimes the ripening fruit may be seen on a sunny southern wall in Devonshire.

Pliny tells us that oil warms the body and cools the head. The ancients applied olive oil externally for health, for development and for luxury—always before their baths, and before any athletic exertion. Oil externally applied is now becoming popular for dyspeptic and consumptive patients. Many are said to be benefited by an inunction of cod-liver oil.

While one physician denounces what another prescribes, we sometimes turn hopelessly to nature's simplest aids and find them best: Who shall tell why faith and anointing in cathedral and palace, in birth and death, are ever side by side? Why upon the heads of kings and prophets has the oil been poured? Why is the oil of joy and the oil of gladness promised in the deepest sorrow? May these not be symbolic of some healing virtue not yet fully discovered?

Egyptian, Jew, Greek, Roman, Arab, African, and Esquimaux have all used oil externally as invigorating, strengthening, and protecting. In baptism, in confirmation, in ordination, in consecration, in benediction, in coronation, in tradition and legend the oil of olives has kept its hallowed place. An interest both historical and classical gathers around the beautiful tree whose leaves have been a symbol of peace and blessing ever since the dove brought to the storm-tossed ark the peaceful olive-leaf.

WOMAN *vs.* LADY.—At an Irish meeting lately held in Dublin for establishing a Technical Training School, quite a dispute arose as to whether it should be called the Women's Institute or the Ladies' Institute. Rev. Professor Houghton was decidedly in favor of "Women's," and said when he was in America the chambermaid at Niagara called herself a "lady," and not long after stole his silk muffler.

We do not know that the time will ever come when every American woman will be called a "lady," but we doubt whether a more beautiful and interesting woman has ever lived than Eve, and she was content to be called a woman, and her husband was as well-pleased with the designation as she was. Besides all this, God said: "She shall be called Woman." What sense there is in the universal substitution of "ladies" for "women," is one of the things we do not comprehend.

WILLIAM E. DODGE,

THE MERCHANT-PHILANTHROPIST.

AMONG the old merchants of New York, none held a higher place in public esteem than this gentleman. Of commanding appearance, he looked at once the man of affairs and the man of sympathies. The face was strong, emphatic, spirited, yet its expression was kind and winning. The contours of forehead, top-head, and side-head, show Mr. Dodge to have been a thoughtful, practical, careful man in the affairs of business, and a sympathetic, humane, generous man in the affairs of home and society. He was endowed with a keen intuition, which made him very prompt in judging and forecasting matters; and behind this intuition were the energy and circumspection requisite to the practical realization of its judgments.

MR. DODGE was born near Hartford, Conn., September 4, 1805. His school privileges were few, as in 1818 his father removed to New York City, where the boy of thirteen became an errand-boy in a dry-goods store on Pearl Street. The population of our metropolis at that time was less than 120,000, and the houses within the limits, did not extend much beyond Canal Street; and John, Fulton, Gold, and Cliff Streets were filled with private dwellings. At twenty-one years of age, Mr. Dodge went into business with a Yale College graduate; and a few years later married a daughter of Mr. A. G. Phelps, an enterprising manufacturer and conductor of an important business in metals. A new store building had just been built the corner of Fulton and Cliff Streets, when in March, 1833, the foundations gave way, the building fell, and seven persons were crushed to death. Among them were two book-keepers and a confidential salesman, whose loss crippled the firm's working force. Mr. Phelps then turned to Mr. Dodge and another son-in-law, and invited them into the office. There they remained a year or more, when the business was reorganized, and the house of Phelps, Dodge & Co. was established. The partners were Anson G. Phelps, William E. Dodge, Daniel James, and James Stokes. The business of the house, already of some magnitude when the change was made, thrived under the keen, wise, and energetic policy of Mr. Dodge, and for a long time it has been one of the largest firms engaged in its line of business in the country. Mr. Dodge was the last of the original partners to die, and he retained an interest in the house until January 1, 1881. Mr. Stokes, like his younger colleague, was a son-in-law of the senior partner, and though the number of partners has since then for a period numbered nine, they have all been sons and grandsons of the original members.

The old firm was dissolved on January 1, 1879, but Mr. Dodge remained associated with the present partners as special partner for two years thereafter. During all the years of his active commercial life

he was almost daily at his office. Energy, clearness of purpose, directness of method, order and grasp of detail were among his characteristics as a business man. He handled vast interests, but always had time to devote to the multitude of religious and philanthropic works in which he was interested.

Probably no man in the country has devoted more of his income to benevolent purposes. In some years he gave upward of $300,000. At no time within several years past did his benefactions amount to less than $200,000.

In politics Mr. Dodge was a Republican. He was a member of the Union Defence Committee, organized by the Chamber of Commerce early in the war. He was a delegate to the Peace Convention at Washington in 1861. In 1865 he claimed the election to the Thirty-ninth Congress, although the certificate of election was given to James Brooks. Mr. Dodge contested the seat, and the House decided on April 6, 1866, that he had received 8,378 legal votes, against 3,362 for James Brooks. Mr. Dodge took his seat on the next day. He served on the Committee on Foreign Affairs. In the Congressional debates on reconstruction, he opposed the original Reconstruction bill and the impeachment movement as dangerous to the business interests of the country, and asserted that a partial paralysis of those interests would follow the passage of the bill. He was appointed an Indian Commissioner by President Grant.

The cause of Temperance has lost a most earnest friend in the death of Mr.

Dodge. In fact the National Temperance Society had its origin in his Cliff-street office in 1865, and he was its president from the beginning till the present time.*

Mr. Bungay, in a sketch of this distinguished merchant, published in his "Pen Portraits of Illustrious Abstainers," says thus appreciatively:

"Mr. Dodge has made heavy investments in almost every enterprise that points toward the reformation and the regeneration of the race. The church, the Sunday-school, education, temperance, have been 'many times and oft' the recipients of his generous benefactions. His heart is moved by 'the wants of man,' and its pulsations put the thought of giving into his head. He gives discreetly, not under the emotion of mere impulse, but after deliberation. Religion and reform have drawn rich prizes from his exchequer, but they have not been the prizes of accident and chance. In pulpit and pew, and in almost every phase of honorable life, there are those who 'rise up and call him blessed.' His great capacity for business is proved by his success. As a man of brains he rises to an altitude that commands the respect and honor of not a few of the best-educated thinkers in this country. The merchants of New York joined with their neighbors in an effort to send him as a Representative to Congress, where his excellent common sense, controlled by conscience, led him to a faithful and honorable discharge of his duties. So frequently is he called on to preside at public meetings his face is familiar to the multitude. He is now, and he has been for several years, the President of the National Temperance Society, and he is 'the right man in the right place.' He is prompt as 'the dial to the sun'; a ready and sensible speaker, who knows how to say without over-saying the right word at the proper time; and he is sufficiently familiar with parliamentary usage to conduct a public gathering with propriety and dignity. Mr. Dodge is tall and slender, has dark hair with lines of silver, finely-cut features wearing the stamp of integrity and firmness, and a knowledge of the world. He dresses plainly, but always in good taste, and never assumes airs of importance because of his wealth and influence."

* We are indebted to the National Temperance Society for the use of the portrait of Mr. Dodge.

A SENSIBLE PREACHER.

I HAVE been to-day engaged in a pleasant and profitable occupation, that of looking through some old files of the PHRENOLOGICAL JOURNAL; and in the issue for June, 1876, I found a criticism on a reminiscence of George Combe. The reminiscence was from the pen of Frances Anne Kemble, and the criticism by Thomas Turner. Miss Kemble claimed to have enjoyed the friendship of Mr. Combe, and she spoke of him as one of the greatest and best men she ever met; but she thinks that his greatness would have been far more conspicuous had he not advocated phrenology. I am reminded, by reading this flippant opinion of Miss Kemble, of meeting, some years ago, a Methodist clergyman who, on learning that I was a phrenologist, said:

"I am also a firm believer in phrenology. I was a student in Yale College when the distinguished Scottish philosopher, Combe, visited this country—in 1837, I believe it was—and a subscriber to the course of lectures which he delivered in New Haven. I have never ceased to thank God that I had been favored with the opportunity to hear the science of phrenology presented in his able and convincing style. I was then of opinion—and that opinion has been confirmed by my large experience in the ministry—that phrenology is of inestimable value to the preacher of the Gospel, and I could hearti-

ly wish that it could be taught in all theological colleges. Indeed, it ought to be taught in all colleges, and in our public schools."

My clerical friend having thus expressed his views, he said: "I am informed that you are to remain in this place over the next Sabbath."

"That is my purpose," I replied.

"I am glad of it, and hope that you will consent to occupy my pulpit one Sabbath evening, and give my people and myself a lecture on phrenology."

I accepted the invitation, and gave a discourse on the Moral and Spiritual Nature of Man, considered from the Standpoint of Phrenology. At the close of the lecture my new friend arose, and said: "Brethren, I can say 'Amen,' to every word the doctor has uttered, and I am quite sure that I am not too complimentary to him in saying, as I do, that you have probably never listened to a lecture or sermon from this pulpit which contained more religious truths than the lecture you have just heard."

Would that all the theological students in this country had heard Mr. Combe.

T. A. BLAND.

Washington, D.C.

PROMINENT PHRENOLOGICAL CHARACTERISTICS OF ALEXANDER THE GREAT.

[*Concluded.*]

THE Benevolence of the conqueror was displayed in his treatment of the wife, mother, and daughters of Darius. After he had defeated that monarch, he sent Leonatus to assure them "that Darius was not dead; that they had nothing to fear from Alexander, for his dispute with Darius was only for empire." "If this message to the captive princesses was gracious and humane, his actions were still more so. He allowed them to do the funeral honors to what Persians they pleased, and for that purpose furnished them out of the spoils with robes and all other decorations that were customary. His behavior was noble and princely." Probably Conscientiousness, Veneration, Self-esteem, Approbativeness, and Benevolence combined with the social faculties to prompt such clemency.

After the fall of Gaza "he sent most of its spoils to Olympias and Cleopatra and others of his friends. His tutor, Leonatus, was not forgotten, and the present he made him had something peculiar in it; it consisted of 500 talents weight of frankincense and 100 of myrrh." Apparently such actions as that exhibited in the preceding sentence savor largely of Benevolence and Friendship. It should be borne in mind as well that the treasures dispensed were plundered from conquered cities; they were acquired by spoliation, and transferred from their owners to the personal friends and favorites of Alexander. It is very questionable whether such a disposition can be justly termed Benevolence. The following incident perhaps shows a more laudable spirit of generosity and purer benevolence: "When Athenodorus was fined by the Athenians for not making his appearance on their stage at the feasts of Bacchus, and entreated Alexander to write to them in his favor; though he refused to comply with that request, he paid his fine for him." This action appears to indicate Benevolence, Approbativeness, and Self-esteem. The lordly spirit of Alexander would have felt humbled perhaps by appealing to the Athenians, especially if the request were denied; whereas, by discharging the fine himself, he maintained his dignity and increased his reputation.

After the defeat of Darius, "the Persian empire appeared to be entirely destroyed, and Alexander was acknowledged king of all Asia. The first thing he did was to make his acknowledgments to the gods by magnificent sacrifices; and then to his friends by rich gifts of houses, estates, and governments." Here we be-

hold an expression of moderate Acquisitiveness, much Self-esteem and Approbativeness, Friendship, Wonder, and Veneration.

"Indeed, in the least good offices he did his friends there were great marks of affection and respect. He wrote to Pencestas, who had been bitten by a bear in hunting, to complain that he had given an account of the accident by letter to others of his friends and not to him. But now, says he, let me know, however, how you do, and whether any of your company deserted you, that I may punish them, if such there were." The least good offices spoken of here bears the stamp of envy and resentment—Destructiveness, Secretiveness, Self-esteem, and Approbativeness—unpleasantly affected with Combativeness and Friendship.

There does not appear the beautiful action of Benevolence unalloyed, for if there did Alexander would have rejoiced at what he otherwise considered the good fortune of others, instead of complaining that he had been neglected. The next instance, however, is less equivocal. "When Pencestas recovered of a dangerous illness, Alexander wrote a letter with his own hand to Alexippus, the physician, to thank him for his care." Benevolence associated with Friendship, probably prompted such a letter.

Alexander seems, at different times, to have been moved by very different motives. On some occasions he apparently acted very humanely and with great reasonableness, while at others his conduct was almost fiendish. "In cases of aspersion of his own character his reason forsook him, and he became extremely and inflexibly severe, as preferring his reputation to life or empire." The general career of the man demonstrates the unregulated sway and presence of Self-esteem and Approbativeness predominating over Conscientiousness and Benevolence.

The following incident, like others, speaks of Philoprogenitiveness. "The barbarians fell suddenly upon a party who were leading his horse Beucephalus, and took him. This provoked him so much that he sent a herald to threaten them, their wives, and children, with utter extermination if they did not restore him the horse. But upon their bringing him back and surrendering to him their cities, he treated them with great clemency, and paid a considerable sum by way of ransom to those that took the horse." It is reasonable to presume he regarded Beucephalus with feelings of peculiar tenderness, the steed having been his constant companion probably since the day he undertook the task of subduing him. "One Sicritus says Beucephalus died of age and fatigue, for he was thirty years old. Alexander showed as much regard as if he had lost a faithful friend and companion; he esteemed him, indeed, as such, and built a city near the Hydaspes in the place where he was buried, which he called after him—Beucephalia. He is also reported to have built a city and called it Peritas, in memory of a dog of that name, which he had brought up and was very fond of. This particular dog, Sotio says he had from Potamo, of Lesbos." The foregoing citation, if true, portrays much Philoprogenitiveness and Friendship, and equal Self-esteem and Approbativeness. The reference to clemency is striking, if not amusing. They surrendered their cities to him, and he paid them a ransom for the horse, but whether the cities were more valuable than the ransom does not seem to have troubled the biographer, or excited comment. "When he came to Ecbatana in Media, and he had dispatched the most urgent affairs, he employed himself in the celebration of games and other public solemnities. But unfortunately Hephæstion fell sick of a fever, and died in the midst of this festivity. Alexander's grief on this occasion exceeded all bounds. He immediately ordered all the horses and mules to be shorn, that they might have their share in the mourning, and with the same view pulled down the battlements of the neighboring cities. The poor physician he crucified. He designed to lay out 10,000 talents upon Hephæstion's tomb and the ornaments, and that the work-

manship as well as design should exceed the expense, great as it was." The occurrences described here are due, no doubt, to great Self-esteem, Approbativeness, and Friendship, with an absence of Christian principle to enlighten the intellectual powers, and direct the moral sentiments into channels of philanthropic usefulness. Superstition in Alexander's age misdirected even his stupendous powers.

The character of Alexander is that of a military chief. He followed war and conquest as a profession, and operated upon a gigantic scale. It is impossible to believe otherwise than that he possessed an immense head, as he displayed extraordinary power, and his plans were vast and extensive, such as could only be conceived by a prodigious mind. That he was a wonderful mixture of good and evil is beyond controversy. That he performed some noble achievements is undeniable, but it is equally true he committed enormous crimes. One of the deepest impulses of his nature, that soared high above all others, was a towering ambition; and this, actuated by a warlike spirit—Combativeness, Destructiveness, Self-esteem, and Firmness—corrupted, constituted him, in the eyes of human reason, one of the most magnificent animals the world has ever seen. But while we thus characterize and condemn what seem to be iniquities passing the bounds of computation, we likewise concede that the part he played on the stage of human events may have been converted by Omnipotence into seeds of civilization which have borne beneficent fruits, enriching the nations of to-day. Bossuet, in his oration for Louis Bourbon, says: "Who could have formed Alexander but the same God who made him visible from afar to the prophet Daniel, and revealed to him by such vivid images his unconquerable ardor? . . . . See that conqueror, with what rapidity he advances from the West, as it were by bounds, and without touching the earth."

The Rev. G. W. Cox sums up the life of Alexander by saying that "It would be unfair to place him in the ranks of those scourges of mankind amongst whom Alaric and Attila, Genghiz and Timour, stand pre-eminent, and that not one of the accounts that have come down to us is strictly contemporary, so that fairness calls upon us to give him the benefit of a doubt when this can be justly entertained. It is impossible to deny that with a higher sense of duty Alexander would have better deserved the title of Great."

THOMAS TURNER.

MARCH.

Brave March goes through the woods in spring;
Tells flowers to bloom and birds to sing,
With threads of green he marks the trees,
Where Nature's future curtain weaves.

With golden glow he crowns the hills;
With kindling hope the heart athrills,
He frees the streams enchained so long,
And makes their flowing tide of song.

He tunes the wind's grand anthem high;
He opes the daisy's starry eye;
He sweeps the green cathedral aisle,
And wakes the violet's sleeping smile.

Through the tall trees the blackbirds sing,
The warbling larks high heavenward wing,
While on the ear in tuneful peals,
The blackcap's silvery sweetness steals.

BY some mysterious, almost instantaneous change, we know when each new month comes in. Each month wears a new type and brings to us new weathers. January comes cold, stern, frosty. February appears, and the sky usually weeps, and the earth weeps, it rains, rains, rains, and the long locked-up frosts and snows, give away and end perhaps in a great comfortless thaw—but March appears dry, clear and dusty. The clouds fly swiftly over our heads, and "twelve hours of March air will dry the damp ground left by February almost to dustiness." Rude, stormy March gives us a charming sensation; he brings the year's first green, the earliest bird-song. The whole landscape is a picturesque blending of last year's paling brown, with this year's brightening green. Arum and cherril, ivy and glaucus, snow-drop and violet

and daisy and crocus, give their early burst of white, green, and purple, blue and gold, and now the shining ranunculus comes,

"The first gilt thing
That wears the trembling pearls of spring."

The snow-drop brings its white bells, the crocus lifts its bare head, the violet half hidden in its withered leaves peeps out, just to say that March is come. Dear violets, how we love them! how friendly they are to breathe us their balmy benediction before we see them. How they cheer the Alpine mountains, brighten bleak Norway, breathe their balm beneath the tall palms of Africa, waft their perfume through the Mediterranean isles. Shakespeare says "violets are sweeter than the lids of Juno's eyes." He has mentioned the violets so often, it must have been a favorite flower of his, and it is now found growing abundantly in the neighborhood of Stratford-on-Avon. The bard may have often stopped to look at them in the same place where they are now waiting to open their dewy eyes. No perfumer has ever been able to extract the odor of the violet. Its resistless charm it keeps and gives to all itself. We might as well ask the star for its gold, as the violet for its sweet. The poet can not give his heaven-born gift, and the violet is Nature's pure sweet poem.

While the first violets are opening their eyes, and giving their delightful odor, the blackcap, earliest of birds, is singing in the trees. He is only equaled in sweetness by the nightingale, and in some of his tones he excels the nightingale. He has a fine black crown on his head; it looks "like a wig a little too big for his head," but listen to him, he has "one silvery shake that no other bird can compass, it sinks as low as music's deepest tone," yet is as distinct as the low ring of a silver bell. There is an unapproachable depth in its low sweetness. "When it sings its little throat is wonderfully distended, and the whole of its little body shivers with delight." It loves to build its nest in the sheltering ivy, where it carefully lays its four or five fancifully spotted eggs. One who hears this blackcap warbler never forgets the melody.

March brings with it the daisy too, one of the earliest flowers that keeps its simple Saxon name, day's eye—and the eye of day it is called, as far back as we can read of it. One of the first flowers, says one, that strayed and grew outside the garden of Eden. Chaucer, the father of English poetry, five hundred years ago, used to rise early in the morning and lie down on his side on the green bank, to watch the daisy unfold. He was the first to tell us that the daisy slept. Stars of the east, the poets have called them. The oldest men in the country say, spring has not come until we can plant our foot upon nine daisies; and many an old grandsire calls his wife to come and count the daisies under his feet, to see if there are really nine. March brings with it the beautiful anemone too, that never opens its petals unless the wind blows. Stirred by the wind, they turn their reddish purple outside to the light, then waving back, reveal their inner white-grey heart till you see a blended white and purple glory waving in the wind from their graceful pendant cups.

Sunshiny and stormy, cloudy and calm, so variable is March, our forefathers used to call it March many-weathers, now cooling, now glowing, now resting, now blowing, the bird-world and the flower-world, the insect-world are waking at his call. A thousand "round-headed tadpoles" are waiting in the ponds soon to assume the dignity of lively young frogs. The thrush and blackbird are singing in the tree tops, where no leaves are seen, but they are even now beautiful with their bright brown, and red, and purple hues. "Flushed into life" are the shining lead-colored boughs, and perched between them is the early nest of the thrush. The linnet, the greenfinch and golden-crested wren are all singing. The blackbirds and the turkey lay, and the house-pigeons are sitting. Ants and trout, and worms, and black beetles are waking into life. You

see the flowers of the yew and the catkins of the hazel, the alders covered with black bunches of flowers, the honeysuckle opening its leaves, the blue-bell blades springing from the ground, the daffodils cheering the children's eyes. Bats and reptiles wake from their sleep, the little fish go up the stream, little lambs appear, the crows are building, baby chickens and geese and ducks are opening their eyes, the ring-dove coos, the thrush sings, and last of all "the bee comes with his vernal trumpet," to tell us of sunshine and flowers, and in old England the crows are cawing from the high old elms, their family home for centuries, overhanging some ancient hall, "grey with the moss and lichens of forgotten years."

The name March was derived from the Romans, among whom it was the first month of the year, and named after Mars, the god of war and the father of their first prince. The legal year began in March, even in England, until 1752. The Saxons called March, Lenet month, because the days now began in length to exceed the night; this is also the origin of the word Lent. March is portrayed as a man with a tawny color, and fierce aspect, with a helmet on his head, typical of Mars, and leaning on a spade, holding almond blossoms and scions in his left hand, a basket of seeds on his arm, in his right hand the sign of Aries or the Ram, which the sun enters on the 20th of March, denoting the augmented power of the sun's rays, which in ancient hieroglyphs were expressed by the horns of animals.

In the brief reign of March, poets and martyrs, saints and heroes, sages and philosophers have found their natal day. Discoverers and inventors have found their beginning's crown in March; fast-day and festival, imposing and hallowed, come with March.

In March we have St. David's Day, St. Joseph's Day, St. Patrick's Day, and usually Maundy Thursday, Good Friday, Palm Sunday, Easter Sunday, and Holy Saturday, and the Jewish Passover.

The first day of March is St. David's day. David is the titular saint of Wales. In the legends of old, most marvelous and miraculous powers were ascribed to him. It is said that an angel was his constant attendant from his birth. He gave the waters of springs their curative and restoring power. He healed the sick and re-animated the dead. Wherever he preached a snow-white dove sat upon his shoulder. The earth on which he stood when he preached was raised miraculously from its level to make a hill from which all could hear his voice. He is entitled the lineal descendant of the Virgin Mary. But barring all these traditions gathering around the good man's memory, St. David was really a good and noble man, a guide, a support, a protection to many, an example to all. In 519, he became Archbishop of Caerleon and Primate of Wales. His archiepiscopal residence was at Menena, the present St. David's, where he died a very old man in 544. He was buried in the cathedral, and the simple monument raised to his memory is ornamented with one row of quatrefoil openings upon a plain tomb. Before the Reformation St. David had more honors paid to him in England than in his own country.

The leek is, as the rose is of England, the thistle of Scotland, and Shamrock of Ireland, the emblem of Wales, and is worn on St. David's day in memory of a great victory over the Saxons. During the conflict, it is said the Welshmen put, by St. David's order, leeks into their hats to distinguish them from their enemies. Gilt leeks are still carried in processions by the Welsh branches of friendly societies; this national badge decorates the mantel-piece in Welsh houses on the anniversary of the patron saint.

On the first of March, 1468, William Caxton, the illustrious printer of the first English book, began to translate at the city of Bruges the "Recueil of the Histories of Troy." This was the first English book ever printed. Who shall tell the number of the legion that have followed it. On the first of March, 1711, appeared

the first number of the *Spectator*, the most popular work up to that time England had produced.

The *Tattler* and *Spectator* were the first attempt in England or any other country to bring out a paper at stated intervals at a cheap rate, "to bring philosophy out of closets and libraries, schools and colleges, to dwell in clubs, and assemblies at tea-tables and coffee-houses." Its great success was chiefly owing to the pen of Addison.

In March over 200 years ago, in 1662, the first omnibus was driven through Paris at seven in the morning. It was a grand and gay affair. Three of the coaches started from the Porte St. Antoine, and four from the Luxembourg. Previous to their setting out, two commissaries of the Chatelet in legal robes, four guards of the grand provost, half a score of city archers and as many cavalry, drew up in front of the people, the commissaries delivered an address upon the advantages of the twopenny-half-penny carriages, intreated the riders to keep good order, then turning to the coachmen, covered the body of each with a long blue frock, with the arms of the king and the city showily embroidered on the front. There was a provost guard in each carriage, and infantry here and there proceeded along the prescribed routes to keep them clear. On March 5, 1850, Robert Stephenson first sent his locomotives decked with the flags of all nations, through the wonderful Britannia tubular bridge, over the Menai Straits. A train of three hundred tons rested with all its weight for two hours, in the center of the tube. The plates and rivets bore the test triumphantly, and thus was completed a modern wonder of the world. Engineers, directors and shareholders, and curiosity seekers from all countries, swelled the number on both sides of the Straits to see the great undertaking.

In March, Beethoven and Goethe, Kirke White and Cranmer were born, and, on the 3d of March, the poets Davenant, Otway, and Waller. Edmund Waller was born in 1605, and will be remembered for his beautiful lyrical poem, beginning—

"Go, lovely Rose."

An account of the noble deeds, the great discoveries and of the great men born in March would fill volumes. Not the least of the most wonderful is the discovery of the planet Uranus, on the 13th of March, 1781, by Sir William Herschel. While he was patiently examining some small stars in the constellation Gemini, he marked one new to him. Through different telescopes he watched it night after night to find out that it was not a fixed star, or a comet. He watched it for six nights and then communicated all he had learned of the strange visitor to the Royal Society.

After astronomers everywhere had calculated and computed to find out the supposed new comet's orbit, they decided it was a planet—a member of the solar system 1,800 millions of miles from the sun, 35,000 miles in diameter. Herschel named it Georgium Sidus, in honor of the king who had generously supported him, but the continental astronomers wished to follow the old mythological system, and gave it the name Uranus.

Let us all welcome March, and try with the departing cold of winter to leave our sorrows and our errors buried beneath its snows, and with its fresh breezes and the budding leaves let green hope unfold again in our hearts; let good thoughts, good words, and good deeds spring up anew in the field of life before us, for only in the brave true soul can eternal spring abide. LYDIA M. MILLARD.

FROM THE ITALIAN.

As lava in the hollow earth,
Though long restrained, bursts raging forth
Through firmest barrier high,
O'er meadow green, its fiery path,
Burns every fountain dry,
So will a daring soul go forth,
To win its way o'er all the earth,
And under every sky.
Through thought's green valley far she winds,
And every golden flower she finds
On art's blue mountain high.

LYDIA M. MILLARD.

EDUCATION AND HEALTH.

EDUCATION is too often secured at the expense of health. When it is attained at such a sacrifice, it is purchased at too dear a price. It were better to remain uneducated, possessing health, than to become educated at the expense of health. Education is a desirable attainment, an almost indispensable requisite in the present stage of the world's civilization, yet it will be of little advantage to him who has ruined his health in obtaining it. A less degree of education with a sound physical system to enable the possessor to make use of the knowledge possessed, is far preferable to a high degree of education with enfeebled powers of body and mind to make use of it. Intellect rules the world, is honored and respected. No longer is the man possessed of great strength the one honored and respected above others. Such a person may excite, for a few days, a certain degree of admiration, but is soon passed by and forgotten. Even success in war is not won by physical strength, but by intellect, strategy, and skill. Wealth is won by knowledge, foresight, and good judgment more than by hard work. In short, all that seems most desirable in life comes through the intellect, hence the universal desire to develop the intellect in order that the good things of life may be had in larger measure. Parents feel a pride in the mental ability and attainments of their children, and encourage them to greater efforts. And is not this right, and is it not a highly desirable state of affairs, it may be asked. Certainly education is desirable, and it is highly desirable that every one should be educated, but it is not desirable that the education should be obtained at the expense of the health. Yet it is a fact that a large part of our people are injured in health during the progress of their education. The health of some is ruined, while that of many is more or less impaired.

WHY DOES EDUCATION IMPAIR THE HEALTH?

Why is it that education so generally impairs the health? Are we so constituted that the development of the intellectual faculties must necessarily be obtained at the expense, or by the impairment of the physical powers? Certainly not; properly managed, the development of the intellect is favorable to the healthful development of the physical powers. But management of the process of education is the cause of the ill effects upon the health. Too much is attempted too early in life, and oftentimes later in life the physical well-being is utterly disregarded. The brain must grow before continuous hard work is required of it, just as the muscles must have time to develop before continuous manual labor can be performed. The ill effects of putting young children to hard work during the period of growth are well known in all manufacturing towns. Boys and girls, of

the age of seven or eight years and upward, are often kept in mills to labor ten or eleven hours per day. Their stunted and partly developed bodies and limbs show too plainly the bad effects of overwork in youth. The bad effects of overwork of the brain of children are none the less conspicuous to those who have eyes to see such things. If any persons doubt that the children in our schools are almost universally overworked, let them try to learn the lessons required of boys and girls of the age of twelve years and upward, and see if their mature brains will not have all the work that they feel able to perform. If this is true, then is it not overwork for the brains of children to accomplish such tasks? What must be the effect upon their immature and undeveloped brain tissues? If such tasks are to be performed, they must be accomplished at the expense of the growth or development of the brain. The energies which were designed to be used for the full development of a large, healthy brain are used up in the learning of lessons, and the nutrition of the brain is interfered with.

THE BAD EFFECTS OF EXCESSIVE BRAIN-WORK.

The ill effects of excessive brain-work in children has often been pointed out by the best medical authorities. Dr. B. W. Richardson, the well known English writer, says: "I have known a regular imposition of work per day, equal to the full complement of natural work for many a man and woman. There are schools in which children of eight, nine, and ten years of age—and it may be younger children still—are made to study from nine o'clock until noon, and again, after a hasty meal and an hour for play, from two to five in the afternoon, and later on, are obliged to go to lessons once more preparatory for the following day. The bad fact is, that the work is actually done; and as the brain is very active because it is diverted from its natural course, the child it belongs to may be rendered so unusually precocious, that it may become a veritable wonder. Worse than all, this precocity and wonderful cleverness too often encourages both parents and teachers to press the little ability to some further stretch of ability, so that the small wonder becomes an actual exhibition, a receptacle of knowledge that can turn up a date like the chronological table of the 'Encyclopedia Britannica,' give the whole history of Cleopatra, to say nothing of the Needle, carry you through a Greek verb without a stop, and probably recite a dozen selections from the hardest poets. This is the outside of the marvelous picture. Let us look at the inside of it, as a skilled eye can easily look and read too. These precocious coached-up children are never well. Their mental excitement keeps up a flush which, like the excitement caused by strong drink in older children, seems like health but has no relation to it. . . . . If you watch the face for long, you note that the frequent flush gives way to an unearthly paleness. If you watch the eyes, you observe that they gleam with light one time, and are dull, depressed, and sad at another, while they are never laughing eyes. Their brightness is the brightness of thought on the strain—an evanescent and dangerous phenomenon. If you feel the muscles, they are thin and flabby, though in some instances, they may be fairly covered with fat." Dr. Andrew Combe, in his work entitled "Principles of Physiology," says: "At any time of life, excessive and continued mental exertion is hurtful; but in infancy and early youth, when the structure of the brain is still immature and delicate, permanent mischief is more easily inflicted by injudicious treatment than at any subsequent period." Notwithstanding these and other warnings from time to time uttered by medical men, the evil of excessive brain activity in children goes on, and seems likely to continue until parents themselves comprehend the danger and shield their children from it.

THE END OF EDUCATION FRUSTRATED.

Imposing excessive brain-labor on children does not promote the end of educa-

tion; on the contrary it frustrates the very purpose in view. The children whose brains are overworked in youth are not the ones who become the most brilliant and talented men. The precocious children are seldom distinguished for brilliancy of intellect when they become men; on the contrary, many of them seem to fall below the average in intellectual ability. The men who make their mark are generally those who, during early life, were not stimulated to excessive brain-work, but who learned a little as they went along, and gave their brains a chance to grow and become fully developed. In regard to this matter, Dr. Amariah Bingham, says: "The history of the most distinguished men will, I believe, lead us to the conclusion, that early mental culture is not necessary in order to produce the highest powers of mind. There is scarcely an instance of a great man, one who has accomplished great results, and has obtained the gratitude of mankind, who in early life received an education in reference to the wonderful labors which he afterward performed. The greatest philosophers, warriors, and poets, those men who have stamped their own characters upon the age in which they lived, or who, as Cousin says, have been the 'true representatives of the spirit and ideas of their time, have received no better education, when young, than their associates who were never known beyond their own neighborhood. In general their education was but small in their early life. *Self-education* in after life made them great, so far as education had any effect. For their elevation they were indebted to no early *hot-house culture*, but like the towering oak, they grew up amid the storm and the tempest raging around."

HOW GENIUSES ARE SUPPRESSED BY EDUCATION.

Not only is excessive brain effort in youth no help toward developing intellectual greatness in manhood, but it is an actual hindrance. Those who if allowed natural and full development would become enrolled among the geniuses of the world, may, by over stimulating of their brains in youth, have their future darkened, their brains stunted, and never be heard of when they become men. In this connection the words of Dr. Richardson, of England, should serve as a warning to all thoughtful parents. He says: "I can not sit day by day to see failure of young brain and of brain approaching maturity, and of brain that is matured, and tamely accept the phenomenon as necessary and therefore to be endured. To see the errors that prevail and not to speak of them, were to be silent on errors which would lead a nation into trained feebleness, which would lead to new generations springing out of that feebleness, and to the propagation of a community that would no more be illuminated by those greatnesses of the past, who in less learned but freer times gave forth the noblest of noble poetry, the most wonderful of wonderful art, and a science, philosophy, and literature that have been hardly mortal. Such a poetry as Shakespeare has poured forth; such an art as Gainsborough, and Reynolds, and Turner, and Herschel, and Siddons, and Kemble, and Priestley, and Davy, and Young, and Faraday have immortalized; such a philosophy as Bacon and Locke have contributed, and such a literature as Johnson, and Scott, and Dickens have, in the freedom of their intellectual growths, bequeathed forever. To me, observing as a physician the appearance and development of those men under the circumstances in which they appeared, is the most natural of events, the mere course of nature untrammeled, regular, and divinely permitted; not forced, but permitted, Nature being left to herself. To me, observing as a physician the appearance of such men in similar greatness of form is at this time an all but impossible phenomenon. The men truly may appear, for Nature is always reproducing them, and the divine permission for their development is equally good now as of yore; but development is checked by human interference, and thereby hangs the reason of the impossi-

ble." This is a fearful warning of what the effects of our present school system of forcing the minds of children are to be. The brains of the school children are being worked to their utmost capacity to learn many and diverse things, the most of which will never be of any practical use to them. Why then force their young minds to learn them? Why not teach them the few things which will be of practical use to them in subsequent life, and leave the mass of impractical book knowledge till a later time of life, when if they desire it, they can learn it at their leisure. Is it worth while to dwarf the minds and ruin the health of our children in an effort to teach them those things which will never be of any use to them? This is a question for the consideration of parents and educators.

HENRY REYNOLDS, M.D.

THE HYGIENE OF WALKING.

[Some months ago Miss Bertha Von Hillern, whose reputation as a pedestrian has extended widely, visited the office of the PHRENOLOGICAL JOURNAL, and in the course of her visit related several incidents of sanitary interest which had occurred in her experience as a teacher of out-of-door hygiene. We invited her to prepare an article for our columns in which she should advance the principles she inculcates, and the system which she applies, in her pedestrian practice. In compliance with this invitation, she recently sent us the following article which was published in the *Youth's Companion*. Her advice is intended specially for her own sex, which in the main is far too indifferent to the utility of walking, but there is much in it of value to her brothers, young and old.—*Ed. P. J.*]

BEFORE I left Europe I read and thought much of the young nation across the ocean, and I became convinced that it would be an inestimable benefit to the whole people if they could be led to take more exercise in the open air. When I came to America my impressions were confirmed, and I asked, How can I induce people to walk? The wealthy prefer to ride or drive—the fresh air can be taken from a luxurious carriage as well as from the foot-path, and the poor can hardly spare the time to walk.

But, the world over, one general principle holds good: people will do what gives them pleasure. If I could create a healthy excitement on the subject of walking, if I could awaken an enthusiasm about it, no matter how little it might be understood, I believed that when once it had taken a good start, it would establish its own hold upon the people—that the great healthfulness of the exercise would be discovered. So for two years I bent all my powers of mind and body to making this exercise as attractive, as fascinating, as I possibly could; above all to ladies, who were the ones most in need of it.

I often felt that the immense crowds who gave me such warm sympathy and enthusiastic support would probably ask themselves later, when their generous excitement had reacted, what good it could do for a young girl to walk fifty miles in twelve hours, or three hundred and fifty in six days? and I knew that most of my kindest friends would hardly be able to answer that question to their own satisfaction; but I hoped that many a brisk, healthy walk would be taken on account of the awakened interest; that many ladies would walk one mile, or five, because I had walked — *one hundred.* I hoped that habits might be established that would save many an aching head.

I may add aching heart, for not only does a brisk walk stir the currents of the blood so that they will not clog the brain and freeze the feet, but it disperses many a morbid fog of feeling that would result in a heartache as senseless as it might be painful. Our finest feelings will not bear stagnation any better than limpid water, and often when we are suffering the most

dismal of low spirits, it is only because the very feelings that were given us to be happy with, have stood unstirred too long. Go take a brisk walk, using our eyes and wits upon the way, and be it in city or country we shall see enough to give a new turn to our thoughts, and find at the end, that our mental coloring has received new tone and vitality.

WALKING AWAY DISEASE.

I could not reasonably expect to be believed, should I relate the bare facts of case after case of painful suffering of body and mind that I have seen literally walked away. I have seen ladies whom I knew well enough to venture upon heroic measures with, who have been just ready to send in hot haste for a doctor, and that not with imaginary sufferings; but whose flushed or pallid faces, abnormal pulse, and other indications of real physical disorder, proved them in need of a physician or—a cure, to drag themselves out of doors when their trembling limbs would hardly support them, and begin a walk that threatened at any moment to terminate in a seat upon the curbstone. In a short time they would brighten a little, step with more vigor and elasticity, and return home after a few miles with a pulse even and strong, a fine, healthy color, and the brain in a state of eager desire for work.

I have induced ladies to go out in this way, when I have had to bring up a long array of past experiences to combat my own fears as to the result, and I have never in a single instance had one return other than cheered and benefited.

SHOES AND DRESS.

Do not attempt to walk in "French-heels"; the high, narrow heel throws the weight of the body upon muscles not intended to act as the false position forces them to act, and the result is injury to the spine and the more delicate anatomy of the body. Let those who are willing to give the experiment a fair trial, to discover if they can not add materially to their health and pleasure by a habit of walking, first provide themselves with boots broad enough to allow the foot to spread out easily; thick enough to protect the feet against cold, damp, and the roughness of the ground, with broad, low heels.

Let there be nothing tight around the waist, nothing to hinder the lungs from expanding, and the blood from circulating freely. Let the skirts be moderately short, and made so as to leave the limbs freedom of movement. In short, give the body from top to toe its freedom during the walk.

HOW TO WALK.

Do not walk rapidly at the start. Begin slowly and then gradually increase the pace until it is a little faster than an ordinary gait, then try to keep the same even step and movement.

In walking, preserve as upright a position as possible; from time to time make a new effort to grow a little taller, to straighten the back, throw out the chest, hold the head higher, till that position becomes habitual.

Never go from a warm room into cold air and start suddenly into a rapid walk, and never walk faster than can be done with closed mouth.

The breathing should be done in long, slow respirations through the nose, as regularly as possible. A habit of long, regular respirations can be acquired, and it prevents the lungs being subjected to too sudden changes of temperature.

Try to acquire a habit of walking from the hips—I had almost said from the shoulder, which is really the true way.

The foot should be lifted not higher than is necessary to allow it to swing easily forward, and the knees should bend just as little as need be to permit that swing.

Never walk rapidly and then stop abruptly, but toward the end of a walk, or when about to stop for any time, slacken the speed gradually, until it is quite slow.

The effort to follow any of these rules is perhaps tiresome at first, but it will repay the trouble. At first, one should

make the length of the walk a little more than enough to feel really tired, but do not walk until tired and then enter a horse-car or carriage to return home. Begin with a short distance and return; if that does not fatigue, make it longer the next time, until you are tired; then gradually increase that until you reach a limit you would like for the habitual walk.

Be very careful not to get heated by walking and then allow yourself to get suddenly chilled. That is one reason why you should not get into a car or carriage after walking.

To persons having heart-disease or delicate lungs, injudicious walking might be hurtful, but with the precautions I have suggested even such will be benefited.

WHEN TO REST.

It is often the case, even to those accustomed to long walks, that after the first mile or two, comes a feeling of great fatigue; it seems almost impossible to go on without at least sitting down for a short rest, but then is precisely the time not to take a rest. Keep on then, even though every step costs an effort, for ten or fifteen minutes; then the fatigue seems to wear away. Gradually a new strength comes, and this second strength can be relied upon.

The muscles seem to be provided with energy sufficient for ordinary demands, but the walk draws upon them suddenly for an unusual effort, the supply of muscular energy is soon exhausted and the reserve is not ready. If a rest is taken then, the muscles react and possibly remain contracted, producing the sensation of walking cramp. But if by an effort of will they are forced into continued activity, nature soon sends out her reserve force to the part making unusual demand, the current is established in that direction and will continue until her generosity is insulted by excessive demands.

SCHOOL-GIRLS' EXERCISE.

Take a school-girl who has so overstudied that her brain is in a state of morbid activity, so that, however tired, it can be forced to renewed activity; tell her she "must not study so hard," take away her books, and still her mind will continue to go over and over the mental processes. But ask her to "come for a walk," make that walk interesting, so that the mind's activity may be in sympathy with the physical effort. Every day make the walk a little longer; the muscles, not having been tampered with, will demand a rest when it is needed; and the reserve forces of the whole body, which had been flowing all to the brain, will be turned into a new channel provided with a healthy power of resistance.

The result will be, that without saying a word against study, you will find this ambitious school-girl studying for a time and then putting her books aside, with the excuse that she is too tired to learn any more then. She has reached that healthy condition where she knows when she is tired, and has to rest.

I should be false to the spirit of my Fatherland should I in any way discourage the ambition to gain a fine education; on the contrary it is to preserve a sound and balanced brain in mature age, that I desire to prevent the reckless squandering of its forces in youth. Any school-girl, who might be a little longer in getting to calculate the courses of the stars, to sail theoretically a ship around the world, will have the sounder intellect, and its stores of knowledge will be more at her command at thirty years of age, because she devoted a little of her youthful time to the care of the casket which was to hold the jewels of the mind.

But there are those who are forced to do a certain amount of brain-work. Let us take for example a teacher, whose work demands more strength than she has to give; who finds herself weaker at the end of a year than at the beginning, weaker each year than in the one preceding; how is such an one to dare take from her insufficient vitality, to give to physical exercise? If at the end of a day's work she can hardly sit up, how can she get on her feet and "take a walk"?

Within certain limits, the exercise of any power—like money invested in legitimate business—not only makes return of all it draws out, but of more. In the case we have supposed of one forced to overwork, the limit is passed at which the brain and the nervous system can make good their drafts upon the general vitality, and the longer the process goes on, the more is the constitution reduced to bankruptcy. If then, during vacation, a habit of walking could be gently encouraged, until two or three miles could be done easily, then when school-work began again, if at the end of a tired day a walk were taken, not only would it restore to the body all the strength it required to make the walk, but more. Thus the physical exercise would create a surplus of strength, to fill the deficit caused by the overdrawing of the brain.

I have seen this theory practically tested again and again, always with happy results, and often to the delighted surprise of those who tried it not quite believing.

DIETARY ITEMS.

ACCORDING to a German chemist, Prof. König, Ph.D., of Munster, Westphalia, a child of one and a half years of age, or less, needs daily 30 grammes of nitrogenous substance, 42 grammes of fat, and 70 grammes of carbohydrates; children of 7 to 15 years 76 grammes of nitrogenous substance, 44 grammes of fat, and 320 grammes of carbohydrates; male adults 120 grammes of nitrogenous substance, 56 grammes of fat, and 500 grammes of carbohydrates; and female adults 96 grammes of nitrogenous substance, 48 grammes of fat, and 400 grammes of carbohydrates.*

There are some important points to be inferred from this computation. First, that it is a grave error, often made in the feeding of children, to believe that fat is unwholesome in tender age, the difference between the fat ratio of babies and of female adults being only 6 grammes; second, that it is a still graver error not to see any danger in allowing children such large quantities of candy, as many of them will consume, the ratio of carbohydrates in children being a great deal less than in adults; and third, that we need not be apprehensive in giving children good, substantial food, especially dried beans, pease, and other articles rich in nitrogenous substance, because their ratio of this kind of food is nearly the same as in adults.

* 15.43 grains, English, are equivalent to 1 gramme.

As to the chemical analysis of some of our articles of diet, the foregoing authority gives the following percentage:

Fibrin.	*Ashes.*		*Nitrogen substance*	*Fat.*	*Carbohydrates.*	*Water.*
—	1.0	Beef, very fat	17.0	26.5	—	55.5
—	1.0	" lean.....	21.0	1.5	—	76.5
—	1.0	Veal, "	20.0	1.0	—	78.0
—	1.0	Mutton, very fat..	15.0	36.0	—	48.0
—	1.0	Pork, lean	20.0	7.0	—	72.0
—	0.5	Goose, very fat....	16.	45.5	—	38.0
—	1.0	Chicken, mid'g fat,	20.	4.0	—	75.0
—	1.0	Game.....	22.5	1.0	—	75.5
—	—	Beef suet.....	0.5	98.2	—	1.3
—	—	Lard	0.3	99.0	—	0.7
—	1.0	Pike.....	18.5	0.5	—	80.0
—	1.0	Salmon.....	16.0	6.5	—	76.5
—	12.0	" smoked ...	24.2	12.3	—	51.5
—	1.5	Codfish.....	80.0	1.0	—	17.5
—	6.5	Bacon, salt	3.0	80.5	—	10.0
—	1.0	Eggs.....	12.5	12.0	—	74.5
—	0.7	Milk, cows'	3.4	3.6	4.8	87.5
—	1.0	Butter	0.6	83.3	0.6	14.5
—	5.0	Cheese, lean	30.0	13.4	5.1	46.5
4.0	3.5	Beans, dried	23.0	2.0	53.3	14.0
5.5	2.5	Pease, "	23.0	2.0	52.0	15.0
3.5	3.0	Lentils "	25.5	2.0	54.0	12.0
0 5	1.0	Rice.....	8.0	1.0	76.5	13.0
0.3	0.5	Wheat-flour, fine..	10.0	1.0	75.8	13.0
1.0	1.0	" coarse,	12.0	1.5	71.5	13.0
2.5	2.0	Oatmeal.....	14.5	6.0	65.0	10.0
—	1.0	Macaroni.....	9.0	0.5	76.5	15.0
0.3	1.0	Wheat-bread, fine,	7.0	0.5	55.2	36.0
0.3	1.0	Potatoes.....	2.0	—	20.7	75.3
1.0	1.0	Carrots	1.0	—	9.0	88.0
2.0	1.0	Kohlrabi	3.0	—	8.0	86.0
1.0	2.0	Spinach.....	2.5	0.5	6.0	88.0
1.0	1.0	Cauliflower	2.5	—	4.5	91.0
1.0	0.5	Asparagus.....	2.0	—	2.5	94.0
2.0	1.0	Beans, green.....	5.5	0.5	7.0	84.0
2.0	1.0	Pease, "	6.4	0.5	12.1	78.0
1.0	1.0	Salad.....	1.5	0.5	2.0	94.0
4.0	0.5	Fruit, fresh	0 5	—	10.0	85.0
10.0	1.5	" dried.....	2.5	1.0	55.0	30.0

According to this percentage and the average price which has to be paid for the said articles, one gets units of nourishing value for one dollar: the mark is about 24 cents.

		Cost for 1000 grammes in Marks.	*Units.*
"Meat"	Beef, very fat	1/8	979
	" lean	1/16	626
	Veal, "	1/8	627
	Mutton, very fat	1/12	1.204
	Pork, lean	1/10	876
	Goose, very fat	—	—
	Chicken, middling fat	1/12	466
	Game	1/20	361
Fat	Beef suet	1/10	2.200
	Lard	1/10	1.660
Fish	Pike	1/20	470
	Salmon	1/20	249
	" smoked	1/10	287
	Codfish	1/10	3.100
Cons. Meat	Bacon, salt	1/10	1.710
Dairy Go'ds	Eggs	1/12	580
	Butter	1/20	1.097
	Cheese, lean	1/16	2.044
Legumes, farinaceous food, etc.	Beans, dried	35/100	4.847
	Pease, "	35/100	4.805
	Lentils, "	40/100	4.687
	Rice	50/100	1.707
	Wheat-flour, fine	40/100	3.220
	" coarse	35/100	4.250
	Oatmeal	35/100	2.827
	Macaroni	35/100	1.360
	Wheat-bread, fine	45/100	2.037
Vegetables.	Potatoes, Irish	25/100	4.740
	Carrots, small	30/100	700
	Kohlrabi	33/100	1.917
	Spinach	35/100	975
	Cauliflower	3/100	90
	Asparagus	1/10	100
	Pease, green	40/100	1.140
	Beans, "	33/100	1.125
	Fruit, dried	30/100	783

The calculation of the units of nourishing value of the above-stated articles was made according to the market prices in Germany, which for the sake of better information we have annexed. On the whole, as to the proportion of the German to American prices, there will not be much difference, so that a house-keeper here may go by it too.

C. A. F. LINDORME, PH.D., M.D.

SHOULD MEN CUT THEIR HAIR?

WHETHER the hair should be cut I could never quite satisfy myself. As a physiological practice, I seriously doubt the propriety. Every cutting is a wounding, and there is some sort of bleeding in consequence, and waste of vital force. I think that it will be found that long-lived persons most frequently wear their hair long. The cutting of hair stimulates to a new growth, to supply the waste. Thus the energy required to maintain the vigor of the body is drawn off to make good the wanton destruction. It is said, I know, that after the hair has grown to a certain length it loses its vitality at the extremity and splits or "booms up"; whether this would be so if the hair should never be cut, I would like to know. When it is cut a fluid exudes, and forms a scar or cicatrix at each wounded extremity, indicating that there has been injury. Women and priests have generally worn long hair. I never could imagine why this distinction was made. The ancient priest was very often unsexed or devoted to a vow of celibacy, but I can not surmise whether that had anything to do with it. Kings wore their hair long in imitation of Samson and the golden sun-god Mithias. I suspect from this that the first men shorn were slaves and laborers; that freedmen wore their hair unmutilated, as the crown of perfect manhood and manliness. If this be correct the new era of freedom, when it ever shall dawn, will be characterized by men unshorn as well as women unperverted.

I wish that our science and our civilization had better devices for preserving the integrity of the hair. Baldness is a deformity, and premature whiteness a defect. If the head was in health, and the body in proper vigor, I am confident that this would not be. I am apprehensive that our dietetic habits occasion the bleaching of the hair; the stiff, arsenic-prepared hat is responsible for much of the baldness. Our hats are unhealthy, from the tricks of the hatters. I suppose there are other causes, however. Heredity

has its influence. Certain diseases wither the hair at its roots; others lower the vitality of the skin, and so depilate the body. I acknowledge that the shingled head disgusts me. It can not be wholesome. The most sensitive part of the head is at the back where the neck joins. That place exposed to unusual heat or cold is liable to receive an injury that will be permanent, if not fatal, in a short period. The whole head wants protection; and the hair affords this as no other protection can. Men have beards because they need them, and it is wicked to cut them off. No growth or part of the body is superfluous, and we ought, as candidates for health and long life, to preserve ourselves from violence or mutilation. Integrity is the true manly standard. ALEXANDER WILDER.

KITCHEN LEAFLETS, NO. 4.

LIVING CHEAPLY—BILL OF FARE FOR MARCH.

THERE is an unusual tide of talk in the papers on household economy, the general drift of which seems to be toward that almost, if not quite impossible object, the establishment of a standard of necessary expenditure for the subsistence of an average family. Men and women recite their experience with more or less detail, one finding ten dollars sufficient to provide for the weekly wants of five persons, two being small children; another requiring twelve dollars to make four persons comfortable, the rental of three rooms in a respectable tenement-house being included; while another, with a dependence of the same number, finds it absolutely necessary to keep his disbursements down to seven dollars and fifty cents, and succeeds in barring out the wolf and dressing wife and children so that they are a degree removed from shabby. Aside from the contributions from experience, there is a large amount of speculation on what is to be regarded as comfort in living, each writer's view varying, of course, in accordance with his experience, fancies, and longings.

There are two points of view from which this subject is to be considered: one may be termed the physical, the other the moral. On the physical side only what is necessary to support life, to maintain health, comes within the range of consideration; on the moral side the field of view is almost indefinitely expanded, and the wants of the body are only supplemental to the wants of the mind, the growth and culture of the latter being the chief object, and its satisfaction fundamental to the realization of a comfortable life. A little inquiry into the cost of food and clothing, of the hire of apartments, and the disbursements for the few other incidentals to housekeeping, will enable us to estimate the amount of money required by a family-man whose meager wages compel him to administer his household on the physical basis; but to attempt to reach an average applicable to the moral system of living would be hopeless, the scale would be at best a sliding one, as variable in its indications as a barometer's column in winter.

A family of five persons getting their supplies of the city grocer, and living on rations of bread and milk, or mushes of wheat, oat-meal, or corn-meal, with a little milk and a taste of sweetening, can get along on sixty cents a day expended for these staples. We have heard of experiments in cheap alimentations by men like Doctor Nichols, of London, and Dr. Lewis, of New York, who are conversant with the nutritive properties of food, and who found that they could obtain enough of nutrition for the needs of body and brain at a cost of ten cents per diem, but the monotony of the diet seems in such cases to have palled upon their appetites, so that it was not long kept up. One writer humorously reports that he knew a theological student in an Ohio

college who, sustained by grace, rice, and corn-bread, lived thirteen weeks on seven dollars, but there were several good apple orchards near the college, and the farmers kept no dogs.

The necessaries of life do not cost much, but the luxuries may run into thousands. Then, too, it should be observed that cheap foods simply prepared are generally much more abundant in nutrition than elaborate and costly dishes.

Here is a bill of fare which I have met with lately, designed for family use:

Bean Soup.
Lobster en Coquille.
Boiled Tongue, Mayonaise Dressing.
Corn Fritters. Spinach.
Broiled Teal Ducks. Baked Potatoes.
Celery Salad.
German Puffs. Mince Pie.
Apples, Pears, Japanese Persimmons, Bananas, Oranges, and Grapes.

Very esthetic, some one will say, yet, considered from a physiological point of view, excessive, muddled, disturbing, congestive. The bean soup, if rightly made, I could not object to, but as the qualities of beans are exceedingly high for nutrition, the addition of such items to the list as lobster, tongue, and corn fritters, is merely contributing variety in a line of similarly dense nutrition. As was urged by the chairman of the "Lime-kiln Club," "While mince-pie, beefsteak, strawberry shortcake, and ham sandwiches helped to enrich the blood and start a foundation for fat to cling to, it was beans which braced and strengthened, and made a man feel as if he could whip a ton of wildcats. Beans were always to be had at any respectable grocery, were easy to carry home, and they didn't need oyster stuffing nor cranberry sauce for trimmings."

But such a bill of fare we are to assume, I suppose, is to be judged from the moral point of view; if so, I must forbear comment until I meet with the man or woman who has just gone through it faithfully, and can illustrate the true inwardness of associating lobster in the shell, broiled duck, and corn fritters, with German puffs, mince-pies, Japanese persimmons, and bananas.

BREAKFAST.

Cracked Corn. Boiled Potatoes.
Gem Eggs.
Corn-meal Gems. Grape and Apple Sauce.
White Bread.
Crust Coffee.

DINNER.

Split-Pea Soup.
Roast Lamb.
Boiled Unskinned Potatoes. Boiled Cabbage.
Rye and Corn-meal Bread. White Bread.
Pumpkin or Squash Pie.
Cambric Tea or Cold Water.
Fruit.

SUPPER.

White Bread. Graham or Gluten Rolls.
Canned Fruit.
Sponge Cake. Cambric Tea.

CRACKED CORN OR SAMP.

Take the quantity desired, wash it well, and soak it in soft water over night. In the morning put it on the stove to cook, in a stone bean-pot, with plenty of water to cover it. Let the pot be set where the corn will cook gently all day, and stir it occasionally, adding boiling water now and then to replenish for what boils off. The next morning place the mush in the oven, in a covered dish, to warm. This preparation is very good eaten with milk or cream. It is better cooked in a bean-pot than in a double boiler, as the latter is made of tin, and may impart a metallic taste to the samp.

GEM EGGS.

Have the gem-pans hissing hot, grease them with a little fresh butter, and break an egg in each one; then place on the stove and cook quickly, hard or soft, as liked. Run a sharp knife around the edge of each egg, and dish out on a platter. Serve immediately. Eggs cooked this way make a very agreeable and pretty breakfast dish.

GRAPE-AND-APPLE SAUCE.

Cook ripe grapes until soft; strain them through a colander; add to the pulp and juice raw apples; then stew all until soft, stirring occasionally. Sweeten to suit the taste.—From the kitchen of *W. W. Cure*.

BOILED CABBAGE.

Trim the head neatly by taking off the outside leaves; wash it well, chop it in fine pieces, and cook in a stone pipkin, in boiling water slightly salted. When done drain all the water off, place in a dish, and pour milk gravy over it and serve.

Roast Lamb.

The parts which are usually roasted are the shoulder, the saddle or chine, the leg, and part of the loin. Select fresh, solid meat, wash it well, and dry with a clean cloth. Have a hot, quick oven, and place the meat in a dripping-pan, pour a cupful of boiling water over the surface, and let it trickle down into the pan. Allow in roasting about one-quarter of an hour to a pound. Baste often with the meat-juices, and skim off all grease, and thicken with browned flour, if gravy is required.

Rye and Corn-meal Bread.

1½ Teacupfuls of corn-meal.

1 Teacupful of boiling water poured on the meal.

1 Teaspoonful of salt.

1 Pint of tepid water.

½ of a yeast cake dissolved in warm water, or three large tablespoonfuls of home-made yeast.

Stir rye flour into the corn-meal until it becomes as stiff as it can be stirred with a spoon. Do this at night, and in the morning, when the dough is light, pour it into a well-greased pan, and bake in a hot oven for about one hour and a half. This recipe makes one loaf of medium size.

Cottage Pumpkin or Squash Pie.

1 Quart of milk.

2 Boston or 5 milk crackers, rolled fine.

4 Teacupfuls of strained pumpkin or squash.

1 Cup of sugar.

1 Teaspoonful of salt.

2 Teaspoonfuls of cinnamon.

Put the milk on the stove to boil; pulverize the crackers, and when the milk boils stir them in and mix thoroughly. Stir the pumpkin, sugar, salt, and cinnamon together; add milk and crackers. Mix all together well. This amount will make two pies. Grease the pie-dishes well, and sift corn-meal on them to about the thickness of one-quarter of an inch, taking a blunt knife or the fingers to spread it evenly. Put the mixture in carefully, so that the meal will not be disturbed. If the dishes are not full enough add a little milk. Bake in a hot oven about one hour, baking well on the bottom. Have the oven not too hot to brown them on the top. In dishing, pass a thin, sharp knife around the edge and under the pie, when cut. If made rightly the under crust will come off nicely, and there will be very little crust at the outer edge. A crust prepared in this manner will be found to be sweet, tender, and wholesome.

Graham Pie-Crust.

Take the quantity of flour needed, and pour enough boiling water upon it to make a stiff dough. Mix well. Flour the kneading-board and turn the dough upon it; roll very thin. Any kind of filling is good with it, fruit particularly. A crust made in this way will be tender.

Scalded Graham or Gluten Rolls.

Pour one pint of boiling water on three pints of the flour, and stir quickly until well mixed; then lift the dough to the moulding-board, and knead only long enough to make it even, then form into an inch-thick roll, and cut into pieces three inches long, or roll out flat and cut into diamond forms. Bake for twenty minutes in a very hot oven. These rolls are excellent hot or cold, and will keep several days in a cool, dry place. A few currants stirred in the dough will render them especially tempting to children.

Remarks.

See Journal of Aug., 1882, for Boiled Potatoes.
" " Feb., " " Corn-meal Gems.
" " Aug., " " Crust Coffee.
" " Dec., " " Split-Pea Soup.
" " Aug., " " Unskinned Potatoes.
" " April, " " Sponge Cakes.
" " May, " " Graham Bread.
" " Jan., 1883, " White Bread.

Grape apple-sauce can be made with canned grapes and apple-sauce at this season.

MIRA EATON.

HOME-MADE BREAD.

Don't offer me cake full of sugar and spices
And citron and raisins; but, oh, how I yearn
For bread that is home-made, in generous slices,
With sweet apple butter just out of the stone.
The taste of the crispy brown crust ever lingers;
That golden-hued butter yet melts on my tongue;
I still feel the crumbs cling fast to my fingers
As out in the garden I feasted and swung.

And then at the table with sister and brother,
Each armed with a slice a foot long at the least,
That seemed so much sweeter when fruited by mother—
No king ever knew the delight of the feast.

Oh, bread that is home-made, delicious, nutritious,
Vile stuff from the baker's has taken your place,
Well whitened with alum, puffed up and suspicious;
I eat it, and hate it, and share its disgrace.

—*Exchange.*

NOTES IN SCIENCE AND AGRICULTURE.

Training Vicious Horses.—A very simple method and an improvement upon the Rarey system of training vicious horses was exhibited at West Philadelphia recently, and the manner in which some of the wildest horses were subdued was astonishing. The first trial was that of a kicking or "balking" mare, which her owner said had allowed no rider on her back for a period of at least five years. She became tame in about as many minutes, and allowed herself to be ridden about without a sign of her former wildness. The means by which the result was accomplished was a piece of light rope, which was passed around the front jaw of the mare just above the upper teeth, crossed in her mouth, thence secured back of her neck. It was claimed that no horse will kick or jump when thus secured, and that a horse after receiving the treatment a few times, will abandon his vicious ways forever. A very simple method was also shown by which a kicking horse could be shod. It consisted in connecting the animal's head and tail by means of a rope fastened to the tail and then to the bit, and then drawn tightly enough to incline the animal's head to one side. This, it is claimed, makes it absolutely impossible for a horse to kick on the side of the rope. At the same exhibition a horse, which for many years had to be bound on the ground to be shod, suffered the blacksmith to operate on him without attempting to kick while secured in the manner described.

Flowers for Winter.—An exchange gives us some special information on this point. Among the plants which can be easily raised in the house are the sweet alyssum, mignonette, stocks, dianthus, and primroses; sweet alyssum and mignonette are most profuse bloomers when raised from seed, and are easily raised. Alyssum prefers a cool and shady position. As a rule, all plants from seed are likely to be fully as vigorous as those from cuttings, and more likely to be free from disease.

Those flowers from cuttings which are specially adapted to give beauty to the home in winter are verbenas, carnations, geraniums, roses, heliotropes, lantanas, ageratums and coleus.

The usual way of rooting these is to place the tender ends of the branches in sand that is kept thoroughly wet. After they are rooted they should be potted off in small pots. A good many plants of these kinds that have been blooming in the garden during summer are worth potting for house culture. Good rich soil should be used, and the plants pruned back to give them shapely form, and to induce a stronger new growth. Medium sized plants are, as a rule, the best for this purpose, as they have the most vitality and take up the least room in the house.

Heliotrope should be severely cut back to induce the formation of new shoots from the base of the plant. Verbenas are not desirable for house culture after having bloomed out of doors, as new plants are much more vigorous and healthy.

If special care be taken in potting such ornamental leaved plants as scented geraniums—if not too large—they may be taken up without pruning; but this is only necessary when the leaves are wanted for trimming bouquets, etc. When potted without pruning the plants should be well shaded, and kept moist and cool. Chrysanthemums should be potted when wanted for late blooming. They should be kept as cool as possible, in order to give flowers up to the latest date. For showiness and fine contrast three of the finest varieties are the large-flowered yellow, white, and maroon. The plants deserve to be generally cultivated, as they are of very easy culture, include a most extensive range of shades, and bloom at a time when flowers are scarce. The chrysanthemum is usually pretty hardy, but should, when wanted for winter blooming, be taken indoors before severe frosts. Carnations are among the best plants for window decorations. In potting them fine soil should be used, and they should not be kept wet if the soil is very retentive.

In potting all garden plants that are usually taken indoors, fresh and well prepared soil should be used, and the plants should be shaded for two or three days until new roots begin to form. After potting, the soil should be well firmed by a copious watering.

Causes of Fires.—Of the fires in 1881, in which the Boston Manufacturers' Mutual Fire Insurance Company was interested, the following is a brief tabulation of causes:

Friction	34
Spontaneous	11
Unknown	10
Foreign matter	4
Sparks	3
Gas jets	2
Lamps	2
Lamps falling	2
Electric lights	2
Incendiary	2
Stove	1
Fire-cracker	1
Matches on floor	1
Emery sparks	1
Rocket	1
Lightning	1
Spark from cotton ties	1
Wood-work in contact with chimney	1
Unclassified	4
	84

Of this number it is seen that less than one-eighth of these fires occurred without a known cause, and fully seven-eighths belong to the class of avoidable.

CORN'S PROTEST.

I was made to be eaten, and not to be drank;
To be husked in a barn, not soaked in a tank.
I come as a blessing when put in a mill,
As a blight and a curse when run thro' a still.
Make me up into loaves, and your children are fed;
But into a drink, I will starve them instead.
In bread I'm a servant the eater shall rule,
In drink I'm a master, the drinker a fool.
Then remember my warning: My strength I'll employ,
If eaten to strengthen, if drunk to destroy.

Astronomical Expectations for 1883.—While the year 1882 will long be remembered by astronomers on account of its great comet and its transit of Venus, 1883 bids fair to witness some celestial events of hardly less interest and importance. In May a total eclipse of the sun will occur, which will be remarkable for the great length of the period of totality—nearly six minutes. This extraordinary duration will give observers unusual advantage for studying the sun's corona at a time when the solar photosphere is at its greater activity, and for search after the small planets which are suspected to exist within the orbit of Mercury. Unfortunately, this important eclipse can be favorably watched only from two small islands of the South Pacific. D'Arrest's comet, seen last in 1877, with a period of about six and a half years, is expected to return within the year; as is also Tempel's comet—last observed in 1878, and having a period of five and a quarter years. A late calculation of the orbit of the comet of 1812 leads Messrs. Schulhof and Bossert to predict the possible return of that long-awaited object, although they think it more probable that it will appear in 1884.

Work of the Grange.—Speaking of the work of the grange, thus far, the *Maine Farmer* says: "It has forced other labor organizations to recognize in it the greatest factor in the solution of the labor question, and taught the people that organization must be met with organization. It forced legislation against excessive railroad charges, and caused even Congress itself to pause and inquire into many of the abuses complained of. More than this, it has awakened the horny-handed tillers of the soil and had them study their own profession more and better; also questions of political economy. And add to these the fact that it has taken our women and made them, in the grange at least, the equal of men, and taught them much that has aided them in making home more pleasant, and lightened their cares and their burdens, and given to farm life more pleasure, more enjoyment, and more social culture."

The Moon's Influence.—Those who yet cling to the old-time faith in the moon's influence upon the weather may be interested to learn that so eminent a scientist as Sir William Thomson has recently felt called upon to declare that careful observation with the barometer, thermometer, and anemometer have failed to establish any such influence; on the contrary, that if there is any dependence of the weather upon the phases of the moon it is only in a degree so slight as to be quite imperceptible to ordinary observation.

Rice Culture.—A correspondent of the *Agricultural Review* appreciatively discusses the great American interest. He says:

"The cultivation of upland rice is one of the growing interests of the South. Year after year it has increased in area and proven the practicability of raising good crops of excellent rice without the irrigation which has hitherto been considered an absolute essential to this important industry.

"In the same fields with corn and sugar-cane the upland rice is now being raised. The yield averages not less than in the lowlands. The upland rice is sown in Florida at various times, the earliest in March. This ripens in August, and from the stubble comes another crop, which is gathered in November. It is planted at various times until the end of June. The late plantings give as good crops as the early ones, the seasons being alike favorable.

"The gathering is usually done by sickle and requires careful handling, as the rice, if over-ripe, readily falls from the straw. All the samples of seed examined show a mixture of varieties. Some ripen early, others late; some yield a large grain, others small; some are light in color, others dark.

"Efforts are now being made to separate these, so as to keep them distinct from each other and take advantage of the best. This can only be done by removing the hull from the grain, and then by hand picking out the seeds required, planting these, and then saving the seed thus obtained without hulling. By this means it is expected that the present upland rice will be greatly improved, by obtaining greater uniformity of ripening, size, and color.

"The straw is a very valuable stock food, and the sheaf rice, fed to horses, is found to be one of the finest summer foods. The horses like it and keep in as good order as when corn-fed.

"This important cereal is thus assuming a new phase. Its cultivation is enlarged, its uses diversified, and it is probable that in a new form it will before long become a popular nutritive food."

The Microscope as a Home Help.—In a lecture on the use of the microscope at home, by Henry Pocklington, the following directions are given for using the instrument to detect adulterated dry goods. Most people like to be sure that they get what they pay for. The microscope, in many cases, places the possibility of certainty on this point within the reach of its owner. Suppose, for example, that the lady of the house wishes to know whether the piece of silk she has set her heart upon for a dress is all silk, or a mixture with cotton, jute, or

China-grass, and, if all silk, whether it has been loaded with dye and dressing. The microscope will set her mind at rest. Take a pattern of the silk, unravel the warp and weft, and examine it under the quarter-inch objective, and you will at any rate see whether all the little fibres of which the weft and warp are comprised look alike. That, of course, will not tell you whether the material is silk; but if you procure a piece of known silk, good raw silk, and study its appearance, and compare it with the suspected specimen, you will come to a sound conclusion very soon. Then take a little cotton and examine it to find that it consists of flattened tubes, curiously twisted, quite unlike the long cylindrical tubes of silk, and different again from the long consistent tubes of flax, with their attenuated ends and marked walls. Take wool and hairs of different kinds and examine them carefully, noting their peculiarities, and you will soon be able to tell whether your coat is all wool, or, as is much more probable, not; whether your wife's sable muff or seal jacket is what it professes to be, and will not improbably learn a lesson in the department of trade morality.

The Mississippi River.—This great river furnishes an almost inexhaustible field for research. Recent data show it to possess 55 tributary streams, with a length of navigation of 16,571 miles, or about two-thirds of the distance round the world. Even this, however, represents but a small amount of the navigation which will follow when the Federal Government has made the contemplated improvements in the Upper Mississippi, in the Minnesota, Wisconsin, and other rivers, in which it is now engaged. But while the Mississippi has 16,571 miles navigable to steamboats, it has 20,221 miles navigable to barges. This navigation is divided between 22 States and Territories in the following proportions: Louisiana, 2,500 miles; Arkansas, 2,100; Mississippi, 1,380; Montana, 1,310; Dakota, 1,280; Illinois, 1,270; Tennessee, 1,260; Kentucky, 1,260; Indiana, 840; Iowa, 830; Indian Territory, 720; Minnesota, 660; Wisconsin, 560; Ohio, 550; Texas, 440; Nebraska, 400; West Virginia, 390; Pennsylvania, 380; Kansas, 240; Alabama, 200; and New York, 70. Nearly all sections of these States and Territories can be reached with ease. Louisiana, Arkansas, Mississippi, Montana, Dakota, and the Indian Territory possess more miles of navigable stream than miles of railroad, all of which are open to everybody who wishes to engage in commerce.

Civil Service Examination in China.—Our economists may profit by the fact, that men who enter the competitive examinations in China are scrutinized as regards physical condition as well as intellectual attainments. The annual provincial examinations were held last fall in Hangchow, whose streets are described as having literally swarmed with students of every age, from fifteen to eighty, and of all conditions. The examination "hall" was an inclosure of about eight acres, containing 10,000 cells for the competitors; each cell being three feet wide, five feet long, and seven feet high. The candidates went in on the eighth day of the eighth moon, and remained in two nights and one day. They returned on the eleventh and went through the same ordeal, which was repeated again from the fourteenth to the sixteenth. A candidate is occasionally found dead in his cell.

HARVEST TIME.

O'er all the land, a vision rare and splendid—
  (What time the summer her last glory yields?)
I saw the reapers, by tall wains attended,
  Wave their keen scythes across the ripened fields;
At each broad sweep the glittering grain stalks parted,
  With all their sunniest lustres earthward bowed,
But still those tireless blade-curves flashed and darted
  Like silvery lightning from a golden cloud.

Then burst from countless throats in choral thunder
  A strain that rose toward the sapphire dome;
Hushed in his lay, the mock-bird heard with wonder
  The resonant gladness of their "Harvest Home,"
And Echo to far fells and forest fountains
  Bore the brave burden that was half divine,
While the proud crested eagle of the mountains
  Sent back an answer from his eyried pine.

And still, the tireless steel gleamed in and over
  The bearded cohorts of the rye and wheat,
Till in long swathes, o'ertopped by perfumed clover
  They slept supinely at the laborer's feet;
And still that harvest song rolled on, till even
  Looked wanly forth from night's encircling bars,—
When, like a pearl of music lost in Heaven,
  Its sweetness melted in a sea of stars.

PAUL H. HAYNE.

Qualifications of a Bee-Keeper.—To make a proper and successful apiarist one should have a special fondness for the business, and in all that pertains to bees, carefully noting the observations, experience, and instructions of intelligent and successful bee-keepers; patience in observing and supplying the wants of his bee colony, guarding it from too great cold, heat, or moisture, from birds, toads, moths, and other insects, and generally treating it with quiet gentleness and considerate care, never disturbing them unnecessarily, or annoying them by quick or boisterous motions, and always avoiding nervousness or fear.

CHARLOTTE FOWLER WELLS, *Proprietor.*
H. S. DRAYTON, A.M., M.D., *Editor.* N. SIZER, *Assoc.*

NEW YORK,
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LIVING FOR WHAT, AND HOW?

"Unworthy he who dies when half his days
Have ripened not his body nor his soul."

WE are living in a period distinguished for its utilitarian philosophy. What is the use of it? *Cui bono?* What can you do? Will it pay? are the questions heard on every side. The man who has something to sell which will save labor in the house, or shop, or store, is likely to find many patrons. The man who offers to the public a device which will aid the merchant in his negotiation, or the farmer in the marketing of his crop, does not wait long for an admirer. The clerk who is enterprising and suave receives rapid promotion, for he draws customers, and it pays to keep and to encourage him. People generally are seeking profit and advantage in some form—it may be for the sake of being rich, it may be for social precedence; it may be for political eminence—and the majority are prompt to seize upon any material instrumentalities which may come within their reach to further their purpose. That few, however, are successful in their endeavors to attain fortune, rank, and high official privilege we know to consist with the nature of things in our every-day life, but aside from the frequent commonplace aphorism that "everybody can not succeed," or the malediction that "rascality climbs soonest to the top of the ladder, while poor integrity is jostled aside," little is offered in explanation of the fact.

It is accepted by the intelligent, that men possess different degrees of capability for conducting business affairs and acquiring money; but in the channels of trade and in the so-called professional vocations, we do not observe a practical application of the principle—for the unsuccessful one is ready to impute his failure to a hundred supposititious causes rather than to a want of capability, and would resent as insulting an intimation of his intellectual inferiority to a successful neighbor.

As men average there is more pride of character in the intelligent poor, than in those who can point to a large cash balance as proof of financial shrewdness. He who is endowed with a liberal share of generous impulse, regards many of the methods of the sharp tradesman as mean and unbecoming. So, too, the man of sensitive honor and quick conscience regards any dealing which is not above suspicion as contemptible, and would rather lose in a transaction than be the gainer through tricks permitted or condoned by the customs of business, as we find it carried on in our active commercial cities. Hence it is that frank, straightforward, high-souled men do not abound in the ranks of the rich and well-to-do.

We do not, however, reject the old aphorism that "honesty is the best policy" because it may not appear to hold good in the world of finance, for we think that the policy mentioned therein, relates especially to interests of a much higher and

better character than money-getting, a point which to the circumspect reader needs no special demonstration. Yet we believe that it does apply in part to the dealings of man with man, in the ordinary channels of trade, and, as a philosophical principle in this respect as in all others, is consistently true.

Success in any undertaking which necessitates conference and association with others, is dependent largely upon knowledge of human nature and ability to adapt one's self to others. The details of the business may be thoroughly mastered and one may be industrious, and persevering, but if he lack skill in judging the dispositions of the people with whom he comes into contact and from whom he would obtain "substantial" assistance, the chances are not many in his favor. Not only should a man have the desire to do right when mingling with the busy, jostling crowd in the market-place, but he must have the courage to meet opposition, the energy to work out his plans, the discernment that makes few mistakes. The bustle and strife of the mart is not the place for the man of delicate conscience, whose mental economy is not well furnished with those robust elements which are indispensable to fortitude and tenacity; but such a man in the quiet channel of professional life, as the physician, the teacher, the clergyman, may win high success and command the respect of all.

We are told often enough by a certain class of practical observers, that success depends chiefly upon industry and perseverance, and we are ready to admit that these qualities are prime factors in the equation of individual prosperity, but precedent in importance, and the key to the final result, is *adaptation*. Seven out of every ten men whose industry and fidelity in their calling as mechanics, storekeepers, lawyers, literary men, etc., etc., can not be questioned, and who are dependent entirely upon their own efforts for support, are to be rated as unsuccessful, and though the practical observer above mentioned may be ready with a hypothesis to account for their failure, what they may allege can be summed up in the one phrase, *out of place*.

Here is a department for the consideration of the political economist, who is pondering and reflecting on the best means to advance the welfare of the State. He knows that the prosperity of the individual is at the foundation of the prosperity of the community, and regards it the special province of education to bring about a certain condition of equilibrium between work and wages, of labor and capital, a harmony of interests between all classes, which will physically induce the desired prosperity of the State at large. But he does not go back far enough in his examination of the basic principles of social order, or at best a quick glance over the shoulder is about all he vouchsafes them, for his view of the subject is a physical and "mathematical" one, and the psychological features which may enter into it are in his opinion but scarcely more than incidental and subordinate to physical control. He forgets that the world is more governed by sentiment than by reason, and that the difference between a well-balanced character and an irregular disorderly one, is that in the first, the sentiments are regulated, disciplined, and restrained, while in the second, they have a dominant influence in the mental economy, and drive the man in this or that direction according to the excitement of the hour. To

estimate aright the uses of things, the well-stored and practical intellect is not to be depended upon alone, but that wiser judgment which is conferred by a well-balanced mind, the trained intellect, the cultured sentiments, the regulated propensities, all working in co-ordinate harmony—furnishing the ability to appreciate the value of persons and things. He who possesses a disciplined character, whose sensuous and selfish emotions are subject to the higher emotions and the law of reason, can find solace and enjoyment in the ever-changing scenes of life, and pursue the even tenor of his way, doing good according to opportunity, not anxious about uncertain gain, not bidding for empty applauses, but self-contained and diligent, and all the time reflecting an influence that is cheerful and salutary upon those who approach him. Such a man makes of life a true success. He may not leave a dollar to be quarreled over by selfish and contentious heirs, but in dying he leaves a nobler bequest, that of an example in living purely, peacefully, happily.

"The memory of the just is blessed."

GAMBETTA DEAD.

GAMBETTA is gone. A career ambitious as that of Alexander, impetuous as that of Charles XII.; in brilliancy not unlike that of Mirabeau; in morality not unlike that of Mark Antony, is finished. The man was foreshadowed in the boy; impulsive, passionate, erratic, endowed with intellectual talents of exceeding rarity, he became the leader, the inspiration of the French people; but lacking in true mental culture, in the self-discipline which renders one even-toned, patient, discriminating, he was incapable of administering great affairs with success. His eloquent and fiery tongue could raise the drooping spirit of his nation, and arouse it to fresh effort, but he possessed not the capability of directing such effort; the steady will and unflinching grasp of the true leader were wanting. He was an enthusiast for personal and national liberty; he chafed under any sense of restraint. As a boy at school where he had been placed with the view to his becoming a priest, he was frequently subject to reproval for acts of insubordination, and so vexed his teachers that one of them, the Abbe Massebie, said, "You can never make a priest out of him. He is an altogether undisciplinable character." Abandoning theology for the law, he is at once the student and the profligate, the fascinating disputant on questions of politics, and the jolly *confrere* at the wine and card-table.

The war with Prussia was his great opportunity; it lifted him to a dizzy height of popularity with the masses who hated the Empire, or longed for the Republic, or rejoiced at the thought of revolution. But his mind was not mature enough, his outlook not broad enough to comprehend the situation, or to meet the great responsibilities which were suddenly thrust upon him. He proved a disappointment to the earnest and intelligent men who were ready to follow a chief in the struggle for liberty and progress.

Eulogies have been pronounced over his grave, grateful tears have been shed for what he did in behalf of France, but the eye of reflection can not be closed to the spectacle of a wrecked life which Gambetta offers. He was the victim of passion and selfish indulgence; he bartered a noble future for the enjoyment of the animal senses. His moral faculties

had not been developed, and exercised little restraint over the impulses of his lower nature, and consequently he was an unbalanced, irregular man, not appreciative of those noble, self-sacrificing emotions which reign in the breast of true manhood. Oh the sorrow of contemplating such an end! A nation may indeed weep for such a man. The editor of *Harper's Weekly* rightly touches the core of the matter when he says in language of epigrammatic force, the lesson of which is as clear as the noontide sun to the dullest intelligence:

"But if any one should be disposed to argue from the stormy and irregular life of Gambetta that moral strength and loyalty to principle and purity of well-ordered life are not essential in great political leadership and statesmanship, he has but to look from the dead Frenchman, exhausted at forty-four, to the greatest of living Englishmen at seventy-three guiding with increasing wisdom and undiminished power the political destiny of his country."

RETURNS THAT CHEER.

EVERY day the mails bring us letters bearing the postmarks of little, obscure places far away among the hills of the West or the South, letters written by hands more familiar with the plow or the hammer than with the pen, but, in their awkwardly traced lines, we often discern an earnest expression of grateful sentiment which inspires a nobler, broader view of the relation we bear to the busy world. A poor farm-hand, for instance, has often addressed us in this fashion: "I am a poor scholar, as you can see, but, I want to tell you how much good your JOURNAL has done me. A few years ago I didn't know anything about living as a man should, and thought it was all right to drink, and smoke, and lounge around when I'd no work to do, just as other fellows like me did, but you showed me what I am as a man and what a man ought to do to improve himself. I could not tell you how much I have been helped, and how different the world looks to me now. I feel that all the benefit has come from reading the JOURNAL, and I am glad to say so."

The simple language of such a man is exceedingly impressive; it is testimony from a quarter which possesses the highest interest to us. Our work is chiefly in behalf of the masses, to arouse the ignorant and careless, to give them motives for self-improvement, and to lead in the way of moral devotion and a more useful life.

We own frankly that such letters help us much in the work we have chosen to do; they encourage us to persevere in scattering the seed of what we believe to be truth, Heaven-born truth. We believe, moreover, that such encouragement is our desert just as much as any servant in our homes or clerk at our desks who is faithful and diligent, is entitled to commendation and encouragement. If a man or woman do well, it does not hurt to say so. In this mixed world of ours, where there is so much of bald, unscrupulous evil, they who are striving to do their duty need the support and stimulus of outspoken approval.

Blessings on all the men and women who are striving to uplift themselves in mind and spirit, although their social place in the world's esteem may be low and not worth notice. Gladly do we offer them the help of our science and our sympathy, and certainly do we assure them that the courageous and diligent soul shall be rewarded in the end.

Our Mentorial Bureau.

To Our Correspondents.

QUESTIONS OF "GENERAL INTEREST" ONLY *will be answered in this department. But one question at a time, and that clearly stated, must be propounded, if a correspondent shall expect us to give him the benefit of an early consideration.*

IF AN INQUIRY FAIL TO RECEIVE ATTENTION *within two months, the correspondent should repeat it; if not then published, the inquirer may conclude that an answer is withheld, for good reasons, by the editor.*

TO OUR CONTRIBUTORS.—It will greatly *aid the editor, and facilitate the work of the printer, if our contributors generally should observe the following rules when writing articles or communications intended for publication:*

1. *Write on one side of the sheet only. It is often necessary to cut the page into "takes" for compositors, and this can not be done when both sides are written upon.*
2. *Write clearly and distinctly, being particularly careful in the matter of proper names and quotations.*
3. *Don't write in a small hand, or in pencil, as the compositor has to read it across his case, a distance of nearly two feet, and the editor often wants to make changes and additions.*
4. *Never roll your manuscript or paste the sheets together. Sheets about "Commercial note" size are the most satisfactory to editor and compositor.*
5. *Be brief. People don't like to read long stories. A two-column article is read by four times as many people as one of double that length.*
6. *Always write your full name and address plainly at the end of your letter. If you use a pseudonym or initials, write your full name and address below it.*

WE CAN NOT UNDERTAKE TO RETURN UN*available contributions unless the necessary postage is provided by the writers.* IN ALL CASES, *persons who communicate with us through the post-office should; if they expect a reply, inclose the return postage, or what is better, a prepaid envelope, with their full address. Personal matters will be considered by the editor if this is done. Anonymous letters will not be considered.*

ACUTE SENSIBILITY.—G. V. N.—You have a very susceptible organization; doubtless rather large Benevolence, Human Nature, with a rather strong social organization, and no great amount of Self-esteem and Firmness. The emotional elements are very influential; you are probably more like your mother than your father. The case is by no means unusual. Culture is productive of a high tone of sensibility, making one appreciate the delicate and refined phases of life. Culture, too, helps toward self-control, so that one in certain relations where it would not be well for him to exhibit emotion, can suppress its manifestation, yet feel as deeply as when it were permitted to have its way in the brimming eye, and the fervent out-gush of sympathy or enthusiasm.

NEW SOLAR HYPOTHESIS.—Anonymous—We think that your theory of the sun is decidedly weak, for the reason that we scarcely can understand how a "*cold dark body*" can send out rays. In our study of natural science, we have not yet learned that *cold dark bodies* are radiant, either of heat or of light in themselves. If you can explain how it is that heat and light emanate from the sun, on the basis of its being "*a cold dark body*," we shall promptly give you a hearing through our columns, and have no doubt that there are many readers who would be glad to examine your demonstration, for it certainly would be "a *great* discovery."

TREATMENT OF BIRDS, ETC., FOR MARKING AND STUFFING.—O. E.—The consideration of this inquiry is somewhat out of our usual line, but it is of sufficient interest, we think, to the reader in general to warrant our attempting an answer.

Taxidermists say that it is important, in the first place, to remove the skin of the bird with care, so that it shall not be injured in any respect, and then it should be treated with a preparation suitable for its preservation—such as arsenical soap, which is made of arsenic and white soap in the proportions of an ounce each, and carb. potash one drachm, distilled water six drachms, camphor two drachms. Another preparation is a powder composed of arsenic and burnt alum in equal parts, with ground oak-bark double the quantity, and camphor one-half the quantity. In skinning, use plaster of paris to absorb the blood and other fluids; it can be sprinkled on and rubbed off rapidly without damaging the feathers. Get the "Taxidermist's Manual," by Thomas Brown, for further particulars relating to methods of stuffing birds and small animals.

MINISTERS AND PHRENOLOGY.—G. W. N.—We are honored with the acquaintance of a very large number of ministers, representing almost every denomination in this country, and the great majority of them, certainly four-fifths, at least, have expressed opinions decidedly in favor of phrenological truth. Among the students in attendance upon the American Institute of Phrenology, there have been, every year, certainly for the past ten, one or more ministers in active work. If it were necessary, we could furnish the testimonials of a hundred in behalf of Phrenology. An experiment was not long since made for the purpose of bringing out clerical opinion in this country for or against Phrenology, and the result was decidedly on the favorable side. The eminent Boston medical professor

and better known author, is not so much opposed as people generally may think from certain old assertions. Not long since he made acknowledgments, which have been printed in our columns, and from which, to our personal knowledge, he has not withdrawn. As regards lecturing, the editors of this magazine are ready to respond to calls in the vicinity of New York city.

A QUERY.—A. J. asks: What early explorer lies buried under a flight of stairs in Quebec?

GEOMETRY.—W. H. C.—Geometry is an important branch of mathematics, and is used in the skilled branches of industry; for instance, in all lines of architecture, in navigation; it is the *sine qua non* of engineering—whatever may be the application of that science. It is important in astronomy, and even in the ordinary business of life, for it has its uses in estimating dimensions, cubic capacity, whether of a pint of molasses or a barrel of petroleum. A well educated man possesses a knowledge of its elements, at least.

AFFECTION OF THE HEART.—A. N.—In cases of enlargement of the heart, one should be exceedingly careful in the ordering his diet and habits; should avoid excitement; should make no strenuous muscular effort; should indeed avoid strains of all kinds, and be moderate and temperate. The diet should be free from all exciting, heating substances, yet be nutritious and supporting. Hypertrophy, in many cases, is due to the eating of excessive quantities of food, especially rich food, with insufficient exercise. Of course, moderate exercise is important in your case; but we should be very careful how we prescribed any special methods of muscular practice.

[*A number of inquiries awaiting attention must be deferred to our next Number*].

What They Say.

Communications are invited on any topic of interest; the writer's personal views, and facts from his experience bearing on our subjects, being preferred.

FAT AN INDICATION OF DISEASE.—More than fifty years ago, I heard a distinguished, college-bred lecturer on physiology state, that "fat in animals is nothing but decomposed and diseased flesh"—his own language. For many years after that, as those words were indelibly impressed on the tablet of memory, I thought that man was a great thinker, and that he had discovered a wonderful truth. But after I had become a man and began to look into the *reason* of things, I lost faith in the assertion. A few years ago, I heard another distinguished speaker affirm, at Cooper Institute, New York City, that "fat is nothing but a mass of scrofula." Recently, in the PHRENOLOGICAL JOURNAL, p. 329, for December, comes Dr. C. E. Page with the following language: "I have never tried to fatten my horses; for I long ago learned that fat is disease."

Now, I take issue with the foregoing, absolutely and positively. I am only a plain, unassuming man, having learned more by my mistakes and blunders through every period of life than by direct effort. Perhaps I have an incorrect idea as to the identity of fat. If the writers alluded to have been referring to some tissue of the animal economy as fat, which I never knew to be called fat, I may be laboring under an erroneous impression. I have always observed that it is a very easy thing for a great man to make a mistake.

The substance which I have always supposed to be fat consists of an oily, concrete material, secreted in various parts of the body. In swine, the abundant secretions about the kidneys are always denominated leaf-lard, or leaf-fat. Similar deposits in horses and neat cattle are called tallow. It appears to me that the doctors and I do not disagree as to the nature of fat. Nearly every one understands what fat is. I had always supposed that a generous amount of fat, in any animal, is usually a reliable indication of perfect health. Is that erroneous?

The chemical constituents of lard, or fat, consist chiefly of carbon and water. Fat is secreted in different parts of the animal and human body for two purposes, viz., nourishment and combustion. When a hen, goose, or duck enters the period of incubation, she is usually fat; but at the expiration of incubation she will be thin, and sometimes very poor. This fact shows that she has subsisted on her fat during incubation, most of the fat having been consumed to generate animal heat. If that fat had been "disease" or "a mass of scrofula," would it support animal life? Bears, skunks, raccoons, and many other wild animals usually become very fat during warm weather; and thus go into winter quarters, where they subsist entirely on their fat. When the spring returns they crawl from their refuges, lank and emaciated, as their *fat*, which has been their chief source of nutrition and warmth, is nearly all used up. If diseased tissue were to be absorbed and enter into the circulation (without the presence of any natural food in the stomach and bowels) would it sustain healthful existence; and would such diseased material maintain the natural heat of the body?

Gangrene is disease. Putrid flesh is disease. Will such substances sustain healthful animal life? Place a piece of diseased meat, or rancid butter, or worthless eggs on the plate of a per-

son, and how quickly the faithful gustatory sentinels indicate the danger that would follow if such articles were employed as food. The bodies of some swine are covered with a layer of pure adipose tissue, three to six inches thick. Now, if that abundant secretion were "disease," how long would it be possible for such a brute to survive? Is it not an egregious error to speak or write of fat as a mass of disease, or an offensive accumulation of scrofula? Taking a philosophic view of fat concerning the numerous useful purposes for which it is employed in the arts and in domestic economy, and judging its true character by the very important part it subserves in the animal economy, is it not plain and easy to be understood that fat is *not* "disease," nor "scrofula," but a healthful secretion?

SERENO EDWARDS TODD, SR.

NEWSPAPERS AND MAGAZINES.—How they come to us, daily, weekly, and monthly! at how great a cost and labor we can hardly understand. We only know that we learn to look for their coming as for the visit of a loved friend, with this exception, that they bring to us a greater variety and a larger insight into the working world around us, than any friend, however wide has been his scope of observation or powerful his oratorical talent, for they combine the wisdom and observation of *many* minds. To those who are prohibited by domestic duties or pecuniary restrictions from the benefits and pleasures of travel, and a personal investigation of the broad arena of society, the papers and magazines are a special boon. In our own rural homes, when wearied with the monotonous round of daily duties, we may through these silent mediums interview the workings of our own and foreign nations; we may visit the chambers of Congress, and listen to the plans and resolutions of the men who, to a certain extent, hold the welfare of the nation in their hands; we may stand in the drawing-rooms and parlors of the White House, and witness the receptions and *fêtes*, scan the elegant costumes, the graceful forms, and sparkling paraphernalia of wealth and luxury; we may learn the decrees of dame Fashion (as well as the torture and ruin she sometimes inflicts upon her devotees); we may learn of the caprices of the goddess Fortune, of the success or failure of golden hopes and lofty ambitions; we may listen alike to the marriage peals and the funeral knell; may catch the message sent by electric force from shore to shore, or the whisper at the telephone; we may witness the grand and terrible splendor of an army drawn up in battle array, and learn the result of the bloody contest; we may listen to the reasoning and advice of men who have spent weary years in the study of the human frame, its wonderful mechanism, its wants and requirements, that the delicate machinery be not impeded in its workings; we may stand at the head of a shaft leading into the dark abyss of a mine, or see the glimmering gold-dust sparkling in the rays of the western sun, or the diamond snatched from the fissures of the rocks, or the pearl from the depths of the sea, brought up at the risk of a human life; we may stand at the glowing furnace, where the stroke of the hammer brings forth perfect forms from incongruous masses of iron; we may visit the deck of a noble steamer, and learn of the trade at the various ports. Merchandise and agriculture, science and art, have their representatives in the columns of print, each contributing to our stock of information. The mind that delights to revel in scenes of beauty and grandeur may bask in the shade of the olive-tree or catch the fragrance of the magnolia; may tread the wild passes of the Alps, or gaze upon the productions of human genius in the halls of art; we may visit the elegant mosques of India, with their dazzling minarets towering toward heaven; we can ascend their hundred narrow steps and sit down beneath the beautiful marble cupolas, and gaze out upon the charming scenery around. "The city of Delhi before us, with its busy crowded streets and tile-roofed houses, the old palaces, the mosques, and a Christian church, and away beyond the walls the vast plain, with its domes and columns and in the distance the grand old Hootuh Minar, and the gray rocks and blue Jumna at the east. We enter the audience-room, where the white marble slabs are laid for the kneeling worshipers, or the relic-room, where, preserved in black silk bags, are the sacred Korans, and the old shoe once worn by Mohammed, and now preserved in a sandal-wood case lined with velvet. We may learn also that the conspiracy against the Government in 1857 was carried on here, and that when the mutiny was crushed in the city, the British officials used it for a hospital."

It would be impossible for us to give a complete synopsis of the contents of our papers, for even though the general topics of interest may be the same from week to week, yet there is such a wide field of thought embraced, and such grand helps for nearly every life-station, we can but wonder what home would be without a newspaper.

ETTIE H. DAVIS.

"THE PHRENOLOGICAL JOURNAL, published by Fowler & Wells, New York, is among the most practical magazines in this country. Others entertain, but this instructs. It is rare that you ever read a Number and fail to find some practical suggestion as to health, diet, education, industry, economy, or the like. This work looks to the necessaries of life, while some others look more to the luxuries, both in work and literature."—*The Educationist.*

PERSONAL.

JOHN WILLIAMS QUINCY, for nearly half a century interested in the metal trade in this city, died suddenly at his home, on January 21st. He was born in Boston, in 1813, and came to New York at the age of twenty-two, and entered into the hardware business, in which he became eminently successful. It is, however, as a benevolent, kind-hearted man that Mr. Quincy was best known to the public, for he aided largely with his means many humane enterprises, and engaged personally in many efforts to promote the welfare of the young. He was a director in the New York Juvenile Asylum, of the Society for the Relief of Half Orphans and Destitute Children, of the New York Society for the Relief of the Ruptured and Crippled, of the Northern Dispensary, a governor in the New York State Hospital for Women, and a director in other charitable organizations. He was also much interested in Phrenology, and often sought its counsel; probably no other American has oftener submitted his head to the manipulation of an examiner. He owned a complete file of the PHRENOLOGICAL JOURNAL from its commencement, and seemed to take pleasure in testing the abilities of different phrenologists. Being a frequent visitor at the office of the PHRENOLOGICAL JOURNAL, he will be missed.

S. B. BRITAIN, editor of the *Spiritualistic Secular Press Bureau*, died in New York City, on the 4th of January, of pleuro-pneumonia, after a short illness of six days. He was born August 18, 1815. He devoted a life distinguished for its moral excellence and steady industry, to the propagation of the Spiritualistic doctrines.

CLARK MILLS, the eminent sculptor, died at his Washington residence, January 12th last. He was a native of New York, and born about 1815. He did not take up the profession which won him reputation until about 1845, and then largely on account of the advice of a phrenological examiner, who urged him to make art his pursuit. He made a marble bust of John C. Calhoun in 1846, before he had ever seen a statue. Since that time he had been for the most part diligently engaged in sculpture; and many busts and statues of his modeling occupy prominent places North and South. One of the most noteworthy is his bronze equestrian statue of General Jackson, while that of Washington, and Liberty on the dome of the Capitol, were from his hands (the latter designed by Crawford, but finished by Mills). The Phrenological Museum contains several valuable casts of great men taken by Mr. Mills' own hands.

WILLIAM E. DODGE, well known in New York business circles as a leading metal merchant, and in society as a philanthropist and temperance advocate, died February 9th, at the age of seventy-eight. In the foregoing pages we publish a sketch of his life, with a portrait.

DR. GEORGE MULLER BEARD died January 23, 1883, in the Grand Hotel. He was born in Montville, Conn., May 8, 1839. Dr. Beard was a specialist in nervous diseases and electro-therapeutics. He was the author of numerous medical works, and was considered an authority on nervous diseases. He had for a few years past given some attention to the phenomena of animal magnetism, and had contributed results of interest to medical science.

WISDOM.

"Think truly, and thy thought
Shall be a fruitful seed."

CHARACTER is higher than intellect.

SHALL grave and formal pass for wise,
While men the solemn owl despise?

THE stream of truth can only be held back for a passing instant, but never permanently stemmed.

FAITH draws the poison from every grief, takes the sting from every loss, and quenches the fire of every pain; and only faith can do it.—*Dr. Holland.*

WE must be here to work;
And men who work, can only work for men,
And not to work in vain must comprehend
Humanity, and so work humanly
And raise men's bodies still by raising souls
As God did first. —*Mrs. Browning.*

DOUBLE WASTE.—Diogenes being presented at a feast with a large goblet of wine threw it on the ground. When blamed for wasting so much good liquor, he answered: "Had I drank it there would have been double waste. I as well as the wine would have been lost."

HE who hates an enemy gives him more reason for animosity; he who shuns him creates the suspicion that he hates him; he who forgives him always triumphs over him; he who loves him makes him a means of good.

WHEN Carlini was amusing Naples, a patient waited on a physician in that city to obtain some remedy for excessive melancholy. The physician endeavored to cheer his spirits, and advised him to go and see Carlini. He replied, "Alas! I am Carlini."

MIRTH.

"A little nonsense now and then
Is relished by the wisest men."

"CAN you find room for a scribe on your paper?" "Not unless you want to subscribe." And again was that scholarly youth crushed.

A COMPANY of settlers, in making their new town, called it Dictionary, because, as they said, "that's the only place where peace, prosperity, and happiness are always found."

"OH, yes," said the tramp, as a tear glistened like a gum-drop upon his sun-stained face; "I served during the entire war." After stowing away the last fish-ball given him by the compassionate housewife, he finished the sentence—"I was a waiter in a Canadian restaurant."

"You write a beautiful hand. I wish that I had such a hand," said Mr. Flasher to a lady clerk at the hotel. "Am I to consider this as a proposal?" asked the bright lady. "Well—er—yes, if my wife is willing to let me off," replied the accomplished Flasher.

COPY of a notice on the beach at a fashionable French watering-place: "In case of the ladies in danger of drowning, they should be seized by the clothing, and not by the hair, which generally comes off."

Two boarding-housekeepers are comparing notes. "It 'pears to me, Mrs. Miggles, that your chicken salid is never found out—leastways, I never heard none of the boarders complain." "You see," explained Mrs. Miggles, "I allus chop up a few feathers with the veal."

Library.

In this department we give short reviews of such NEW BOOKS *as publishers see fit to send us. In these reviews we seek to treat author and publisher satisfactorily and justly, and also to furnish our readers with such information as shall enable them to form an opinion of the desirability of any particular volume for personal use. It is our wish to notice the better class of books issuing from the press, and we invite publishers to favor us with their recent publications, especially those related in any way to mental and physiological science. We can usually supply any of those noticed.*

A NEW THEORY OF THE ORIGIN OF SPECIES. By Benjamin G. Ferris. 12mo, pp. 278. Extra cloth, $1.50. New York: Fowler & Wells, Publishers, 753 Broadway.

A thoughtful Eastern man contributes a new book to the literature of evolution—not a volume that follows in the lead of those who accept the theory as "law and gospel," but one which questions the validity of certain propositions advanced by the Darwinianites, and especially that relating to the origin of man, and discusses with a sharp criticism assumptions formed on data, which, although apparent or even probable, are yet positively undetermined. Such assumptions, for instance, as natural selection, "archæbiosis" or spontaneous generation, the identity of the vital or bioplasmic element in all classes of life, etc. The theories of development promulgated by Lamarck and Darwin, the views thereon of Owen, Spencer, Huxley, and others, are considered in the early chapters of the volume; the laws of Heredity are discussed at much length next; then the nature and origin of Life; then differences of mental capacity in the brute and man; later the question of a First Cause comes in for a share of attention, and the order of creation from the lowest form to man; finally the author presents in a synthetic form his own views of human development. In Chapter XI. he premises, "We see that creation as it goes on under our observation is by the ordinary process. From this we are able to evolve not merely the general, but the invariable rule that every living organism, within historic times, has required a receptacle or matrix for its conception, gradual development, and final birth. Surely from what we thus see we should be able to find a general law for the production of new species. If species are reproduced by this ordinary process then it is fair to conclude that they must have originated, not by an unusual birth, but by an *extraordinary generation*, and herein I apprehend may be found the key to the whole mystery." He claims that this *extraordinary generation* is brought about by a fresh "influx of life" from the Creator, "whenever in the orderly progress of changing circumstances a new species becomes necessary." In other words, the author accepts evolution in a general sense, but is of opinion that creative intelligence and power were employed in the production of the successive steps of the process. He discerns no middle ground between this theory and that of "special creation"—"either the ancestral type of each species was specially created, or there was a prepared organization adequate to the reception and protection of the infant." We think that Mr. Ferris' views are well worth the careful thought of those who feel the pressure of modern scientific thought so much as to be doubtful of their religious ground, as his suggestions point to a possible reconciliation of biological science with a belief in an over-ruling Providence.

A HAND-BOOK OF HOMEOPATHIC PRACTICE. By George Mockford, M.D., member of the American Institute of Homeopathy, etc. 12mo, pp. 435. Chicago: Duncan Brothers, publishers.

If the Homeopathic school of therapeutics has anything to which reference can be made as a

matter of commendation, it is the definitions by which its *materia medica* is classified. Given the disease, we find a series of remedies, each having a correspondence to certain symptomatic phenomena, and each indicated as the result of provings or trials. To be sure, the field covered by these provings is very extensive, and the gradations of strength or potency in the medicaments are very numerous, yet the subject, like all others, has its first principles, which may be comprised in a moderate volume, and their application in a general sense be practically discussed.

The author of this "manual" offers the book to the student in Homeopathy as "a series of notes culled from the writings of foreign and American authorities." In this respect we can see its serviceability in the way of directing one's study of disease and in the investigation of remedies. To one quite ignorant of medicine it would be too concise and at the same time confusing, especially with regard to the dose and administration of medicine. The nature and history of the remedies mentioned are left to the student or practitioner's acquirement in other channels. As a volume which the physician in the course of active practice may catch up and examine for suggestion or mental refreshment in any sudden embarrassment, it is an excellent book of its class.

OUR DEAD POETS. By an Outdoor Student of Literature. Illustrated. pp. 131. Published by the Author, at Ashland, Ohio,

Who, by the terms of the dedication, is a graduate of National Normal University of that State. The poets discussed and illustrated are Bryant, Taylor, Holland, Longfellow, and Emerson. The "outdoor student" has not depended entirely upon his own discernment in formulating opinions on the individual merits of this galaxy of genius, or in the selections which grace his little volume; but we can take him as supporting them, and deeming them able to pass muster. In conning the book one may make a comparison of the qualities of the verse of the different poems, and exercise a critical turn at his convenience.

PUBLICATIONS RECEIVED.

THE CHURCH IN THE HOUSE. A series of Lessons on the Acts of the Apostles. By William Arnot. Published by Robert Carter & Brothers, New York.

FIRST LESSONS IN PHYSIOLOGY AND HYGIENE. For the use of Schools. By Charles K. Mills, M.D. Philadelphia: Eldredge & Brother. Price, 85 cents.

A HAND-BOOK OF LITERATURE, English and American. Historical and critical, with illustrations of the writings of each successive period. By Esther J. Trimble, late Professor of Literature, State Normal School, West Chester, Pa. Price, $1.50.

ELECTRICITY IN MEDICINE AND SURGERY. By George C. Pitzer, M.D., Professor of Theory and Practice of Medicine in the American Medical College of St. Louis, etc. Price, $1.00.

The above entitled volumes will be noticed in future numbers of the JOURNAL.

PAPERS AND PROCEEDINGS of the National Association for the Protection of the Insane at the Stated Meeting held in New York City January 20, 1882. The pamphlet states the object of this new organization, and includes four interesting papers by gentlemen who have given particular attention to the subject of insanity. Dr. Nathan Allen is the author of the first, entitled "Insanity, and its Relation to the Medical Profession and Lunatic Hospitals." Dr. Shaw, of the Kings County Insane Asylum, furnishes facts from his own experience in relation to the results of non-restraint.

THE PHRENOLOGICAL MAGAZINE, Volume III., complete for 1882, comes to us from its publisher in London; is neatly bound, and covered with cloth of a very agreeable shade of drab. The twelve numbers for the year constitute a volume worthy of enumeration among the books of any library. Price, $2.50.

SIXTY-FOURTH ANNUAL REPORT of the Trustees of the New York State Library for the year 1881, as transmitted to the Legislature January 13, 1882.

CALVERT'S MAGAZINE, an illustrated monthly, bearing on art, science, and literature, and having particular reference to social events in Brooklyn; is now in its ninth volume, neatly printed and well illustrated.

THE MODERN AGE is a new venture in the line of miscellaneous literature; a monthly publication at a low price, and without illustrations.

THE GREAT NORTHWEST: A brief description of the resources, the agricultural produce, the trade, and general prosperity of the Northwestern States, illustrated with diagrams, and published by Leander H. Craw, New York City.

THE REPORT of the Third Assistant Postmaster-General to the Postmaster-General, showing the condition of the bureau under his charge for 1882, contains the customary details.

FIFE AND DRUM Series, A JOLLY TIME; a bright and stirring temperance tale, by Mary Dwinell Chellis. Price, 10 cts. Published by J. N. Stearns, New York.

1883

PREMIUM LIST.

1883

We present below a List of Articles offered as Premiums for Clubs to THE PHRENOLOGICAL JOURNAL AND SCIENCE OF HEALTH, and would call special attention to the very liberal offers and conditions given. The articles are all new and useful; the very best of their kind. Besides these, to each subscriber is given a splendid Premium.

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7	One Dozen Silver Plated Tea Spoons, Reed & Barton's make	5 00	5
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17	The Amateur's Photographic Outfit	12 00	12
18	The Perfected Type-Writer	100 00	100
19	An Elegant Graphoscope	6 00	6
20	Boy's Tool Chest, 45 assorted tools	5 00	7
21	Youth's Tool Chest, 61 assorted tools	10 00	14
22	Gentleman's Tool Chest, 85 assorted tools	22 50	30
23	Family Grind-Stone	3 00	4
24	Kidder's Electro Magnetic Machine, No. 4	20 00	20
25	Kidder's Electro Magnetic Machine, with Tip cup, No. 5	27 00	25
26	Household Microscope	5 00	6
27	McAllister's Gem Magic Lantern	8 00	11
28	The Home Learners' Telegraphic Instrument	4 50	6
29	The Combination Fruit Press	3 00	4
30	Gold Plated Paragon Pencil	3 00	3
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34	An Alarm Clock, "Joker" Lever	6 00	6
35	The Mechanical Organette	8 00	8
36	The Bonanza Printing Press	3 00	3
37	The "Holly Scroll Saw"	3 00	4
38	The "Demas" Scroll Saw and Lathe	8 00	10
39	The Avery Sewing Machine	30 00	28
40	The Fairy Sewing Machine	3 00	4
41	German Student Lamp	4 75	6
42	Gentlemen's Rubber Over-Coat	5 00	5
43	Ladies' Rubber Water-Proof Cloak	4 00	4
44	Rubber Leggins, (Gents', Ladies' or Misses')	1 50	2
45	Rubber Water-Bottle, 2 quarts	2 00	2
46	Mattson's Rubber Syringe	3 00	3
47	Goodyear's Health Lift	5 00	5
48	Goodyear's Pocket Gymnasium, Family Set	10 00	16
49	Pump Plant Sprinkler	1 50	2
50	Set of Portraits for Lecturers	40 00	40
51	Set of Phrenological Specimens	40 00	40
52	Small Set of Phrenological Specimens	10 00	10
53	Set Lambert's Physiological Plates	10 00	10
54	Worcester's Unabridged Dictionary	10 00	12
55	Student's Set of Phrenological Works, with Bust	10 00	8
56	Geo. Combe's Works. Uniform edition, 4 vols	5 00	4
57	New Physiognomy; or, Signs of Character	5 00	4
58	The Hydropathic Encyclopedia, by R. T. Trall, M. D.	4 00	4
59	The Family Physician. By Joel Shew, M. D.	3 00	3
60	Phrenological Busts, Large	1 00	2
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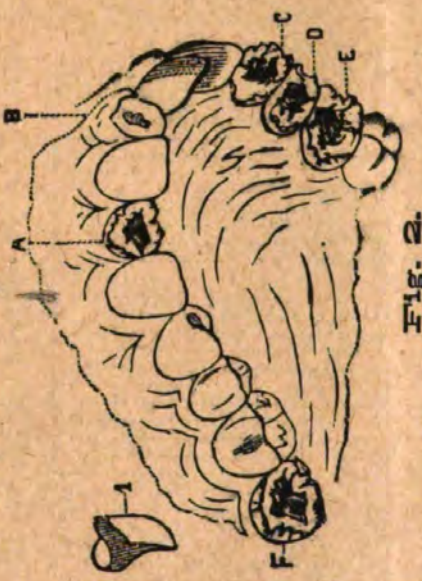

Fig. 1.
1. Crown, with porcelain face, before attaching.
A. Decayed root, front tooth.
B. Root prepared for crown.
C, D, E and F. Decayed roots.

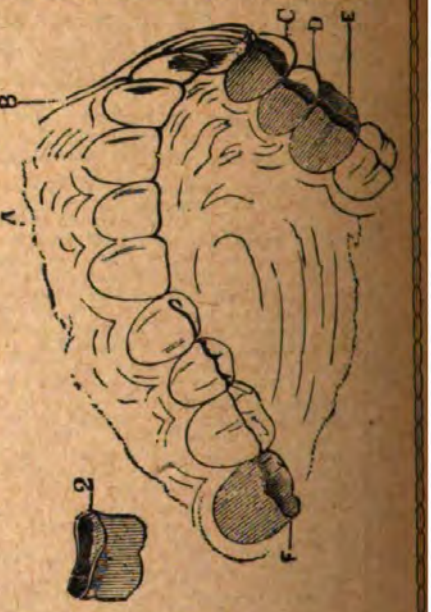

Fig. 2.
2. Crown, all Gold.
A and B. Porcelain-faced Crowns in position.
C, D, E and F. Gold Crowns in position.

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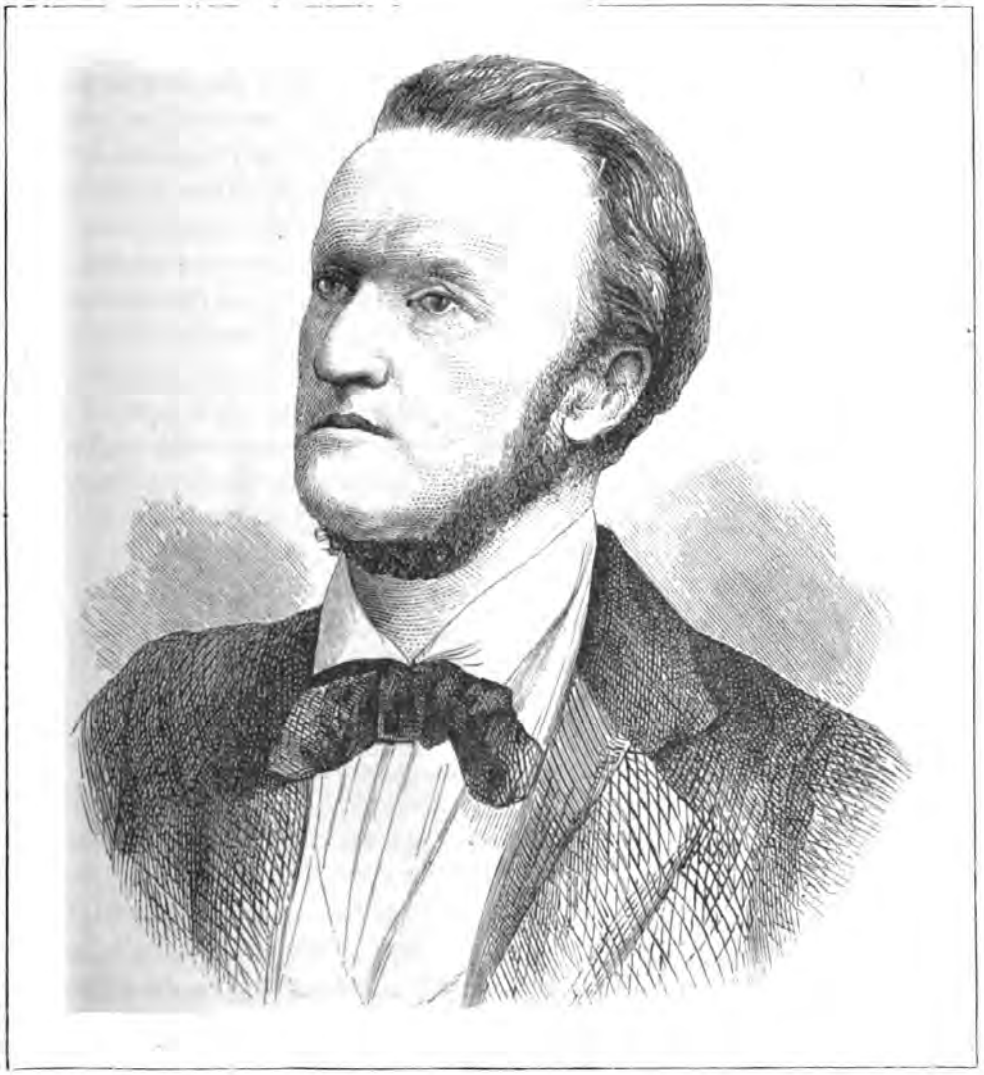


WAGNER AND DORÉ.

THE ARTIST AND THE TONE MASTER.

THE world of art has been surprised and afflicted by the unexpected death of two of its most eminent men, who were summoned to leave the scene of their labors and triumphs within a few days of each other. One had secured his fame

through the fertility of an imagination which seemed inexhaustible for designing pictures of every kind: landscape, caricature, satire, pathos, were illustrated with a promptness and excellence of representation which only genius could possess. The other had mounted to the top of "fame's dread mountain" through his masterful control of the arts of song. A musician at seven years of age, a composer at twelve, he made his way steadily forward against many difficulties until the musical world acknowledged that his methods, though new and strangely contrasting with the music which had heretofore obtained in public favor—the music of Handel and Haydn, Beethoven and Mozart, Rossini and Schubert—were eminently deserving of attention and reward.

In organization there were similarities between these two men. They both had very prominent perceptive organs, and were highly appreciative of the physical or sensible qualities of things; competent to analyze with minuteness whatever came within the range of their criticism. To Wagner belonged a higher development of forehead and crown, a greater capacity for philosophical reflection, and a more exacting aspiration. In Doré we find the elements of invention and mechanical device more strongly marked; he possessed, so to speak, the architectural spirit in a high degree, associated with unusual mechanical capability; could design and give form to his designs. In Wagner the ideal sense was less closely associated with the mechanical and practical; and in giving tangible expression to his thought, we should expect less of harmony and homogeneity than in the work of Doré. In both we observe a marked development of Tune, and its relation is well contrasted: in the case of the Paris artist, it evidently worked with Constructiveness, and the perceptive range of the intellectual organs chiefly. In the case of the musician it consorted with Ideality, Marvelousness, and other organs of the top-head. Both men were delicately susceptible to emotional influences, but in the German there was a much greater excitability, a characteristic which was likely at times to be indicated by eccentric outbursts of feeling and perhaps of passion. Wagner was a man who, as we infer from the current portraits, could ill bear interference or opposition, and was exceedingly impatient with criticism. Doré's tenderness, in like circumstances, probably evinced itself in retirement from public notice, and melancholy depression. He had not the robust tenacity of the musician; not that pertinacious hold on his purposes which would not be evaded or loosened by any difficulties: a characteristic marked upon his organization evidently enough.

Both had broad heads, the lateral organs above the ear and in the temporal region being salient; hence, the minds of both were powerfully influenced by energetic, industrious, impulsive forces; the imaginative elements were very active, both Ideality and Sublimity being large, the latter organ probably being more pronounced in Doré's brain than in Wagner's, while Marvelousness was more influential in the reflectives and motives of the composer of Lohengrin and Parsifal than in the artist. The weird, fantastic, and appalling, had a charm for the latter's pencil, while the strange, fantastic, and supernatural were contemplated with special interest by the musician.

PAUL GUSTAVE DORÉ was born at Strasburg, in 1832. In his thirteenth year

he went to Paris, and there finished his youthful studies at the Lycée Charlemagne. He was a designer at that early age, and when only fifteen was employed on the *Journal pour Rire*, a comic illustrated weekly. He also sent some pen-drawings to the Salon in 1848, and continued to exhibit every succeeding year.

In 1857 his work received honorable mention, and the merit and originality of his designs were recognized on every hand.

He was not content to pursue a definite course of study, but preferred to follow the bidding of the popular favor which was manifested for his fantastic designs.

Everything which he produced was at once caught up. And making his art a matter of steady industry, he drew innumerable pictures for illustrated journals, in almost every phase of art. But his fame rests chiefly on his book illustrations. The designs for the "Wandering Jew," Balzac's "Contes Drolatiques," the "Essays of Montaigne," "Don Quixote," Dante's "Inferno," Tennyson's Poems, Milton's "Paradise Lost," the Bible, Coleridge's "Ancient Mariner," etc., gave him a world-wide celebrity. The last, and in many respects the best work of Doré, was executed for an edition of Poe's "Raven," which was published by Messrs. Harper & Brothers, of New York. The designs are twenty-six in number, and were sent to this country to be engraved, and will be published in a vol-

ume similar in form to that of the "Ancient Mariner."

Doré was unmarried, and lived in his mother's house in the Rue St. Dominique, St. Germain, surrounded by artistic objects, books, musical instruments, pet dogs, and curios. He died on Tuesday, January 23d, after a short illness, the consequence of a cold.

RICHARD WAGNER was born at Leipsic, on the 22d of May, 1813. His early education was less extended than Doré's, although he early showed a disposition toward literary employments. At fifteen he made choice of music as a profession, and studied it systematically. His first effort in composition was a pastoral comedy, which did not find its way to the stage, however, but in 1833 he wrote the opera of "The Fairies." This indicated the cast of his musical thought; his sympathy with the legendary and supernatural which every composition from his pen familiar to the public illustrates.

In the summer of 1834 he became musical director at the Madgeburg Theater, where in 1836 he brought out his opera, *Das Liebesverbot*, which proved a failure. Following this he produced Rienzi, *Der Fliegende Hollander* and Faust. Rienzi procured for him the Prussian order of the red eagle and the position of Chapel Master at the Dresden Opera House. During this time he brought out his Flying Dutchman, Tannhauser, and Lohengrin. Just as the last piece was about to be produced at Dresden in 1849 the revolutionary outbreak in Saxony took place, and the excitable, independent Wagner became identified with the Liberal party. He was an active leader in the movement, and when it was suppressed was obliged to take refuge in Zurich, and became a citizen of the Canton. After ten years he received a political pardon from the King of Saxony, and took up his residence in Munich, where the eccentric and art-loving Louis of Bavaria became his devoted friend. The chief points of Wagner's musical creed may be stated in his own words: "The error in the opera as a species of art has consisted in the fact that a mere means of expression—that is, music—has been made the end, while the end of expression, the drama, has been made the means, and thus the actual lyric drama has been made to rest upon the basis of absolute music."

To make the meaning of the master clear, we add the opinion of a critic in *Harpers' Weekly:*

"Wagner found the opera a succession of levels of dull recitative, relieved here and there by arias, which, as a rule, bore no special relation to the text, and simply furnished singers with an opportunity to display their skill. Interpretative talent was overpowering creative genius. He saw at once that the true opera would be that in which the music would give the exact dramatic meaning of the text and situation. For such an opera a fine drama was as necessary as fine music."

Wagner's greatest triumph was the festival performances of the operas forming the "Ring of the Nieblung" at Baireuth in 1876, in a theater built especially for the purpose. The success of the performances was so great as to lead the composer to present "Parsifal" last year in much the same manner, and with "Parsifal" his remarkable career was brought to a close.

His death occurred rather suddenly in Vienna, on the 13th of February, and his body was entombed with much ceremony at Baireuth, the scene of his greatest triumphs.

PHOSPHORESCENCE.

BEHIND the swiftly moving ship strange light
Floats on the waves and dances in the spray;
Brighter than moon and whiter than the day,
Its myriad points leap dazzling to the sight,
And make the whole sea fair in darkest night.
No science yet has fathomed, or can say,
Where lies the shining secret of its ray,
Or at what hour the water will be bright.
Such moments and such mystic lights there are
In human lives. The days' deep currents flow
Miraculously calm, and all things glow
With radiance borrowed from no sun or star.
'Twixt golden past and present lies no bar;
The future, golden, draweth near too slow.

—*Overland Monthly.*

On Deck among the Thousand Islands.

ON THE ST. LAWRENCE FROM CLAYTON TO MONTREAL.

THE traveler or tourist who takes in his route the River St. Lawrence, passes on his way from Clayton, the head-waters, to Quebec, a series of ever-changing phenomena. No stream of equal length, used as a thoroughfare for travel and commerce, offers a like panorama. There are other water-courses which may possess features of special interest, they may be historically more enticing and in one or two more points beautiful, but certainly none combine so many features of attraction as the St. Lawrence. In sailing down the channel, now rapid and narrow, anon widens to the dimension of a lake; now it is tortuous, anon it is direct as an arrow's flight; at points there are rapids violent and dangerous, with thickly-strown sunken rocks, and rocks which are not sunken, requiring the steady hand and unerring sense of the experienced pilot. Now, there are hundreds, yes, thousands of islands thickly accumulated; again for miles the way is clear, both shores appearing in uninterrupted view, while cities, towns, and villages dot the shores, and, beyond, reaches of prospect embracing mountain and plain contribute their agreeable variety of effect.

The St. Lawrence has been for years a theme for the consideration of writers; and those in whom the esthetic sense is strong, have found it an abundant field for reflection. A plain description would trend upon the romantic, for an enumeration of its beauties and an allusion to some of its early historic or traditional associations, can not fail to awaken the imagination of the dullest mind.

The river is reached by the traveler from the interior of the United States by several common routes of travel. The Western visitor may go by way of the lakes or the lake-side railways to Oswego or Watertown; the Southern or Middle State visitor, proceeding up the Hudson River, finds the Utica and Black River Railway a convenient means of travel, as

the northern terminus of that railway is Clayton, a small town but a few miles below Lake Ontario. Here the steamers are taken. But before the direct passage down the river, one should make an excursion or two among the Thousand Islands, and he will find himself richly rewarded for the time which may be expended in that way.

A Rocky Island Shore.

From Clayton down to Alexandria Bay the river teems with islands; so that the name given to that part of it, "The Thousand Islands," is not a misnomer, there being upward of 1,800 islands of all sizes and forms and characters. Some are miles in length, others mere rocky crests standing a few feet above water; many are thickly wooded, others desolate areas of stone; many are inhabited, some extensively so. Most of the inhabited ones are owned by private individuals, and used as a summer residence. Three or four of the larger have been taken possession of by associations, religious and otherwise; the method of co-operation helping greatly of course toward social enjoyment. On Wells Island, for instance, there are two or three settlements formed by as many co-operative societies; that of the Methodist, called "Thousand Island Park," is the largest. Here a number of hotels and cottages have been erected for camp-ground purposes, and in mid-summer the settlement is characterized by an air of activity incidental to a small town, the number of people assembled there reaching a thousand or more.

At the lower end of the same island a settlement has been established by Presbyterians under the name of the Westminster Association; the people of Watertown, N. Y., have taken great interest in this, and it has entered upon a stage which indicates success. As if not to be outdone by other Churches, the Baptists have secured part of Round Island, three or four miles from Clayton, and have already made notable progress toward establishing an important summer town upon it. This islet is a very picturesque one. It has a hotel of considerable dimensions and several private cottages tucked away in cosy nooks. One of the most pleasing little summer homes heard of, is that of Mr. Taylor, the artist. The Thousand Island district stretches for about twenty-eight miles; and when it is considered that the average breadth of the river is about ten miles there, we can understand how so many islands may be distributed over the basin.

It is an indescribably delightful sail among and around these islands in the mellow warmth of a summer afternoon;

their variety is often startling, and so many improvements have been made by owners or lessees, that one's interest never

ROUND ISLAND AND ITS SURROUNDINGS.

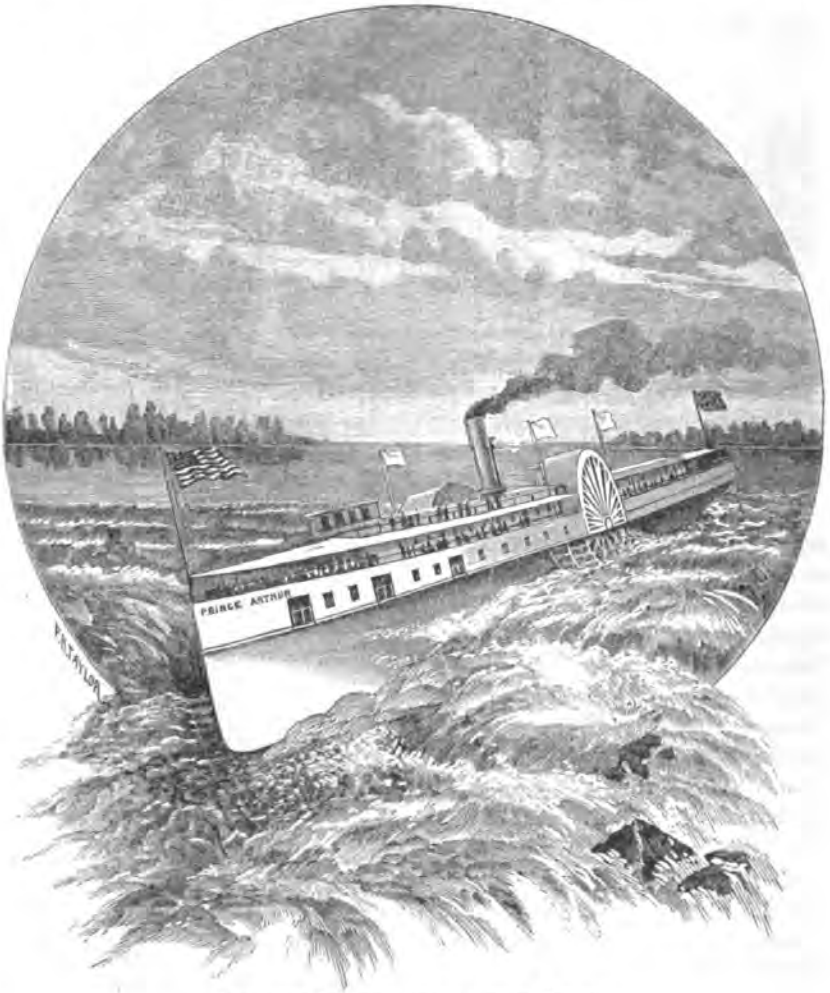
flags, although he may spend many days in the neighborhood. Perhaps these island objects will have more attraction for us as we near Alexandria Bay; for there are the greater number of those which have been appropriated for summer homes. On one, for instance, we find the imposing cottage of Mr. Pullman, well known because of his relation to the "Palace Car," which has become one of the indispensables in modern railway traffic; another is the summer residence of the Packers, notable in Pennsylvania railway affairs; another was owned by the late editor of *Scribner's Magazine*, Dr. Holland, whose handsome cottage bears the name given to one of his attractive novels, "Bonnie Castle." A prominent New York politician, Mr. Alvord, has a residence further up stream, a high and commanding bit of territory half a mile from the shore; we believe the place is now called Governor's Island.

Florida Island, one of the most beautiful, is owned by the Messrs. Hayden, of Ohio; Walton Island, by a club of gentlemen, residents of Watertown, N. Y. Arcadia Island is in the possession of Mr. Briggs, of New York; then there are others to which names have been given by their present owners or others, among them Manhattan Island, Nobby Island, Welcome Island, Summer Island, etc.

From the American shore some beautiful views are to be obtained of island groups. A few years ago we had an opportunity to visit that part of the St. Lawrence, and we well remember with what fascination we gazed upon the scenery of the river spread out before us as we stood on the broad piazza of the West-

AN OLD MANSION BY THE RIVER.

minster Hotel, and later as we sat upon the lofty veranda of the Thousand Island House. The site of this hotel is but a short distance above "Bonnie Castle," and it has been well selected, its prominence commanding a considerable sweep of prospect east and west. While going down the St. Lawrence by steamer, the tourist passes the Thousand Islands in grand review; the last of them, the Three Sisters—so called because of their close resemblance to each other—like sentinels, ushering him into a new theatre of experience upon a broad lake-like expanse, extending from Morristown to Wind Mill Point, and passing the important cities of Ogdensburg and Prescott. Ogdensburg is a beautiful town, an important railway center, and noteworthy as a resort for tourists; Prescott, on the Canadian side, is the terminus of the St. Lawrence and Ottawa Railway. Not far below Ogdensburg the increasing speed of the steamer intimates to the traveler that he is approaching one of those exciting portions of his journey—the never-to-be-forgotten descent of the Long Sault Rapids. Here the descent is continuous for nine miles, and the swiftness of the current is so great that a raft is carried along at the rate of a mile in five minutes. The rapids rush along at a speed of full twenty miles an hour, their roar being almost deafening. The seething waters terrify while they

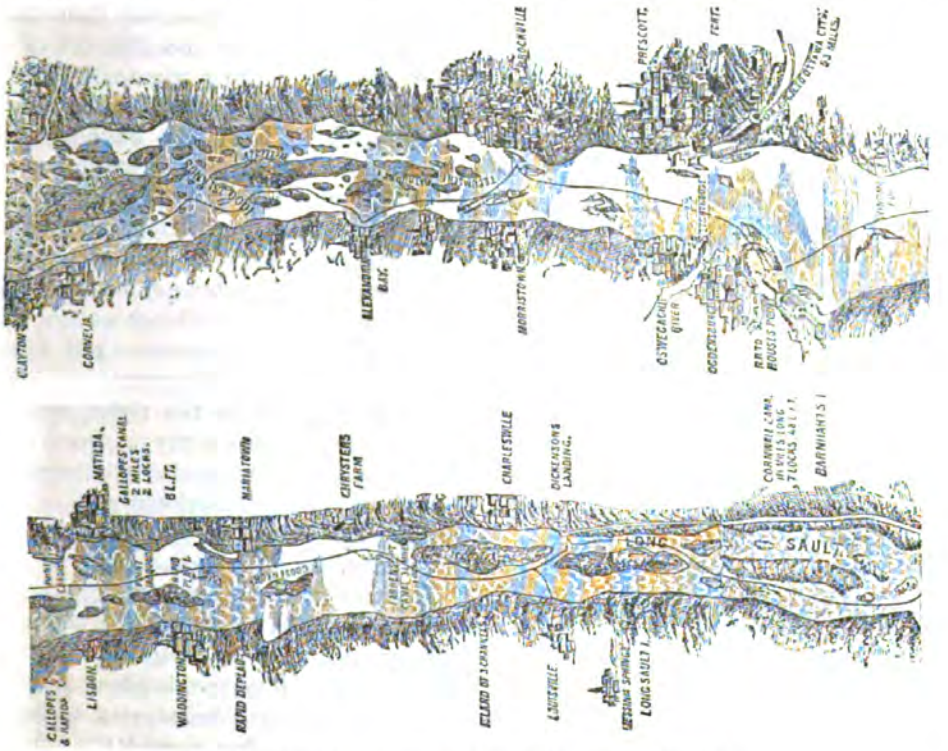


A Steamer Shooting the Lachine Rapids.

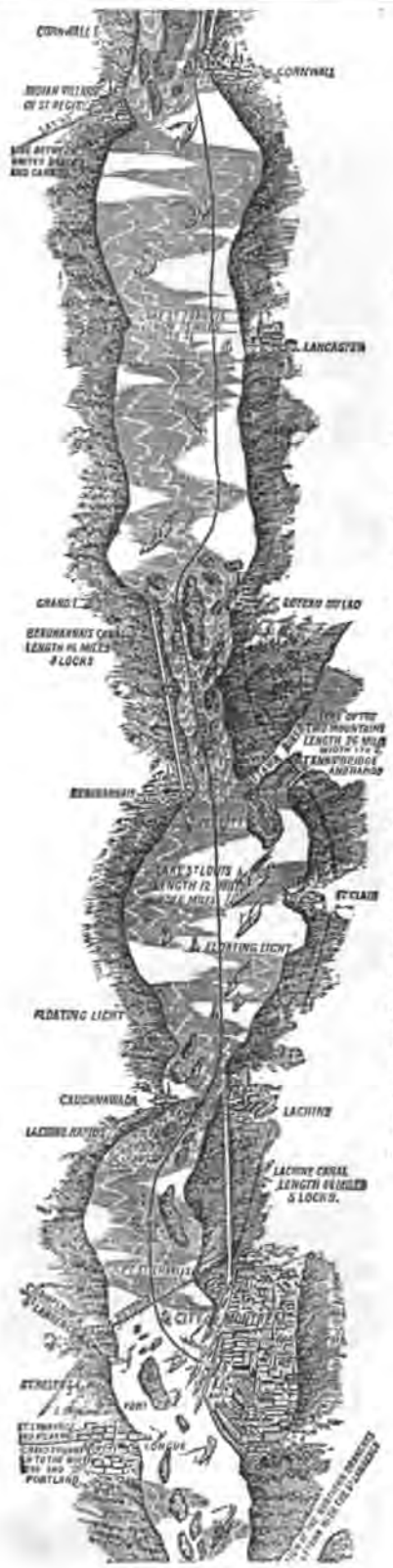
fascinate, and of course it is unnecessary to say that great nerve and strength are requisite for the safe guidance of the vessel in these and other rapids which are encountered; a very slight deviation indeed from the true course of the channel would be almost certain to result in disaster. Such a calamity, however, is almost unknown, owing to the perfect discipline which prevails upon the St. Lawrence steamers, and the very complete system of precautions against accident.

A Party Camping Out.

even keel, passing swiftly village after village, and at length entering that broad expanse known as Lake St. Francis, which extends from the Indian village of the St. Regis on the American side to Grand Island, a distance of forty miles. Below Grand Island, are the Coteau Rapids, named from the village of Coteau du Lac; and then in succession come the Cedars,



Profile of the St. Lawrence from Clayton to Montreal



PROFILE OF THE ST. LAWRENCE FROM CLAYTON TO MONTREAL. (See preceding page.)

Split Rock, and Cascade rapids; the passage through the Cedars is surprising in its way, the descent of the current communicating a peculiar motion to the steamer—somewhat like that which one feels while descending in an elevator. The Cascade Rapids are so called from their resemblance to a succession of short leaping falls, the vast body of water falling from one ledge or terrace of rock to another.

On emerging from Cascade Rapids, at Lake St. Louis the river expands to full six miles in breadth, while the river-lake is twelve miles in length.

Now the reader has to pass through another region of danger, the Lachine Rapids, which are below the city of the same name, and nine miles from Montreal. The velocity and roughness of the current here have rendered necessary the construction of the Lachine Canal, which in stormy weather is used by steamers for the passage from Lachine to Montreal; from this it may be inferred that these rapids are sometimes too difficult to be safely essayed by the navigator. Here it is that the Indian pilot, Baptiste, whose name is familiar to all who have traveled much in America, has been employed for over forty years. Rocks of enormous size lie in the current both above and under the water, and one who stands upon the steamer's bow is intensely occupied in watching the fierce ebullient waters, and wonders at the remarkable skill which directs the course of the vessel, avoiding rocky crests now to the right, now to the left, and now directly in front; the abruptness of their appearance being quite startling, while occasionally a sharp thump and a violent jerk indicate the proximity of sunken rock.

Montreal, the metropolis of Canada, has many features of interest to the traveler; it is situated upon an island lying at the base of Mount Royal; this island is thirty miles long and ten broad, and owing to its fertility has been named the garden of Canada. The city is large and important as a commercial center, being at the head of ocean steamship navigation, and

the terminus of leading American railways, so that it has direct communication with all parts of the world. In architectural features it is worthy of attention; as some of the most beautiful buildings in America are to be seen on its streets. The French cathedral, Notre Dame, is the largest church edifice in America, capable of seating ten thousand people; its two towers, which are visible from a great distance outside of the city, are 220 feet high; the right tower contains a bell weighing nearly fourteen tons. There are other churches also worth mentioning; while the Court-house, Post-office, Merchant's Exchange, Bank of Montreal, the Albert Buildings, Old Government House, McGill College, will all repay a visit on the part of the stranger. The drives around the city traverse scenes which abound in the picturesque and are always enjoyed by those who find time and opportunity to go out upon the well-constructed roads. The wharves remind one of the docks of Europe, being constructed of stone in great part; a grand terrace faced with limestone is built along the river's edge. On the occasion of the last meeting of the American Association for the Advancement of Science, a large number of educated Americans had an opportunity to obtain a realizing sense of the character of Montreal, and to learn something of the urban spirit of our northern neighbors, and so far as we know all returned to their homes with a higher opinion of Canadian affairs and prospects than they had entertained previously.

One could scarcely allude to this city of Mount Royal without mentioning the celebrated Victoria Tubular Bridge, which is constructed at the cost of over six millions of dollars, and is nearly two miles in length; a fine view of this bridge is had from the steamer's deck as one approaches the city. D.

CHARACTER OF LADY MACBETH.

OF the women who have written their names so distinctly on their age that future generations from afar may read them, there are not a few whose characters, deformed by a ruthless, reckless ambition, stand out witch-like and abhorrent, like inhabitants of the nether world. They flit before us, shadowy yet well defined, a throng of beautiful and stately figures. Agrippina and Stationice, Fredegonde and Brunehardt, Isabella and Elizabeth of England, Catherine de Medicis, Clytemnestra, Catherine Second of Russia, and she the wife of "Great Glamis, worthy Cawdor, and one who should be king hereafter," Shakespeare's immortal Lady Macbeth. Wicked, bold, intriguing, unscrupulous women all of them, in whose hearts love and pity had long been dead; but the last-named seems the most fearful and abhorrent character of all. In fact, her unsavory reputation has passed into a proverb, and "wicked as Lady Macbeth" is of phrases one of the most opprobrious that can be applied to woman. Wicked enough she undoubtedly was, but there are almost redeeming qualities in her character, plainly perceptible if we analyze it closely, and in a certain sense the popular mind needs enlightenment upon some points regarding this grossly misrepresented woman. Her name is a synonym for everything wicked and vile, and there are ill-founded opinions of her personal appearance as well as of her character. It is time that some of these views should be displaced by more accurate conceptions.

Those people mistake much, we think, who consider Lady Macbeth to have been a wrathful demon of humanity in her external appearance. She is generally represented in illustrated editions of Shakespeare as a woman of large stature, with black hair and eyes, and a masculine, swarthy countenance, disfigured by an expression of imperious malignity. We choose rather to think of her as a tall, slender woman of willowy grace and

movement, beautiful in feature, with golden hair crowning the queenly head, and eyes of a changeful, eloquent blue, serene as a June sky at times, at others dilating into gleaming, burning blackness. She was not an Italian, be it remembered, nor a French woman, but a Scotch woman, of a blonde, fair-haired race. Nor could she well have been a distorted man, nor a coarse, brutal woman, a scold, a virago, or an Amazon. There is nothing to convey such an idea; nor could Macbeth, we fancy, have loved such a woman as the popular mind pictures her. He was a grand and gifted man, a brave soldier who had won laurels in war, a statesman honored in the councils of his king, high-spirited, ambitious, but generous and "full of the milk of human kindness." Yet this man, with the traits of chivalrous, generous manhood ingrained in his character, loved his wife with a great love. Their conversation to the very last shows the love and trust that each felt for the other. The strong, haughty warrior paid the woman homage in his every thought. He turned to her for appreciation, sympathy, and counsel, and she was ever ready to offer these to his willing heart. Her hard, unpitying cruelty might at times have called up a shudder in his soul, but her inflexible devotedness to his interests, her daring confidence in his success, contrasting with her elements of lovable womanliness and her gentle delicacy of form, touched his admiration and valor, and shamed him into emulation. Macbeth loves her to the last with all the strength that his poisoned nature retains. Her death, announced just before the decisive battle, comes as the presaging of his own doom, taking from life all comfort, and making it hideous as the demon of a nightmare.

Lady Macbeth, then, was no dark-haired, swarthy Italian dame, with tropical voluptuous languor, which love of ease or desire of revenge made cruel; no coarse Parisian fish-woman Amazonian in physique and brutal in habit, whose tenderness of nature had been calloused by the iron heel of despotism. Blonde, delicate, elegant in form, accomplished in manner, she had also an intellect that was as active and brilliant as it was ruthless. Knowing the power of reasoning and persuasion, she brings to her aid wit and scorn, confutes her husband's scruples with ingenious sophistry, and in passionate, eloquent words strengthens his heart and hand to the accomplishment of the heinous deed. Macbeth had faltered—a brave and daring soldier, he would rather meet his foe in the open field, than, like a coward, stab him in the dark and in his sleep. Moreover, the one at whose life he aimed his steel was not his foe. But Lady Macbeth's higher intellect is not moved by any qualms or by indecision, and she knows the nature of the man before her. By eloquent appeals, by a quiet scorn that could sting like a scorpion, by earnest protestations of her love, she wins him to her fell purpose. How intense is her emotions, how fervid her imagination, keen her intuitions, and how far-sighted in reasoning!

Her courage is that of a lion. She absolutely fears nothing. Her hands do not tremble, her cheeks do not blanch as she bends over the sleeping Duncan. She even avows that she could have done the deed herself, "had he not resembled my father as he slept." One door that led to the sweet visions of her childhood had not been securely guarded, and for a moment she is almost startled from herself. But the next moment she is stern and inflexible again. Macbeth performs the deed, and the crown is gained. That same strong purpose and inflexibility of will is needed after Macbeth becomes king. Haunted by the demons of his foul deed, Macbeth becomes almost insane, and it requires all of her great powers of mind to soothe and restrain the royal madness that threatened to reveal their sin. She watches over her husband day and night. At the feast, when his delirium at seeing the ghost of Banquo causes the assembled lords to rise in wonder and confusion, it is her grace and self-possession that screens his ravings and bids the feast go on. Even when the

fear of discovery, like a vulture thrusts its beak into her heart, her strong will commands her lips. She never utters consciously a syllable of repentance or remorse. Her nerves are iron.

Lady Macbeth reminds us of Catherine de Medicis in her deep, inscrutable cunning and policy. She could dissemble like an actor. When the king visits them, fearing that her husband's mobile countenance might betray him, she bids him, "Look like Time!" Time, that is so plain and yet so hidden and deceptive, bringing to our doors the most terrible calamities, yet sending no announcing messenger. She wishes him not only to be unreadable: "Look like the innocent flower; but be the serpent under it." She herself practices well the words of her own wisdom; while her bosom is filled with the deadliest venom, nothing but the guileless innocence of unsuspecting childhood is in her face. With the greatest courtesy she welcomes her royal guest, gives him gracious and kindly greeting, bowing before him with high-born dignity and grace. With what silvery accent the speech rolls from her tongue:

"All our service,
In every point, twice done, and then done double,
Were poor and single business, to contend
Against those honors deep and broad wherewith
Your majesty loads our house."

So Catherine de Medicis, the evening before the massacre of St. Bartholomew, feasted and complimented Coligny and the Protestant leaders, calling them her dear friends and beloved servants, though the swords were already whetted which were to drink their blood before the morning light appeared.

Brilliant in person and conversation; queen of the social world, adroit and far-seeing in policy, with a temper brave and heroic, and a brain so calm and strong that she could arrange with the most cold-blooded exactness of plan the deed that was to lift her husband to the throne, Lady Macbeth stands unrivaled among intriguantes and conspirators. She is refined as a Greek, and ruthless as an Oriental. In daring and strength of will she surpasses them all. But if she is superior in boldness and wickedness, she also excels them all in womanliness. Though she stained her soul with blood, she never lost the honor of her womanhood. In fact, it was the nobler faculties of her nature, her love for her husband, her intense devotion to his success, her pride in his honor, that urged her forward to the accomplishment of her crime. It was no petty selfishness, no personal ambition to be queen herself, but a wifely pride to see the Scottish crown on her husband's brow. So true, so wifely, so devoted; yet it was a false ambition which spurred her on to the act that blots her name.

In the absence of a groveling selfishness, and freedom from mere personal ambition, as well as in her womanly purity, Lady Macbeth rises far above such women as Clytemnestra, Agrippina, Fredegonde and Catherine Second of Russia. No foulness, no domestic orgy stains her. She was pure as an iceberg. It is her husband she thinks of first and last. The crown seems not worth the possessing when Macbeth can not wear it with kingly honor; and she sickens at last of a malady that defies the treatment of the learned leach, and dies a disappointed heart-broken woman.

Poor Lady Macbeth! We pity rather than abhor her. She is so noble in her wifely devotion, so refined, so much a woman despite her atrocious crime, that when we would condemn, we admire and wonder. But was she not amply punished? Power and sovereignty won at such cost could not give her peace. The rankling serpents in her bosom hiss at her as she treads the stage. Her life went out in gloom and despondency, such bitter gloom that we shudder as the spirit of the poor woman passed beyond the grave. In her life there is a fearful warning. Who would choose to bear the ignominy that encircles her name? Unrivaled intellect, grace of person, and wifely devotion, a lofty purity can not atone for one fearful crime. No monster

was Lady Macbeth, only a keen, aspiring, pitiless woman; yet who would be like her?

"Life's but a walking shadow, a poor player
That struts and frets his hour upon the stage,
And then is heard no more; it is a tale
Told by an idiot, full of sound and fury,
Signifying nothing."

FRED MYRON COLBY.

A TRUE GHOST STORY.

[The following is related by an English clergyman, and copied as we find it in *Temple Bar*. The names only are fictitious.]

THE tale I am about to tell is a simple statement of facts, without embellishment or explanation.

My wife's mother had in her service a coachman named Philips, apparently an old bachelor, but in reality a widower with one son. The name of the son was James Henry Philips, who had been brought up by friends at a distance, and was apprenticed to a trade in London. With the exception of his own father, no one in our neighborhood but myself was aware of his existence. Nor did I, again, know much about him, for his father had only twice casually mentioned him to me, though we were on very friendly terms, together.

After a time, however, Philips married again, and I performed the ceremony; but the son was not there, nor did I even notice his absence. In fact, he had almost entirely slipped out of my mind, for with a large seaside parish on my hands, of which I was curate, my time and attention were fully taken up with matters nearer home. I mention this lest in the course of the following story my readers should chance to think that a deep impression, previously made on my own mind, had predisposed me to see what I saw, and afterward to regard it in a supernatural light. I can not, therefore, too emphatically repeat that I knew next to nothing about James Henry Philips, my friend's son; that I had never seen him; and seldom, if ever, thought of him at all.

The next thing I have to state is that when Philips married again, he gave up his situation as coachman, and settled with his wife in a street in my parish, called Dunton Street.

And here it is that the extraordinary part of my story begins. And yet, after all, I have no midnight horrors to relate; but only something very curious and strange, and that happened, too, in the broad face of day.

It was a hot and bright afternoon in summer, and I was unrobing in the vestry after service in the church, when my parish clerk, a white-headed old man, with a merry, mischievous twinkle in his eye, ushered in a lady, desirous, as he meaningly said, of an interview with me in private. Her errand was this. She had heard that there was sickness in the town, and for her children's sake (and they were legion) she wished to know if the report were true. If it were, for she was but a visitor, she would seek for lodgings elsewhere. I told her that I would make inquiries, and let her know, if she would kindly leave with me her name and address. She gave her name, which I have forgotten—let us say it was Mrs. Timidity—and her address was Dunton Street, a place already mentioned in this narrative.

Now in Dunton Street there lived at that time, among others, three persons in particular: viz., my friend Philips; my new acquaintance, Mrs. Timidity; and an old lady named Jackson, with whom I was engaged that very afternoon to drink tea. Off then I set, after service in church, like a boy let loose from school, for Mrs. Jackson's house in Dunton Street, which I very soon reached. As if it were only yesterday, I remember perfectly well walking down the broad, bright street in the broad, bright after-

noon. And in going to Mrs. Jackson's abode, I had to pass the house of Philips, I remarked indeed that all his window-blinds were drawn carefully down, as if to screen his furniture, of which his wife was inordinately proud, from the despoiling blaze of the afternoon sun. I smiled inwardly at the thought. I then left the road, stepped on to the side pavement, and looked over the area rails, into the front court below. Why I did so, I can not exactly say. A young man, dressed in dark clothes, and without a hat, and apparently about twenty years of age, was standing at the door beneath the front steps. On the instant, from his likeness to my friend Philips, I seemed to recognize his son. We both stood and looked very hard at each other. Suddenly, however, he advanced to that part of the area which was immediately below where I was standing, fixed on me a wide, dilated, winkless sort of stare, and halted. The desire to speak was evidently legible on his face, though nothing audible escaped from his lips. But his eyes spoke; every feature in his countenance spoke—spoke as it were, a silent language, in which reproach and pain seemed equally intermingled. At first I was startled; then I began to feel angry. "Why," I said to myself, "does he look at me in that manner?" At last, annoyance prevailing over surprise, I turned away with the half-muttered thought: "He certainly knows me by sight as a friend of his father, and yet has not the civility to salute me. I will call on the first opportunity and ask his reason for such behavior." I then pursued my way to Mrs. Jackson's house, and thought no more of what had just occurred.

On the next day, Monday, true to my appointment, I called on Mrs. Timidity in Dunton Street, and relieved her mind of all unnecessary fears. On my way home, however, finding myself thus inadvertently in the neighborhood of Philips' house, and feeling certain in my own mind that it was Philips' son I had seen, I determined to call on him at once. My hand indeed was actually on the knocker to seek admittance, when the thought struck me that I had another engagement for five o'clock; and as it was close upon that hour, I gently replaced the knocker, saying to myself as I turned again to the street, that I would make a point of seeing the young man before the week was out.

Next day was Tuesday; and out of sight was out of mind. On Wednesday it was my turn to officiate at the local cemetery. I went there in due course, and read the service over a little girl; and was preparing for instant departure, when the sexton informed me that there was another funeral still, but that the hearse and mourners had not yet arrived. On my asking who was to be buried, I was told that it was a young man from my quarter of the town, who had died of consumption. I can not give the reason, but immediately I felt startled and ill at ease. It was not that I had the least suspicion that anything extraordinary was about to happen. I had quite forgotten young Philips. The feeling which I think was uppermost in my mind was annoyance at the fact that any one should have died, of such a slow disease, in my parish, but without my knowledge. Accordingly, I waited impatiently for the arrival of the funeral *cortège*, which I beheld approaching in the distance. As soon, then, as it stopped at the cemetery gates, I asked without delay for the registrar's certificate. I took it at once with eager, outstretched hand; I opened it immediately; and to my surprise, my horror — I was going to say, terror—my eyes fell on the words, "James Henry Philips, aged twenty-one years." I felt stunned. I could scarcely believe my own senses; and my surprise was increased, not to say my alarm, when I looked up and saw Philips and his wife as the mourners. With an effort, however, I mastered my feelings for the moment; and with calm lips, but with an agitated heart and confused thoughts, I read the service through to the end.

Need I say that for all that day, and for some time afterward, I felt strangely

nervous and upset? My mind was a chaos of doubt. I perpetually asked myself the question, wherein my fault lay, that the young man should have looked at me in such a manner, that the mere recollection of his glance should pierce me to the very soul? Was I the victim of my own imagination, building up unnecessary horrors out of a chance coincidence, singular indeed, but in no sense preternatural? Had I known of his presence in the town, and yet had left him unvisited in his illness, then I could have understood the reproach and pain visible in his face, and could at once have felt that he had come to me with a message of blame from another world. Oh, how that look of his haunted me, mingling with my dreams, and disturbing my waking thoughts! Nay, to this very day, though years have passed, I can not recall the story without a shudder and a thrill.

Under the pressure of such feelings, it may readily be imagined that I lost but little time before calling on Philips and his wife. I found the latter at home, and what she had to say only made me more uncomfortable still. James Henry Philips bore such a close resemblance to his father, that all who saw him remarked on the striking likeness. In addition to this, during the last three months of his life, which he spent under his father's roof, he had often wondered that I did not come to see him. His longing for an interview with me had been most intense; and every time he saw me pass the house without going in, he had both felt and expressed a keen disappointment. In fact, he died terribly in earnest, wishing in vain to the last that I would come. The thought pierced me through and through. I had not gone to him, but he had come to me. And yet I would have gone, if I had but known. I blame the doctor for not telling me; I blame the parents for not sending for me; and with that awful look he gave me in my remembrance, I blame myself, though I can not tell why.

But there is something else I have to tell in order to make this sad, short story complete. James Henry Philips had died on the Thursday before the Sunday on which I had seen him. He had died too in the front room, on a level with the area, into which its window opened. He had also lain there till the Wednesday following, awaiting burial. His corpse then was lying in that very room on that very Sunday, and at the very moment, too, when I had seen his living likeness, as it were, in the area outside. Nobody, I found, had passed through the area that day; the door there had been locked and unused all the Sunday. The very milkman, the only person who called, had come by the front steps to the house; and Philips and his wife were the only inmates at the time.

Finally, let me observe again that all this happened in the full blaze of day, and so I leave my story with my reader. In short, the tale in itself is so extraordinary, and I know it to be so true, that its plain and bare recital is its own very best witness.

A NEW CEPHALOMETER.

MR. CLARK BROWN, a gentleman much interested in brain-studies and the determination of character, has invented an instrument for measuring the dimensions of the head. The basis of measurement is the medulla oblongata, that being taken as the central point of brain development. The instrument is shown in the engraving, but for the reader's information we give the following description of it, as given by the inventor:

"A graduated semicircular arc is fixed at its ends on axial pivots having hollow bulbous extensible sections, adapted to enter the openings of the ears, one of the pivots having a graduated scale, by which to register the traverse of the arc on the

pivots. The bulbs have perforations to admit sounds to the ears. A scale traverses the upper arc radially, and is capable of sliding along it from end to end. An arched stay-brace connects the pivots, and passes over the front of the face and carries a steady rest, which is placed on the nose. Another arched brace connecting the pivots passes under the chin. It will be seen that by the traverse of the upper arc forward and backward on the pivots, and the traverse of the radial scale along the upper arc, the relative positions of the different organs or other divisions of the head, and also the relative sizes or distances from the axis, can be readily taken. Phrenologists and some physiologists ascribe different mental faculties to special organs or divisions of the brain, and judge of the power of faculties by the development or size of their corresponding brain seats, a condition best determined by estimating the distance of those parts of the skull from the medulla oblongata (the upper extremity of the spinal axis), which is situated very nearly on a line between the

openings of the ears and midway between them. The instrument illustrated makes these estimates actual measurements, giving the radial extension or the distance of the outside surface from the medulla oblongata."

A PHRENOLOGICAL LIFT.

MRS. RANSOM was discouraged, she didn't know why, and her inability to comprehend the reason of her discontent was the hardest part of it.

Mrs. Ransom desired above all things to understand causes. She had done her duty as far as she knew it, and she was sure there must be something radically wrong about her spiritual nature to admit of such fearful possibilities of suffering. She had worked hard all day—in fact, she always worked hard every day, but the work was by no means "done up," and the basket of must-be-mended clothing could hardly be called an inspiring object, even to the woman who had not used up her strength in the treadmill of housework. Mrs. Ransom endeavored to turn the scale of her misery by enumerating her blessings. There was her husband, Deacon John Ransom, a kind, honest man. There were her three healthy, happy boys, bidding fair to grow into brave, honorable men. A few rods down the village street lived her mother, the wisest of counselors and the most loving of friends. There was plenty to eat, drink, and to wear in the house. There was never any quarreling in the family. The Deacon was devoted to his home, his church, and his business.

Some women's husbands, Mrs. Ransom told herself, were forever finding fault. She could not recall one unkind word that her husband had ever spoken to her. Yet, what? Was it possible, she wondered, that unkindness would be preferable to this something which she could not even give a name to? Sober, honest, kind, industrious, what more could any reasonable woman ask for? Could any fate be bad enough for a wife who was not wholly satisfied with such a husband? She knew now, as she always knew when she permitted herself to think about it, that she was entirely to blame, and yet how could this be the case when she was so anxious to do all her duty?

At this stage of self-examination, Deacon Ransom entered the house. A church meeting had been called a little earlier than usual, and the Deacon was anxious to anticipate the evening meal.

Mrs. Ransom left the silver she was

polishing, and hastened to spread the table.

"I guess I've got a customer for the west pastures," the Deacon remarked, evidently very much pleased with his news, "and that money, Caroline, will lift the mortgage from the barns, and pay up for what I lost on them last buildings. Things always come round to the folks who have patience," he resumed after waiting a moment for his wife to reply.

"That's true, John," Mrs. Ransom responded cheerily as she pushed her husband's chair to the table, "but I don't think you've had patience enough yet about the west pastures. In a year or more there'll be a railroad over there, and then your land'll be worth something."

"Well, I declare," said the Deacon, throwing himself into the chair his wife had placed for him, and looking up into her face curiously, "if you are not the worst wet blanket I ever tackled."

Mrs. Ransom tried to laugh, but it was a most unsuccessful experiment.

"It stands to reason," she said, "that if there is going to be a railroad in that locality"—

"Mebbe there will be, and mebbe there won't," the Deacon interrupted; "and mebbe we shall both be dead before another year rolls round."

"It is possible," Mrs. Ransom responded, "but in all probability one or more of the children will survive us, and in any case five thousand dollars will be better than five hundred, you know."

"Now, Caroline, I want to ask you one question!"

Deacon Ransom's good-natured face was a knot of perplexities.

"I want to know what chance you have had to find out about business affairs—you or any other woman, when it comes to that?"

"My opportunities have certainly been limited," his wife answered, "but sometimes, John, folks know things without learning them."

Mrs. Ransom's refined face was crimson now as she added, "And once in a while even a woman can be found who possesses a little common sense."

"Mercy me! Caroline," said the Deacon, "I never had a doubt of your common sense, but men are made for business, and women are made for the house. I never interfere with your way of managing things here, do I?"

Mrs. Ransom was naturally logical, but the sentiment just uttered was so fortified by age and prejudice that she seemed powerless to combat it. She felt like many another, that a truth was just as valuable from a woman's lips as a man's. If she really possessed more wisdom than her husband about business affairs, why should not this wisdom be made use of?

Mrs. Ransom was too generous to say, "I told you so," but there had never been a time when her husband acted contrary to her judgment that the result had not been disastrous.

"I don't know why there should be any talk of interference, John," Mrs. Ransom responded after a while. "I should be very glad if you would criticise my way of doing things, especially if you could show me a better way. Who thinks of buying the land, John?"

"Amasa Steele."

"And did Amasa Steele ever touch anything that did not turn to gold? Why, John, can you not see that Amasa wants that land because of what it is going to be worth?"

"'A bird in the hand is worth two in the bush,' any day, Caroline. There may never be a railroad over there, and I want the money."

"But the land will be there all the same whether there's a railroad or not, and its value won't depreciate."

"How do you know whether 'twill depreciate or not?" the Deacon asked. "I wish, Caroline, that you would attend to the house, and leave me to attend to my business. I've been brought up to it, and you aint. I'm a man and you're a woman."

"And because you're a man you must needs be wise, and because I'm a woman

I must needs be foolish! It sounds rather odd summed up, doesn't it?"

"It's no use talking," said the Deacon, with a wise shake of the head, "a woman's a woman, and a man's a man. Anyway, Caroline, if Amasa concludes to buy the land you'll have to sign your name to the deed, I suppose."

"The next time I sign my name to a piece of paper, John," Mrs. Ransom replied, in a tone which her husband had never heard before, "it will be when I know we are going to be benefited by it; you made me sign away the homestead, and I told you you would live to regret it. You have acknowledged it many times. True, I am a woman, and you're a man, but I knew better than you did, what would be the result of that transaction, and many were similar to it."

This was the first time in a married life of sixteen years that Mrs. Ransom had hinted even at non-compliance with her husband's wishes, and before five minutes had passed she regretted her protest. Didn't St. Paul say that "wives must obey their husbands"? Mrs. Ransom wondered what could have come over her, for she had a grudge in her heart against St. Paul even, and her religious education had been very strict. The idea of one man, and a bachelor at that, laying down laws for the whole human family! But this bordered on blasphemy, and the poor woman felt that her sinfulness was past forgiveness.

When the Deacon returned from church meeting he was accompanied by a strange gentleman. The only hotel in the place was crowded, and the Ransoms sometimes accommodated the landlord by entertaining his guests. The traveler's room was ready, and the heavy-hearted hostess lingered over her work, and tried to forget her discontent in listening to the cheery conversation of the new-comer. In some way the talk turned at last on the science of Phrenology.

"I've often thought," said the Deacon, "that I would like to have my bumps felt of. I believe I'll go down to New York, and have it done up in shape before long."

The stranger smiled.

"I'll do it for you right here!" he said. "I am to speak on Phrenology tomorrow night in Rochester at the regular Lyceum course"; and then he rose and passed his hand lightly over the Deacon's head.

Mrs. Ransom's intelligent face glowed with pleasure as she listened to the delineation of her husband's character. It was all so strange, so wonderful, so true!

"You should never rely on your own judgment in any matter involving considerable sums of money," the examiner said among other things.

"You can not reason from cause to effect. After a bargain is effected, or a calculation made, no one can be more excellent than yourself in working out the details. I can see," he went on, "without even touching your wife's head, that she possesses all the business talent of the firm. Not once in a thousand times would her judgment be at fault. She would make an excellent lawyer, and is a logician by nature. Your wife is a judge of character. You will never know an honest man from a thief, till you find out by experience. Your wife is executive, and you are mechanical. She can save you money with her head. You can make her money with your hands. Your wife is too finely organized, too keenly intuitive and intellectual to be used as a domestic dromedary. I can see too that her nerves are unstrung from overwork and a certain lack of appreciation which is harder for her to bear than sickness or poverty. Her mission is not with pots and kettles, washing or scrubbing. She will live to be a blessing to her family and community, with half a chance for the peaceful and natural development of her faculties, but hard work and monotony will use her up in a short time."

In this way the stranger proceeded for a considerable time. The Deacon was dumfounded.

"Well, I'll be switched," he said, "if this don't beat the Dutch! My wife the best man of the two! St. Paul ought to drop in now, hadn't he, Caroline?"

"Take your wife's advice, if you want to make money," the stranger responded,

"and she'll obey you enough in other things to suit even St. Paul."

"Well!" the Deacon exclaimed, "this is fortune-telling, and nothing else!"

To make a long story short, Amasa Steele didn't get the land, and the railroad was built, and thousands of dollars were realized from the west pastures.

The Deacon took the phrenological lesson to heart, and Mrs. Ransom has been able to develop and use the faculties she possessed and is of course a healthier and a happier woman. ELEANOR KIRK.

KING LOOKA'S SAYINGS.

THINK not the thoughts of evil: every one
Who evil thinks, has guilt for evil done.
The mind alone has evil: things of sense
Are helpless things, unable for offence.
Keep thy mind upward: only can you know
The things below you when you *walk* below.
For evil is of earth and ne'er ascends
To mix with good, and good to heaven tends.
Keep wisdom's counsel only: he who gives
His mind to prattlers, trusts his purse to thieves.
Have courage ever near thee: he who halts
Waits unprepar'd for folly's wild assaults.
Keep pure thy speech: for once a person lends
His house to knaves, next time they bring their friends.
Don't hurry nature, she will bear no press;
For weeks it takes a goose to hatch, no less.
Be ever constant: water wears the rock,
Not by the sudden gush, but constant drop.
Be watchful ever: they who stand and gape
Let coons and opportunities escape.
Take not too much advice: you may have read
Who calls most doctors, is the soonest dead.
Be not important: ere you came below
The laws of nature ran as they do now.
Have much forbearance: you can never know
What other people overlook in you.
Be meek and reverent: think not God, to do
His labor better, should consult with you.
Read much and slow: all due attention give,
For years of pouring can not fill a sieve.
Tell truth: for when to lying you give way,
The devil has a favorite harp to play.

KARL KARLINGTON

A GREAT MAN'S AVOWAL.—It was on a recent occasion when in the presence of a large company of scientists, Victor Hugo uttered the following: "What is it to die, if it is not to live forever? Those millions of worlds above which call us by their radiant symphony, bear me witness. And beyond those millions of worlds, what is there? The infinite—always the infinite. If I pronounce the name of God, I bring a smile to some of you who do not believe in God. Why do they not believe in God? Because they believe only in the vital forces of nature. But what is nature? Without God 'tis but a grain of sand. This is like looking at the small side of things because the great side dazzles us too much. But I believe in the great side. What is the earth? A cradle and a tomb. And even as the cradle has its beginning, so the tomb has its dawning for the dead; it is a door closed, indeed, to the world, but opening upon worlds of which we may now have only a far-distant glimpse. Messieurs, believe if you will that I shall be buried to-morrow or in ten years to come. I feel within me the assurance that the tomb will not hold me prisoner; I feel that your six feet of earth will not be able to make night where I am lying; your earth-worms may devour all that is perishable in my frame, but that something which is the life of my brains, the life of my eyes, the life of my ears, my forehead, and my lips, can be betrayed by no power upon earth. Messieurs savants, let us live if you will by the visible and positive, but let us also live by the invisible. I shall soon pass away; believe the words of a man who has knocked his forehead against everything. Science will make wondrous terrestrial discoveries; but it will be wrongly directed if not dominated by a radiant ideal."

WILLIAM CULLEN BRYANT AT FORTY.

AMERICAN POETS, No. 4.

WILLIAM CULLEN BRYANT AND HIS POETRY.

THE present generation recalls our poet only as the profusion of card photographs and crayon portraits represent him—aged and leonine. It is fairer to turn to representations made during his prime, unidealized and undramatized by pose, costume, and beardliness; when his crown held its natural covering, and one might say with certainty that lips, chin and cheeks were parts of his countenance. Indeed, Bryant's personality was by no means imposing. Had he been tonsorially trimmed and fashioned in the conventional manner, we doubt whether a Spurzheim or Lavater, by external indications, would have singled him out from the many as a man of much more than average endowment. In the *N. Y. Mirror* for September, 1837, may be found an engraving, copied from a painting by Inman, which was, confessedly, a good likeness. Here our author looks less a poet than a practical person—one who might be taken for a barrister or office-holder. This representation does not belie his character. An article published in Buckingham's *New England Magazine* (not *The New Englander*) for November, 1831, says: "He is a man rather under middle size, with bright blue eyes and an ample forehead, but not very distinguished either in face or person."

The earliest London copy of his verses bears on its title-page: "*Poems by William Cullen Bryant, an American. Edited by Washington Irving.* Published by Andrews, London, 1832." "An American" comes in rather strangely. There was not much "editing" done beyond the title-page. In a printed note, Irving

dedicated the volume to Samuel Rogers, the poet. The names of Irving and Rogers drew toward it some attention, and gave it notoriety. But the prominent houses (Longman's, Murray's, etc.) refused to issue the volume, and it was put into the hands of an obscure publisher.

Professor Wilson, in *Blackwood's Magazine* for April, 1832, said, quoting these lines from *The Forest Hymn:*

> . . . . . "no silks
> Rustle, nor jewels shine, nor envious eyes
> Encounter, etc."

"Such sarcastic suggestions jar and grate, and it would please us much if they were omitted." And they were omitted in later editions. In *the same publication* for September, 1834, these remarks were made by another hand: "Mr. B.'s poetry has found its way piecemeal into England; and having met with a little of our newspaper-praise, which has been repeated with great emphasis in America, is now set up for a poet of extraordinary promise. Mr. B. is not, nor ever will be a great poet. He wants fire; he wants the very rashness of a poet; the prodigality and fervor of those who are overflowing with inspiration."

The *Foreign Quarterly Review* for August, 1832, said: "Quiet propriety and freedom from extravagance characterize the poetry of Mr. B. The merit of his sentiments lies rather in their justness than in their novelty, etc. The short poem called 'The Gladness of Nature,' halts awkwardly:

> "'Artless one, though thou gazest now
> O'er the white blossom with earnest brow.'"

In subsequent editions these lines were eliminated. Bryant's "Foster-mother," the *North American Review* for April, 1832, contained an extended and candid estimate of his early volume. Quoth the reviewer: "Mr. B. is not a first-rate poet; his verse never makes the cheek glow and the veins tingle; he can not lay claim to fertility of invention; he communes with no others, only with himself. But no one ever observed external things more closely, or transferred his impressions to paper in more vivid colors."

Our literary hedge-planters of former days took no cognizance of such criticism, and assumed that it must be prompted by malice, or written in a spirit of detraction. Since the poet's death these estimates have been published: "There is not so much strength and massiveness in the volumes of Mr. B.'s maturity, as in the book of his youth."—*London Saturday Review.*

"Mr. B. scarcely claims a place higher than our minor poets. After 1858 he was induced by various friends to publish some more pieces of verse; but they are deservedly forgotten."—*London Times.*

"As a poetic writer of the second order, Mr. B. will always command respect."—*London Academy.*

"His verses are wanting the highest quality of inspiration. They are timid and sonorous—a chaotic collection of images and flabby verse."—*London Athenæum.*

"As a poet he could not be placed in the second rank."—*London Spectator.*

"Such supercilious London weeklies as the *Athenæum* and *Spectator*. Mr. Bryant the first citizen of our country."—*N. Y. Evening Post.*

"The dead master. Mr. Bryant's *Land of Dreams* is radiant throughout with imagination."—*Scribner's Monthly.*

"The foremost poet of our country."—PARKE GODWIN.

"This great poet."—RICHARD H. STODDARD.

The truth usually lies between extremes. We are agreed that Bryant was a poet; his apparent magnitude being dependent on the manner of critical measurement. Some believe that, in commercial parlance, he did a large business on a moderate capital. Be that as it may, this fact remains, that the *Thanatopsis* of his boyhood raised expectations that were never fulfilled. In after years our poet kaleidoscoped this one inspiration, but to little advantage.

As a rule, poets are disposed to condense their effusions, by weeding out feeble and diffuse passages. Mr. Bryant amplified and expanded his versions;

but in so doing he was unable to revive the original mood in which they were written. He had a torpid imagination, and as his ambition was to extend the one volume of his many years, the poet tampered with after-thought at the dictation of prosaic judgment.

Prefixed to the collection of 1846 were these remarks:

"Perhaps it would have been well if the author had followed his original intention, which was to leave out of this edition, as unworthy of republication, several of the poems which made a part of his previous collections. He asks leave to plead the judgment of a literary friend, whose opinion in such matters he highly values, as his apology for having retained them." Surely, some men are unfortunate in their friendships. Our author's stanzas would have given a better average had he been controlled by intuition, and stricken out these weaker versions.

Let us say that Bryant's verses are of a kind that *never* tempted the music-composer; of a kind that no translator could make effective. A fair botanist and ornithologist, a sagacious forester, a good landscape-painter, his workmanship is by no means perfect. We discover lines spun out with expletives, occasional false rhyme, and inverted metaphor. Nor is the language always euphonious, and the rhythmic accent made to fall where it belongs. Again there are mannerisms: *Ay* stands for *yes:* indeed, strange to say, the latter word is unused in his vocabulary. *Bee, squirrel, deer, she-wolf*, and *back-woods-hunter* appear on over-many occasions; of *murder, blood*, and *bones* there are incessant repetitions.

The poet's life-history may be summed up as follows: At the age of sixteen he entered Williams College, and attended the classes two terms, seven months in all. Thereafter he read law, and practiced as a country barrister for about ten years; edited a New York monthly magazine eighteen months; and finally became editor of a daily evening paper, with which he was connected until the end of his life.

Well might the methodical man-of-business venture on this confession:

> "I broke the spell that held me long,
> The dear, dear witchery of song,
> I said, the poet's idle lore
> Shall waste my prime of years no more,
> For Poetry, though heavenly born,
> Consorts with poverty and scorn."

Verily the Muses are jealous and exacting; and so they were with Bryant. As he grew older he became less a poet and more of a worldling. Says Horace Greeley: "Wisely, kindly devised is that divine ordinance, 'We can not serve God and Mammon.' If poetry were the avenue to fortune and present favor, how could our earth upbear the number of her poets." Bryant's laborious accumulations amounted to over a million dollars. He left no public bequests.

The composition of about one hundred and seventy-five versions, mostly short ones, occupied the poet more than sixty-five years. His volume embraces of Sonnets seven, Church Hymns twelve, Patriotic Lyrics nine, Lyrics of the Greek Revolution five, Indian Poems seven, Verses on Flowers nine, Rivers eight, Winds nine, Moon and Stars ten, Months and Seasons twenty.

Says George William Curtis: "He who melodiously marked the solitary way of the water-fowl through the rosy depth of the glowing heaven, and on the lonely New England hills,

> "Rock-ribbed and ancient as the sun,"

saw in the river and valley, in forest and ocean, only the solemn decoration of man's tomb." Yes, yes, we "smell the mold above the rose!" Of poems in which the leading thought is Death there are thirty-four; their very titles spread a grave-yard odor: "A Sick-bed," "Consumption," "Monument Mountain," "Knight's Epitaph," "No Man knoweth his Sepulchre," "Disinterred Warrior," "Tree Burial," "Burial of Love," etc., etc.

Griswold says in his "Poets and Poetry of America": "The melodious flow of Mr. B.'s verse, and the vigor and compactness of his language, prove him a perfect master." Such has been the pre-

vailing opinion of his countrymen. Let us test the force of this statement, as applied to his various poems:

"THE AGES."—Has more scope and variety than any other of Bryant's pieces. Form and spirit are derived from Byron's "Childe Harold." The twenty-eighth and twenty-ninth stanzas are particularly elaborated. The stanza beginning:

"Peace to the just man's memory, etc.," is well wrought, but more euphonious than striking.

"The best college poem ever written. The twentieth stanza is a master-piece of quiet sarcasm."—*Richard H. Stoddard.*

"THANATOPSIS."—Richard A. Dana gave this account of what he remembered of its first publication:

"While assisting E. T. Channing in the *North American Review* (1817) he read to me 'Thanatopsis,' which had just been sent to the *Review:* I broke out saying, 'That was never written on this side of the water.'" The introductory and closing lines were added in 1821, and some change made in the passage which speaks of the "ocean." It has undergone other alterations and extension. The old reading:

"Take the wings of morning and *the Barcan deserts pierce*,"

has more nerve than its modernized substitute.

A noble composition; its close is particularly grand and effective.

"THE YELLOW VIOLET."—Neatly rendered, popular, and often quoted. Six stanzas complete the subject: the last two, didactic ones, are superfluous. Mr. John Burroughs says, "The author is at fault in his botany; the yellow violet has no perfume; neither do the hands of spring *first* plant it in the watery mould."

"TO A WATERFOWL."—Unique, exalted, artistic. Bryant has done nothing better. Some prefer Owen Meredith's poem on the same subject, entitled "A Bird at Sunset"; but Bryant's is the original version. The story runs that one evening he saw a wild duck flying across a sky of marvelous beauty, and a picture of Divine Providence was revealed to him. Southey's poem, the "Ebb-Tide," probably suggested the form of the stanza.

"HYMN TO DEATH."—Written in 1825. Bayard Taylor says, "This piece has stronger and loftier strains than the 'Thanatopsis.' Some of its periods are noble and highly imaginative; and had the work been made more compact and uniform, it must have rated second to none of our author's achievements." The passages beginning:

"Who are thine accusers?—who?" and "Raise thou the Hymn to Death," are excellent of their kind. Here and there may be noticed unevenness of execution, broken imagery and prosy duplification, showing it was put together during different moods and at sittings remote from each other.

"THE OLD MAN'S FUNERAL" has a prosy title. We fail to appreciate the propriety of:

"Ye sigh not when *the sun*, his course fulfilled,
His glorious course, rejoicing earth and sky,
In the soft evening, when the winds are stilled,
Sinks where his islands of refreshment lie."

Poe speaks of this passage with commendation. To us the simile appears far-fetched and awkward. Further on we are told:

"Cheerful *he gave his being up*, and went
To share the holy rest that waits a life well spent;"

which is unusual language in poetry. Again we have:

"Nor can I deem that nature did him wrong,
Softly to *disengage the vital cord*";

which is said more in the manner of a lecture on obstetrics than in the language of a poet. The ninth stanza is disfigured by falsely rhyming *his* with *miseries.*

"AN INDIAN STORY."—During the narrative the Indian enters his cabin. His squaw is missing. Then he calls—but *he only hears* on the flower *the hum of the laden bee. Laden* is expletive. We submit that the excited tomahawker, under the circumstances, had no leisure to observe the "flower," nor bother with the

"bee"; he was a better man of business. In the thirteenth stanza we read:

"And the grape is black on the cabin side," etc.

It is difficult to realize which is the grape's "cabin side"—whether it be larboard or starboard, and why it should be black on the one side only. The closing line that tells of "Maquon, the fond and the brave," is not sufficiently copper-colored, and recalls memories of "Alonzo the Brave and the fair Imogene." In the fourth stanza *walks* is badly rhymed with *rocks*.

"AN INDIAN AT THE BURIAL PLACE OF HIS FATHERS."—In the eighth stanza it is said:

"And there, in the loose sand, is thrown
Of his large arm *the mouldering bone*,"

which is non-poetic, and reminds of the shambles. We also, further on, read about "crushed tribes," which is less intelligible than "crushed" sugar or grapes. As an Indian version this is tame and conventional. We notice that *forth* is falsely rhymed with *earth*, and *flowed* with *wood*.

"SONG. DOST THOU IDLY ASK."—Here the author for once escapes from his somber self, and "capers nimbly in a lady's chamber." We learn that:

"Maidens' hearts are always soft."

What do our fair readers say to that? Further on some lover is advised to

"Woo her, etc.,
When on rills that *softly* gush
Stars are *softly* winking."

All this is "soft" and bright and cheery, coming from the grave author of "Thanatopsis." At the close—shades of dentists and wig-makers defend us! Her lover is told to

"Warn her, ere her bloom is past,
To secure her lover."

"MONUMENT MOUNTAIN."—Some passages are only lined prose, and dull at that. The nine-worded climax and closing lines are awkwardly rendered, and the entire more or less disfigured by unmeaning adjectives, used as line-extenders—such as: *old* world, *old* cliff, *old* woods, *huge* pillars, *huge* gray walls, *cheerful* smile, *cheerful* voices, etc. "Stern and stately blank verse. No other man in America was equal to have written it."—RICHARD H. STODDARD.

"THE MURDERED TRAVELER."—"Phœbus, what a name!" We notice strength in the title, but none in the poem. The line,

"They little knew who loved him *so*,"

ends with an inferior word and expletive. The statement, in the sixth stanza, that the wolf and wild-cat "dined on his remains," is burlesque. *The North American Review* said "picturesque, affecting and solemn." Emerson has reprinted this piece in his "Parnassus."

"I can not forget with what fervid Devotion" is in the metre of Woodworth's "Old Oaken Bucket." Such lines as: "I can not forget with what *fervid devotion*;" and "When o'er me descended *the spirit of song*;" and "No longer *your pure rural worshiper* now," and "Ye *shrink from the signet of care on my brow*," are unlike Bryant, and sound as if Tom Moore had written them.

"HYMN TO THE NORTH STAR."—In the third stanza that reads:

"And thou dost see them rise,
Star of the Pole! and thou dost see them set,"

it seems to us the author's astronomy is at fault. Terrestrial observers confess to the rising and setting of parts of the firmament; but it may be questioned whether the same earthly effects obtain within the pale of the Polar Star. This is an exalted poem, conceived and fashioned in our author's best manner. In the fifth stanza *lost* is badly rhymed with *coast*.

"SONG OF THE STARS."—The meter is not happily chosen, but the composition is imaginative and praiseworthy. The stanzas beginning: "Away, away, through the wide, wide sky," etc.; and "Look, look, through our glittering ranks afar," etc.; and "And see where the brighter day-beams pour," etc., are very pictur-

esque. James C. Percival preferred this to any other of Bryant's poems.

"A FOREST HYMN" is a fainter "Thanatopsis," neither as compact, direct nor eloquent as the version of his boyhood. It is interlarded with expletive adjectives, by which the lines are extended to rhythmic dimensions; such as: *beautiful* youth, *beautiful* form, *beautiful* order, *green* tree-tops, *green* leaves, *mighty* forest, *mighty* oaks, *old* trunks, *old* world, *barky* trees, *great* miracle, *great* deep, etc. As if it were not well understood that leaves are green, trees barky, forests mighty, and the world old. Time was when "A Forest Hymn" was by many a reviewer declared superior to "Thanatopsis."

"JUNE."—Poe chose it for a favorite. British reviewers admitted its merit. It is memorable as the swain's song of the author. Few of his pieces have been wrought with equal unity and completeness. Let us say, however, that June, the month of roses, should be a harbinger of cheer and gladness. But the "Old Man of the Mountain" was so firmly seated on Bryant's shoulders that he could never get rid of him.

"TO A MOSQUITO" should be expunged from the author's collection. The jokes are in the vein of Halleck, but less spontaneous and refined; some create a sense of disgust. Is it not diverting to hear the comfortably-housed author jingle his well-lined purse and "gravely" sing of poesy:

"——— the pale-eyed sisters in my cell,
Thy old acquaintance song and famine dwell."

To afford a taste of Bryant's witticism let us quote a stanza:

"Try some plump alderman, and suck the blood
Enriched by generous wine and costly meat;
On well-filled skins, sleek as thy native mud,
Fix thy light pump and press thy freckled feet,
Go to the men for whom, in ocean's halls,
The oyster breeds, and the green turtle sprawls."

For the favorite: "DEATH OF THE FLOWERS," we could have desired a less forbidding title: the departure of flowers is more an act of fading than dying. Graceful, pathetic, melodious; the poem would be complete in the first, second, and fourth stanzas. The third, with its list of floral varieties, is gratuitous; and the last one does not harmonize with the others.

"A MEDITATION ON RHODE-ISLAND COAL" is local, and jocose after a fashion. In the seventh stanza we are told that Rhode Island sends

". . . the treasures of its womb across the sea,
To warm a poet's room, and *boil his tea*";

a combination of disagreeable and incongruous imagery. Throughout there are false rhymes too numerous to mention, which attest that most of Bryant's comedy was achieved under mental tribulation.

"THE PAST" has noble passages. It would have been stronger if the eighth, eleventh, twelfth, and fourteenth stanzas had been omitted. Poe justly says of the passage:

". . . And glorious *ages gone*
Lie deep *within* the shadow of *thy womb*";

"The 'womb,' in any just imagery, should be spoken of with a view to things future, and not with a view to things past. "The Past," as an allegorical personification, is here confounded with Death.

"THE PRAIRIES," — (*Knickerbocker Mag.*, Dec., 1833,) is, in style, "Thanatopsian," but highly mannered and rather tedious. The opening line formerly stood: "These are the garden-deserts," which, at the suggestion of an English reviewer, was altered to read more correctly: "These are the gardens of the desert." The statement that

"The beaver builds, etc.,
On waters whose blue surface ne'er gave back
The white man's face, etc.,
He rears his little *Venice*,"

is slightly incongruous; and the statement that the bee is

"A more adventurous colonist than man,
With whom he came across the deep,"

may be disputed. Sown broadcast we have a crop of expletive adjectives.

In "LOVE AND FOLLY," a translation, the second stanza reads:

"But folly vowed to do it then,
And *struck him o'er the orbs of sight.*"

A fanciful way of rendering the common Saxon equivalent.

"CAUTERSKILL FALLS," (*N. Y. Mirror*, 11th June, 1836) was prompted by memories of "Rip Van Winkle." The story has no real connection with the locality. The fifth stanza is a recent interpolation. We do not understand the meaning of:

"And furry gauntlets the carbine rear."

Hands may rear carbines; but gauntlets rearing carbines—never!

"THE STRANGE LADY."—(*N. Y. Mirror*, 14th of May, 1836.) Once more, under cover of balladry, Bryant attempts to escape from his somber self. To transplant traditions derived from mediæval history to the wilds of North America, is extra-hazardous. The author's wood-nymph is certainly not "native and to the manor born." Moreover the touch of Robin Hood, where the "Strange Lady" *beshrews* the bow and converses with the hunter about the *Greenwood Tree* is extraordinary. The expression "night should overtake thy *feet*" can not be admired. With equal propriety might night "overtake" our hands or head. Night, usually, overtakes us entire. As a climax we have Bryant's customary thunder-storm.

"A PRESENTIMENT."—(*N. Y. Mirror*, 16th of April, 1837.) Subject and form were evidently prompted by Goethe's "Erl-King." So directly imitative an experiment should have been canceled. The father's twice-repeated admonition, "hush, child," hardly falls within the dignity of the language of poetry. The climax, instead of being a surprise, is again that same impotent thunder-storm.

"PLANTING OF THE APPLE TREE."—(*Atlantic Monthly*, January, 1864.) Here we find little of interest, and nothing akin to poetry. This pomological orchard-tenant is neither fruity nor juicy; it yields only the flavor of dried apples, and casts no poetic seedlings. It is claimed that Halleck admired this composition.

"ROBERT OF LINCOLN" is deservedly popular. The title has a somewhat affected sound. Lowell better names his poem, "Bob-o-Link." We wish our author had written more of such dainty and sprightly verses.

"THE HOMERIC TRANSLATIONS."—It may be said that they are fairly well done, and conveniently add to the dimensions of Bryant's volume. But the translator was not sufficiently worshipful of Ilium and Troy to sit at the feet of the grand old Pagan. We copy this passage from his introductory remarks:

"It has always seemed to me that Cowper's version had very great defects. Almost every sentence is stiffened by some clumsy inversion; stately phrases are used when simpler ones were at hand, and would have rendered the meaning of the original better. The entire version has the appearance of being hammered out with great labor, and as a whole it is cold and constrained; scarce anything seems spontaneous." This is outspoken and critical. The *London Athenæum* remarks: "B.'s translations seem less laboriously rounded and ornate, but more forceful and vigorous than Lord Derby's"; while the *London Times* asserts: "B.'s performance fell flat on the ears of an educated audience, after the efforts of Lord Derby in the same direction."

"A LIFE TIME" is comprised in thirty-seven stanzas, in the manner of Heine. It opens thus:

"I sit in the early twilight,
And through the gathering shade
I look on the fields around me
Where yet a child I played."

The biblical allusions are commonplace and unsuggestive. Bayard Taylor says this piece is "distinguished for purity of diction, balance and harmony of rhythm, variety of movement and native poetic instinct."

"THE POET" contains some wise sayings. But when the writer recommends the versifier to

" . . . *summon back the original glow* and wend
The strain with rapture that with fire was penned,"

we protest that this proceeding is not a matter of volition; the poetaster may so strive, but the poet can never accomplish the task, little as artist could retouch his canvas after the colors are dried.

Scattered among the magazines may be found some experimental versions that have not been republished. *Graham's Magazine* for 1845 contains "The Saw-Mill," a translation from the German of Körner; *Godey's Lady's Book* for 1844 has "Stanzas from Goethe," a translation from the German, and the volume for December of 1849 contains "A Polish Winter Scene," translated from the German of Pfizer. The "Stanzas from Goethe" are an inferior rendering of that author's *Ich denke dein*. This "Saw-Mill" had special attraction for the translator. Two stanzas will show its character. The tree speaks:

"Oh thou who wanderest hither,
A timely guest thou art!
For thee this cruel engine
Is passing through my heart.

"When soon, in earth's still bosom,
Thy hours of rest begin,
This wood shall form the chamber
Whose walls shall close thee in."

In the *New York Mirror* of July 6th, 1833, may be found a long and elaborate poem, entitled "The Robber," which has been discarded by its author. We copy a few verses, with the remark that, *in some respects*, it stands for one of his best productions:

"Beside a lonely mountain path,
Within a mossy wood
That crowned the wild wind-beaten cliffs,
A lurking robber stood.
His foreign garb, his gloomy eye,
His cheek of swarthy stain,
Bespoke him one who *might have been*
A pirate on the main,
Or bandit on the far-off hills
Of Cuba or of Spain.

"His ready pistol in his hand,
A shadowing bough he raised,
Glared forth, as crouching tiger glares,
And muttered as he gazed—
'Sure he must sleep upon his steed—
I deemed the laggard near;
I'll give him, for the gold he wears,
A sounder slumber here;
His charger, when I press his flank,
Shall leap like mountain deer.'

. . . . . .

"'Twere vain to ask what fearful thought
Convulsed his brow with pain:
'The dead talk not,' he said at *length*,
And turned to watch again.
Skyward he looked—a lurid cloud
Hung low and blackened there;
And through its skirts the sunshine came,
A strange, malignant glare.
His *ample* chest drew in, *with toil*,
The hot and stifling air.

"His ear has caught a distant sound—
But not the tramp of steed—
A roar as of a torrent stream,
Swol'n into sudden speed.
The gathered vapors in the west,
Before a rushing blast,
Like living monsters of the air,
Black, serpent-like and vast,
Writhe, roll, and sweeping o'er the sun,
A frightful shadow cast."

The climax, again, is that inevitable thunder-storm!

This forgotten version is reprinted in the *N. Y. Mirror* of April 6th, 1833:

SPRING.

"'Tis sweet, in the green spring,
To gaze upon the waking fields around;
Birds in the thicket sing,
Winds whisper, waters prattle from the ground;
A thousand odors rise,
Breathed up from blossoms of a thousand dyes.

"Shadowy and close and *cool*,
The pine and poplar keep their quiet nook;
Forever fresh and *full*
Shines at their feet the thirst-inviting brook;
And the soft herbage seems
Spread for a place of banquet and of dreams.

"Thou who alone art fair,
And whom alone I love not far away,
Unless thy smile be there,
It makes me sad to see the earth so gay;
I care not if the train
Of leaves, and flowers and zephyrs go again."

And where is the woman that would not call this "a very nice poem"?

Here we close, without entering into any examination of the latest of the

"Later Poems." Nothing novel or striking can be found among them. We have chosen to be critical and exacting with an author who, we can not help thinking, was greatly overrated during his lifetime.

They that prefer to exult in the old-fashioned, unqualified Knickerbocker praise of Bryant will find in the monograph of Mr. A. J. Symington, recently published, all that can be desired. In our humble opinion Bryant has written some weak, faulty repetitions, and indifferent poetry. But his "June," "Waterfowl," and "Bob-o-Link"; his "Hymn to the North Star," and "Thanatopsis" are a boon to literature.

WILLIAM WEIDEMEYER.

GETTING USED TO IT.

ADD a certain quantity of arsenic to your horse's dinner to-day, and he will die from its effects. The amount necessary to accomplish this result is quite small, and so arsenic is universally known as a poison. Certain other substances are of a "poisonous nature," but are not as deadly, except the dose be largely increased; but if thus increased, will act, perhaps, quite as promptly as the arsenic, or the strychnine, or the prussic acid; and I will, later on, mention some of these. Referring again to the effect of arsenic, if you *begin fine* enough—dredging the least trace of this beautiful, white, sweet substance upon the animal's grain, and continue to do so daily, gradually increasing the amount—you can so accustom his organization to its use that he will swallow even a larger quantity than that which we first supposed, and not only live, but appear to thrive on it! This may be styled, "getting used to it"—an expression often heard in relation to very many substances which human beings permit themselves to indulge in, but which they would not, upon any consideration (at least this could be said of most persons), place before their domestic animals or household pets. An Austrian stage-driver habitually "sweetened" the grain fed to his horses with the poison first mentioned, and it had the remarkable effect of making them fat, sleek, and glossy, and "spirited" also; but such horses *live* on an average only about three or four years after "getting used" to this seasoning. They either die of some "acute disease," or begin to emaciate and decline past all service. Arsenic, strychnine, and many other poisons are administered as "medicine" by drug doctors, and their patients often "improve" through the use of these substances. Sick people do not *always* improve as much as the horses first mentioned, for their "family physician" dare not keep on increasing their prescription; it has to be increased to some extent, or it soon loses its effect; but the *aim* is to stop short of large doses of any one poison, and "try" a new one, or several

new ones, perhaps; for the law at present gives them the right (the laws are made by a drug-swallowing people; even the drug-prescribing class, it must be confessed, also take their own pills, at least many of them do)—the law gives us the right to deal out deadly poisons to men, women, and children who are *already suffering from poisons* generated within their own organisms or introduced through unnatural habits, and which might readily be eliminated by the adoption of natural habits; but, instead, they call the poison-monger and swallow more. Well, as before remarked, they get used to drugs: some are eternally "cured" in less time than the average medicated life of the Austrian horses—their original disease *and the drug* do the business for them; others go on, alternately improving and declining, for several years, dying at last prematurely; others are fortunate enough to "outgrow" their ailments, so as not to "need" medicine; others—a few, here and there one—outgrow the accursed superstition of medication, having learned how to "run the machine" with the least possible friction, and, so, live out their allotted time—*the balance of it*—in ease and comfort; that is, if they were fortunate enough to begin in season, before organically or hopelessly diseased. It is quite safe for one (sick or well) to *begin to-day*, even if the only "beginning" he knows how to make is to stop medicating—short off (he can apply to hygienic physicians for advice, which is cheaper than medicine)—not taper off, for this is, in spite of appearances to the contrary, about like withdrawing a drowning man from the water *gradually, when he is head down!* The danger of his boots coming off in your hand is less than that of suffocation from a slow pull; besides, you *save his boot* anyway, which is more than can with safety be predicted of the patient who leaves off drugging by degrees. How many persons we see who are getting used to substances which (in the "doses" usually taken) are much less injurious than drugs and medicines: Beer, wine, and all spirituous liquors, and various other stimulating drinks, as coffee and tea, which may be said to work more physical injury than ardent spirits, because their use is not confined to men chiefly, but prevails almost universally among women, and our growing youth of both sexes. They are by all acknowledged to be *stimulating*, though not usually regarded as intoxicating—are not, in fact, in the ordinary sense of the term. But, let us inquire, what does any stimulant do—speaking of beverages, such as almost universally appear on our tables—or of tobacco, for example, which a man "gets used to" until he has to have it to "nerve him up"? And let me remark that the drinks referred to may be made sufficiently strong to speedily paralyze the muscular system, and produce coma and death; and this, too, without drinking a very large quantity; while a single cup, "pretty strong" (or, of tobacco, an ordinary quid chewed for the space of five minutes), will violently purge one who is unaccustomed to its use. But, getting used to any or all of these substances, they may be used constantly and freely, and, in rare instances, without apparent harm. But we are accustomed to consider the living only; who shall count the dead, who in imitating the habits of their parents (who "knew it never hurt *them*") died prematurely; and this too, in great measure, because of the use of these questionable articles by those very parents who, *themselves, seemed* to get no harm? We have not yet answered the question, as to what a stimulant *does?* Well, it makes the heart beat faster, for one thing. But what of that? The heart "gets used" to it, and may well say, "I can stand this as long as you can"—yes, just as long as the man can: just about so many beats and its work is ended forever! But why does it make the heart beat more rapidly? Simply because it is an unnatural and unwholesome, a poisonous thing, and the entire organism exerts itself to thrust it out; and so long as it accomplishes this fairly, so as to prevent its *accumulation* beyond bounds,* the ma-

* The time comes when it must suffer from this cause; or from the accumulation of what should be cast out by the various excretories—if not *the* poison itself, waste

chine runs along satisfactorily, but at an unnatural, and therefore a *wearing* speed. Every machine built by man has a normal maximum speed, so to say, beyond which the works are *racked* and tend to over-rapid impairment; the human mechanism, likewise—each one—has its natural gait—the safe, best rate for it to run. Stimulated by the faith, hope, and courage which arise from *good health*, it will do its life-work better than by getting used to any sort of artificial stimulation. But suppose we give a mere hint of the operation of this principle of getting used to an evil, in the line of morals? It isn't a very great step, either, from the question of physical to that of moral health. No sound mind except in a sound body; and this gives few, if any, absolutely sound minds. The *brain* is the mind-machine—a part of the unsound body, so far as it is unsound—and if the machine is defective, how shall it do perfect work? "A toothache will bias the temper, the judgment, even the morals of a man, as surely as a slight fissure will mar the music of a flute," says Dr. Oswald, author of "Physical Education." A pure-minded boy or girl is shocked—*abashed*—at hearing an oath, or a vulgar expression; but many such get used to it. My God! how many become so familiar with sin that they fancy for a time that it agrees with them! that happiness, the *summum bonum* of earthly existence, has come to them through sin! Alas, they have made a fatal mistake, from any point of view; they have not found happiness, but *stimulation* to the point of a sort of intoxication, with the ebb and flow of the tide; and with each receding tide the oftener and stronger and worse the potion necessary to "keep up the spirits," until at last the final reaction comes — surely comes — when no increase of the dose can avail. However, it is never too late to mend. Utter renunciation of evil ways, and a better, purer life, is possible for all. But in default of this, the deep, dark gloom of decline settles down about them; disease—physical, mental, moral — fastens upon them, and only the oblivion of the grave can give them peace.*

matters which, retained, become poison. The excretory system keeps the body *clean*; any very general failure in this direction is certain death. The excretories, impelled by the entire vital organism, may be calculated to do all necessary work for a given person, for seventy years; but plied with an immense amount of extra labor, they wear out at fifty; another person, "wound up" for fifty years, dies at thirty, another at ten, another at five, and so on—depending upon the inheritance and the degree of abuse.

* By Dr. C. E. PAGE, author of "How to Feed the Baby," "Natural Cure of Consumption, Dyspepsia, Bright's Disease, Rheumatism, etc., etc.," (in press).

A DUTCH LADY-DOCTOR.

CHILD AND STUDENT.

DURING my stay in England, I was several times invited to write a paper on some of my countrymen, and I have taken occasion since to discuss four or five of them, all literary celebrities on our native soil. Now, however, my choice falls on a person moving in a different sphere: Miss Aletta Henriette Jacobs, the first Dutch lady-doctor.

To Sappemür, a small countrified town in the north-eastern part of Holland, came to live twoscore and odd years ago, a young medical man named Abraham Jacobs, married, but not blessed with means. The young doctor had to live on what he earned by his profession, which, at first, was not considerable; but as he was very industrious, his income increased little by little every year. His family, however, kept also increasing, and at last he was the happy father of six boys and five girls.

Mrs. Jacobs took great care of the domestic education of her girls; she felt convinced that it is imperative on a woman, whatever may be her position, to be well up in every kind of domestic business. The father watched conscientiously over

the mental development of his children, and one of his principles was that to girls, no less than to boys, the opportunity should be given to gather sound knowledge. He imbued his girls with the conviction, that neither knowledge nor labor dishonor a woman; on the contrary that these two will always be their most precious ornament. Three of his five daughters have proved how deeply they took their father's advice to heart. The oldest of these three is at present the first and only female chemist in Holland; the youngest was the first lady who obtained the testimonials of teacher of mathematics and bookkeeping; of the other one, whose name appears at the head of this paper, I wish to give you a sketch.

On the 9th of February, 1854, the family of Mr. and Mrs. Jacobs was increased for the seventh time; a girl was born, who received the name of Aletta Henriette. The father rejoiced at the baby being a girl, as he thought the education of his daughters the greatest happiness of his life.

Aletta was a thoroughly healthy and sprightly child. Very soon she manifested an inclination only to obey when she understood the "why." Mr. Jacobs appreciated that peculiarity and always explained to her why he wanted her to do one thing and to abstain from another. Besides he proved himself to be a highly sensible man in every respect, and indulgent in a good degree. Bodily punishments were unknown in this family, still the parents knew perfectly well how to maintain their authority. Their children loved them tenderly, but they respected them at the same time, and very rarely one ventured to disobey. What were the punishments inflicted on this flock? Half an hour earlier to bed and no "good-night kissing," or, when the crime was considered very great, the little culprit had to stay at home next Sunday.

Mrs. Jacobs required of her girls, the little ones as well as the large, that after tea-time, when her husband used to read aloud, they should occupy themselves with some needlework, and though there were some who disliked it, no one ever thought of wasting her time. Thus Aletta, as well as her sisters, acquired great dexterity in every kind of needle and fancy-work, and till this day she can say that she never wore a hat or bonnet not trimmed by herself, while she has been mostly her own dressmaker.

Mr. Jacobs took the greatest interest in the studies of his children, and when his wife sometimes complained of Aletta's domestic lacks, he used to answer: "Have a little patience because of her splendid school-reports." Nevertheless Mrs. Jacobs' complaints were well founded. For some domestic work Aletta had no adaptation at all, and especially for anything connected with the laundry, and the laundry is a quite complicated affair in Holland. Another occupation for which she could never get a liking, was the ordering and dusting of the breakfast-room. It happened more than once that Mrs. Jacobs entered the room, supposing breakfast prepared, but found Aletta with a book in her left and a duster in her right hand, so absorbed in reading that she did not even perceive her mother's entrance. Of course her mother grew angry with her! Aletta had another dislike: she detested to play the piano. She felt sure she had no talent for it, and thought the daily practicing a horrid waste of time. Her father trusted to her self-knowledge, and consented to her leaving off music.

Thus freed, Aletta took a book or talked with her father, while he prepared some prescriptions, and very soon he began to teach her Latin. She was but a tiny child when she accompanied her father in visiting his patients. At first, as she declares herself, she did it chiefly for the dainties given to her by the farmers and peasants; soon after she delighted in bringing little presents to sick poor people, and finally the patients began to interest her. She put several questions to her father proving that the process of an illness interested her young mind.

Do not fancy, however, that this child was precocious and perhaps never a child in the real sense of the word. The very

reverse. She was but a child, a mere child, at an age when her play-fellows had long since broken with all childishness. Shall I prove it? She had already turned sixteen, when one day she went to her father and said timidly, "Daddy dear, I know very well that babies do not grow on a tree, but now I want you to tell me plainly where they come from?" Mr. Jacobs, highly amused with this proof of simplicity, kissed his pet, and—held his tongue. Aletta could never explain to herself how it was, that this and other nursery-secrets remained so long mysteries to her, who, living in the country, had every opportunity to and did accurately observe, the lives and doings of the animals. In those days, however, there was for her an immense distance between man and the lower creation—but let us not forestall events.

Between the age of ten and twelve years Aletta complained repeatedly that she was not a boy, for then she could become anything, as she expressed herself. One evening a friend of Mr. Jacobs, a member of the school-board, called upon him, and seeing Aletta, who was just fourteen at that time, wished her to show him her exercise-books. Well aware that she need not be ashamed of them, she ran to fetch them. On receiving them back with warm praises for her work, she burst into tears and stammered in the midst of her sobs: "What is the use; why am not I a boy, then I could become anything!" "Dearest child," he replied encouragingly, "why should you not

ALETTA HENRIETTA JACOBS, M.D.

choose a profession?" She looked greatly surprised at him and he continued: "Dry your tears and become an assistant-chemist (apothekers-lurling). Assistant-chemist—it is true Aletta did not like the idea very much, but at all events it was something, and preferable in her eyes to schoolmistress or lady's help, for she was well aware that her parents could not leave her much money and consequently she would have to provide for herself one day. Mr. Jacobs indeed spent his last penny on the education of his children. When he had a school-bill or some private lessons to pay for, he did it with the greatest pleasure, exclaiming: "Now I am making interest for my money!"

Aletta began to prepare herself for the examination of assistant-chemist, and some time after went to her brother, a chemist at Arnheim. The result of her studies was that she passed the examination on the 26th of July, 1870, with such success, that she ranked first among the nine young-lady candidates. However splendid this result, Aletta did not feel satisfied with the position itself, and on coming home exclaimed: "Don't imagine I shall bother myself any longer with potions and drugs!" She felt thoroughly unhappy. Now she had attained the height of a Dutch-woman's ambition!—the mere idea made her feel ill. In those days the law did not allow women to pass the higher examinations in that line. But even without such an impediment, Aletta would not have felt more satisfied, as the profession of chemist had no attraction for her.

She became ill; not so ill that her life was in danger, but seriously enough to make her parents alarmed. Not only her father, but also a few other doctors, considered it to be a physical illness, but she felt sure afterward, that not her body, but her heart and mind had been suffering. At last she was sent for a change to a friend at Groningen. One day, when alone with her host, she uttered the thought which had long pressed on her heart by whispering: "I want to become a doctor." "If you really wish it, why should you not?" he replied directly; "dispensation of the admission-examination is, I am sure, granted on less testimony than a certificate of assistant-chemist." No time was to be lost. A petition was at once addressed to the prime minister (Mr. Thorbecke) for permission to attend the lessons at the University, and dispensation of the admission-examination on account of her diploma of assistant-chemist. This done Aletta returned home at once, as she considered it now high time to give her parents a full account of her resolution. No doubt her father was highly astonished; no doubt he thought his darling's plan somewhat too bold, justly considering that at that time she could not have a full knowledge of the extent and depth of the difficulties unavoidably connected with her object. But Aletta's eldest brother, also a medical man, did all he could to persuade his father that, notwithstanding the difficulties, his sister's aspirations were not impossible. Consequently her father, in reply to a letter from the minister Thorbecke, asking him whether he knew what his daughter had petitioned and whether he approved it, gave his consent without any reservation. However, Aletta got but a conditional consent from Mr. Thorbecke; he would not yet decide the question, but allowed her to attend the lessons at the University.

The 23d of April, 1871, was for Aletta the most important day of her life. Introduced by her oldest brother, she took on that day her first academical lesson. Many of her friends tried to dissuade her from beginning her studies so soon before the summer holidays, but she, on the contrary, considered these few weeks as a kind of novitiate. If she should find the studies too heavy, or the academical life too disappointing, she did not intend to return to the University after the holidays. She received scores of letters, signed as well as anonymous, entreating her to retrace her steps; doctor was not a profession for a lady, they urged. And for one moment she hesitated, but only one.

In the weekly paper, "*Ons Streven*" (our efforts) of the 17th May, 1871, appeared a letter signed *S.* giving an account of Miss Jacobs' attendance at the University. Every sentiment proved that *S.* was not of her adversaries, but rather liked the idea of women becoming physicians, and understood Miss Jacobs' inclination. Here I have only to remark that the original plan of some of the professors to give the lady-student private lessons, instead of obliging her to attend the official course with her comrades, was not adhered to. She knew by that time the Groningen students and could trust them, and during the ensuing five years she worked uninterruptedly with them, and they always behaved to her like true gentlemen. No doubt Miss Jacobs, with her innate tact, made them feel by intuition, that she would not allow them to pass certain limits. She never accepted any out-of-the-way politeness from them, and always opposed their abstaining from any innocent pleasure on account of her being of the company.

It was a very fatiguing life. During more than four years Miss Jacobs went daily by train, at seven in the morning from Sappemür to Groningen, and came back at about five o'clock, even in the depth of winter. Then she had to study, and often received some private lessons, and did a great deal of work given to her by her teachers.

It was just at the very beginning of Miss Jacobs' academical life, that a sharply malicious and unfair article addressed to her and signed "Theodor" appeared in the organ of the Leyden students. It was by mere chance that she discovered it, as her fellow-students had agreed to hide it from her, and it was with much difficulty that she succeeded in obtaining a copy of the paper. Though the greater part of her comrades knew who "Theodor" was, his name is unknown to her even at present. "No," they said, "we won't tell you; sooner or later he will come to the conviction how unfairly and unchivalrously he has acted. If you knew his name and met him afterward, you might feel disgusted with him, and we wish to spare you and him." Immediately after a well-composed refutation appeared in the "*Groningen Studen Zenblad*," signed O., and only long after Miss Jacobs learned that that article was written by one of her youngest comrades.

A year had passed after Miss Jacobs' course at the University and still she had not yet received the minister's consent to her full entrance upon her professional course. She began to feel uneasy about it, for Mr. Thorbecke was not only ill, but growing worse and worse, and it was by no means certain that his successor would be a Liberal. A Conservative would probably not give the desired consent. Now Miss Jacobs played the Prime Minister a little trick. As a rule the students do their "Tentamen" a short time before the "Propædentish" examination. Miss Jacobs did not intend to do her "Propædentish" before autumn, but now she resolved to do some of the "Tentamen" at once. Immediately after she sent the certificates to Mr. Thorbecke, who was impressed that he could not withhold his full consent any longer, and a few hours before his death he desired one of the other ministers to sign the consent without delay — May 30, 1872. At the same time it was also ruled that women could pass the two higher examinations in chemistry.

Possessing the document that authorized her to attend the lectures at the University, Miss Jacobs could quietly wait till October, when she passed her "Propædentish" examination, which is entirely philosophical and embraces botany, zoology, physics, chemistry, and mathematics (the higher range). Soon after this examination an article appeared in "*Ons Streven*" by Miss Schaap. Miss S. confined herself chiefly to the communication of insignificant matters, how Miss Jacobs was dressed on this occasion, what Miss S. thought of her physiognomy, and such like observations.

Mr. Jacobs accompanied his daughter on this occasion, and had the satisfaction to witness that she passed gloriously.

When the issue was made known, it seemed as if there never would be an end to the students' applause. To their credit be it said, they never showed the least jealousy of Miss Jacobs, on the contrary always gave her proofs of entire sympathy. Three years after she began her medical studies, she passed her "Candidate examination," as it is called, on the 23d of April, 1874. She could not have given a better proof of how she employed her time, as for this examination, which embraces physiology, anatomy, general pathology, histology, physics, chemistry, materia-medica, and other subordinate branches of science, four years are usually given.

As the study became now more practical, Miss Jacobs established herself at Groningen, and passed not only many days but also many nights at the hospitals. While suffering from a fever, she continued her studies; but at last got so ill that she had to leave off working, go home and take to her bed. Soon one of the Groningen professors came to see her, and found her much worse than he had imagined. Not expecting that the patient could overhear him, he gave his opinion undisguisedly to Mr. Jacobs. This sentence, almost a sentence of death, was more than the girl could bear. "Success being impossible for me, I will not live any longer," was the desperate meditation, and secretly she stole away from her room straight to her father's laboratory. Already she had a bottle of a certain poison in her hand, when her father, who had probably heard some noise, looked in and seeing her, quietly observed, "But tell me, dear, what you are doing there?" "I intend to take a little of this," she answered in a low tone. "I see," was his reply, "you must have overheard what Professor K. has said to me, but I am sure he mistakes. At all events, why should you kill yourself just to-day? You can do it as well to-morrow, or the day after. I shall drive to Groningen and ask Professor L. to come, and my head for a football if he thinks you dangerously ill." The sick girl did as her father told her and went to bed again.

In a short time Miss Jacobs recovered and on the 23d of Oct., 1876, she passed her "Doctorate examination." This examination is more specially theoretical, but also partly practical, and treats on pathology, surgery, obstetrics, and all their subdivisions.

The Groningen University could not now offer Miss Jacobs what she wanted for her studies any longer. She therefore made up her mind to go to Leyden, as she was warned not to come to Amsterdam, because of the military students, who were described as exceedingly rude. From Leyden she received letters advising her not to come there, as one or two professors of the medical faculty greatly objected to women studying at that University. She therefore decided to settle at Amsterdam, which offered great advantages in the larger hospitals, and I may testify that Miss Jacobs was never worried in any way either by the University, or by the military students. Indeed the students liked to work with Miss Jacobs and consequently they opposed unanimously her request to attend a professor's day lessons, instead of the evening course, as he wished her to do, on the plea of its being rather difficult for a lady to go in the evening from and to her house. Her fellow-students assured her they would always accompany her home, and in fact they did so. They also gave her many practical hints on life in the capital; and did all they could to make her residence in Amsterdam pleasant.

Miss Jacobs worked hard and always assisted at the operations in the hospitals. Her strong nerves were of great use to her on those occasions. No illness or operation was so horrible that she could not assist. Now and then a professor expressed his wonder at her calmness and resolution, and thought them insensibility. Miss Jacobs then tossing her head said, "Professor, you don't understand me in the least; it is not want of heart that makes it possible for me to stay here till the end, but I am so deeply impressed by these sufferings, that I try to help the patient and if possible to relieve what is almost not to be endured.

Although I keep my place till the whole operation is over, it touches me so deeply that it makes me unfit for ordinary life for one or two days at least, and after an important operation, nothing better suits my disposition than to remain in the immediate neighborhood of the sick-bed." And still to this day there are people who confound Miss Jacobs' self-restraint with want of sensibility.

The future medica resolved to pass without delay both parts of the "Arts examination." For the first part she was summoned on the 17th and 18th of April, 1877. During the examination she felt very ill; especially on the second day it was hard work for her to answer the questions properly. The examiners observing her abnormal condition, believed it to be due to "examination fever," and did all they could to set her at ease, but would not believe her when she declared that at that moment she was quite indifferent to the result of her examination. At last the day came to its end and Miss Jacobs left the building as "Semi-Arts."

Thoroughly ill she reached her apartments, and felt only too sure that she would do much better in following the advice of some of her friends, and wait with the second part until she was quite recovered. Before deciding she went to the country for some days, and returned apparently so much better, that she did not hesitate to accept an invitation for a dinner party for the next day. At the friend's house, however, she was attacked by such a violent fever, that she was forced to lie down, and once lying down, she could not be removed, as the doctors declared it to be the lowest form of typhus. Not one of them thought it possible that she would recover; still she did, and seven months passed before she could think of resuming her studies, but when at last that happy hour struck, she studied so industriously that she passed the second part of the "arts examination" in April, 1878. This examination took several days. In many respects those days were very trying to her, as two members of the committee, not sympathizing with the idea that there should be female doctors, did all they could to prevent her passing; but their attempt failed, and Miss Jacobs returned home with her "arts-diploma."

ELISE A. HAIGHTON.

[*Conclusion in May.*]

THE TRANCE STATE

AS RELATED TO SEA-SICKNESS AND SURGERY.

THE following is the substance of a paper read by Prof. E. P. Thwing, of Brooklyn, at a meeting of the New York Academy of Sciences, held January 22d last, and of remarks made by other members upon it:

It was St. Bernard who exclaimed when surveying the human frame: "Thou hast a glorious guest, O flesh!" The spirit indeed is a glorious guest within these walls of clay. It is fearfully, wonderfully made. The study of the phenomena of its life is a most elevating employment and enjoyment. This Academy of Sciences has wisely placed first among the sections under which its researches are prosecuted, that of biology, or psychology, connected with which I have been making a few simple experiments. The past two years frequent voyages across the Atlantic and in foreign seas, have brought me in contact continually with the misery of sea-sickness. Fortunately exempt myself from this distressing ailment, it has been an interesting exercise to study its features in others, with reference to some possible methods of relief. Having repeatedly induced the somnambulistic or trance state in different individuals where it was desirable in surgical operations to secure physical insensibility, it occurred to me that some such treatment might alleviate sea-sickness.

As to what this condition is which we call "Trance," there appears to be a wide field of phenomena covered by the term. In the cases now to be cited, some of the individuals seemed to be wholly somnolent, others not at all, while others were perfectly insensible, yet with nothing of the restlessness which often attends coma in disease.

The manipulations, or passes of the old-time mesmerists, seem needless, or even the fixing of the eye of the subject. This goes far to confirm the hypothesis of Dr. Geo. W. Beard, already ably stated in a paper presented to this Academy; viz., that this is a wholly subjective state in which, with a concentration of nervous activity in one direction, there is a corresponding suspension of nervous activity in other directions. A few experimental tests will now be presented.

Cases 1 and 2.—There were two gentlemen ill the first day they spent on the Atlantic, with the usual symptoms of nausea and giddiness, both of which were relieved in a few moments by a simple pressure of the hand on either side of the head. "I think you will have no more trouble," and words of similar import were quietly spoken as I sat, or stood behind them. In one of these cases, drowsiness was at once induced, and I heard no complaint of sea-sickness from either of them afterward during the voyage. Both were well known professional men, not easily imposed upon, and not likely to engage in simulating what was not a real experience.

Case 3 was an English lady, past middle life, who came on board ill, and who had for two days retained no nourishment on her stomach. Standing behind her, I held and rubbed her forehead with a gentle pressure a moment, simply uttering as before, soothing words. Her first exclamation was, "What a heaven to be relieved from pain!" I first offered her a cracker, which was relished, then a herring, and she finished with a dinner of her own choosing, roast mutton and caper-sauce.

Case 4th.—A fortnight later, on the coast of Norway, on my way to Trondhjem, I had as a fellow-passenger, a sturdy sportsman from England, whom I cured of sea-sickness, he becoming drowsy as soon as my manipulations began. The sleep was made so profound that a pin pushed through the skin of the hand caused not the slightest wincing. When awakened by the words, "All right," his illness was gone, and he complained no more.

Cases 5th and 6th.—A German governess and her pupil, a few weeks later, crossed the dreaded Channel between Dover and Calais on the same steamer with me. The younger was vomiting violently, and her teacher was on the point of following her example, when the disturbance was arrested by my taking a seat behind her, and holding my hand over her eyes. I used gentle friction on the forehead, and calmly assured her that there would be, there could be no more trouble possible, and referred to the foregoing cases.

Having relieved her from any discomfort, my attention was next given to her sick companion, thirteen years of age. Without taking her hand, or even looking into her face, I drew my hands a few times across her eyes, saying in a faint whisper: "Sleepy, sleepy, sleepy." She at once grew limp and heavy, and was extended on a bench apparently as lifeless as if breath was gone; she was evidently what might be called a good subject. Her father stood by all the while, having solicited assistance, and being quite interested in the new medicine. When the words, "all right," were spoken, she awoke with a start and the usual smile which almost invariably marks the pleased surprise of those with whom I have experimented.

Case 7th.—Afterward, on the coast of Wales, another maid about the same age was busy in paying like tribute to Neptune, when I called her to me, and bade her close her eyes, when seated, promising her that she would suffer no more. The relief came so quickly that her parent, who was with her, exclaimed:

"What did you put on your hands?" as if suspecting the use of chloroform. Her older sister asked of the drowsy patient: "Are you all right? We shall soon be in Liverpool." "I do not care how far off Liverpool is now," was the quiet answer of the half-asleep patient; and in a short time she appeared as well as ever.

Case 8th.—Near by was a Welsh quarryman, who weighed 180 pounds, as a friend of his who could speak English afterward told me. The quarryman was leaning over the taffrail, also engaged in casting his bread upon the waters, when, to try a new experiment by the pantomime, I laid my hand upon his shoulder and pointed to a bench—aiding him to sit thereon. Taking my seat behind him, I made him recline his head upon my left shoulder; he was too sick to resist, and I had everything my own way—then bringing my hands over his eyes and forehead a few times, I soon led him into a trance, as his heavy weight assured me. To show the bystanders who crowded about, that neither he nor I were in sport, and that this was not an ordinary sleep, a pin was pushed into the back of his hand and left there. The question after a while arose as to the method of awakening him, as neither could understand the tongue of the other; however, I tried English, and he at once responded, and opened his eyes with a wondering gaze, saying in Welch to his comrades that he had known nothing of what had been going on.

Case 9th.—This was a case where hysteria was combined with neuralgia and sea-sickness, from which undesirable combination the patient, a middle-aged woman, passed into a state of delicious excitation, as she afterward said, which deepened into a trance state so very deep that some little effort, three times repeated, was necessary to arouse her. In this case, unlike the others, a very steady gaze full in the eye, was evidently helpful in securing that concentration of expectancy which the voice alone, even in a foreign tongue, is oftentimes sufficient to produce.

Other cases might be cited, but they present no features that would be of any pathological interest, or throw any light upon the psychological problem involved.

At the suggestion of Prof. Wm. James, of Harvard College, Dr. Beard has made some interesting experiments in producing artificial sea-sickness, and then relieving the same by a simple mechanism. A swift rotary motion was imparted to the body of each subject, which at once produced the nausea, or vertigo, which comes from the reel or pitch of the vessel at sea; the subjects were wholly unable to stand, and suffered the discomforts already described, but on being put in a trance state they were not only free from cerebral and ventral disturbances, but seemed rather to enjoy the situation.

He also once put into a patient's hand on going to sea, a little disc, and told him that if he should be overtaken by sea-sickness, he would be cured by looking intently at the disc. He became ill, but explicitly and believingly followed the directions given; he went to his berth and fell into a trance state which continued twelve hours, and cured him. These instances are sufficient to show: *First*, that the trance state will in many cases arrest sea-sickness by restoring nervous equilibrium—in many cases, I say, for all do not respond to this influence; still our failures are often our best teachers. Those I have failed to benefit have generally been in one or the other of two classes; first, those who by conversing with others, or by listening to their comments, or by some other diverting circumstances, fail to concentrate their thoughts on the subject. Second, those who seem determined not to get better, but are querulous, or desperate, and who like many people seem to "enjoy ill health."

Some men have more power of concentration than others; they are able to fix their own wills and the attention of others to what they choose to present. The voice is a factor—the eye, the hand, and the step, are all factors in the work of entrancing. Rays of light gathered to a focus burn, and some brains are a

better burning-glass than others, so men seem wizards in the eyes of those they enchain, for concentrated mental power has a marvelous control over physical power, as well as over the intellect, memory, and imagination. There are those who, though desirous, do not at first yield, who afterward, under changed conditions, yield readily, and to their complete satisfaction.

A few days ago I assisted, by request, in several surgical operations performed by a professor in Bellevue Hospital. Each patient was at first required to submit to my steady gaze; after I had secured their attention, and induced the trance state, none of them dreaded the operation.

Secondly, the cases already cited confirm the fact that tranciform conditions, that is, those states which represent but an incomplete control or partial unconsciousness, are sometimes sufficient to secure relief.

Thirdly, the sense of subjugation and helplessness, which is a concomitant of sea-sickness, is an important accessory to the operation, and is not to be overlooked. This is similar to the consenting attitude which lower animals instinctively take under the hand of the tamer, or trainer, and somewhat like the trance of fear known as panic.

As a *Fourth*, and final observation: The feeling of certainty on the part of the operator seems to be helpful, if not essential, in awakening the feeling of expectancy on the part of the patient. Quiet, undemonstrative, yet authoritative words expressed in decided tones of voice, and in movements that show no hesitancy, or doubt, I have found always to play an important part in the relief of this, or any ailment. *Possunt quia posse videntur*. They are able because they seem to be able; and hardly anything is more contagious than confidence, or more masterful in power.

At the close of the paper, Prof. Newberry, of Columbia College, President of the Academy, remarked: "This has been practiced for years, and when I was a medical student, twenty-five years ago, I saw it in surgery put to this beneficent purpose. There is less risk than in anæsthetics, and it deserves all the attention that is given to it; some do resist it, and so it can not be always depended upon, but it is a wholesome influence, and it is not policy to call it 'Humbug,' for it has been taken out of the hands of charlatans, and is being used by those who have made its phenomena a study."

Prof. Wm. C. Jarvis, M.D., spoke as follows: "Mr. President: I can frankly accept the main facts contained in this most interesting and useful paper by Prof. Thwing, not only relying on his accurate and acute powers of observation, but on my own convictions after careful investigation of phenomena as remarkable as any he relates. At my office on January 13th, there were present with me Drs. Birdsall, Mullendorf, and Griffin, and two patients, a lad of fifteen, and a lady about twenty, when Prof. Thwing threw the lad into a trance. Chronic nasal catarrh had effected a permanent closure of his right nostril for more than a year, and examination showed it to be thickened turbinated tissue, the removal of which is always indispensable to relief. The application of caustic gives much pain, and the knife sometimes causes dangerous hemorrhages. The instrument devised and used by me was an ecraseur. I transfixed the tissue with a needle, and performed this, regarded by some as the worst, part of the operation with no sign of consciousness on the part of the patient. A fine loop of piano-forte wire was then adjusted, and I began to draw it through the instrument when a fit of sneezing brought the lad to consciousness, and the remainder of the operation was finished while he was awake.

"A second operation on January 20th, was a complete success. A large piece of thickened tissue was removed without the least sign of consciousness. Two other patients were present that day, one fifteen, the other nineteen; the latter was suffering from a glandular growth at the extreme outer portion of the ear beneath the base of the brain. An unsuccessful

attempt had been made by another physician, who pronounced it impossible to remove the tissue, and the patient on that occasion was so terrified that it required several to hold her, but on this occasion Prof. Thwing, who saw her for the first time, induced trance so that I was able to remove a part of this glandular tissue, while she was evidently unconscious of the pain it occasioned."

Prof. Jarvis added the remark that he thought that this influence would secure results in surgery hardly less important than ether.

KITCHEN LEAFLETS, No. 15.

MORE ABOUT LIVING CHEAPLY—ART IN THE KITCHEN—BILL OF FARE FOR APRIL.

AN inquiry has been made by one to whom economy in the food supply of his household "is not a matter of jest," with reference to what may be considered the best articles of food. He is desirous of knowing the comparative cost of the most nutritious elements supplied by the market-man. A few months ago I contributed an article to this department in which was detailed a series of the staple foods, with the percentage of carbon and nitrogen they contain. The inquirer will find it in the November Number. In that article it was stated that of all the foods wheat-meal approached closest to the proportions required to meet the wants of the human body, and oatmeal comes next. Now, as the cost of these cereals is very nearly the same in our market, and twenty-five ounces are sufficient for a day's rations, the reader can easily calculate it.

Dr. Frankland, the English chemist, who has devoted a great deal of attention to the study of alimentation, for the purpose of determining the values of different articles, finds that 7 cents' worth of oatmeal will go as far as 7½ cents' worth of wheat flour. I infer that he alludes to the ordinary wheat flour of commerce and not to meal made of the whole grain, as that contains 1.2 per cent. more nitrogen than he gives to "wheat flour." Appropriating his results and adapting them to the scale of prices as they average in the markets of New York and Boston at the present time, it is found that one's food for a day would cost according as it is composed of the following articles respectively:

	Price per lb.	*Cost.*
Beans,	6 cts.	8¼ cts.
Pea-meal,	7 "	10 "
White-flour bread,	5 "	12½ "
Potatoes,	2½ "	13 "
Rice,	8 "	11 "
Boiled cabbage,	2 "	25½ "
Eggs,	18 "	41½ "
Milk, per qt.,	10 "	32 "
Mutton (lean),	18 "	60 "
Poultry,	20 "	60 "
Beef (lean),	20 "	70 "

As we glance down the table the necessity of variety is seen when one makes use of vegetables and flesh meats, because the quantity required, if an attempt were made to subsist on one article, as potatoes or mutton, would be too large for a man's average digestive powers, and his nutritive function would soon become deranged if it were persisted in. Those simple elements like wheat-meal and oatmeal, however, whose composition is so near the absolute requirements of our organization, can be used indefinitely; and if fruit or a little vegetable adjunct be taken, and a little fresh milk as a sauce, one can get along very comfortably.

"THAT HORRID KITCHEN."

In this era of bric-a-brac, or "esthetic culture," or whatever else it is called, there is a growing dislike to household work, especially the duties of the kitchen. I hear young married women complaining lamentably about the enforced drudgery of housekeeping, and emphasizing their dislike to any kind of kitchen work. What is the training these unfortunates have received at home? How unfortu-

nate for them and their little households! How unnatural the culture that doats on daubed canvas, ugly old bits of Chinese pottery, and extra-sensuous poetry, while the importance of good food, neatness, and order to sound health and real comfort is overlooked. These misled people do not appear to think that the making of a true home is one of the highest arts in life, and in it they can exercise their best powers of intellect, imagination, and sentiment. And yet, when they sit down to a table which is tastefully spread, and partake of food which is well prepared and nicely served, they are ready enough to confess their enjoyment, and testify to the help which skill and refinement can give to appetite. There is much of monotonous drudgery in kitchen duties, certainly; so there is in every department of practical and useful life; yet one of buoyant disposition, or one who insists on viewing life hopefully, can invest the plainest work with characteristics of attraction. The washerwoman who sings cheerily as she bends over the rubbing-board is not thinking so much of the soiled garments under her hands as she is of the sentiment of her song. She may not, like Newton, find it interesting to study the glancing tints of soap bubbles, but she may anticipate the pleasure of those who will wear the garments she is cleansing, and so delightedly forecast the effect a garment fresh and sweet from the renewing hand of the laundress has upon a refined taste. When I see table-linen brought up from the ironing-board folded in fanciful designs, I am gladdened by the thought that here is one who rises above the drudgery level of her work and makes of it an art.

Then the cook, if she could be made to realize that her duties are related to the artistic and creative, she would not be, as she is in nineteen out of twenty cases, an ignorant slattern, turning out so many dishes of vegetables, "meat," and dessert daily, overdone or undertone, or entirely spoiled, and generally ruinous to the stomach that harbors them. But it may be that our housemaids, for the most part, need the mental development which education gives to appreciate the higher and refining phases of their vocation; and those who look to them for the "creature comforts" of life, would not be so ready to condemn their "works," did they bestow a little thought upon the amount of intelligence and skill which good kitchen service represents.

Some one tells a story about Longfellow, who was found one day not long before his death at the house of a lady neighbor, whose circumstances or inclinations led her to do most of her household work herself; the poet and the lady were in the kitchen conversing in a lively manner. The lady's hands were busy in preparing some apples for the cooker, and the author of "Evangeline" was assisting her in pealing them.

BREAKFAST.

Crushed Indian Porridge.
Codfish Cakes or Bread and Egg Omelette.
Oatmeal Bread. Graham Gems.
Cranberry and Raisin Sauce. Crust Coffee.

DINNER.

Vegetable Soup.
Meat Croquettes. Baked Potatoes.
Macaroni a la Creme.
Graham Bread. White Bread.
Boiled Bread and Fruit Pudding.
Oranges.

SUPPER.

Bread. Oatmeal Crackers.
Stewed Dried Peaches.
Dried-Apple Cake. Cambric Tea.

CRUSHED INDIAN PORRIDGE.

Have one quart of boiling water in a pan on the stove; stir into that one-quarter of a teaspoonful of salt. Then sift, with the left hand, one and a half teacupfuls of crushed Indian corn into the water, stirring with the right at the same time. When well mixed, cook for fifteen minutes, stirring occasionally. Serve hot. The quantity given makes porridge enough for four persons. It is light and nourishing. The preparation of corn called "Crushed Indian," and sold by grocers who keep a variety of cereals, is excellent for the above purpose.

CODFISH CAKES.

Take one pound of good salt codfish, wash well, and put it to soak in cold water enough to cover

and let stand all night. In the morning, pour off the old water, and replenish with fresh cold water. Place the vessel containing it on the back part of the stove, and when the water has commenced to boil, take it off. The fish must not be allowed to cook, as that hardens the fibre. Now drain off the water, and pick the fish to pieces, being careful to throw out all the bones. Add six large potatoes well boiled and mashed, one beaten egg, and a half cup of milk. Mix all together, and mould into cakes three inches or so in diameter and one-half thick. Brown them on the griddle or frying-pan, greased with a little butter. The cakes may be made of fresh boiled codfish, in the same way, if desired. They can also be rolled in cracker crumbs before browning. This renders them very palatable to some, but requires more butter for cooking.

Cranberry and Raisin Sauce.

Take one quart of cranberries, look them over carefully, and wash them. Put them on to cook in a porcelain-lined pipkin, with one cupful of hot water. While cooking, stir and mash them occasionally. After they have been cooking half an hour, add one cupful of seeded raisins. In another half hour add two cupfuls of sugar. Mix the fruit well by stirring, and cook an hour longer. The sauce made by this method is pronounced *extra* good by those who have eaten it. Add more sugar if not sweet enough to suit the taste; but it will be found that the raisins so modify the tartness of cranberries that a moderate amount of sugar will be sufficient.

A Vegetable Soup.

1 small cabbage.
1 bunch of celery.
1 pint of stewed tomatoes.
1 onion.
3 carrots.
4 turnips.
A little salt.

Chop all the vegetables—except the tomatoes—very finely, and place them in the pot over the fire, with about three quarts and one pint of hot water. Let them cook slowly about one hour, then stir in the tomatoes, and boil about half an hour longer; remove from the fire, and rub the mixture through a colander; then return the soup to the fire. Now stir in a tablespoonful of butter and half a cup of milk, with a little cornstarch or flour mixed in it. Let the soup boil up once, and it will be ready for the table.

Meat Croquettes.

Chop the meat (cold roasted beef, beefsteak, or lean roasted mutton) very finely. To three cupfuls of the meat add one cupful of bread crumbs which have been previously soaked and mashed in about half a cup of milk. Stir in one beaten egg; then flour the hands with Graham flour, and make up into round cakes or small cylinders. Beat up an egg, dip each cake in it, and roll in cracker-dust or corn-meal; then brown them in a hot pan with sweet butter.

Boiled Bread-and-Fruit Pudding.

6 small apples pealed, cored, and chopped fine.
2 heaping teacupfuls of bread crumbs, either white or Graham.
1 teacupful of sugar.
1 " of currants.
5 well-beaten eggs.
A pinch of salt.
The grated rind of a small lemon.

Put the bread crumbs in the mixing dish, add the sugar, beaten eggs, lemon, salt, currants, and lastly the apples. Mix thoroughly; pour into a well-buttered tin mould and boil two hours. When done, put the mould in a pan of cold water for a second, and the pudding will turn out without adhering. Any plain sauce can be eaten with it, or simply cream, or sugar.

Oatmeal Crackers.

Take two pints of fine oatmeal. Pour upon it one pint and a quarter of cold water; mix thoroughly, and let stand about half an hour. Then flour the kneeding-board well with Graham flour; turn the dough upon it; flour the top of the dough thickly, and roll out smoothly until it is about one-eighth of an inch thick. Cut out the cracker-forms with a biscuit-cutter; place them in a shallow pan (sheet iron); prick each with a fork to prevent blistering, and glaze them with a little milk, and bake in a hot oven about twenty minutes. The glazing is conveniently done with a little mop made of a piece of white muslin tied on a stick.

Dried-Apple Cake.

3 cupfuls of dried apples.
3 " " N. O. molasses.
5 " " wheat flour.
2 eggs (beaten).
1 cup white sugar.
½ " butter.
1 " milk.
2 teaspoonfuls baking powder.
1 " cinnamon.

Carefully look over the apples, cutting out the bits of core left upon them. Put them to soak at night in plenty of cold water. In the morning drain off all the water through a sieve; chop the apples, not too finely; pour in the molasses, and place them on the stove in a porcelain kettle to simmer for two hours. When done and cool, mix in the eggs well beaten, the sugar, butter, and milk, then the flour previously sifted, through which the baking powder has been mixed previ-

ously, and lastly add the cinnamon. Set in a quick oven, and bake until a broom whisk will come out dry. The materials as given will make two medium-sized cakes. One cup of seeded raisins added is an improvement.

REMARKS.

See JOURNAL of Jan., 1882, for White Bread.
" " March, " " Oatmeal Bread.
" " May, " " Macaroni a la Creme.
See JOURNAL of May, 1882, for Graham Bread.
" " " " " Graham Gems.
" " Aug., " " Crust Coffee.
" " " " " Baked Potatoes.
" " Nov., " " Omelette.

All soups prepared from the juice or stock of flesh meats should be made the day before they are wanted for the table, or long enough before to cool so that the grease can be skimmed off.

MIRA EATON.

NOTES IN SCIENCE AND AGRICULTURE.

Progress of Electric Invention.—*The South* appreciatively says: "We seem to be in the midst of an electric revolution, the progress of which is watched by all. Sunlike arc lights now blaze in nearly every city of the world; while the incandescent lamp, with its soft white rays, is competing with gas in the houses of the rich and affluent.

"How often, when looking at these lamps, more wonderful than Aladdin's, the question arises to one's lips, What is this electric light? Merely *energy*. As Dr. Siemens says, in this short word *energy* we find all the efforts in nature, including electricity, heat, light, chemical action, and dynamics, equally represented, forming as many 'modes of motion.' Friction in the working parts of a machine represents a loss of mechanical effect, but produces a gain of heat; and, in like manner, the loss sustained in transferring electrical energy from one point to another is accounted for by heat generated in the conductor. They desire to augment the transformation of electrical into heat-energy at certain points of the circuit, and, consequently, the heat-rays become visible, and we have the incandescent electric light. In effecting a complete severance of the conductor for a short distance after the current has been established, a very great local resistance is occasioned, giving rise to the electric arc—the highest development of heat ever attained.

"The principal arguments in favor of the electric light are furnished by its immunity from products of combustion, which not only heat the lighted apartments, but substitute carbonic acid and deleterious sulphur compounds for the oxygen upon which respiration depends; its light is white instead of yellow, and thus enables us to see our surroundings as by daylight; it supports growing plants instead of poisoning them, and by its means we can carry on photography and many other industries at night as well as during the day. The objection frequently urged, and with reason, against the electric light, that it depends upon the continuous motion of steam or gas engines, which are liable to accidental stoppage, is being gradually removed by the introduction of the secondary battery. This has been lately improved by Planté, Faure, Brush, and others, and promises in the near future to accomplish for electricity what the gas-holder has done for the supply of gas and the accumulator for the hydraulic transmission of power.

"Regarding the transmission of power to a distance, the electric current has also entered the lists. The transformation of electrical into mechanical energy can be accomplished with no further loss than is due to such incidental causes as friction and the heating of wires.

"In other fields electricity is also making rapid progress. Late improvements in the telephotograph, by which a luminous image focused on a very sensitive selenium cell is reproduced by the electric current staining a chemical paper at the far end of a conducting wire, bring within our hopes the feat of seeing by telegraph, which has hitherto been regarded by many as chimerical, but which, after all, may not be far distant."

The Decoration of a Room.—Crude white is in favor with housewives for ceilings—"it looks so clean." That is just its fault. It looks so clean, even when it is not, that it makes all else look dirty, even though it may be clean. To paint the flat ceiling of a moderate-sized room by hand is simply a waste of labor. It is only at great personal inconvenience that one can look long at it, whilst as a matter of fact no one cares to do so. You see it occasionally by accident, and for a moment, and that that casual glimpse should not be a shock to the eye, it is as well to tint it in accordance with the room, or even cover it with a simple diapered paper, which will to some extent withdraw the attention from the cracks that frequently disfigure the ceilings of modern houses. What hand-painting we can afford may best be reserved for the panels of the doors, window-shutters, and the like, where it can be seen—these doors and the other woodwork being painted in two or three shades of color, flat or varnished, according as we prefer softness of tone or durability of surface. Perhaps it will be best in this instance that the woodwork shoul fall in with the tone of the dado; but this is not a point on which any rule can be laid down. The decoration of the panels should be in keeping

with the wall-paper patterns. It may be much more pronounced than they, but still it must not assert itself. One great point of consideration in the decoration of a room is the relation of the various patterns one to another. It may often be well to sacrifice an otherwise admirable design simply because you can find nothing else to go with it. A single pattern, once chosen, will often control the whole scheme of decoration.—*Magazine of Art.*

A Warning to Leap-suicidalists.—For a long time the favorite mode of committing suicide in Paris has been by leaping from one of the towers of the Notre Dame. This choice of place is not a mere whim, but rests on a belief that in falling so great a distance the velocity would become so great that respiration would be impossible, and death would really take place before the body could strike the ground. Indeed, in a recent case, a physician has testified that such was the real cause of death. The height of the balustrade of the tower of Notre Dame is sixty-six metres above the pavement. Now, according to the well-known law of falling bodies, the descent would take place with a velocity accelerating as follows: Five metres the first second, fifteen metres the next, twenty-five metres the third, and thirty-five metres the fourth—in all, eighty metres in four seconds. Hence, the fall from the tower requires less than four seconds, and the final velocity does not reach thirty-five metres per second. Now railway trains not unfrequently attain a velocity of one hundred and twenty kilometres per hour. This would give two kilometres per minute, or thirty-three metres per second. This is almost precisely the velocity a body would acquire at the end of the fall through the space in question. Now, as engine-drivers experience no danger of suffocation in moving through the air at this rate, and whether the direction of motion is horizontal or vertical being immaterial, it is plain that all Parisian suicides who have leaped from the historic tower of Notre Dame have done so under an erroneous theory; but, like so many other mistakes, the discovery came too late, and the poor, deluded wretch met, after all, the fate he climbed so high to avoid.

What a Bombardment Costs.—The cost of a single round in the bombardment of Alexandria was figured up by the *Pall Mall Gazette* as follows:

Four 81-ton ton guns.....	at	£25	10	0	£102	0 0
Ten 25-ton guns.....	at	7	0	0	70	0 0
Thirty-eight 18-ton guns..	at	5	5	0	199	10 0
Sixteen 12-ton guns.....	at	3	12	0	57	12 0
Eight 9-ton guns.....	at	2	15	0	22	0 0
Two 6½-ton guns.....	at	1	15	0	3	10 0
Four 64-pounders.....	at	0	18	0	3	12 0
Seven 40-pounders.. ...	at	0	12	0	4	4 0
Eighty-seven guns					£462	8 0

That is to say, a single shot from each of the eighty-seven guns costs in the aggregate about $2,300. The *Gazette* very pertinently inquires if this is the bill for a single round, what must it be for a day's bombardment? And this is only one item of the vast outlay required to maintain an army and conduct a campaign.

War is a tremendous moral evil and produces great physical damage wherever it occurs, besides being prodigiously expensive. We trow that *Christian* people, if the financial effect were fairly shown them, would rarely vote for a war.

Cauliflower Culture.—An enterprising seedsman gives some advice on the raising of this delicious vegetable:

"The crops of Dwarf Erfurt and Snowball begin to come forward in June; and these, with the later sorts, are in market, almost without intermission, until November. Remarkably fine cauliflowers in great abundance were grown about Boston and elsewhere the past season, notwithstanding the long and severe drought, which is particularly unfavorable to their culture. Cauliflowers require very high cultivation, even more so than cabbages, and plenty of moisture. Whether grown in the kitchen-garden or upon a large scale, the crop is a paying one. The demand is evidently rapidly increasing, and there is no more delicious vegetable grown. Cold-frame plants are probably the best and hardiest for early crops; the frames, however, need rather more protection during cold nights than is required for cabbage plants. Seed sown in hot-beds in February will produce plants that are not much, if any, inferior to cold-frame plants. They should be transplanted out once before setting in the open ground, and also should be gradually hardened by exposure; in this way they may be in condition to set out as early in April as the ground will permit. Set the early sorts about two feet by fifteen inches and cultivate the same as cabbages. Where irrigation is practicable, great advantage is thus obtained during a drought.

"For late cauliflowers, sow seed in open ground from the middle of May to the middle of June, in hills, the same as directed for late cabbages. Thin to one plant in each hill; this avoids the drawbacks resulting from transplanting in a dry time. When the plants first appear, they are liable to the attacks of a small black fly; guard against this by frequent dusting with plaster, which apply in the morning while the dew is on. When the heads are forming, tie the leaves together at the top, thus avoiding discoloration by exposure to the sun."

To Keep Silver-plated Articles Bright.—This can be done by dipping the articles occasionally in a solution of hypophosphite of soda. Large articles, like pitchers and salvers, should be wiped off with a rag dipped in the solution and dried with a soft towel. By rubbing a little with a piece of chamois leather they will be as bright as new.

H. S. DRAYTON, A.M., M.D., *Editor.*
NELSON SIZER, *Associate Editor.*

NEW YORK,
APRIL, 1883.

FLIPPANCY vs. SCIENCE.

A NEW YORK contemporary whose specialty is commenting on current events relating to music and the stage, prints this:

"The phrenologists who have been measuring a man's brain by the size of his hat are staggered at the lightness of Gambetta's knowledge department. But history and Phrenology do not agree. The great poets have always been characterized by the smallness of their cranial development. There are people who would attach no significance to this, however, save that the same is equally true, to a large extent, of noted men in the more practical lines of human greatness. The heaviest brain on record was that of an ignorant laborer. The brain of a Cincinnati negro weighed more than that of either Daniel Webster or Napoleon Bonaparte."

When the average newspaper man of the period touches on a matter of science, in the glib and flippant style for which he is notorious, he is sure to exhibit a melancholy if not amusing degree of ignorance. Clutching at some incident or rumor which seems to his uninstructed mind to negative a well-known principle he regards it a good opportunity to wing a shaft of sarcasm or facetiousness at the whole "ology," whatever it may be. He does not stop to consider his position, whether or not he is competent to discuss the point or issue he thrusts in the face of the public. Fortunately for him the scientific man regards his little essays in the realm of science with amused forbearance, and if he devote a minute's thought to what he has flung out, it is to see how far one who is permitted to write for the papers can stumble along in the darkness of ignorance, and perhaps of prejudice.

With regard to the lightness of M. Gambetta's brain, as reported, our contemporary has some warrant in the letter for his wit, but we must confess ourselves a little at a loss to know who are the phrenologists who measure a man's brain by the size of his hat. Surely no neurologist of moderate capability would accept a hatter's measurement as a good and sufficient *datum* on which to estimate the dimensions of a head. We have reason to believe that M. Gambetta had a large head; his portraits indicate it, and the current descriptions of him state it. Here is one by Mr. G. M. Fowle:

"The head larger below than above, broad near the neck and at the jaws, narrow and rather flat at the top; wanting in veneration, as the phrenologists would tell us, but great in passion, in combativeness and in language; a fine, well-set forehead, however, wide just above the eyes, and slightly sloping to the hair; a still finer intellectual brow, the best feature but one of the countenance—that one being an exceedingly well-cut, expressive, handsome, full-lipped mouth."

We have yet to learn the particulars of the examination of his brain, and the process by which the really extraordinary result of 1,100 grammes for its weight was obtained. We feel quite sure that if

the brain when taken from the skull indicated that small proportion to what is generally accepted as the average for a full-grown man, there must have been some extraordinary alteration in the cerebral substance previously, some disintegration or decomposition whereby the cerebral mass lost very considerably in density and volume.*

As to great poets having "always "small heads we challenge the statement. Mr. Page's mask of Shakespeare and the busts at Stratford-on-Avon, indicate an encephalon by no means small. Goethe and Schiller had large heads, the former a particularly massive one. Scott had a remarkable head. Tom Moore, Keats, Wordsworth, and Coleridge were well furnished in this respect. Victor Hugo has a massive cranium, and Mr. Tennyson's can not be termed small. In our own country, Bayard Taylor, Longfellow, Whittier, and Stoddard must be enrolled on the list of the big-headed.

Had our contemporary been familiar with authors on nervous structure, with Luys, Bastian, Maudsley, and Ferrier, for instance, he would not have committed so significant a blunder. To them we must refer him for the correction of the statement reflecting on poets, and also that immediately following, which swoops like the falcon upon its prey, upon the general list of great men.

Yes, it may be that a laborer had the heavy head ascribed to it, but what of its structure and nature? We have never heard it described, and we fear that the person or persons who weighed it did not possess the technical knowledge which could properly describe the organ. There are "cabbage heads," great, round growths of nervous substance and bone which show at once to the skillful phrenologist what they are: simple, unelaborated developments, very heavy perhaps, yet watery, coarse in fiber and rudimentary in convoluted structure.

* In a late number of the London *Lancet*, Gambetta's brain is spoken of as *large*.

A BUSINESS VIEW OF IT.

OVER in New Jersey the temperance folks have been making a gallant fight in behalf of a bill which was introduced in the Legislature for the regulation of the sale of alcoholic liquors, and have received an amount of support from the people which is certainly encouraging to the earnest reformer. While the bill was pending, a meeting was held in Trenton to discuss the moral and physical features of the alcoholic question, and several gentlemen of scientific eminence took part in the proceedings. A certain doctor made a vigorous speech in behalf of alcohol, the reasoning of which was founded upon the views of chemists and medicists of thirty or forty years ago, and which the testimony of men like Maudsley, Carpenter, Richardson, Parkes, and Lees, who stand at the head of physiologists to-day, has completely refuted. But there were men in the assemblage who saw the motive of that doctor's plea in behalf of the whisky dealer, and exposed its untruth and unsound sophistry. The points of the discussion related to the query: Is alcohol good for man in health or sickness? and the right of Government to prohibit or license the sale of liquors was made contingent upon the determination of this question, and such was the practical nature of the testimony that we doubt not the majority of the audience left the hall that night well persuaded that the negative had the better of the argument.

One of the later phases of this question has a definite, commercial character which can not fail of effect. We allude to the attitude which life insurance in England has taken toward liquor-drinking. In one of his lectures Mr. Joseph Cook presents an array of data which he was at some pains to procure when in England, and which he rightly considers "of the largest philanthropic significance." From official documents supplied by one celebrated life assurance society, it was shown that in 1872, 1875, and 1878, of the two bonuses the society has been in the habit of paying to total abstainers and to moderate drinkers, that paid to the former was fourteen per cent. higher than that awarded to the latter, while the bonus for 1881 in the temperance section was twenty-three per cent. higher. The United Kingdom Temperance and General Provident Institution furnishes data which show the great superiority in commercial value of the abstinent life to the moderate life. "It insures members in two sections, one in which all the members are total abstainers; in the other, moderate drinkers; all intemperate persons being, of course, excluded. The two sections are exactly alike in every other respect, about 20,000 lives being insured in the General Section, and 10,000 in the Temperance Section. Returns of the expected and actual claims in both sections for fifteen years, from 1864 till 1879, show that in the General Section 3,450 deaths were expected, and that 3,444 took place; whereas, in the Temperance Section the expected deaths were 2,002, and the actual deaths only 1,433. During the year 1879 the expected claims in the Temperance Section were 195 for £40,844; the actual claims were 164 for £28,690. In the General Section 305 were expected for £64,343, the actual having been 326 for £74,950. The five-year bonuses in the Temperance Section have been 17½ per cent. greater than those in the General Section."

It seems to us that putting the subject in this business way must compel attention from those whose manner of thought and employments give them a bias against sentimental and even moral views of the temperance movement, and we wish that our friends who are engaged in this work of reform would avail themselves of the financial experience of the long-headed managers of life insurance.

AFTER BISMARCK, WHAT?

NOW and then the telegraph informs us that Prince Bismarck is ill, and as he is past middle life, and his table habits have been of a character that would long ago have broken down a man of ordinary constitution, we have not been surprised by them, nor would we be surprised by the announcement of his sudden departure from the arena of his martial and political triumphs. What effect upon German affairs his death would have we can scarcely predict, but certain it is that whenever the apostle of "blood and iron" is said to be sick, there is at once an expression of the gravest interest, not only in Germany, but in all Europe, and much fear is entertained by some in the circles of government lest he should die, and with his death there should begin an era of political embarrassment and of social revolution. It seems strange that in this modern day so much is dependent upon the life of one man, or that a policy or system of government in a powerful nation should be in charge of an individual. It is said that no man has been

trained in the principles of the Chancellor, and, therefore, he would leave no representative who would continue his work. Does this mean that Bismarck's principles and policy have little favor with the German people? that he is too stern an imperialist to find warm sympathy among a people who have begun to grasp the idea that true liberty and progress are not promoted by vast standing armies and a frontier bristling with fortifications?

The very aged Emperor can not be expected to live much longer, and his Chancellor seems not likely to survive him long, if he does not die first. These men have been closely bound together in motive and purpose, but we are told that the Crown Prince is a man of different spirit from them, that he has broad and liberal views of State affairs, believes in popular education, and is a friend to progress. His appearance in the portraits we have seen do not belie this representation. He has a soldierly bearing, but the expression is mild and kindly; there is little of the stern warrior which is evident in his father, and nothing of the unflinching and arbitrary master so evident in the features of Prince Bismarck.

Well, the great Chancellor has accomplished an important work in consolidating the German States. Perhaps this was his mission; and after he has gone a less severe *régime* may be found what was needful for the development of Germany in the arts, of peace and prosperity.

Our Mentorial Bureau.

To Our Correspondents.

QUESTIONS OF "GENERAL INTEREST" ONLY *will be answered in this department. But one question at a time, and that clearly stated, must be propounded, if a correspondent shall expect us to give him the benefit of an early consideration.*

IF AN INQUIRY FAIL TO RECEIVE ATTENTION *within two months, the correspondent should repeat it; if not then published, the inquirer may conclude that an answer is withheld, for good reasons, by the editor.*

TO OUR CONTRIBUTORS.—It will greatly *aid the editor, and facilitate the work of the printer, if our contributors generally should observe the following rules when writing articles or communications intended for publication:*

1. *Write on one side of the sheet only. It is often necessary to cut the page into "takes" for compositors, and this can not be done when both sides are written upon.*

2. *Write clearly and distinctly, being particularly careful in the matter of proper names and quotations.*

3. *Don't write in a small hand, or in pencil, as the compositor has to read it across his case, a distance of nearly two feet, and the editor often wants to make changes and additions.*

4. *Never roll your manuscript or paste the sheets together. Sheets about "Commercial note" size are the most satisfactory to editor and compositor.*

5. *Be brief. People don't like to read long stories. A two-column article is read by four times as many people as one of double that length.*

6. *Always write your full name and address plainly at the end of your letter. If you use a pseudonym or initials, write your full name and address below it.*

WE CAN NOT UNDERTAKE TO RETURN UNavailable *contributions unless the necessary postage is provided by the writers.* IN ALL CASES, *persons who communicate with us through the post-office should, if they expect a reply, inclose the return postage, or what is better, a prepaid envelope, with their full address. Personal matters will be considered by the editor if this is done. Anonymous letters will not be considered.*

LARGE-HEADED GIRL.—J. B. T.—The photograph of the young lady indicates hydrocephalic disorder. The dropsy is evidently chronic in its nature. Possibly its effect is that of a stimulus to certain organs, the intellectual in particular, as such has sometimes been the case.

BASHFULNESS.—C. P. Y.—From time to time an item has been published in the PHRENOLOGICAL explanatory of bashfulness. In "Phrenological Miscellany," a book you will find in our publishers' list, an extended discussion of the subject is one of the leading features, which it would be well for you to read. Bashfulness is a trait resultant from the combined operation of several organs, with a sensitive temperament. The subject of it is usually deficient in Self-esteem and Combativeness, while Approbativeness, Veneration, and Caution are largely developed.

PRESIDENT GARFIELD'S BRAIN.—G. W. C.—Mr. Garfield had a large head. In the pamphlet on "Indications of Character" you will find some diagrams of the horizontal contour of the heads of several leading Americans, Mr. Garfield's among them, and a statement to the effect that Mr. Garfield wore a hat of the size 7¼, which would indicate that his head measured about 23¼ inches in circumference, a size much above the average. W. F. H. S. inquires with regard to the phrenological character of Mr. Garfield, a sketch of which was published just prior to the Presidential election in 1880, and will be found in the August Number for that year.

THE TEMPERAMENTS. — *Question.* — When and by whom was the later classification of the temperaments introduced? I mean the Motive, Vital, and Mental. A. C.

Answer: This classification was made known to the public mainly through the lectures and publications of the Fowlers, as long ago as 1838. It seemed to them, as it seems to us, a classification based upon a sound physiology, while the older classification is more related to what might be termed pathological, deranged, or abnormal physical conditions.

BETTER HANDWRITING.—G. B. D.—It matters little how old one is, provided that his faculties have not become impaired and his muscles feeble, he can make some improvement in his handwriting. Earnest and continuous effort will accomplish much; a half an hour's daily practice will, at the end of a month, show a change for the better. We know an old gentleman who learned to draw passably well when past seventy.

CRITICAL POINT.—N. D.—It has not yet been ascertained to what extent physical reduction can be carried, but physiologists are generally agreed with regard to what might be termed a par value in weight. For instance, it is claimed that a man measuring six feet should weigh a hundred and fifty pounds at least to be in good condition; ten pounds below that is indicative of a loss in vital vigor, so that he could not work up to his full standard in attempting to carry out any endeavor. It is difficult to deduce from observation the fact in reference to what would be a critical stage in any one's case. We have several times been brought face to face with invalids whose depletion is extraordinary, and yet they live on and on, and now and then, to the astonishment of everybody, one gains in weight and strength, and even recovers entirely.

HOT-WATER TREATMENT.—J. E.—The practice of water-cure includes hot as well as cold applications, and it is known that in cases of congestion, accompanied with a high inflammatory state, hot water is beneficial, and far more kindly in its effects than cold water, there being much less reaction, or membranous excitement. In the case of the child, the treatment seemed heroic, but its effect you were witness of in its reducing the glandular turgescences and relieving the trachea. Other means might have been tried, but your doctor acted in accordance with what he had learned through his regular channel. It was better by far than the old-fashioned caustic application or mineral washes.

BRAIN GROWTH. — S. — The skull is composed of several bones, fitted very nicely to each other, the design of nature evidently being to permit of movement in correspondence to brain development or expansion. You will find in any work on anatomy a full description of the structure of the cranium, and a complete solution of what seems to you problematical.

ELOCUTION.—Of whom can a person obtain first-rate instruction in the science and art of public speaking? I am a student of theology, and have the opinion that the best of messages should be presented in the best manner.

Ans.: For systematic and successful vocal culture, and for thorough training in graceful and effective oratory, we cordially commend Prof. Fred. A. Chapman, 127 East 10th Street, New York. As he gives lessons in elocution annually to our classes in the American Institute of Phrenology, we have reason to know that his method of instruction is excellent.

[*A number of inquiries awaiting attention must be deferred to our next Number*].

What They Say.

Communications are invited on any topic of interest; the writer's personal views, and facts from his experience bearing on our subjects, being preferred.

"SELF-CONTROL."—In the November (1882) No. of the PHRENOLOGICAL JOURNAL is an article by Isaac P. Noyes, which goes to show in a very clear light, I think, that self-control would be or is a much more suitable name for the organ called Self-esteem, than the one it now bears. I was more than pleased with the article referred to, because I had often had similar thoughts regarding the name of the organ in question.

It is a fact, that every illustration is in proof, that to the degree this organ is in force, does the person exhibit genuine self-control. Many persons have the thought settled in their minds, that this organ is nothing more or less than conceit. I think there is a strong influence toward the feeling of vanity in its composition, and so there is, I think, in Approbativeness, and to a less-

extent in several other faculties; yet few will deny, after a careful investigation, but that there is a more profound influence given by the organ; and this influence is much more truthfully and judiciously expressed by the name of Self-control.

We are aware that there is always a strong opposition to a change of any kind being made in the terms of science, but we all wish to see Phrenology become as nearly perfect as possible, and a change can be made now much more readily than in later years; therefore, we would invite all who are interested in its perfection, to give this matter a careful thought, and if Self-control is seen to be the better name, the change will be made.

I would refer to the remarks of Mr. Sizer in his "Choice of Pursuits," on Self-esteem, which is a very comprehensive analysis of the faculty.

"What's in a name?" is a question that, notwithstanding the many essays that have been written concerning it, is still unanswered. Though the name can not affect the substance of a thing, it can affect our conception of it, and thus an appropriate and consistent designation should always be given where it is possible.

CHARLES L. HYDE.

A VISIT TO THE ANCIENT CAPITAL OF HONDURAS.— Comayagua, the ancient capital, like other ancient cities, has a history of great interest to the cosmopolitan observer. I had the satisfaction of visiting this relic, for relic it now is, of Honduras a year or so ago.

Its history dates back to the seventeenth century, nay, possibly to a period centuries before, as marks of former inhabitants are left in the ruins now to be found in various parts of the valley, ruins belonging to the Aztecs, in the shape of funereal mounds and sacrificial altars, as well as mysterious caverns and fortifications never yet examined by the present inhabitants.

Comayagua is built at the northern extremity of a most beautiful valley, forty miles long by some twenty-five wide, and all very fertile. On all sides are to be seen mountains of from seven to fifteen thousand feet above the sea level. Without doubt the valley was at one time the bottom of the sea, or a lake, and more probably the former, for reasons requiring too much detail description in a brief article like this.

Though settled by the Spaniards shortly after their conquest by Cortez, nothing is now seen of improvements made by them, which are earlier than the eighteenth century. In the year 1762, the missionary priests appear to have entered and taken hold of the material works which now remain. The city has seven churches, all dating in the past century. The Cathedral, a specimen of pure Spanish architecture, is constructed entirely of stone, with an arched roof of brick. Built over one hundred years ago, it yet shows the freshness of a few decades. There is in it nothing to decay; on the contrary, it strengthens by age.

Comayagua had at one time a population of over 18,000, now it does not number 3,000. Such has been the influence of political revolutions since the day of Honduras independence from Spain, which occurred on the 15th of September, 1823. The object of each and every revolution being merely to change the governing power or policy, the force of the attack always centered at the capital.

Comayagua has seen Honduras change in three days as many Presidents, and there have been as many as five acting in the same day.

Since the year 1824 the State has had no less than six new constitutions. The first was made in 1824, and called the Constitution of Confederation, under President Cerda; the second in 1825, under President Herrera; the third in 1839, under President Molina; fourth in 1848, under President Lindo; fifth in 1865, under President José Maria Medina, the same who was shot for treason in 1878; and then another was framed in 1873 under President Celeo Arias. The last on the list was that announced by President Soto.

Comayagua was always the greatest loser from these changes, for, as the Government never had any funds to spare, the citizens were obliged to maintain all army expenses by forced taxation, but not only this, the employés of Government, who generally were residents of the place, were never paid with anything but the "promise to pay," because the Government changed so frequently, and the succeeding President always repudiated the claims matured in his predecessor's term of office. In times of revolution any house and property was at the mercy of the rebels, who occupied or destroyed whatever property they pleased, and to-day the effects of many a fearful contest are visible in its ruins. The surviving citizens will show you where a dear friend, or sometimes an entire family, perished in one of these fearful contests.

One singular fact struck me in viewing the peoples who inhabit Comayagua, and it is, that not a foreigner or one of foreign descent exists in the whole city, unless we speak of the Spanish conquerors, but who now have lost their identity by being mixed with the aborigines.

Indeed, this same fact occurs in Tegucigalpa, the present seat of government, unless we except an Irish family by the name of John Connors, who settled in Honduras some fifteen years ago, and now has employment at the Government mint here, and this man says the reason that he has remained so long was because he never could raise money enough to get away, until he is now so thoroughly identified with the people that his children are even more of the

country than many other families there. I mean that such is the effect upon isolating individual families that they retrograde even beyond those of the country, unless they are of superior intelligence.

Comayagua, though to-day in ruins, is destined to be the seat of a strong and populous city. It stands at the head of a stream that flows to Puerto Cortez, forming an easy path for a railway. Indeed, there are already some fifty miles built, but at a standstill for want of funds. The valley of Comayagua is an immense field of rich agricultural land, entirely depopulated and growing in wild underbush. It is watered everywhere by fine cold streams running down from the mountain sides in all directions. These same streams afford water power to any extent. All along the mountain sides are beautiful tablelands or patches for fine farming. The temperature of the valley ranges from 68° to 75° the year round, and higher up on the mountains one may attain the cool temperatures of 60° to 65° the whole year. The temperature here is never known to vary more than 5°. Yankee thrift will some day see that there is "money to be made" here, and it will take hold and complete the railway and populate this valley. E. E. RIOPEL.

LIFE AND LABOR IN ARIZONA.—Dr. Helen J. Underwood, in a letter dated at a frontier town of Arizona Territory, writes concerning the rather mixed state of society there, and the eminent need of some enterprising and devoted missionary efforts in behalf of public morality. She says: "The longer we remain here, the more I am impressed with the terrors of liquor drinking and selling, for both are very universal and respectable. The drinkers are made wild by one glass of the stuff which is retailed here, and then the respectable sellers, as it is said, 'roll them and go through them,' which means that every cent is taken from the benumbed and drugged victims. Of all the hired men we have had I do not think one of them had one cent in his pocket thirty-six hours after reaching a whisky-hole. All who work here get high pay—about $40 a month for inferior labor—but I never saw so much destitution among men. Tramps abound, and we should be very cruel if we did not give them something to eat on their journey, as it is twenty-three miles to the next house north of ours. By the way, if you know of any efficient working-women who desire to earn good wages, and do not, look upon necessary work as degrading, and to be shirked, you can do us and them a favor by telling them of Arizona Territory. Good house-help receive from $30 to $40 a month, but they are Chinamen and can cut their own wood, and can do other heavy work when needed, which is an item in their favor; but serviceable women can get good places at good prices. I know of one noble instance here, who, while her husband is under a cloud, took a position at $40 and board for herself and little girl. She is prized as a treasure by the family, and is proving a blessing to them and to her own."

OPINIONS ABOUT IT.—Mr. J. D. K., of Charlestown, Ind., says: "I have been taking the JOURNAL for six years, and have become so much attached to it that I can not give it up, though at this time I feel as if I could scarcely spare the money; the purchase of a farm, and its working, absorbing all my resources; in fact, costing me much more than I expected. I have given up the agency business in which I have been heretofore engaged, but will solicit the patronage of my neighbors in a work like yours."

MR. J. B., one of our neighbors living on the other side of the St. Lawrence, writes in a letter renewing his subscription: "I have been a reader of the PHRENOLOGICAL JOURNAL for eight or ten years, and am much pleased with its contents. Wish you every success in your good work, knowing, indeed, that a good work is being accomplished by your efforts.

PERSONAL.

ON her ninetieth birthday Mrs. E. A. Jewett, of Georgetown, Massachusetts, coasted down-hill on a hand-sled, at a speed faster than that of a railway train. An old hand at the game, surely.

THE late Dr. Joseph W. Taylor, of Philadelphia, left $900,000 for an institution at Bryn Mawr for the education of women. The college building is nearly completed, and is to be known as Taylor Hall.

ONCE a year the Emperor of China, attended by all his ministers, plows a furrow across a field for the encouragement of agriculture, and the Queen of England sometimes enters the lists as competitor at local fairs for the same purpose. Now, President Arthur, what will you do?

HON. MARSHALL JEWELL, ex-Governor of Connecticut, ex-United States Consul to Russia, and ex-Postmaster-General, died of pneumonia, at Hartford, Connecticut, February 3d, in the fifty-eighth year of his age. Mr. Jewell was a New England man, and during the greater part of his life was prominently identified with the business interests of New England. As Postmaster-General, he did much good work in suppressing "straw bids" and other corrupt work in the postal service.

MR. S. B. DRIGGS, who died in New York January 26th last, should be remembered for his success in draining the Hackensack meadows,

which comprise that great salt marsh lying between Jersey City and Newark, N. J., a task which others had attempted and failed in. He laid nine miles of iron dike around a part of the meadows; and after the land was drained some was sold to the Pennsylvania Railroad Company, and the round-houses and workshops now standing on the meadows were built on the drained land. The railroad company paid $1,200 an acre for what Mr. Driggs had paid $24 an acre.

WISDOM.

"Think truly, and thy thought
Shall be a fruitful seed."

HAVE no friends you dare not bring home.

IT is easier to suppress the first desire than to satisfy all that follow it.—FRANKLIN.

LIFE is not so short but that there is always time enough for courtesy.

WORK, play, study, whatever it is, take hold at once and finish it.

HE is the truest friend of his race who makes it easier for the people to have virtuous and comfortable homes.

LET us learn to anoint our friends beforehand for their burial. Post-mortem kindnesses do not cheer the burdened spirit. Flowers on the coffin cast no fragrance backward over the weary days.

ON the bathing-tub of King T'ang the following words were engraved: "If you would one day renovate yourself, do so from day to day. Yea, let there be daily renovation."—*Chinese Sayings.*

MAN and woman were made for, and not like, one another. One only "Right" we have to assert in common with mankind, and that is as much in our hands as theirs—the right of having something to do.—MRS. MULOCH-CRAIK.

NEITHER deep wisdom, bold action, the administrative faculty, nor that soundness of judgment whose predictions are always ratified by results, ever come from the study of literature alone.—HORACE MANN.

"WHY did you learn to smoke, my boy?" "For the reason that you did, I suppose." "Well, I want you to stop smoking." "Won't you give me the reason for stopping that I had for learning, father?" After a moment, "Yes, I will." Both stopped.

HAST thou named all the birds without a gun?
Loved the wood-rose and left it on its stalk?
At rich men's tables eaten bread and pulse?
Unarmed, faced danger with a heart of trust?
And loved so well a high behavior
In man or maid, that thou from speech refrained,
Nobility more nobly to repay?
Oh be my friend and teach me to be thine!

R. W. EMERSON.

THE foundation of domestic happiness is faith in the virtue of women; the foundation of political happiness is confidence in the integrity of man; the foundation of all happiness is reliance on the goodness of God.—HARE.

MIRTH.

"A little nonsense now and then
Is relished by the wisest men."

"LET us play we were married," said little Edith, "and I will bring my dolly and say, 'See baby, papa!'"

"Yes!" replied Johnny; "and I will say, 'Don't bother me now. I want to look through the paper!'"

MIXED.—"Suppose a fellow that has nothin' marries a gal what has nothin', is her things his'n, or his'n her'n, or is his'n and her'n his'n?"

WHEN Dr. Chapman was dining at an hotel he was served with what was called barley soup on the bill of fare. "That is not barley soup," said he to the waiter, "it is barely soup."

A BOSTON young lady of wealth and position has astonished "society" by cutting and making her own wedding dress. She also intended to make her own wedding cake, but the board of health interfered.

CATCHES the eye: "A loft to lett" is painted on the door of a Gold Street store. "Why don't you spell those words properly?" a customer asked the proprietor. "Because if we did, no one would turn to read them. That extra 't' catches the eye."

A CHATHAM Street merchant is strict in regard to the personal appearance of his clerks wearing a mustache, and when one of them applied to him for permission to raise a mustache: "Dat vas all right," he replied; "you shoost raise so much viskers as you blease, so long you don't wear 'em in the store during pishness hours."

"WHAT'S your name?" asked one four-year-old Miss of another. "I do declare!" replied the second little girl, "you are as inquisitive as grown people. They always ask my name, and where I got my new boots, and all such things, until I am ashamed of 'em."

MR. SIMON WOLFF, the American Consul General at Cairo, Egypt, is said to have reached Cairo about the time of the great revolt. Soon afterward he was sitting in front of Shepherd's Ho-

tel, taking his after-dinner coffee, when an excited Englishman rushed up to him, and cried: "Have you heard the news, Mr. Consul? There is to be a general rising to-night, and every European and Christian in the city is to be murdered!" Mr. Wolff went on sipping his coffee, apparently unmoved by these dreadful tidings. "Do you not hear me?" reiterated his agitated informant. "The fanatics intend to-night to kill every European and Christian in Cairo." "Yes, I hear you," quietly responded Mr. Wolff, "but I do not see how that affects me at all, since I am an American and an Israelite."

In this department we give short reviews of such NEW BOOKS *as publishers see fit to send us. In these reviews we seek to treat author and publisher satisfactorily and justly, and also to furnish our readers with such information as shall enable them to form an opinion of the desirability of any particular volume for personal use. It is our wish to notice the better class of books issuing from the press, and we invite publishers to favor us with their recent publications, especially those related in any way to mental and physiological science. We can usually supply any of those noticed.*

OAHSPE: A NEW BIBLE, in the words of Jehovah and his Angel Ambassadors. A Sacred History of the Dominions of the higher and lower Heavens on the Earth for the past twenty-four thousand years. Together with a Synopsis of the Cosmogony of the Universe; the Creation of Planets; the Creation of Man; the unseen Worlds; the labor and glory of Gods and Goddesses in the etherean Heavens. With the new Commandments of Jehovah to man of the present day. With revelations from the Second Resurrection, formed in words in the thirty-third year of the Kosmon era. Quarto, pp. 890. Oahspe Publishing Association. New York and London.

The title in full as above is given, as it conveys some notion of a singularly constructed book. It purports to be a new bible or revelation in which are set forth, obscurely enough, it must be said, a new faith or a system of religious doctrines derived from the ancient forms, both Pagan and Christian, and claims to reconcile the deductions of modern science with true religious principles, besides clearing up many mysteries relating to the origin of nations or races, philology, ancient civilization, etc. The author is said to be a New York dentist, who wrote Oahspe on a type-writer under spiritual guidance during the last two years; all that time being scarcely conscious of what he was doing, and when the manuscript was finished, he was commanded to give the book to the world.

The general bearing of the teaching is in the line of spiritualism, the language being similar to that of the common Bible, yet often fantastic and platitudinous. Descriptions are given of the angelic world, how the angels live therein, and of the dwelling-place of the gods, by which it seems there are many. Accounts are also given of Moses, Jesus, Abraham, Mohammed, Zoroaster, etc., and it would appear that American history is of great moment in the councils of the etherean powers, for we have a relation of our rise and progress as a nation. We are reminded in reading it of some of the communications said to have been made by Indian chiefs through mediums, as so many of the names and phrases are in the aboriginal vein. Possibly the Indian occupies a lofty place in the spiritual world. Mr. Irving has certainly accorded him a high character for simplicity and purity of habit in the days previous to the settlement of America by Europeans (see "Knickerbocker's New York"). And this may account for the Indian spirits having so much to do with earthly affairs.

MORAL EDUCATION: ITS LAW AND METHODS. By Joseph Rhodes Buchanan, M.D., Author of "System of Anthropology," etc. 12mo, pp. 395. Price, $1.50. Published by the Author.

If one were to examine the long list of volumes which have been published during the past twenty or thirty years on education or pedagogy, he would be surprised to learn that very few discuss methods for the development and training of the moral sentiments. He would be led to infer that the intellect is the grand element in human nature, and all that is needed for the attainment of what is desirable in life is its culture; or, in other words, to fill the memory with the data of history, science, and literature, and to furnish the tongue with fluent, symmetrical, logical phraseology. Yet in despite of the schools and the books, in spite of great effort on the part of those who have had charge of public and private education, the intellectual result has been far from adequate, while the general mental symmetry of the educated class appears to be no better than it was a century ago. Dr. Buchanan puts the matter thus: "Governments, churches, and colleges, for many thousand years, have striven in vain to conquer crime, disease, and misery. A new method must therefore be adopted." And the purpose of his book is to formulate or suggest such a method. Intellectual training is not a liberal education, he claims, and every physiologist and phrenologist will agree with him; because it does not improve the physical constitution; does not impart industrial capability; and does not develop and render practically influential the moral nature. He sets forth five elements as *indispensable* to a true liberal education, viz.:

1. Regular physiological culture, so that the health could be improved by the education.

2. Practical industrial education, so as to make

each pupil a master of one or more vocations by which he or she may be supported through life.

3. Hygienic and medical instruction for both sexes sufficient to qualify them to maintain their health and escape disease.

4. The moral nature should be so cultivated as to eradicate the principal causes of crime and vice, and an honorable, benevolent, high-toned character be built up.

5. Literary or intellectual training.

The educational policy that prevails, our author asserts, is responsible for the vast increase of debasement, crime, insanity, pauperism, and mortality, which statistics show to be the case "in the present century during which religion and morals have declined," and "intemperance has much more than doubled." Yet he is far from underestimating the importance of proper religious training, as he gives instances of the happy effect of the methods in vogue in some institutions conducted under church authority, and says, p. 146: "There are few who realize the power of religious education, the energy with which the religious or the leading sentiment of the moral nature inspires all our faculties, sustains the energy of the brain, brightens the soul, and sustains the moral and physical health," and "It is no more difficult with proper means and methods to develop saints, than to develop sots and assassins; no more difficult to develop the brain than to develop the muscles, though the development may be more apparent in its powers than in its growth or structure. The casts of heads taken by Deville, of London, at different periods of life, gave definite proof of the growth of the brain in the portions that were cultivated, and every gymnasium yields evidence of bodily development by culture."

The author, however earnest in his condemnation of the general practice, finds something here and there to approve, and is inclined to think that "better ideas are everywhere germinating." Yes, we may not be satisfied with what we know to be the moral state of society, but we can not believe that the excellent teachings of men like Locke, Milton, Combe, and Mill, and like Pestalozzi and Froebel, have been lost to educational science. Dr. Buchanan's views in many points are not dissimilar to the conclusions announced to the world by these men.

The volume is worthy of a much more extended notice than we can give it in this place, and we heartily commend it to the attention of all who are interested in the practical work of the schools.

THE CHURCH IN THE HOUSE. A Series of Lessons on the Acts of the Apostles. By William Arnot, late minister of the Free Church in Edinburgh. 12mo, pp. 464. Price $1.50. Published by Robert Carter & Bros., New York.

The publication of this series of brief commentaries on the work of St. Paul and other apostles as related by Mark, will prove serviceable to those who may make use of it in a systematic examination of the book of Acts. The eminent Scottish minister nowhere else illustrates better his facility of exposition and practical illustration. The volume was prepared for Sunday reading in the family, and all appearance of profound treatment avoided as much as possible, yet the intelligent—we mean of course in this connection those who are conversant with the Bible—will understand it best. One hundred and five passages are elucidated, quite covering the field of the apostles' early work.

ELECTRICITY IN MEDICINE. By Geo. C. Pitzer, M.D., Professor of the Theory and Practice of Medicine in the American Medical College of St. Louis, etc., etc. 8vo, pp. 88. Price $1.

This modest treatise will commend itself to the medical student and practitioner who wishes an introduction to the part which electricity plays, so far as it has been developed in therapeutics. It does not affect minuteness or elaboration, but furnishes the leading facts of the subject in a perspicuous style. The elements of electrical science are explained, and a considerable number of illustrations accompany the text descriptive of electrical apparatus. How batteries are used in the treatment of disease are described chiefly from notes of cases in the author's own practice and as recorded by other electricians; these cases cover a broad field in nervous disorders, including facial paralysis, neuralgias, and other painful affections, tumors, spinal curvature, muscular atrophy, hysteria, skin diseases, etc. The volume although small is a very satisfactory one in point of practical information.

FIRST LESSONS IN PHYSIOLOGY AND HYGIENE. For the use of schools. By Charles K. Mills, A.M., M.D., Fellow of the College of Physicians, Philadelphia, etc. 12mo, pp. 206. Philadelphia: Eldredge & Brothers.

A concise exposition of the principles of the subjects mentioned in the title, in accordance with the later conclusions of scientific research, and written in an easy, untechnical style—therefore the book is adapted to the use for which its author designed it. We commend the arrangement of descriptive matter followed by a "Syllabus," which helps greatly to impress the mind of a pupil, and then "Questions for Review." The hints on Hygiene are generally excellent, and the addition of advice for the treatment of accidents is a good thought on the part of the author. The illustrations deserve commendation for their beauty and fidelity to nature.

THE NEW YORK GUIDE OF COMMERCE FOR 1876. Contains all Laws, Rules, and Regulations controlling trade with foreign

nations, Commercial Treaties, U. S. Bonded Warehouses; and compiled from Custom Records, a List of actual importers paying duties at the Port of New York. Also Fees, Fines, Forfeitures, and Penalties, List of Commercial Ports and Bonded Routes, Coasting Trade and Fisheries, the New York Produce Exchange and Rules, Tables of Foreign Moneys and United States Tariff, including Recent decisions of the Treasury Department. 8vo, pp. 823. Geo. E. Hall, publisher, New York.

This book, as the very full title shows, is a useful one for the merchant and manufacturer, and needs but the cursory examination of the business man to elicit his approval.

PUBLICATIONS RECEIVED.

THE PHYSIOLOGY OF ALCOHOLICS, an address delivered in the Tremont Temple, Boston, by W. B. Carpenter, the well-known physiologist. This expression of high authority on the verdict of science respecting alcohol, should have a very important influence upon the thought of the time. Price in paper, 10 cents. Address J. N. Stearns, New York.

A STATEMENT OF FACTS in connection with the Quarterly Report of the Treasurer of the Medico-Legal Society of New York, by E. C. Harwood, M.D. This well-known Society appears to have become a little muddled in its financial matters, and Dr. Harwood gives us an inkling of the situation

SCOTT BROWNE'S First American Standard Phonographic Reader, prepared to follow Scott Browne's "Text-Book of Phonography," affording reading and writing practice on the reporting principles of the art, as employed in a simple style of language, to which Appleton's Third Reader is the key. Published by the author, New York. The phonographic characters are printed with great clearness. The subject matter of the series of lessons is entertaining.

SCOTT BROWNE'S Copy-Book and Phonetic Analyzer, No. 1, consonants and regular vowels. Price, 25 cents. Well calculated to assist students who have just entered upon the practice of phonographic outlines.

ANNUAL REPORT of the Chief Signal Officer to the Secretary of War for the year 1880, is an exceedingly bulky volume, covering the whole field of meteorological observation during the past year, and also including interesting data relating to the solar eclipse, several fine illustrations and suggestions with regard to instruments, brief essays upon physical topics, and notes and items interesting to the weather observer at large. Perhaps it is well that the department should issue so expensive a book for general distribution; but it seems to us, that after the elaborate monthly reports, a very much smaller book would have served all practical purposes.

THE leading monthly magazines have opened for 1883 in a vigorous manner; *The Century*, *Harper's*, and *Lippincott's* indicate on the part of their publishers no thought of taking a single step backward. Foreign matters—scenery, society, politics, literature—have formed a very prominent feature thus far in the New York monthlies. *Lippincott's*, on the other hand, has opened with a show of American interests, which promise that our country shall not be suffered to take a back seat in the competition for home readers.

The Medical Tribune appears in a new dress. Color and design of cover are creditable to the publishers; while the matter of the February and March Numbers indicate a decided motive on the part of the editor to make the publication worthy of a wider circulation than that of a single school of practice.

THE AMERICAN JOURNAL OF INSANITY for October deserves mention for the fullness of its report of the proceedings of the Association of Medical Superintendents; Dr. Bucknell's paper on the Plea of Insanity in the Case of Guiteau is a readable analysis of the evidence given at the trial, and the scientific discussion of the case; and so are the two succeeding papers which are briefly critical of the same subject. The article on "Insanity as a Ground of Divorce" is an important one, condensing, as it does, the views of eminent authority in psychology.

POPULAR SCIENCE MONTHLY, for March, deserves notice on account of several articles which are interesting above the average. One, on "Queer Phases of Animal Life," is well illustrated by views of monkeys and birds and wild dogs, bats and so on. "The value of the climate of Florida to the sick," contains data of a practical nature. The pedigree of wheat, and a few words about eatables, will claim the attention of physiologists.

THE NORTH AMERICAN REVIEW discusses "Money in Elections," "Gladstone," "The Pyramid of Cheops," "Protection," "Taxes," "Educational Needs," etc., in its usual independent style.

HARPER'S NEW MONTHLY MAGAZINE for March gives us glimpses of Holland and Arizona, and also a historical retrospect of the early discoveries on the Canadian frontier by French navigators. A very opportunely and finely illustrated description of Wagner's last opera, Parsifal, is included in the plump Number.

FIFE AND DRUM SERIES, No. 7. "A Jolly Time," a small volume of temperance tales from the pen of Mary Dwinell Chellis, a well-known author in that line of literature. Price, 10 cents. J. N. Stearns, Agent, N. Y.

1883

PREMIUM LIST.

1883

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THE PHRENOLOGICAL JOURNAL AND LIFE ILLUSTRATED.

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ADOLF ERIC NORDENSKJÖLD,

THE DISCOVERER OF THE NORTH-EAST PASSAGE.

WE have no information as to the size and weight of the man whose portrait is before us, but we are impressed that he is above the medium size, and that his head is rather large; there also appears to be balance and harmony between the head and the body; and also between the different parts of the head.

The face indicates strength; there is breadth of cheek-bone, a strong nose, a well-marked and strong chin, and there are a seriousness and a sincerity about the expression of the eye, which tend to give confidence in the man's power and purpose. He looks as if he did his own thinking, and felt competent to reach conclusions that are both useful and safe. There also seems to be no tendency to display; he would fight a battle if he were a military man, and not humiliate those whom he had defeated, by a flush of power. If he had been in Gen. Grant's place at the close of our war, like him, he would have avoided a parade in Richmond.

In that massive forehead, the phrenologist sees across the lower half of it great talent for scientific knowledge and practical talent; in the upper half of the forehead he sees philosophy, originality, power of criticism, ability to calculate consequences, and to plan such work as he has to carry out himself, and make the plan and the execution harmonious. He would have excelled in literature, in art, in natural philosophy, and in languages.

If the reader will observe how the head swells on each side, upward and backward from the outer corner of the eye across the temples, he will see the mathematical, the mechanical, the inventive, and the mental organs which enable a man to make circumstances available; the head is wide as we go back from the temple, showing a tendency to economy executive ability, guardedness of expression, courage, and force of character, presided over by prudence. The height of the head from the opening of the ear it will be observed is quite considerable. showing firmness, integrity, self-reliance, respect for superiority, and kindly sympathy for those who are in trouble, together with that faith which gives courage and strength to work in prospect of future results.

The face indicates strong social power; a tendency to make friends without any great ado, winning people to his side and his cause by sincerity and frankness. He probably has a great many staunch friends, and while he never flatters a man, he treats him justly and kindly and confidingly, and thus enlists him in his own behalf. There are few men who have occupied an influential place, and who have had friends who were more loyal than Prof. Nordenskjöld's friends are to him.

His health, strength, and harmony of body, and the power to sustain a large brain for arduous duty, are marked in his whole constitution. There may be men who are tougher than he, but his vital and locomotive forces are so well harmonized that they co-ordinate and supplement each other, and thus contribute health, strength, endurance, and that blessed self-hood that gives self-command.

THE spirit of adventure has led to a series of expeditions to the Arctic regions during the past ten years, expeditions for the most part furnished at great expense, and conducted with much skill, but resulting in little else than those experiences amid ice-fields and barren land which are fraught with suffering and disaster to the bold explorers. We may read with wonder the story told by survivors of an attempt to solve the mysteries of the polar land or sea, but we can not suppress the practical question, *Cui bono?* For what has so much been risked? What substantial profit has come from the large expenditure of money, time, and life? The voyage of Lieutenant Schwatka, to be sure, put to rest all doubt

with regard to the fate of Sir John Franklin and his company, by the finding of many remains of that expedition of so many years ago, scattered along the inhospitable shores of King William's Land, but that and a few new facts of geographical interest, and the record of heroic endurance, comprise the results of an extraordinary undertaking.

The researches of Prof. Nordenskjöld do not belong to the class of Arctic adventurings which we have just considered, but to the domain of science, as they have been undertaken by one whose birth and early education were Scandinavian, and his professional training in a great degree was conducted with reference to the systematic examination of new lands within the circle of the Midnight Sun.

Adolf Eric Nordenskjöld was born at Helsingfors, Finland, on the 18th of November, 1832. His family is one of much distinction in the educated circles of Finnish people, his ancestors being known for the possession of superior mental capabilities, in which those applicable to the study of nature and to physical research were specially active. His father began life as a lawyer, but relinquished that profession for the study of natural philosophy; and having completed a course in chemistry and mineralogy at Stockholm, under the direction of the eminent Berzelius, and a course in mining at Upsala, he returned to Finland, where he entered the Mining Board, of which he afterward became the chief. In the prosecution of geographical and mining studies he traveled extensively in his own and foreign countries, and added considerably to the general stock of information, not alone by many discoveries of importance in mineralogy, but also by the publication of his conclusions in relation to geological questions. In the course of his active career he accumulated a large cabinet of minerals and curiosities, and it is not surprising that his son, born and growing up amid such influences, should have been impressed with the love of research, and early manifested it.

When thirteen years of age Adolf entered college, and under the training of able tutors the home influences were so fostered in him that at nineteen he passed to the University, where he devoted himself to the study of geology, mineralogy, and chemistry. During the vacations he sometimes accompanied his father on his travels, at one time visiting with him the Ural to examine the mines at Tagalsk belonging to the Demidoff family.

Having provoked the ill-feeling of the then Russian ruler of Finland, by a too liberal expression of his political opinions, it was intimated that a voluntary exile would be convenient for him. In consequence he gave up one or two positions which were of service to him in a pecuniary sense, and left Finland and went to Berlin, where he continued his studies. Returning home, he received his doctor's degree, but again encountered the displeasure of the Russian authorities, and finding that no hopes of promotion could be entertained in such a relation, he went to Sweden in 1858, where he has since resided, and of which country he is now a naturalized subject. In the same year he took part in an expedition to Spitzbergen, where he made several interesting discoveries, and on his return was appointed Professor and Intendant of the Imperial Museum at Stockholm, and in this capacity, in 1861, and again in 1864 and 1868, visited Spitzbergen; his ship, the *Sophia*, in this last visit reaching as far north as 82° 41′ latitude.

In 1870 he visited Greenland, and made himself thoroughly familiar with the exigencies of Arctic exploration. Two years later, at the expense of Mr. Oscar Dickson, who had largely borne the cost of previous expeditions, he once more started for Spitzbergen, with the hope of being able from thence to commence a journey over the ice to the North Pole, but a succession of accidents compelled his return. In 1875 and 1876 he made other visits, but the crowning act of his life so far has been the Vega Expedition of 1878 and 1879, when, in company with Captain Palander, a naval officer of uncommon nautical ability, he was enabled success-

fully to face the trials of two successive years' journeying in Arctic waters, without the loss of one of the crew, and also without illness.

The progress of this remarkable journey—which solved the problem, a far more practical one than that of the North Pole, which had interested the leading navigators and the foremost commercial states for hundreds of years, of a northeast passage to China and Japan, and the circumnavigation of the Old World—has been told with minute detail, and forms one of the most interesting chapters in the history of ocean navigation. On their homeward voyage *via*. the Pacific and Indian Oceans, the Mediterranean Sea, the Atlantic and North Sea, etc., to Stockholm, honors were showered upon Professor Nordenskjöld and Captain Palander, the former of whom is now a member of thirty scientific societies, the holder of the gold medal of the Royal Geographical societies of England and France, and decorated with numerous stars and crosses, the gifts of his own sovereign and of other monarchs.

A writer in *Nature*, in reviewing his work, said: "No one man has done half so much as Baron Nordenskjöld for a scientific exploration of the Arctic regions. The most striking characteristics of his various expeditions have been the small expense at which they were conducted, their modest, but carefully considered equipment, the clear and scientific methods on which they were planned, and the wealth and high value of the results obtained."

Baron Nordenskjöld represented the capital of Sweden in the National Diet from 1869 to 1871, and was instrumental in bringing about some important legislative measures for the promotion of science. He is a genial man, averse to public display, and with a disposition to retirement from notice, which is rare among travelers, especially the adventurous sort who are known to the public today.

PORTRAIT.

Joy came too late, and a calm despair
Drew lines of gray in the silken hair.
Waiting and watching for hours and hours
Faded the bloom of life's fairest flowers;
And softest eyes by their unshed tears
Grew dim and cold with the passing years.

And love, with its pure and passionate glow,
Grew white and still as the fallen snow,
And the heart that had burned with holy fire
Lost all its warmth and its fond desire.

What paled the eyes and faded the bloom
Enwrapped the mind in perpetual gloom.

So the old, old tale in the calm, sweet face,
The soft, cold eyes and the stately grace,
And the hair a mantle of silver sheen
Is told to the passer-by, I ween.
And the women who dream and sigh in vain
May gaze on this picture to still their pain.

MARGARET WINCHESTER.

OUR ANCESTORS.

THERE are few questions more immediately interesting to Englishmen than the question, Who are our ancestors? From what elements and in what proportions are we compounded? May we consider ourselves as all pure Teutons? or are we partly Celts as well? Furthermore, may we even reckon among our immediate ancestry some still earlier and less historical races than either of these? Such questions are full of practical importance to ourselves, and they are also of a sort upon which modern investigations into language and the science of man have cast a strikingly new and unexpected light.

Of course, in considering the origin of Englishmen, we must look at the matter

in no petty provincial spirit. We must include roughly in that general name Welshmen, Scotchmen, and Irishmen as well; and if our friends in the north prefer to speak of Britain rather than of England, I am sure I for my part will have no objection. There are many learned modern historians, with Mr. Freeman at their head, who will tell us that Englishmen are almost pure-blooded Teutons—of the same original stock as the Germans, the Dutch, the Danes, and the Norwegians. But when we come to inquire more fully into their meaning, it turns out that they are speaking only of the native inhabitants of England proper and the Scotch Lowlands, without taking into consideration at all the people of Wales, Ireland, and the Highlands, or the numerous descendants of immigrants from those districts into the south-eastern half of Great Britain. Even in the restricted England itself, these same doughty Teutonic advocates admit that there is a nearly pure Celtic (or pre-Celtic) population in Cornwall, in Cumberland, and in Westmoreland; while the western half of the Lowlands, from Glasgow to the border, is also allowed to be inhabited by a mainly Welsh race. Furthermore, it is pretty generally granted by our stoutest Teutonic champions themselves that the people of Dorset, Somerset, and Devon; of Lancashire, Cheshire, Shropshire, Herefordshire, and Worcestershire, are all largely mingled with Celtic blood. Thus, in the end, it appears that only the native inhabitants of the Lothians and the eastern and southern coast of England are claimed as pure Teutons, even by those who most loudly assert the essentially Teutonic origin of the English people. We may possibly find that this little Teutonic belt or border itself is not without a fair sprinkling of earlier blood.

Perhaps the best way to clear up this question will be to glance briefly at the various races which have inhabited these islands, one after another, and then to inquire how far their descendants still exist in our midst, how large a proportion of our blood they have contributed, and whereabouts their representatives are now mainly to be found. Of course, in such an inquiry we can only arrive at very approximate results, for, in our present advanced stage of intermixture, it is almost impossible for any man to say exactly what are the proportions of various races, even in his own person. Each of us is descended from two parents, four grandparents, eight great-grandparents, and so forth; so that, unless we could hunt up our pedigrees in every direction for ten generations, involving a knowledge of no less than 1,024 different persons at the tenth stage backward, we could not even say how far we ourselves were descended from Irish, Scotch, Welsh, or English ancestors respectively. As a matter of fact, every one of us is now, probably, a very mixed product indeed of Teutonic, Celtic, and still earlier elements, which we can not practically unravel; and, perhaps, all we can really do is to point out that here one kind of blood is predominant, there another, and yonder again a third.

The men of the very earliest race that ever lived in England are probably not in any sense our ancestors. They were those black fellows of the palæolithic or older stone age, whose flint implements and other remains we find buried in the loose earth of the river-drift or under the concreted floors of caves, and who dwelt in Britain while it was yet a part of the mainland, with a cold climate like that of modern Siberia. These people seemed to have lived before and between the recurrent cold cycles of the great glacial period, and they were probably all swept away by the last of those long chilly spells, when almost the whole of England was covered by a vast sheet of glaciers, like Greenland in our own time. Since their days Britain has been submerged beneath several hundred feet of sea, raised again, joined to the continent, and once more finally separated from it by the English Channel and the Straits of Dover. Meanwhile our own original ancestors — the people from whom by

long modification we ourselves are at last descended—were probably living away in the warmer south, and there developing the higher physical and intellectual powers by which they were ultimately enabled to overrun the whole northern part of the Old World. Accordingly, interesting as these older stone-age savages undoubtedly are — low-browed, fierce-jawed, crouching creatures, inferior even to the existing Australians or Andaman Islanders—they have yet no proper place in a pedigree of the modern English people. They were the aboriginal inhabitants of Britain; but their blood is probably quite unrepresented among the Englishmen of the present day.

Long after these black fellows, however, and long after the glaciers of the ice age had cleared off the face of the country, a second race occupied Britain, some of whose descendants almost undoubtedly exist in our midst at the present day. These were the neolithic or later stone-age men, who have been identified, with great probability, as a branch of the same isolated Basque or Euskarian race which now lives among the valleys of the Western Pyrenees and the Asturias Mountains. They seem to have crossed over into Britain while it was still connected with the Continent by a broad isthmus, or perhaps even by a long stretch of land occupying the entire beds of the Channel and the German Ocean. Our knowledge of them is mainly derived from their tombs or barrows — great heaps of earth which they piled up above the bodies of their dead chieftains. From these have been taken their skeletons, their weapons, their domestic utensils,and their ornaments—all the latter objects having been buried with the corpse for the use of the ghost in the other world. From an examination of these remains we are able largely to reconstruct the life of the Euskarian people—the earliest inhabitants of Britain whose blood is still largely represented in the existing population.

In stature the neolithic men were short and thick-set, not often exceeding five feet four inches. In complexion they were probably white, but swarthy, like the darkest Italians and Spaniards or even the Moors. Their skulls were very long and narrow, and they form the best distinguishing mark of the race, as well as the best of its survival at the present day. The neoliths were unacquainted with the use of metal, but they employed weapons and implements of stone—not rudely chipped like those of the older stone-age, but carefully ground and polished. They made pottery too, and wove cloth; they domesticated pigs and cattle; and they cultivated coarse cereals in the little plots which they cleared out of the forests with their stone hatchets or tomahawks. In general culture they were about at the same level as the more advanced Polynesian tribes when they first came into contact with European civilization. The barrows which they raised over their dead chieftains were long and rather narrow, not round like those of the later Celtic conquerors. They appear to have lived for the most part in little stockaded villages, each occupying a small clearing in the river valleys, and ruled over by a single chief; and the barrows usually cap the summit of the boundary hills which overlook the little dales. Inside them are long chambered galleries of large rough-hewn stones, and when these primitive erections are laid bare by the decay or removal of the barrow, they form the so-called "Druidical monuments" of old-fashioned antiquaries, a few of which are Celtic, but the greater part Euskarian.

For the moment it will suffice to point out that before the arrival of the Celts and other Aryan tribes in Britain, these Euskarians spread over the whole of our islands, and were apparently the only people then inhabiting them. At least the monuments of this date—perhaps from 5,000 to 20,000 years old—seem to be similar in type wherever they occur in Britain, and to contain the remains of an essentially identical race. I shall also add here, by anticipation, what I hope to

show more in detail hereafter, that their descendants exist almost unmixed at the present day as the so-called Black Celts in certain parts of Western Ireland and Scotland, and in a few places in South Wales; while their blood may be still traced in a more mixed condition in Yorkshire, Lincolnshire, East Anglia, the Scotch Highlands, and many other districts of England and Scotland. How they have managed to survive and to outlive the various later Celtic and Teutonic conquests we shall have to inquire when we come to consider the origin and progress of those subsequent waves of population.—GRANT ALLEN in *Knowledge*.

VEGETABLE LIFE—GRASSES.

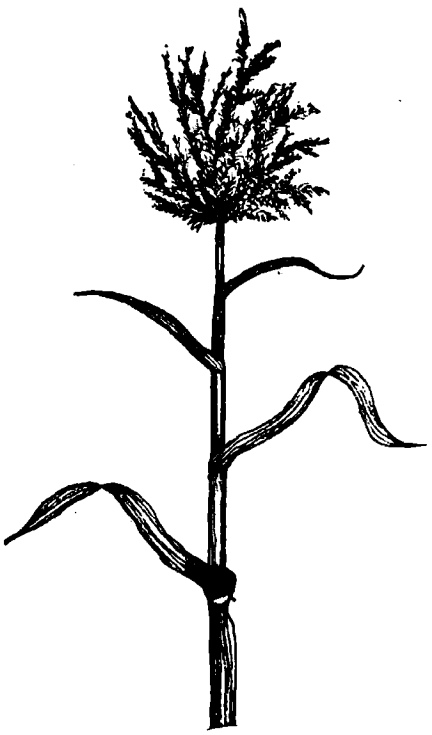
THERE is nothing like a vital principle existing in the mineral or fossil kingdom. The mystery of life pervades the entire vegetable and animal tribes, being present in the simple cell of the lowest organism. Every form of vegetable life derives its nourishment from inorganic matter—that is, from substances—either fluid or gaseous, in which, under no condition, has the principle of life ever existed.

The mystery of vitality is something beyond mere physical organization. We may plant the seed and watch the wonders of germination; we may trace the developing beauties of the flower through its brief summer day, until only the dry stalks and brown ripened seeds remain again, but all those glowing phenomena were only the results of a more wonderful unseen process—the *vitality*, divinely given, and without which all human care would be vain.

Life, whether animal or vegetable, is a source of unceasing activity, and the vital essence of the plant is never at rest any more than are the throbbing pulses of our own highly-wrought organisms.

We have before briefly alluded to the fluid secretions which pervade all vegetation, and which are peculiarly abundant in the new growth, and about the spongioles of the roots, and the pores of the fresh, growing leaves—in fact that portion of the plant which assimilates the food and produces the growth. To this living substance, Dr. Muhl, its discoverer, has given the general name of *Protoplasm*.

Though not yet thoroughly understood in all its processes and changes, yet among its constituents and products are all the chemical elements and compounds found in the plant, and endless changes are there constantly going on. This protoplasm, or life activity, never ceases, and



SACCHARUM—SUGAR-CANE.

is even more plainly discernible in the lower organisms than when inclosed in the walls of cells, which are themselves results of protoplasmic action.

Allusion has been made to the yellow dust—pollen—existing in the anthers of the stamens. In the pollen grains is supposed to exist the initial form of vegeta-

ble life, or protoplasm. Pollen grains vary in form, but preserve their identity in the same family of plants, and their mechanism and action is, perhaps, the greatest wonder of the plant.

Each pollen atom is perfect in itself, and consists of a tiny membranous sac filled with a fluid, in which exist minute molecules in ceaseless motion, which are, as far as has yet been discovered, the first principle of life. When the pollen is mature, it is detached from the protecting anther, and the greater part of it is blown away. A few grains falling upon the stigma burst their coverings and are conveyed by the tissues of the style to the germ, and there develop new protoplasmic cells, and assume another form as the vital embryo in the seed. This vitality, under favorable circumstances, is truly wonderful. Lindley raised some raspberry plants from seeds taken from the stomach of a human skeleton which was found thirty feet below the surface of the ground, and which was apparently of great antiquity.

DHOURA—EGYPTIAN MAIZE.

The seeds of some plants retain their vitality longer than their powers of reproduction. The balsam *Impatiens* is an example. The seeds, when several years old, produce a much larger proportion of double flowers—non-seed bearing—than when new, and are, therefore, more highly prized for the garden than fresh seeds, which produce only single flowers, but vital seed, by which alone the plant is perpetuated.

Flowers, fruits, and grains had their respective presiding divinities in the ancient heathen world, and Ceres, the goddess of harvests, was represented with clusters of grain and poppies in her hands.

Of the vegetable families which deserve more than a passing notice, the *Graminæ*—Grasses—are the most abundant and important. They provide the *staple* of food, both for men and animals. Of the four thousand known species, none are essentially poisonous, one or two varieties only being suspicious. The family possesses characteristics which enable it to be distinguished at a glance, though the differences in many species are very slight. Climate, soil, and location often effect these changes, while certain traits pervade the entire order. Grasses have hollow, jointed stems—*culms*—and linear leaves; the roots are fibrous, and the seeds one-lobed—*monocotyledonous*. The flowers are inconspicuous and possess but little coloring, and the floral organs are inclosed in imbricated bracts called *glumes*, or the husk of the grain. There is generally neither calyx nor corolla. The nutritious qualities reside both in the stalks and foliage, as well as in the grains—the two former as food for animals, and the last for animals and man.

Bounded by neither zone nor altitude, wherever a summit has uplifted itself from the ocean, the grasses have clasped their arms about it. They develop into trees in the tropics, they spread their soft tapestry about the temperate zones, and cling in tufts and clumps to the thin soil in the colder wastes. In the Falkland Islands, auks, penguins, and sea-lions find

shelter in the long overarching leaves of the tussack grass.

The vital tissues of the Graminæ are in

PAPYRUS ORIENTALIS.

the *center* of the stalk, pushing the growth outward; hence they rank among the *Endogens* or *inside-growers*. The various grains—cereals—live but one or two years, dying after the seed is perfected, while many of the grasses exist for an unknown period.

The different grains have been found in the cultivated portions of the earth ever since man has lived by the "sweat of his brow," nor can any particular country be named as the home of their nativity, though probably after the flood many of the fruits and grains were derived from Southwestern Asia. Wheat grains have been found in the ruins of the lake dwellers of Switzerland, and also in the mummy cases of the Pharaohs. Cultivation has developed many varieties of this grain with varying degrees of hardihood.

The Norwegian peasant sows barley where the frost remains in the ground at the depth of three feet during the year, and in favorable seasons the grain ripens in the midst of lichens and reindeer moss.

Maize, or Indian corn, is indigenous to the western world. This grain was held in great esteem by the aborigines, and was particularly revered by the Mexicans. The old chroniclers told wonderful tales of the artificial gardens of Montezuma adorned with Maize, bearing leaves of wrought silver and awns and anthers of gold.

The oat—Avena—was found wild on the island of Juan Fernandez, and is now cultivated on both continents as one of the common grains. Rice is the most valuable of the grain-bearing grasses, furnishing, as it does, food for more than one-sixth of the entire inhabitants of the world. The most densely populated districts in Asia are supported entirely, or very nearly so, on the products of the rice-fields, and famine follows a failure of the rice crop. The cultivation of this grain is very laborious, the plants requiring to be pruned and several times transplanted in Oriental culture.

Some of the rarest perfumes of olden times were obtained from the Graminæ. These almost priceless grasses were found on the desert plains of Central Asia, where they still exist, growing in tufts amid the desert sands. The holy anointing oil of the Jewish sanctuary owed its wonderful

BAMBUSA—BAMBOO.

fragrance to these rasses of th Asiatic wastes. Ancient classic writers as well as the sacred penmen often mention

these fragrant plants. The sweet-scented vernal grass—Anthoxanthum—fills the air of New England with its delightful odor during the hay-making season.

Sugar-cane, the products of which are so essential to a race delighting in sweets, is a graminaceous plant, claimed by both continents, and its use antedates history, though sugar. as an article of food, has been in use in Europe but a comparatively short period. This is one of the long-lived grasses, well-kept plantations existing more than half a century.

The Dhoura, or Egyptian maize, produces a coarse grain much used by the lower classes in the Orient. This plant is the source of one of the chief grain products of Egypt, being next to wheat in importance. It fed the numberless toilers on the banks of the Nile territories before the Christian era, and the mode of its culture there is the same now as then, as is shown by the prehistoric sculptures yet remaining in that land so full of memorials of an unknown past. In some portions of Asia this plant yields three harvests in the course of the year. The cereals have been the principal food of Egypt through the historic ages.

While the alimentary properties of grasses and their products have furnished support to so great a proportion of animal life on the earth, yet one species, valueless for food, and of no special importance at the present day, for a long period of the world's history outranked all others in importance—the Papyrus Orientalis of the Nile.

Allusion has been made to the manufacture and uses of this plant in a former paper. In this place it ranks in its own distinctive family, the Graminæ, and, as such, can not be overlooked. This coarse but not ungraceful sedge grows from four to ten feet in height, with culms perhaps an inch in diameter, from the tissues of which the writing rolls of antiquity were wrought. The monumental structures and carvings on the banks of the Nile have been hardly more enduring than the records written on the papyri. They penetrate far into prehistoric times, being found in the catacombs of the Pharaohs.

The Saracenic invasion ruined the manufacture and sale of papyrus sheets, and since that period it has been lost sight of in modern inventions, and the once renowned reed has become a neglected and comparatively useless weed of the stagnant waters of the East.

We close our sketch with the *bamboo*—Bambusa—which is one of the most useful and beautiful of the tropical aborescent grasses. This grass affords to the sea-islander nearly all he needs for shelter, clothing, and weapons. He builds his huts and boats of its larger stalks, and weaves mats, nets, and cordage of its fibers. The slender branchlets form his weapons—bows, arrows, and lances.

Among the more civilized Chinese and Japanese, besides furnishing material for houses and fences, bamboo is manufactured into furniture and many useful implements, which often find their way to more enlightened lands.

Sir James Smith calls the bamboo the "Giant of the Grasses." Its culms often attain to the height of a hundred feet in a single season, and with their graceful, drooping branches, or laterals, from which depend slender willowy leaves, they form one of the loveliest and most distinguishing objects of a tropic landscape.

ANNIE E. COLE.

HOW THEY TALKED.

MY RECOLLECTIONS OF PROMINENT AMERICANS.

AS I sit in my library and recall the friends of other days, I think, though so many are lost to me—dear, beautiful ones, who, weary with the toil of life, turned their face to the wall, and left me to mourn for them—I am less sad and lonely than most of those who survive.

My memory is a perpetual source of enjoyment, for it unfailingly preserves all that is wholesome to be remembered. and

although it is tenacious of all impressions, it has a divine faculty of winnowing the wheat from the chaff. I scarcely ever forget anything. I can recall the very words and looks of persons, and even their dress, the hour and place where a conversation occurred, as freshly and as vividly as though not a day had intervened.

Some of these friends were silent, observant, others full of a fine glow and enthusiasm. W. C. Bryant was one of the most reserved of men, but his fine eye would kindle under a happy turn of thought, and his ideas would then flow into words as aptly chosen as the language of his written poetry. I do not think he affected the conversation of women, and I have often had them wonder how I could find anything by which to sustain a colloquy with him. He never paid a direct compliment to a woman, but talked right on, just as he would talk with a man of ideas. He thus paid her understanding the best tribute. Mr. Bryant was thoroughly the gentleman in manner, listened well, was very quiet; no twisting or wriggling, which we so often see in writers of some pretension, and which is so very offensive to a person of culture. He was refined to fastidiousness; somewhat cold, rather intolerant, exact in morals, constant in friendship, and altogether a man to live long and be respectfully talked about to the last. His poetry will live, being artistic; and if not belonging to the high impassioned range, is altogether his own.

C. F. Hoffman conversed fluently and well. Though conservative in the highest sense, he had a keen admiration for a progressive idea well expressed. He recited admirably, reproducing the author's conception with the imparted interest of a finely modulated voice, and often with a penetration that carried the thought onward beyond what was apparent in the author's experience. He was animated, gay, courteous, with an electric play of fancy, pathos, tenderness, and enthusiasm. His own mind lent a grace to the thought of his colloquist, who was apt to feel that nothing was easier than to converse with famous people, till he tried it with somebody of less genius, when he learned the difference between the electric spark of the inspired man, and the dog-trot commonplace of mere talent. I remember Margaret Fuller would often look worn, weary, and revolted at the commonplace twaddle of society, and the only time I ever saw her look positively handsome was in conversation with Mr. Hoffman. Her pedantry amused him, and he knocked her theories right and left with a thorough appreciation of her intellect, and at the same time with a good-natured audacity,

N. P. Willis.

a gallant courtesy, and fine discrimination, which made his irony pleasing, and brought to the surface that humanizing love of admiration which disarmed the most ultra of women, and made her as placable as "a sucking dove."

John Neal was an excellent converser; indeed he cared very little for the opinions or predilections of those about him, but poured onward like an avalanche, indifferent to what might be bruised or uprooted in its pathway. He was terribly in earnest. The only person who reminds me of Neal is George Francis Train, both being overwhelmed with a superabundance of ideas, which they poured out, whether apt, or otherwise, to the occasion. Both were poetic, but Neal was a poet, and Train essentially prosaic; he rhymed,

but that does not constitute poetry. Both were favorites with women, for the reason that both were like women, intuitive; and though both imagined themselves to be essentially masculine, and both *were* manly, yet they never came in contact with a large-hearted woman, who did not feel a

EDGAR A. POE.

maternal instinct to protect them, while small women were afraid of them. Indeed a full woman always becomes a protector to the full man, as well as to the weak of both sexes.

Rufus W. Griswold, the compiler of American Literature, was a pleasant, gossipy man in conversation, full of whim and absurdity, as tricky as a pretty woman; never seeming in earnest, yet at heart very much so, and of fixed and tenacious opinions. If one wished to know how earnest he could be, he had only to name James Fenimore Cooper and Napoleon Buonaparte, when he would become really eloquent. Time will prove that the first is as well worth talking about as the latter, and when we shall have a generation of largely organized men and women, Cooper will grow into higher favor.

Willis was conventional, full of fancy and compliment, but not in the large sense suggestive. He belonged essentially to the artificial and luxurious. He lacked depth and comprehensiveness; took always the best he found floating on the surface of society; what was most tasteful and most artistic. I used to think he might have made more of his genius, but subsequently became convinced that it was neither large nor exacting, and that he achieved all he was capable of doing. Mr. Willis had the foolish vanity of a man of the world, who was willing to be thought a much worse or a more killing man than he really was, where women were concerned. It is to be hoped that the more enlightened views growing upon the minds of the sex will eventually disabuse the minds of men of many of these weak, ridiculous notions which were a part of the training which Mr. Willis in his youth received from such sybarites as Lady Blessington and Count D'Orsay.

Edgar A. Poe was ordinarily a reserved man, stately and self-involved, full also of a quaint suggestiveness. Always, everywhere, he seemed a person who could not be placed where he ought to be; so much so, that when his "Raven" appeared, I felt that he was there—there in that weird, solitary atmosphere. With women he was more at home; not that there was anything weak or unmanly in his appearance, but I think he had confidence in women, and trusted his best utterances to them. All poets have more or less of this feeling, but it was pre-eminent in Mr. Poe. Perhaps they all feel a mother-want. Good Mrs. Clem supplied much of this to him.

Mr. Poe, now so many years in his grave, is having a literary resurrection. It galled him to be misconstrued by the conceited clique of Boston, and the coldness of Longfellow, Emerson, and others was too much felt by him. That two men like Emerson and Longfellow, whose theories of life were in accepted channels, and not altogether original, rich men also, surrounded by cliques, should turn upon this child of imagination a cold aspect is more to be regretted than wondered at. Poe never was, for any length of time, free from pecuniary anxiety, while these men, having married rich women, never suffered from this cause. Knowing how super-

ciliously the Boston cliquers treated him, I never so much wondered at his hostility. Poe accused Longfellow of plagiarizing from me, which brought me a letter from Longfellow to explain what is unexplainable.

Orestes A. Brownson was Johnsonian. He liked a monologue better than colloquy; was humorous, philosophic, dictatorial. In talking with me he was very apt to slide into "Sir," instead of "Madam," which was not displeasing to me. His reading was simply enormous; he never forgot anything, and would surprise a listener by illustration and quotation from some out-of-the-way author, just to show that there was nothing new under the sun, and that those who plumed themselves upon saying a new or original thing, were, in reality, repeating in a poorer way what some finely-cultured mind had reached centuries before. Dogmatic as he naturally was, his humility and childlike docility in all matters pertaining to his religious belief were truly touching.

Extremes are apt to approximate. George Ripley, the apostle of Brookfarm, out of which experience Hawthorne constructed his romance of "Blithedale," a Massachusetts scholar, and very proud of his native State; and William Gilmore Simms, a South Carolina scholar, and he also proud of his native State, were very similar in the style, though greatly differing in the subject matter of their conversation. They were finished, concise, elegant. They talked in paragraphs, so well worded that every syllable might be put into a book, and it would read well there.

Mr. Ripley had no superior in the country as a critic, and the *Tribune* owes much more to his taste, judgment, and learning than is generally known to the public. His conversation was genial, full of a subtile, refined insight rarely rising to enthusiasm, and yet in character Mr. Ripley was an enthusiast of a high order; a poet in heart and expression, without the incumbrance of the art. His prose has the finish of Irving, and a great deal more of breadth and penetration. He was fond of the society of superior women, as all superior men are; and he fully sympathized with the highest aspirations of the sex.

Wm. Gilmore Simms.

These men were entirely devoid of any pretentiousness; they talked from the love of companionship and not from a love of display. They were gentlemen—truly such, in birth and culture; and where one has enjoyed the society of such men and such women, who for many years met every week and sometimes oftener, they can easily forego the vapidness of modern fashionable intercourse.

Many of the leading politicians were men not only of ideas, but of peculiar tact and appositiveness in expressing them;

indeed the training which these men undergo in the ranks of party, and by the necessities of public speaking, is nearly equal to the close logical training of the student of the law, to which must be superadded a peculiar fluency of manner, a quick repartee, and a familiarity with those tones and feelings most likely to influence human emotions.

WENDELL PHILLIPS.

Wendell Phillips is a refined and ready converser, whose ideas, in spite of the limitations of the one subject to which he devotes himself, circle largely and embrace all topics familiar to the scholar and the man of letters. His voice is singularly persuasive, and with a manner always earnest, he has the eloquence and taste of a Greek. Certainly he is no charlatan, but is entirely convinced of the justice of the opinions he holds and publicly advocates.

Thurlow Weed, so aptly called the Warwick of party, was one of the most agreeable talkers one can well meet. He traveled much, was a close observer of men and events, and his judgment rarely at fault in anticipating results; indeed, so remarkable was he in this respect that he illustrates the opinion that a cool, observant mind, an intellect unswerved by the imagination, is very nearly akin in its conclusions to the character of a prophet; what the one foresees by a divine intuition, the other also foresees by the deductions of reason.

Mr. Weed had seen and been in correspondence with most of the distinguished men of the age; had talked familiarly with crowned heads, shared in the diplomacy of courts, been intimate with dignitaries of the church, familiar with politicians at home and abroad, and acquainted with the literati of his own country and Europe. He read much, was a profound student of Shakespeare, and probably Charles Dickens had nowhere a more devoted admirer of his writings than in Thurlow Weed.

Mr. Weed's letters from abroad are models of a pure epistolary style, graphic, concise, always to the point. He had talent at such a white heat that it was equivalent to genius, and being talent it was far more available to him than the faculties of a man of genius are apt to be to the possessor of them. He was a good

listener as well as talker, always allowing his colloquist a fair chance to speak, and yet nobody was better able to cut off a bore, or to silence the insolent. He was also a splendid hater, and knew how to strike down an enemy with a telling blow.

In social life he was pre-eminently genial, considerate for others, kind to the destitute, forbearing to the erring. His deeds of benevolence were many, and some of them truly romantic, and thus this man, once the pride and the terror of party, was a most kindly and agreeable man in the home circle, abounding in anecdote, and courteous and obliging.

ELIZABETH OAKES SMITH.

KEEP THE WHEEL TURNING.

If ye want to get on in this big warl' o' oors,
Ye maun tread ower the nettles as weel as the floors.
Be sober an' honest, nae secrets reveal,
Hae patience—ye'll prosper by turning the wheel.

I mind my auld grannie aft telt me when young
To mind what I said—aye to guard weel my tongue.
I thocht on her words as she filled up her reel;
She lived an' was honest through turning the wheel.

There's naething like aye keeping on the alert;
We kenna how soon a chance micht come oor airt
To better oorselves, ay, and help us to speel
The steep hill o' life—ca' awa' at the wheel.

When ye've a few pounds in yer pooch, ye can say—
"Come weel or come woe, I can manage my way;"
'Tis the great po'er o' wealth that can build a heich bell—
Sae, if ye'd obtain it, keep turning the wheel.

TOM M'LAGHLAN.

INTELLECTUAL AND MORAL CULTURE.

THE history of man shows the failure of teachers in religion and morals to make men truthful and honest. This truth holds good in nations where the Bible is taken for a standard of right and wrong, as well as in those countries where the people bow at the feet of Mahomet or worship at the shrine of Buddha, or an imaginary deity. Even in Puritan New England, where the school-house and the church stand side by side, and the young have the advantages of excellent intellectual culture and the religious training, according to the Episcopal and other creeds of different Christian denominations, vice and sensuality abound; and men in high stations, both in Church and State, violate the laws of the land, and in prisons, and sometimes upon the gallows, suffer the penalty of their crimes. There is a cause for this state of morals; and we affirm that it is the result of error on the part of intellectual, moral, and religious teachers in educating and training the youthful mind.

It is affirmed by those who have the education of the race under their supervision, that the youthful minds should be educated at home by parents. This is true, but how can the young be educated at home when the parents are ignorant, and have no intellectual and moral culture? Or in countries where the public school reaches all, how are the children to be taught morality at home when both parents are violators of all the commands of the Decalogue? Furthermore, how can any instructor, private or public, teach the young the principles of honesty without a knowledge of the innate faculties of the mind to be educated? Educate the intellect and neglect conscience, and a people, like the inhabitants of New England, having learned men, great in science, theology, and law, but in numerous cases deficient in the eternal principle of

justice, is found to be the result. This is proved by the many instances of fraud by bank cashiers and persons holding positions of trust in wealthy corporations. And these defaulters, in most instances, have been educated in our public schools, and many of them have had the advantages of religious instruction in our churches by distinguished doctors of divinity. The cause of this state of things has been the wonder of the teachers of religion of the Puritan school in New England for more than two hundred years.

To the mind of a believer in phrenological truth, the cause of the prevalence of vice and crime in Christendom becomes perfectly obvious. He sees that the intellect has been cultivated while the moral powers have been left to the guidance of mere reason. Moral science has been taught in our institutions of learning, on the false principle that justice among men is the result of intellectual culture. And the expounders of the Gospel of Christ have held, generally, that morality alone is not sufficient to entitle a person to admission to the heavenly mansion; thus undervalued morality. To erroneous interpretations of Scripture and heathenish theories of mental philosophy may be ascribed the failure in great part of our public instruction to render men "a law unto themselves."

Until the discovery of Phrenology by Dr. Gall, educators had no guide to direct them in the safe road that leads the young to the temple of virtue. They were blind guides, not having the light of science to show them that conscience is an innate sentiment of the mind, and needs something more than a command to make men abstain from committing evil.

When conscience shall be recognized as a faculty of the soul to be cultivated, as has recently been denied by a distinguished educator of Massachusetts, and proper means are used to train this feeling, as we would train courage, love, fear, hope, or kindness, we may then expect the oft-disputed statement of Solomon to show itself to be true, viz.: "*Train* up a child in the way he should go, and when he is old he will not depart from it." Our schools *instruct* the intellect, and stop; they do not *train* the moral feelings. The difference between instruction and training is great. We train horses, dogs, and oxen, and they obey us. We instruct children in intellectual matters, but we fail to train them in morals, at least in the public schools. We submit, that nearly all the *training* pupils get in school is addressed to fear, ambition, or shame, through the system of "*marks*." When does a teacher appeal to conscience, the law-keeper of the human mind? When is a pupil trained to do right because it *is* right? We remember how, sixty years ago, the restless or playful child was put to shame by being seated in the middle of the room on the "dunce block," and made to wear the "fool's cap," and the whole school was permitted to laugh the delinquent to scorn. This was simply mortifying the love of Approbation through shame, while the industrious and orderly were recompensed by praise "marks," through the same faculty, Approbativeness. Sometimes Cautiousness was painfully appealed to by the whip, but conscience rarely, if ever. Hence the cunning of the child was aroused to avoid detection and consequent punishment by any trick he could invent, or any falsehood he might utter. Intellectual culture, therefore, separate from the faculty of conscience, simply qualifies men to commit crime all the more successfully. Hence we find adept thieves, bank robbers, wholesale swindlers, and the worst of libertines among men of high intellectual culture.

We come now to a remedy for the evils that afflict society from immoral practices. And it can be found by giving proper instruction to the young in a moral point of view. And this must be done in our public schools. Immoral parents will not teach their children morals, either by precept or example; and they can have but little practical instruction in goodness at the average Sabbath-school, which is open for an hour only in a week. Education in Massachusetts is compulsory —that is, all children between the ages

of five and fifteen are obliged to attend school twenty weeks in a year. Here, then, is the place to give moral instruction to the young. And it must be done by direct instruction in the moral duties through Conscientiousness, just as they are taught to cast interest by the exercise of the organ of Number, or Calculation. Text-books are needed to aid in giving this instruction; and a step in the right direction has been taken by the Woman's Christian Temperance Union in placing "The Temperance Lesson Book," which shows the bad effects of intoxicants on the body and mind, in the public schools.

We believe in moral progress, and predict the fulfillment of a day of millennial glory as the Bible teaches; and this long-expected time will be hastened by the aid of phrenological truth. Religion and science must be united; human enactments must be in accordance with the law of God, which is Truth, and then war and crime will cease among men. This day of millennial glory lies in the distant future; but the phrenologist can see its dawn, by the carrying out of the principles of this heaven-born science, with the proper training of conscience in accordance with the commands of the Decalogue. It will cause a nation of just men to be raised up who will need no civil enactments to make them yield obedience to the law of God. P. L. BUELL.

REAL MANHOOD.—Human life is full of all manner of goodness. The shell of selfishness which the struggle for existence brings to the surface, appears to the superficial observer as the real man. Man is not like the peach with its luscious exterior and its bitter pit within, but, rather, if we read him rightly, like the walnut whose shell conceals a wealth of interior goodness.

I have met but one man in whom I could find nothing but evil. Many a man is made sharp on the grindstone of poverty, and the world accounts him an aggressor; but at home, for the sake of which he struggles with the selfishness of the world, he is cherished as *lover*, *friend*, and *protector*. The world judges by the shell—the family by the nut within. S.

TO A DEPARTED FRIEND.

I know thou art gone to the house of thy rest,
  Then why should my soul be so sad?
I know thou art gone where the weary are blest
  And the mourner looks up and is glad.
Where Love hath put off in the land of its birth,
  All the stain it hath gathered in this;
And Hope, the sweet singer that gladdened the earth,
  Lies asleep on the bosom of bliss.

I know thou art gone where thy forehead is starred
  With the beauty that dwelt in thy soul;
Where the light of thy loveliness can not be marred,
  Nor thy heart be flung back from its goal.
I know thou hast drank of the Lethe that flows
  Through a land where they do not forget;
That sheds over Memory only repose
  And takes from it only regret.

In thy far-away home, wherever it be,
  I believe thou hast visions of mine;
And the love that made all things a music to me
  I have not yet learned to resign.

In the hush of the night, and the waste of the sea,
  Or alone with the breeze of the hill,
I have ever a presence that whispers of thee,
  And my spirit lies down and is still.

Mine eye must be dark that so long has been dim
  Ere again it may gaze upon thine,
But my soul has revealings of thine and of thee
  In many a token and sign.
I never look up with a vow to the sky,
  But a light like thy beauty is there;
And I hear a low murmur like thine in reply,
  When I breathe out my spirit in prayer.

And though like a mourner that sits by a tomb,
  I am wrapped in a mantle of care;
Yet the grief of my bosom (oh, call it not gloom!)
  Is not the black grief of despair.
By sorrow revealed as the stars are by night,
  Far off a bright vision appears;
And Hope like the rainbow, a being of light,
  Is born like the rainbow in tears. ANON.

LANGUAGE, No. 3.

THE DISCOVERY OF LETTERS (CONTINUED).

Great was the genius who first designed
How letters should express the mind.
ANONYMOUS.

WHEN, or by whom, letters were discovered, we have at present no exact means of knowing. The art of writing itself is of so great antiquity, and the written annals of ancient nations so imperfect, that it is found to be extremely difficult to decide to what nation or people even, the honor of the discovery really belongs. For, as Sir Isaac Newton very justly observes: "There is the utmost uncertainty in the chronology of ancient kingdoms, arising from the vanity of each in claiming for itself the greatest antiquity, while these pretensions are favored by their having no exact account of it."

The Hebrew Scriptures are by many centuries the most ancient writings now extant, and of these, the book of Job is thought to be the first that was written. But the first mention of writing made in Scripture will be found in Exodus, 17th chapter and 14th verse: "And the Lord said unto Moses, Write this for a memorial in a book, and rehearse it in the ears of Joshua, for I will utterly put out the remembrance of Amalek from under heaven." This was immediately after the defeat of the Amalekites by the Israelites near Horeb, and before the arrival of the latter at Mount Sinai. It is observable that there is here not the least hint which might induce us to believe that there never had been any writing done in the world before then, or that writing was now heard of for the first time. On the contrary we may conclude that Moses knew very well what was meant by "writing in a book"; for he certainly would not have been commanded so to write had he been ignorant of the art of writing.

The foregoing, as well as what has been said in our last paper, fully establishes the great antiquity of the art. How the art originated has already been explained. With what nation or people it originated we shall probably be able to discover in the course of this investigation; but to what individual of that nation or people, if to a single individual—which we are inclined to doubt—the credit of the discovery is due, we can only conjecture.

Some ancient profane authors of respectability attribute the discovery of letters to the gods or to some divine man. This was the usual method among the ancients; for Plato says: "Whenever they could not unravel a difficulty, they brought down a god, as in a machine, to cut the knot." The learned Bishop of Gloucester, however, remarks that they gave nothing to the gods, of the origin of which they had any records. That is, if it were possible to account for anything in a natural way, they so accounted for it; but if that could not be done, or if the memorial of the invention or thing, whatever it might be, had been lost, then the honor was ascribed to the gods. The gods then seized upon the property by that kind of right which gives estrays to the lord of the manor. Some writers, too, of modern times think that letters could not have been the invention of man, but that they must have been the gift of God. Thus, the Rev. Thomas Scott, D.D., author of a commentary on the Bible, in the preface to his work expresses the opinion that the art of writing was communicated by divine revelation to Moses in order to perpetuate with certainty those facts, decrees, and laws which he was deputed to deliver to Israel.

Tradition has ascribed the discovery of letters to Cadmus the Phœnician; but the account of the transaction contains so much that is purely mythical, that the whole story is now generally regarded as a fable. The tradition is discredited by the best informed writers on the subject.

But though the claims of Cadmus individually can not be allowed, it is still generally supposed that alphabetic writing originated with his countrymen.

> Phœnicians first, if ancient fame be true,
> The sacred mystery of letters knew;
> They first, by sound, in various lines designed,
> Expres't the meaning of the thinking mind;
> The power of words by figures rude conveyed,
> And science everlasting made.
> —*Rowe's "Lucan," B. iii., L.* 334.

Some Roman authors attribute the discovery to the Phœnicians, among whom are Eusebius and Pliny, the latter of whom says: "These Phœnicians were much celebrated for the invention of letters, astronomy, navigation, and the liberal arts." From this we learn that other arts and sciences were attributed to them, as was also great skill in architecture and manufactures. Their fine linen and glass were said to be superior to those of any other nation. In fact the discovery of glass has always been attributed to them. And whatever was great, elegant, or pleasing, whether in building, apparel, or in coloring, it was customary to distinguish by the epithet "Tyrian" or "Sidonian," these being the chief cities of Phœnicia. "Tyrian purple" is a household word even to this day, although its manufacture ceased to exist centuries ago, and the secret of it has long been lost.

The Phœnician too was the commercial man of the olden time: he was the first to go down to the sea in ships. Now a people who were architects and manufacturers must, as a matter of course, have understood mechanics; and a people who understood and pursued navigation, could not fail to be acquainted with geography and astronomy; and a merchant could not be ignorant of arithmetic, and above all of writing, which is essential to all the rest. So upon the whole, the Phœnicians seem to have more to sustain their claims to the honor of the discovery of letters than any other people; not only in their greater advancement in the arts and sciences, but in a higher degree of civilization generally.

Among those who have disputed the claims of the Phœnicians to the honor of having discovered letters, the Egyptians seem to have done so with better prospects of success than any others. Their title to this distinction, however, seems to be based rather upon the more remote antiquity which they claim for themselves than upon any greater degree of civilization. Yet the Egyptians might possibly have had something to do with the discovery. An alphabet of syllables at least might have existed, perhaps did exist in Egypt prior to the discovery of an alphabet of letters. The first character in the alphabetic scheme, as we have seen, had its origin there; but whether it was ever employed by the Egyptians as such is more than we are now able to determine. Whatever claims of this kind they may have, and they are considerable, still it is in Phœnicia that we first meet, with any degree of certainty, with a regular alphabet.

As has been previously remarked, the most ancient written language in the world is the Hebrew, of which the Phœnician, Samaritan, and Chaldee are allowed to be dialects. These are called by Dr. Webster the Semitic languages; as they were the languages and dialects used by the descendants of Shem, the progenitor of the Israelites. Although the Phœnician alphabet does not entirely correspond with the Samaritan, there is great similarity between them. The first five books of the Old Testament, commonly called the Pentateuch, are supposed to have been written originally in the Samaritan character, or in one very similar to that. They have come down to us, however, in the Chaldee, a character which is said to have originated with Ezra the scribe when he wrote out a new copy of the law after the rebuilding of the temple.

Every character in the Hebrew alphabet, besides its function as a representative of a given sound, has a meaning; two meanings in fact, a literal meaning and a symbolical meaning. A, or its equivalent, called *Aleph* in Hebrew, of which the history has already been given,

has a literal meaning in that tongue very similar to that given to it by the Egyptians; in the one case an ox, and in the other, Apis, the bull. Its symbolical meaning is precisely the same in both instances, namely, a leader. This proves its identity, and it also goes to show that this character did duty previously in an alphabet of syllables, and most likely too before that in an alphabet of words. The letters of the Hebrew alphabet stand also for numbers, as do the Roman characters, as may be seen in the 119th Psalm.

The most that the advocates of the Cadmean theory claim for their protégé is the invention of sixteen letters, about two-thirds of the whole number composing the different alphabets. These are equivalent to the following letters of the Roman alphabet, the one which we use: A, B, D, E, F, G, I, K, L, M, N, O, P, R, S, and T. Some authorities aver that four letters were added to these by one Palamedes, and four more by Simonides, Greeks both of them. Others again say that the alphabet of the Phœnicians contained twenty-two letters when it came to the Greeks; and we know that the Hebrew of which the Phœnician was a dialect as stated, contains that number; and that the Greeks added two characters. That the Greeks did make additions to the Phœnician alphabet to this extent at least, is certain, for their alphabet contains twenty-four letters.

The Greeks also rounded the forms of the letters. Their letters are consequently found to be somewhat less angular than those of the Hebrew alphabet. As their names for the first two characters in the scheme were *Alpha, Beta;* the term *Alphabet* has descended to modern times as the name of any collection of symbols representing the elementary sounds of speech.

In the first paper of this series, that on the origin of speech, it is remarked that the different spoken languages would always be found to accord with the varying national characteristics of the people speaking them. This principle holds good to some extent also in written language as well. And why not? If the character of individuals is discoverable in their handwriting, as it is said to be, why not national characteristics also? We think that we can discover some evidence of this principle in the effort of the Greeks to round the characters of the alphabet, and thus produce more graceful forms. For, according to Hogarth, the curved line is the line of beauty. In the fine-arts, in the department of sculpture, the Greeks were at one time the acknowledged masters, as have been the Italians in the department of music. In the more graceful characters of the Greek alphabet we may recognize an appreciation of beauty in form, the same as we perceive an appreciation of musical sounds in Italian speech.

The Romans adopted the Greek characters—at least they derived from them their capital letters; their small letters were made among themselves, about the year 700 of the Christian Era. This alphabet was considerably changed and improved before it became that series of symbols which we now use under the name of Roman letters. Finally, upon the downfall of the Roman Empire and the return to their native wilds of the Northern hordes of barbarians who had taken part in the conquest, along with other spoils, they carried away with them also Roman letters, and applied these as best they might to the representation of spoken tongues which differed greatly from the Latin, and to the representation of which they were not well adapted. Some few of these Northern tribes, it is true, refused to adopt the Roman characters, continuing to use the alphabets of their own, to which they had been accustomed. These latter are those mostly who speak the Sclavonic dialects. They form, however, exceptions to the general rule.

Some of the different varieties of letters now in common use are due to the invention of the art of printing. It was found advisable to employ in printing, letters which were more compact, and which should occupy less space than those

ordinarily used in writing. This branch of the subject will be treated of more at length in a subsequent paper on the invention of printing, where it more properly belongs.

When men first began to write, the order of writing was from the right hand toward the left. Afterward they wrote from right to left and from left to right alternately, commencing every line after the first immediately underneath the finished end of the preceding line. This method was in vogue up to the time of Solon, the celebrated lawgiver of Athens. The inscription on the famous Sigean monument is an example of this mode of writing. The motion of the hand in writing from left to right, however, was found by experience to be by all odds the best, at once the most natural and the most convenient, and this was the method eventually adopted by all the nations of Europe. Some Asiatics, however, as the Chinese, write from top to bottom of the sheet or page. But as their characters stand for things, and not for the sounds of vocal utterance, having in them nothing of the phonetic principle, it makes not so much difference as to the order in which they are placed, as each character is a word complete in itself.

Writing was first done on tables of stone, sometimes on stone pillars. The Ten Commandments, we are told, were first written on tables of stone. Afterward plates made of some soft metal were used. The writing on these was done with an iron *stylus*, the process resembling somewhat the engraving of modern times. In some countries they wrote on tablets of wood upon which had been spread a thin coating of beeswax. An iron *stylus* was used here also, sharpened at one end to a point, and flattened at the other, in order that when a mistake had been made, the writer could, with the flattened end of his *stylus*, obliterate the impression by smoothing over the wax, and so begin again. As writing became more common, the inner bark of a certain kind of reed found in Egypt, and called *papyrus*, was made use of.

About this time pens and ink began to come into use. Pens were first made, at least in Egypt, from reeds, cut down to a point and split, exactly like those since made from quills. The pen was afterward made from a feather or quill. The English word "pen" is derived from the Latin *penna*, meaning a feather. Parchment, made from the untanned skins of sheep and goats, and a finer kind called *vellum*, made from the skins of very young or aborted calves, was invented previously to the Christian Era, though its use had not become general in Europe until the beginning of the eighth century. It has been almost wholly superseded by paper, which was an invention of the fourteenth century. Metallic pens, too, have for the most part superseded quills.

We have thus endeavored to give briefly a succinct history of the art of writing, from its earliest inception, from the first rude attempts that were made, the hieroglyphs of the Egyptians; tracing it through all of its various stages, down to the introduction of the phonetic principle, when the written characters were first made to stand, not for things, as heretofore, but for words, words representing the sounds of speech; which, as we have seen, effected a complete revolution in the methods of chirographical representation. Writing now became, and continued to be, a science, as well as an art, the science of written language. We then traced it from an alphabet of words to an alphabet of syllables, finally ending in an alphabet of letters; which, after making such modifications, alterations, and additions as seemed to be necessary in each particular case, was in time adopted by nearly every nation or people having a written language.

The discovery of letters, in its wide and far-reaching results, was the most important event that had happened in the history of the world up to the period at which the discovery was achieved; an event without which very little farther progress could have been made. Although other discoveries and inventions made subsequently, as, for example, the

invention of printing, may have done more for the spread of general intelligence and the advancement of the race toward a higher civilization; and others again, as the invention of the steam-engine, may have added more to its material prosperity; still it is questionable whether without the previous discovery of letters, these later inventions could have been accomplished. Certainly, without letters there would have been no call for the printing-press. As it is, the discovery of letters was rendered a thousand times more effective for the achievement of all ends within the scope of written language by the invention of printing. As this last is included in our definition of written language, the history of its invention will be given in our next paper.

JAMES COULTER LAYARD.

THE AINOS AS THEY ARE

THIS tribe of people has excited some attention in scientific circles on account of certain peculiarities of organization. Some writers have ventured the notion that in them is to be found a link which carries the human a degree lower toward the brute organization. Recently, however, an English lady who has seen the Ainos at home, published a book* in which she relates her impressions; saying among other things:

"After the yellow skins, the stiff horse-hair, the feeble eyelids, the elongated eyes, the sloping eyebrows, the flat noses, the sunken chests, the Mongolian features, the puny physique, the shaky walk of the men, the restricted totter of the women, and the general impression of degeneracy conveyed by the appearance of the Japanese, the Ainos make a very singular impression. All but two or three that I have seen are the most ferocious-looking of savages, with a physique vigorous enough for carrying out the most ferocious intentions; but as soon as they speak the countenance brightens into a smile as gentle as that of a woman, something which can never be forgotten. The men are about the middle height, broad-chested, broad-shouldered, 'thick-set,' very strongly built, the arms and legs short, thick, and muscular, the hands and feet large. The bodies, and specially the limbs, of many are covered with short bristly hair. I have seen two boys whose backs are covered with fur as fine and soft as that of a cat. The heads and faces are very striking. The foreheads are very high, broad, and prominent, and at first sight give one the impression of an unusual capacity for intellectual development; the ears are small and set low; the noses are straight, but short, and broad at the nostrils; the mouths are wide, but well formed; and the lips rarely show a tendency to fullness.

"The 'ferocious savagery' of the appearance of the men is produced by a profusion of thick soft black hair, divided in the middle, and falling in heavy masses nearly to the shoulders. Out of doors it is kept from falling over the face by a fillet round the brow. The beards are equally profuse, quite magnificent, and generally wavy, and in the case of the old men they give a truly patriarchal and venerable aspect, in spite of the yellow tinge produced by smoke and want of cleanliness. The savage look produced by the masses of hair and beard, and the thick eyebrows, is mitigated by the softness in the dreamy brown eyes, and is altogether obliterated by the exceeding sweetness of the smile, which belongs in greater or less degree to all the rougher sex.

"The height of the adult men ranges from 5 feet 4 inches to 5 feet 6½ inches. The circumference of the heads averages 22.1 inches, and the arc, from ear to ear, 13 inches. According to Mr. Davies the average weight of the Aino adult mascu-

* "Unbeaten Tracks in Japan." By Isabella L. Bird.

line brain, ascertained by measurement of Aino skulls, is 45.90 ounces avoirdupois, a brain weight said to exceed that of all the races, Hindoo and Mussulman, on the Indian plains, and that of the aboriginal races of India and Ceylon, and is only paralleled by that of the races of the Himalayas, the Siamese, the Chinese and Burmese. Mr. Davies says, further, that it exceeds the mean brain weight of Asiatic races in general. Yet with all this the Ainos are a stupid people!"

The coast Ainos, Miss Bird tells us, she found to have more hair on their bodies than those in the interior, and in some other respects differed in appearance, a difference probably to be accounted for by their mode of life and their surroundings. The Aino garments are often exceedingly handsome, being decorated with "geometrical" patterns, in which the Greek fret takes part, in coarse blue cotton, braided most dexterously with scarlet and white thread. The modesty of the women is very remarkable, sometimes almost excessive even to European notions; nor do they seem to be the unmitigated drudges that most savage women are. The great hero of the Ainos is Yoshitsune, who is also the most popular hero of Japanese history; the Ainos worship him, and Miss Bird was permitted to visit his shrine on a hill near Biratori, the Aino village at which she spent most of her time.

CHAINS—AN OBJECT-LESSON.

[From a lecture delivered by Professor L. N. Fowler to a London audience, the following notes were taken. The comparisons drawn between the parts of a chain and the phases and progress of an ordinary human life are original and striking.]

THE chain of life is divided by seven. The first seven years we are learning to live, walk, talk, and read; if a child lives till it is seven, there is some chance of its living longer. If it lives till it is fourteen, it has been taking in stock to make the links, and preparing to learn the lesson of life. If he lives till he is twenty-one, he should have learned the lesson of life, and be ready to go to work. If he lives till he is twenty-eight, he should have learned to govern himself, to love, found his mate, and settled in life. If he lives till he is thirty-five, he should have begun to make the links, and get his position in society. If he lives till he is forty-two, he should have got all his forces in full operation, have laid all his foundations, and commenced his work in earnest. If he lives till he is forty-nine, he should have done his greatest day's work, made his best and largest links, have thoroughly learned the lesson of life, and so accumulated as to be beyond want. Seven times seven brings us to the meridian of our mental and physical vigor, strength, and activity.

If he lives till he is fifty-six, he should have become well acquainted with the design of his existence, the value of human nature, and learned how to act with success on the minds of others.

As a chain may be strong or weak, long or short, made of good and bad links, get rusty, lost, or broken, used for a good or bad purpose—so may be the chain of life.

As a chain may be rough or smooth, bright and dark in spots, and wear most in spots—so in the chain of life.

As a chain may be joined, welded by heat, so two lives may be joined and blended by love—the magnet will attract and hold together; a little magnet draws and holds but little.

As the chain is perfect in proportion to the perfection of each link and the union with its fellow—so the chain of life is perfect in proportion to the perfection of each mental power and its action with all other mental powers.

As chains become mixed up, become snarled, the links deranged, and twisted out of place—so in the chain of life in business, courtship, marriage, and health, matters get crooked, mixed up, and in confusion.

Swivels are necessary to let the twist out of a chain when the log rolls; it is composed of two parts, the one working within the other, and no chain is perfect without a swivel. Twists and snarls in the chain of life are produced by gambling, idleness, bad planning and circumstances, too hard work, intemperance; and a mental swivel, made up of Causality, Constructiveness, and Conscientiousness is needed to get the kinks and snarls out.

One chain is a thousand times more useful than another—one holds a watch, another a furious beast, and a third holds a ship with a precious cargo and many hundred lives—so in life. Some lives are very responsible and do the most important work involving the well-being of thousands. One anchor chain will make many thousand small chains. As a violent jerk on a chain would break it, when the same amount of strain applied steadily would not break it, so a sudden shock to the mind or a violent strain on the constitution would snap both, etc.

Chains made of jet are very tender and brittle, but will receive a high polish, are made to shine, and are more worn for ornaments than for use; so many receive a high educational polish, are mere ornaments in society, and are remarkably brittle and tender in the rough paths of life.

Some chains are not what they appear to be—for they are glazed, painted, or plated—so in the chain of life many externally are better or worse than they ap-

pear to be. It is not every one who can bear a close examination.

Strings will tie together the broken links, *but* they will break. Toggles are the best for the purpose, although inconvenient and bungling. Imperfect actions, perverted appetites, broken limbs, unwise marriages, and a bad reputation, are very inconvenient, and require much toggling. The lives of some are more toggle than chain.

It takes time and many appliances to bring some chains to their bearings, but they do a mighty work when once in their place, for they hold a powerful and costly ship in a fierce gale. So in life, it takes great occasions and powerful influences for some men to take a certain direction, but when it is taken they carry everything they take hold of. For instance, Wilberforce, Lincoln, Oliver Cromwell, Alfred the Great, and many others.

The dog-chain is used to keep the unruly animal in a safe place. So the lives of some men are like this chain to keep the dangerous and criminal class in their place.

As the watch-chain is very handy—light, neat, available, useful, and serves a good purpose—so many lives are made very handy, useful, and available for good purposes by their high tone, refined spirit, and willing, sympathetic disposition.

A safety chain is of secondary use in securing an article more valuable than itself. So some lives are spent in looking after some other lives more important.

Ornamental chains show how expensive and artificial a life can be made, and at the same time of how little use they are to society.

As many chains are made to do very dirty work and left to rust for want of care, so many a life is spent in doing the hardest and dirtiest kind of work with poor pay and no thanks.

Some chains of life are made up of broken promises, flirtations, following the fashions, failures in business, etc. While others are continually doing good, setting good examples, reforming and educating others.

A chain with all its hooks, links, swivels, and rings is not made all at once; every part has to be made separately, and then put together piece to piece. So it takes a whole life to make a life chain; every day adds a link until the end comes.

Let us examine our life chain as we go along.

NEWSPAPER GOSSIP.

EVERYTHING that does not tend to elevate our purity as a people depreciates it. Nothing earthly is immutable or unimpressible. Change is God's initial permit, and to it, unfortunately for the most of us, was added the choice of change. Evil should not be a temptation to the Christian, yet its coils are ever dangerous to our plastic developing youth, and wearing, rather than strengthening, to the resisting powers of maturity. Endurance is a virtue and silence golden, but blessed likewise is the full power of speech. These maxims require much judgment in application.

Fault-finding may be rather chronic with Americans. The exercise of it to the pleasure or even perfect satisfaction of the party directly concerned is one of the most unattainable graces. I have vainly sought for the grace to express disapproval of what seems to me wrong with a delicacy that could be recognized more fully as the hearty approval of good. In lack of desired favor, I say sorrowfully how I dislike the gossip of city dailies and all other publications that stoop to the common minutiæ of community scandal, drunken broils, default of manner and principle. Though the parasite of ill is continually gnawing at the vitals of society, it is not a morally delectable dish to be served hourly, even though it be prepared in every conceivable style,

from a whole roast to an imperceptibly flavored broth. We are fashioned by what we consume mentally as fully as physically, and quite as liable to acquire perverted tastes. This is why the keepers of mental restaurants—the editors and conductors of the press—should be conscience-bound to furnish their patrons healthful and unadulterated food. I doubt if any of these well-disposed and often highly gifted proprietors desire to offer what is unsound, yet the moral connoisseur grows faint with the odor of dishes daily pushed to the front. Those flavored with the aromatic spice of wit are the most acceptable, but as second-rate burnt almonds, they leave one's mouth smarting by the deceptive peach-kernel. Others appear to have no other conceivable object than to swell the bill of fare to the fullest record of the latest law and love-breaker.

"We serve what our customers consume most freely; prepare most of what sells best; simply bow to the demand for excitement," echo the experienced. This is true just as in other departments of business, yet there is a higher law of trade—a reward beyond that of moneyed patronage.

God has given us a short lease on life. The greater responsibility of position we assume during that time, the greater accordingly must be our accountability. The privilege of satisfying the mental need of developing souls, of arranging our thoughts and those of others, that they may form a part of the living present, is grand and glorious—too precious to be misused. We should watch well what we gather and scatter again, lest the world be none the better for our presence, and we be reckoned *unfaithful* servants.

S. L. OBERHOLTZER.

PRINCE GORTSCHAKOFF.

ONE of the three or four great minds that have exerted a paramount influence in the affairs of Europe for thirty years or more, belonged to Alexander Michaelowitch Gortschakoff, late Chancellor of Russia, who died on the 11th of March, at Baden. What Bismarck is to Germany, Prince Gortschakoff was for many years to Russia, and hence that vastly spread-out empire owes her position before the world to-day, more to him than to any other man.

He was born July 16, 1798, and received his education at the Lyceum of Zarskoe-Setlo, founded by Catherine II. There his course was very brilliant, and after leaving the place he continued to study. Certain contributions of his to current literature attracted the attention of the then Russian Minister of Foreign Affairs, who forthwith took him into the Foreign Office. Then he was only twenty-five years of age, and was sent as attaché to important legations, appearing at the Congresses of Laybach and Vienna as a member of the suite of M. de Nesselrode, the famous diplomatist. In 1824 he was Secretary of the Russian Legation in London, and afterward filled the positions, consecutively, of Russian Chargé d'Affaires at Florence, member of the Russian Legation at Vienna, and Ambassador Extraordinary at Stuttgart. He was made a Privy Councillor and was raised to the rank of Lieutenant-General by the Emperor Nicholas.

He was chief in authority in behalf of Russia at the negotiations which took place at Vienna immediately preceding the outbreak of the Crimean war. Then he was one of the two Russian plenipotentiaries at the Conference at Vienna in March, 1855, after the Emperor Nicholas' death, and where he displayed great tact and ability in maintaining the rights of Russia, but was ultimately obliged, though most reluctantly, to acquiesce in a restriction of Russia's naval power and military operations on the Black Sea. After the terms of peace were definitely adjusted and the Treaty of Paris was signed in April, 1856, Gortschakoff was appointed

Minister of Foreign Affairs in place of Count Nesselrode, who had retired.

In 1860, in consequence of events occurring at Naples, Gortschakoff addressed his celebrated circular to the Powers of Europe, urging upon France and England their own principle of the independence of nations, and protesting against the interference of western powers with the internal policy of the Two Sicilies. In 1863 the Emperor, who had made him Vice-Chancellor in 1862, promoted him to the office of Chancellor of the Empire. In 1866 he succeeded in bringing about the separation of the Roman Catholic clergy of Poland from the Holy See.

It was by the efforts of Gortschakoff that a change was brought about in the policy of the Russian Government, the substitution of mild and judicial measures of control for the old military despotism. He busied himself chiefly with internal reforms, one of which, the emancipation of the serfs, he carried out in so prudent a manner that it produced no turbulence of a serious nature. In 1871 he succeeded in obtaining from the great Western States a revision of the Treaty of Paris, to certain conditions of which regarding the Black Sea he had given such a reluctant consent. The demand for this revision created great excitement

in Europe, but, with great tact and ability, Gortschakoff ultimately carried his point.

The Russo-Turkish war, consequent upon the insurrection in Bosnia and Herzegovina, the Bulgarian massacres, and the Turco-Servian war, again brought Russia and Gortschakoff prominently before the world a few years ago. A general European war was expected to result from the complications of the time, and it was greatly due to Gortschakoff that this calamity was averted. He accompanied the Emperor to the front, and there closely watched the interests, sympathies, and tendencies of all parties, and acted accordingly. On peace being concluded he gave ample evidence in his reply to the Circular of Great Britain on the San Stephano Treaty that he had through age lost none of his great ability as a diplomatist.

On his retirement last year the Emperor testified by a special rescript to the character of his services, in which he acknowledged "the glorious and splendid services which had gained for him the respect and gratitude of his countrymen, and had graven his name indelibly on the pages of Russian history."

Unlike certain other great leaders of state in Europe, Prince Gortschakoff warmly favored the Union cause during the late war, and witnessed to his sentiment in a circular, by these memorable words: "The North American Republic not only presents itself to us as an indispensable element of the international balance of power, but, besides that, it is a nation toward which our most august Emperor and the whole of Russia have always had a most friendly disposition, because both countries are in the ascendant period of their development, and seem called to a natural unity of interests and sympathies, proofs of which have already been given on both sides."

The portrait exhibits a type of physiology and mentality more like the Teuton than the Sclav. It is robust and powerful in every respect; the great breadth of the head at once impresses us with the natural endowment of the man in executive stimulus, and in capabilities of organizing, planning, and arranging. The intellectual faculties were specially developed in the domain of reflection, and possessed uncommon strength and breadth of application. Intellect in this case was closely allied with the faculties of the middle and lower side-head, and therefore was thoroughly practical in its reasonings. Expediency, fitness, utility were among its cardinal principles. We do not see in the features much expression of harshness or severity, but rather a kindly, considerate tone, intimating the influence of strong Benevolence, and the effect of a well-developed social nature. Here was a man of solid convictions, and of resolute, determined action, but one who viewed his purposes on all sides, gathered suggestion and counsel from incidental circumstances, quickly formulated his plans and could as quickly modify them in application; was circumspect, politic, reticent, shrewd, yet urbane, kindly, mellow, and gentle.

SCOLDING ACCOUNTED FOR.

SOME years ago it was my fortune or misfortune to be associated in the intimacy of family life with a very influential and interesting woman. She possessed rare executive ability, and could "turn off" more work in a given time than any other woman I ever saw. Her husband was a clergyman, but his wife's power over a congregation was far greater than his, and her influence in the parish over which he was installed, was fully equal to if not greater than his. The larger the occasion, the higher she rose to meet it, and she was never so utterly easy and at home as when the greatest demands were made on her powers of self-possession, of

fine utterance and of administrative ability. In public assemblies she was captivating; in society, polished and agreeable; but at home she was often the dreadful opposite of all this. She would scold, scold, scold, from morning till night. Her husband was one of the sweetest saints the Lord ever made; but he couldn't please her, and every member of her family in turn experienced the fearful lashings of her tongue. All the time she was intensely religious, always ready for prayer-meeting and devotional exercises of whatever sort, always justifying her motives as being, as no doubt they in fact were, of the very best.

She had a large family, and an income both small and irregular; her husband was a "poor manager," as the phrase is, and always behindhand and in debt, and she, poor woman, tried out of her superabundant energy and vitality to make up deficiencies at every point where they occurred.

It is interesting to me now to recall her manner when she marshaled her forces and started into a piece of work. Every person in the household was laid under contribution and was compelled to contribute to the grand result in some form, by helping directly or by keeping out of the way. When the work began, the scolding began, and the harder the work was pushed the harder the scolding went on.

Years after this experience I became a student of Phrenology, and then I was able to explain to my entire satisfaction why this good woman could be so good, so religious, so consciously devout, and yet at home so utterly disagreeable and intolerably odious. The two organs of Combativeness and Destructiveness in her must have been very large. When she had her executive ability lashed into fury by the stimulus of a big job on hand, the blood in her brain was drawn specially to these organs, first to Combativeness and sympathetically to the contiguous organ, Destructiveness, and so the scolding was entirely accounted for without damaging her Christian character in the least. She was not an introvertive woman save in emotional matters of a purely religious sort, and she was not a bit philosophical. If one ventured to expostulate with her and point out the unwisdom of her course, her invariable rejoinder was that "God knew her heart; He knew her motives were pure."

The value of Phrenology to one who would develop within himself a harmonious and well-balanced character is incalculable. The calling one's attention to one's own excellences or defects is the first step toward a better understanding of what must be done to round out and perfect the character. When we can see ourselves as others see us, or what amounts to almost the same thing, see ourselves as we see others, we are in a way to remove and overcome defects and cultivate those qualities we would improve and those in which we are wanting.

L. S.

MORNING AIR.—"What is the pill that will keep us well, serene, contented? Not my or thy great-grandfather's, but our great-grandmother Nature's universal, vegetable, botanic medicines by which she has kept herself young always, outlived so many old Pans in her day, and fed her health with their decaying fatness. For my panacea, instead of one of those quack vials of a mixture dipped from Acheron and the Dead Sea, which came out of those long, shallow, black, schooner-looking wagons which we sometimes see made to carry bottles, let me have a draught of undiluted morning air! If men will not drink of this at the fountain-head of the day, why, then, we must even bottle up some and sell it in the shops for the benefit of those who have lost their subscription ticket to morning time in this world. But remember, it will not keep quite till noonday even in the coolest cellar, but will drive out the stopples long ere that, and follow westward the steps of Aurora."—H. D. THOREAU.

CRANIOLOGY OF INEBRIATES.

DR. J. S. WRIGHT, professor of surgery in the Long Island College Hospital, of Brooklyn, N. Y., has lately made some original studies of the heads of inebriates, comparing them in size and special developments with those of epileptics and others. The following is a *résumé* of his conclusions:

He assumes that any organ which has notably deviated in conformation and volume, has also deviated in function. That the brain may deviate from the standard of conformation and volume. That any organ of the body has in health a fixed, though variable conformation and volume; and a constant, though variable function. The first question to be solved was this: Does the confirmed inebriate have an abnormal conformation of the brain? In answer the heads of thirty-five confirmed inebriates, inmates of the inebriates' home at Fort Hamilton, N. Y., were measured and compared with similar measurements of thirty-five uneducated men. The average weight of the inebriates was found to be less, owing to the derangement of nutrition and general health, but the average height was greater. The head of the confirmed inebriate had a greater circumference than the head of the uneducated man, but this measurement can not be depended upon as an index of the volume of the contained brain. The conclusions were, namely:

1. The uneducated man has a greater volume of brain in the anterior part of the cranial cavity than the confirmed inebriate; also a greater volume in the posterior part of the cranial cavity.

2. The confirmed inebriate has a greater volume of brain in the middle part of the cranial cavity than the educated man; also in the middle region of the head the vertical diameter of the inebriate is greater.

Hence it appears that the brain of the inebriate is a deviation of both organism and function. In the majority of cases the conformation and the volume of the brain are attained by the time the individual is twenty-five years of age; hence the inebriety may not be the cause of the deviation in conformation and volume of the brain of the confirmed inebriate. The causes must operate previous to this date. They must occur during the early life of the individual, or they must be hereditary. In many cases these causes are inadequate to produce the deviations in volume and conformation found in the brain of a confirmed inebriate, hence it is concluded that they are mainly hereditary. It is also thought that the brain of the confirmed inebriate is a poorer order of development than the normal brain.

It follows then that these deviations of the brains of confirmed inebriates are properly to be treated as diseased conditions, and that a confirmed inebriate must be treated as a sick man.

In the study of the question, do epileptics have an abnormal conformation and volume of brain, a large number of cases were examined. The result reached was that the brain in incurable epileptics is a deviation both in structure and function. The outset of the disease is generally hereditary. Given this outset, manifested in the conformation of the brain, we have a basis for the development of epilepsy, or inebriety. Looking upon certain individuals as having heads deviating from the standard of volume and conformation, and finding that they are not adjusted to the conditions in which they live, and that they exhibit abnormal functional manifestations, and seeing that the influences of disease and injury augment their deviations, in a given case of injury or disease we may have in the brain itself an important indication as to what the clinical history may be not only immediately, but during the rest of the life of the individual. Dr. Wright notes also that the average criminal exhibits a deviation from normality; and concludes that the brains of inebriates and epileptics vary but little, and with slight changes would readily run into each other. The modified brain found in the epileptic often has descended from the altered brain of an inebriate.

FAT AS DISEASE.

IN the March PHRENOLOGICAL JOURNAL, p. 164, Mr. Todd gives his impressions as to the wholesomeness of fat, and "takes issue, absolutely and positively," with the statements of a number of distinguished physiologists who have pronounced against the accumulation of fatty matters in the cellular tissues and throughout the substance of the muscles and organs, calling it a state of disease, pure and simple. For upward of five years past I have made the study of this disease—fatty degeneration—a specialty, my attention being particularly called in this direction from noting its relation to the enormous death-rate of infants, a class which should, from Mr. Todd's point of view, be almost exempt from sickness; certainly, with rare exceptions, they are as fat as the hogs of which he speaks, that are "covered with a layer of pure (!) adipose tissue, three to six inches thick," which he terms a "healthy secretion." Mr. Todd speaks with pride of having learned more by his "mistakes and blunders than by direct effort." I hope he has not committed the mistake of permitting himself to become fat, for he may find at last that his knowledge about the true nature of fat has come too late. Hogs and cattle being fattened for the market, die in whole droves of a *filth* disease—typhoid-pneumonia. The only *healthy* hogs in existence are the wild ones, that are as lean as greyhounds, and try the mettle of the swiftest hunting horses. Compare these animals, living as they do to advanced age unless overwhelmed by a body of hunters, with the obese creatures that are fed to fill lard tierces, tubs, and pails for "domestic economy!" that is, largely for the benefit of the doctors. Not one of all the millions of hogs butchered has even an approximately sound liver or kidney; in fact, he has not a sound organ or tissue in his body. The same is true of the stall-fed ox. And this leads me to reply to the question, "If that fat [speaking of the hibernating animals] had been 'disease,' would it support animal life?" Fat is not disease in the sense of corruption, but rather exhibits the effort of nature to prevent temporarily acute disease by storing up in the *cellular tissues* the indigestible and non-assimilable excess in diet. In *health* these tissues subserve an entirely different purpose; in *disease*, the disease under consideration, they are stuffed out and form the "adipose tissues," as they are popularly called. This is one of Nature's methods for prolonging life under adverse circumstances, substituting a chronic disease for an acute one.

Again, the good missionaries tell us of the Chaumars, who for centuries have lived largely on the flesh of animals dying of the plague. That is, whenever the cattle-distemper rages, perhaps taking whole herds, the Chaumars, who form a low class,

though a very populous one, are given the carcasses for food; in fact, according to the custom, if not the law of the country, it belongs to them of right. And yet we are told that they are as healthy as the rich meat-eaters of that country who subsist on the fat cattle killed before the disease has developed beyond the need of any aid from the butcher! If the Chaumars can subsist on putrid flesh, I see no reason why the bear may not live on his own carcass, even if we agree that it is not strictly a healthy one. We know, of course, that he does so live; and that during the entire winter he serves us for an example of the "fasting cure"! I could name hundreds of eminent fat men who have died in this and other countries, whose lives would have been spared for many years, had they "hibernated" until they came out "lean, lank, and emaciated," provided they had then begun a more wholesome way of living, and had thenceforth kept themselves in *condition*. Leon Gambetta, whom M. Rochefort called "the fatted satrap," died from the effects of a slight wound from which a *clean* man would have readily recovered. Gustave Doré, the great French artist, died of putrid sore throat, a disorder which can never "attack" a person except the predisposition exists. Fat hogs die by thousands of this same disease. Doré was a man of "moods," at times gloomy and saturnine, no comfort to himself nor any one else; again, the light and life of a loving circle of friends, who had become "weather wise," knowing when to approach him and when to keep at a safe distance—this constituted one of the symptoms of his disease. We have in this country, in our halls of Congress, scores of men liable at any moment to be stricken down because of this disease. These subjects do not all die young, like Gambetta; there is a "tough vein" running through some which keeps them along for a good many years, but they would live *better* and *longer* lives if they would take measures to rid themselves of this disease. Here and there an observing agriculturist or the editor of an agricultural journal has learned that, if not disease, fat *predisposes* to disease. It is abnormal; and, therefore, strictly speaking, disease. In reply to a query as to the cause of "black leg" in cattle, the editor of the *Live Stock Journal*, classing it as one of the zymotic diseases, and one of the most fatal, says, "It usually attacks young cattle that have suddenly *put on fat*," and he cautions his readers against over-feeding their stock. No, fat can not be justly called "diseased flesh," for it is *not* flesh; the *muscles* are flesh. It can not be called "a mass of scrofula" until the creature who bears it is overborne by it; then it speedily becomes a mass of corruption. In conclusion, I will invite all persons to make some "direct effort" to study up this matter for themselves, and ascertain whether it is not "an egregious error to speak or write of fat" as a "healthy secretion," when it is a question of what we term *fat* cattle, *fat* hogs, *fat* babies, or *fat* men and women.

C. E. PAGE.

Biddeford, Me.

DOCTORING AMONG THE MINERS.

A CONTRIBUTOR to the Detroit *Free Press* thus describes the way sick men were treated in the pioneer days of gold mining:

"As to medicines, our mainstay was a hot sweat. When a man began to dump around we didn't lose time by feeling for his pulse or looking at his tongue. Three or four stones were put into the fire to heat, blankets borrowed for the occasion, and when we got steam on, the knots and twists and kinks in that chap's case had to unravel. He'd come out as long and flat and thin and white as you please, and if any one pointed a finger at him for the next week he'd cry like a baby.

"Next to a sweat we had decoctions of herbs, barks, and roots, and once or twice

we tried the earth cure. On one occasion when a red-headed miner from Ohio was laid up with a pain in the side, a stranger came along from White Dog Bend and said he could cure him by laying on of hands. For three long hours he smoothed away at the patient as steady as clock-work, and then there was a row. The 'smoother' asserted that the cure was complete, while the patient denied that the pain was a whit easier, and, of course, we stood by our companion and gave the stranger a tumble off a cliff twenty-eight feet high into an old snowdrift eighteen feet deep.

"But as I said at the start, sickness became so prevalent, and our plain remedies had so little effect, that it was finally decided to send up to Sacramento for a doctor. The idea was to have him come down and brace us all up and leave medicines and remedies, and the expense was to be borne by a shake purse.

"A letter was sent to a dealer in the town, asking him to forward a doctor, and in about five days along he came. He was a young man of twenty-four, just out of college in the East, and just landed on the slope without a dollar in his pocket, and all he brought to camp with him was a lancet, some prescription blanks, and a stick of salve for making sticking-plasters.

"There were four men in the hospital that day, and after a bit the doctor entered to take a look at them. It happened that he came to Big Jim Smith first. Smith was threatened with inflammatory rheumatism, and was in no mood to take nonsense.

"'Run out your tongue,' said the doctor, as he bent over the man.

"Big Jim displayed it, but in such a begrudging way that it was plain to see that he thought it all bosh.

"'Your pulse,' said the doctor, as he reached over for Jim's great paw.

"'Pulse? I haint got any!' growled Jim.

"'Oh, yes, you have. Here it is in your wrist. Keep still for a moment.'

"'Stranger,' said Jim, after the doctor had dropped his hand, 'd'ye mean to tell me that ye kin feel a man's wrist and tell what ails his inside?'

"'Yes, in a measure.'

"'Excuse my not calling you a liar, but some of the boys will do it for me afore you're an hour older.'

"'What are your symptoms?' asked the doctor.

"'Never had any.'

"'But how do you feel?'

"'Sick.'

"'How were you taken?'

"'Stranger, what are ye driving at?' demanded Jim, as he sat up in bed.

"'Have you got pains?'

"'In course I have! D'ye 'spose I'd be lying flat on my back here if anything less'n a ton was holding me down?'

"'Do you ache?'

"'Raythe r!'

"'Any fever?'

"'Wall, I git away with a quart of cold water at a gulp.'

"The doctor sat and studied the case for a few minutes, and then he came over to the shanty where the committee had assembled, and said:

"'Gentlemen, the case of Big Jim is a serious one. He needs a change of diet, scenery, and air. My advice is that you brace him up as well as you can on chicken soup and beef tea, and then send him off for a trip to Cuba. I'll look at the other cases in the morning.'

"But he never did. When the boys found that he had come without even a dose of quinine, and they heard him talk about chicken soup and trips to Cuba for a man who hadn't five dollars to his name, they waited upon him in a sort of hilarious body, and at midnight he went up the trail at the rate of twelve miles an hour, with a crowd behind him aching for his ears as relics.

"Next day we heated half a ton of rocks, took six or eight blankets, and gave Big Jim such a sweat that all his toe-nails shed off, and rather than be cured in the same way the other men got well.

"'I did have some faith in the chap,'

explained Jim—'just a leetle bit until he axed my symptoms. That floored me. The idea of sending 200 miles for a doctor to walk in on ye and not be able to tell symptoms from the all-firedest backache a man ever had, topped off with chills galloping up and down the spine wall. I'm only sorry that you moved the procession on him afore I was able to head it!'"

THE SPIRITUAL AND ANIMAL IN ILLNESS.—Keep ever in your mind that many people seem to be two-thirds spiritual and one-third animal; and that others seem to be one-third spiritual and two-thirds animal, between which are all intermediate kinds If you attempt to treat all of them alike, you will certainly fail. The mental management of the sick is often more difficult than the physical. A close study of mental therapeutics is one of the necessities that the regular profession is still extremely deficient in. Irregulars often give a mere placebo, or useless agent, which faith (psychological energy) on the part of the patient potentizes, and a wonderful cure (?) results. Novel remedies often assist the cure through mental influence. Many regular physicians give valuable, true remedies, but give them just as they would administer to a horse or a sheep, and seem to despise the aid of faith, mystery, expectation, and hope. They must learn to depend more on the aid of hygiene, diet, and mental impressions in simple cases, and less on large, crude doses of medicine. DR. CATHELL.

DIABETES—EARLY SYMPTOMS.

A GREAT many people contract this distressing and very fatal disease, long before they are become aware of it, and it is for the purpose of giving a hint or two that may be of benefit to the readers of this magazine that this article has been written.

The first marked symptom that we notice in the above disease, is the cessation more or less of perspiration, although we can not explain it. No local pains may exist, spontaneous or otherwise; but later in the progress of the disease there are pains in the back, and the emission of urine is very frequent, generally greater during the night, thus depriving the patient of much of his sleep. The quantity of urine passed when the disease is fully developed is usually considerable—something like a gallon or more, in the course of twenty-four hours. At the commencement the amount voided is not remarkable, but it soon augments, till the maximum is reached, when the diabetes has also reached its highest point. This supersecretion is not of the greatest importance, since diabetes may exist without the quantity of urine exceeding that in perfect health—this point is well authenticated by many eminent observers. The urine immediately after its emission is transparent, not so dark-colored as usual, and sometimes colorless, though ordinarily of a yellow-straw color. If examined some time after emission, it usually resembles the color given to a large quantity of water in which some honey has been dissolved. It is often inodorous, though frequently strong with the odor of violets. Notwithstanding its great quantity, diabetes urine has a much greater specific gravity than that of normal urine. That which is first voided in the morning is heavier than that which is passed during the day, although it contains less sugar.

When diabetes urine is left undisturbed for two or three days in a moderate temperature it acquires an odor of wine or sour milk; and instead of being ammoniacal, as it certainly would be if in ordinary condition, it is very acid, this being due to the presence of carbonic acid produced by fermentation. The urine in a case of diabetes always turns to the right in polarized light. In this disease

the mouth is dry and harsh, as with persons suffering from intense thirst. The saliva is not abundant, but thick and frothy, and almost always acid. Great augmentation of the appetite is one of the principal symptoms of this malady, and notwithstanding the large amount of food which may be taken, digestion up to a certain point goes on without trouble.

In the early stages of this disease there is usually marked constipation and the fecal matter is frequently inodorous; this is an indication of the great intensity of the complaint. The skin undergoes many remarkable alterations, becoming dry and rough—usually its sensibility diminishes sometimes to the point that it is entirely wanting. Cutaneous perspiration almost entirely disappears.

A new and very successful method of treating this hitherto obstinate disease has been lately introduced, and like other diseases which not many years ago were regarded as desperate if not entirely fatal, it can be said to have lost a great part of its terrors to the skillful physician. To be sure there are in America but a few who have made diabetes a specialty, yet their record of its successful treatment is encouraging to those who suffer with it.

E. S. SMITH, M.D.

NEW YORK.

A DUTCH LADY-DOCTOR.

(Concluded from the April No.)

THE "arts-diploma" is a State certificate, and according to the law of 1865, indispensable for the professional medical man. Miss Jacobs could, therefore, have established herself and tried to get some practice. But, besides the "arts-diploma," there is also a university degree, the English M.D., the Dutch doctorate, and as many persons continue their studies till they obtain also the latter title, Miss Jacobs decided that she would not leave the university before obtaining it.

She went back to Groningen, and began her dissertation, but she had now a great deal of ill-luck. First, she had three times to give up her subjects for want of the materials indispensable for her researches, but fortunately she could bring to an end her fourth subject ("On localization of physiological and pathological phenomena in the brain.") And secondly, her father became suddenly very ill, so that he had to give up his practice. What to do? His practice was the only source of income for himself and family, consisting then of six members. So in the middle of her studies, Aletta took up his practice, and thinking she would earn more by being a professional doctor in Amsterdam resolved upon leaving the university and giving up her doctor's degree. But some of her friends convinced her that her plan was by no means good; she should first finish her studies and then go for some months to a foreign country before establishing herself. Considering all the obstacles, it was really astonishing that Miss Jacobs was ready with her dissertation within the usual space of time, and was graduated on the 8th of March, 1879, after having defended with much success, not only her dissertation, but also the thirteen theses following the same, of which, especially the 3d: "Chloroform should be used more frequently in confinements than has been done as yet," was severely attacked by one of the professors. But as a conviction is a sacred thing to Miss Jacobs, and she was never in the habit of fearing any one, however disagreeable the result might be to herself, she defended her thesis with all her energy and eloquence, and the doctor-diploma was given to her. This event brought Miss Jacobs' academical life to a close.

But did Dr. Jacobs feel satisfied with the result of her medical studies? In many respects, yes; but in some, by no means. It had been for her a very pain-

ful discovery to see how rarely in severe cases recovery of the patient is in the hand of the doctor, even if he is one of the most skillful physicians. But on the other hand her studies had also convinced her, that though the disease once developed, could not always be cured, many diseases could be prevented, and what she thought the best way for it she had explained in her 9th thesis: "Hygiene should be taught in *Middelban* (Higher) Schools for girls by special teachers in special hours."

Three days after her graduation, Miss Dr. Jacobs crossed the Channel to spend a few months in the London hospitals. A long time she hesitated between London and Vienna, but she never repented of choosing the English capital. She was very kindly treated by many persons, but more especially by Dr. Sturge, whose assistance during her stay of five months was of very great value to her.

II.—AS PHYSICIAN.

Miss Jacobs returned from England in the second part of August, 1879. The Medical Congress in Amsterdam was held about that time. Miss Jacobs intended to establish herself at Amsterdam, and open her "consultative practice" on the 15th of September; however, only for women and children. This proved clearly enough, she had no mind to follow up the advice of one of the professors, who proposed that she should become his assistant for about three years, and to settle after that as a specialist in surgery, as he had several times observed how steady her hand was and how keen her eye. However flattering this proposition, she declined; she preferred the pathological and obstetrical parts of the medical science, for though the "arts-examination" includes, as the reader has seen, the three branches of the medical science, every medical man feels that in practice they are too much for one person. Thus, every doctor chooses between pathology and surgery, according to his individual taste, but as he has a general knowledge, he does not hesitate to lend his help whenever called for, unless he thinks the experience of a specialist is required.

Although it is but three years since Miss Jacobs settled as doctor and "accoucheure," the result has already proved that she made the right choice.

Her patients are people in easy circumstances, moving in the higher circles of society. Nothing can speak more in her favor, as she had many prejudices to conquer at first. Though some improvement is observable, it must be admitted that, as a rule, the higher classes do not sufficiently honor the labor of women. The number is still rather small who think well of a woman who earns her own living, and large of those who think her far below those women who are wasting their time from morning till night. Hence, how great were the difficulties that met the woman who opened for herself a new sphere of activity, one which forced her during the many years of preparation to associate exclusively with men of every age. The second prejudice Miss Jacobs had to conquer was her origin. There is no doubt but that her family descended from Jewish stock, and in Holland there is still some prejudice against Jews, even when it is known that they are no longer of the Hebrew faith. Miss Jacobs was not educated as a Jewess.

As to her character, she combines great gentleness with deep compassion for the patient, and a vehement aversion of every kind of untruth and affectation. Those who come to her with complaints of which they knew beforehand they would have to submit to a local examination, are at once presented with the alternative of going away without delay, or of being helped by her as she judges necessary. Her little speech never fails of the desired effect.

Miss Jacobs requires for her services the highest fee charged by Dutch doctors. This at first occasioned much amazement among some people, who, no doubt, think that a woman should be paid less than a man. But she never allows people to haggle with her. They are plainly told that in future they will

do better to call for cheaper professional assistance, but that she declines the honor. The reader would draw a false conclusion if he thought Miss Jacobs close-fisted. Nay, in many matters she is always very liberal, and allows others often to have the best of the bargain, perhaps oftener than is reasonable. She can not endure meanness in well-to-do people. In the first weeks of her practice she gave a great proof of disinterestedness. Two families contracted with her for a certain sum to pay a daily visit to their children. A few days after, the lady doctor told the parents she had resolved to break the agreement, being convinced it was pernicious for the children to be asked every day, "How are you? Do you feel any pain?" etc. In future she would only come when called for, but promised, how often that might be, her bill would never exceed the set sum, while it would be less when her help had been only rarely required. By this arrangement she surrendered a part of her benefits at a time when she was by no means sure of success. Several times she has succeeded in curing persons who were pronounced past cure by one or more medical men. This must chiefly be ascribed to the great interest she takes in her patients. In severe cases she is thinking of them by night as well as by day, and as long as he or she is alive, she considers there is hope, and will persist in applying every possible remedy. Thus she saved her mother when pronounced past cure by two of the best professors, and also several other persons. Some time ago, a lady came to her who had been attended, without the least success, for two years, by Professor Lehmann, a renowned specialist. Before Miss Jacobs accepted her as her patient, she went to Professor Lehmann, informing him of the lady's wish. "Then you intend to follow another method?" he asked. "Not at all," Miss Jacobs answered, "as I am sure your method is the only right one in this case; but I will try at the same time, whether it does not make a difference that you are a gentleman and I am a lady." And the result? Within two months the patient was perfectly well, to which the professor testified. Miss Jacobs observed: "I know, of course, that such a complaint can easily ruin the whole constitution, but I also supposed that a hysterical nervousness, such as you unwillingly excited in this weak lady, made her recovery impossible."

No doubt Miss Jacobs' success is a great eye-sore to many of her Dutch *confreres*, and no doubt they think it a very bad thing for them. One of our Dutch professors went so far as to declare that the *practice* of the medical sciences should be exclusively in the hands of ladies. Some doctors, however, oppose Miss Jacobs in such a ridiculous way that they do themselves more harm than good. But what the gentlemen doctors may say is indifferent to the lady doctor, who quietly pursues her own way.

From the very beginning Miss Jacobs desired to be of use to the poor, as she knew by experience that among the lower classes there are many women who neglect certain diseases rather than go to a doctor, and that their aversion should not always be explained as narrow-mindedness and prudery. As many expenses were connected with the opening of a "klinick," as it is called, she could not realize her desire before the beginning of this year. She may now be consulted two mornings every week free of expense, and many hundreds have already profited by this opportunity.

In Germany the lady doctors, such as Miss Tibertius and Miss Lehmus in Berlin, are tolerated, but nothing more. They have no rights, and are not considered equals of the gentlemen practitioners. They are not allowed to sign authentic documents, such as certificates of births and decease. No such thing in Holland. Miss Jacobs has the same rights as any of her associates, and her signature is as valid as theirs.

ELISE A. HAIGHTON.

AMSTERDAM, 1882.

A PHYSICIAN'S MEMORANDA.

REMOVAL OF STRONG ODORS FROM THE HANDS. — Ground mustard mixed with a little water is an excellent agent for cleansing the hands after handling odorous substances.

DIET IN BRONCHITIS AND ASTHMA.— A full meal with its resulting pressure upon the diaphragm is frequently followed by sudden death in patients suffering with bronchitis and asthma. Such persons should always leave the table hungry, and in selecting food should give the preference to concentrated nourishment, avoiding soups or other liquids and all substances the ingestion of which causes flatulence.

NIGHT SWEATS OF CONSUMPTION.— Sponging the chest with salt and water at bedtime, in many cases arrests the sweating completely.

BRUISES. — Tincture of arnica is in general use as a lotion for bruises, but its value is greatly overestimated, and it is objectionable in that it sometimes acts as a powerful irritant. The following mixture used as a lotion is quite efficacious and no danger attends its use: Muriate of ammonia, two drachms; vinegar and water, of each two ounces; mix.

FISSURED NIPPLE.—A simple and safe means for the relief of cracked nipple is to powder it repeatedly with pulverized gum-arabic. Immediately after the child has suckled, the powder should be dusted over the surface and the nipple protected from the air.

STINGS OF INSECTS.—The juice of the red onion is a perfect antidote for the sting of bees, wasps, hornets, etc. If applied freely soon after being stung, it gives almost instant relief. The sting of the honey-bee is always left in the wound, and should be extracted before applying the onion juice.

FETID FEET.—A prompt remedy for this disgusting affection is found in washing the feet with a solution of chloral (one part of chloral in one hundred parts of water), and keeping them enveloped in compresses wet with the same. Another efficacious method is to powder the interior of the socks with a powder composed of one part of salicylic acid and five of starch.

TO REMOVE INDIA-INK MARKS.— Blister the part with a cantharides plaster a little larger than the mark; then keep the place open with basilicon ointment for a week; finally dress with simple ointment to heal it. As the new skin grows the tattoo will disappear.

ACID BURNS.—Make a soft paste of calcined magnesia and water, spread thickly on a soft cloth and apply to the parts. Renew in twenty-four hours. This gives speedy relief and leaves no scar.

NERVOUS HEADACHE.—When the pain is frontal, and the blood-vessels are full and throbbing, relief may often be obtained by the constant application of cold to the head. The head should be elevated on a hard pillow, and hot applications made to the feet so as to draw the blood toward the lower extremities. Should the pulse be small and contracted and the vessels of the head full and throbbing, while the hands and feet are cold, it is a good plan to put the patient into a warm bath at 97° for ten minutes, and then to bed. It is astonishing the relief this simple remedy sometimes brings.

PNEUMONIA IN TOPERS.—When pneumonia attacks the steady, square drinker, one who carries regularly his pint to a quart of whisky daily, it comes exclusively under the domain of the undertaker, as the first case of recovery by any known method of treatment has yet to be reported. L. H. WASHINGTON, M.D.

WHITTIER'S OPINION OF A BOILED DINNER.—The old-fashioned New England beverage (cider) was mentioned, and Mr. Whittier stated that he had once derived much benefit when unwell, "when nothing tasted good," from the use of cider. Huntington suggested that with-

out cider we should not have vinegar. "Well," said Whittier, "vinegar is not of much use, after all." "Except," replied Huntington, "to eat on cabbage and cucumbers." "Neither of which are fit to be eaten," remarked the poet. "I think it would be a good idea to start a prohibition party on those two articles. As for cabbage, it is not fit to be eaten; if you cook it in the house, you have got to burn your house down afterward to get rid of the smell; it is certainly the most diabolical smell that was ever invented"; and Whittier, who was sitting near the open stove grate, upon the top of which he had deposited his tall hat, folded his hands and laughed a hearty silent laugh. "What do you think of onions, Mr. Whittier?" asked I. "Well," he replied, "onions are not quite so bad, for you *can* get rid of the smell of those in three or four days." "Then," said Huntington, "you would not approve of the old-fashioned 'boiled dinner'?" "*No.* I think that is a detestable dish. I remember that my father used to have it, in which cabbage, onions, beets, potatoes, turnips. and carrots were all boiled up together, and turned out into a great dish all in a heap, with a great greasy piece of meat in the middle. I think that is the reason why the present generation is not so strong as the former. It is owing to the way the parents lived, eating so much pork and potatoes. Our last war showed that. The farmers were not nearly as strong as the men recruited in the cities —Portland, Portsmouth, and Boston." "But the people in the cities do not have the free air we get in the country," said Huntington. "I know that," replied Whittier; "but they live better, and that makes a great difference." —*Harper's Magazine.*

KITCHEN LEAFLETS.—No. 16.

WOMAN'S EDUCATION AND NEEDS—BILL OF FARE FOR MAY.

IT may not quite belong to this department, yet I feel that I should have something to say with regard to the question of woman's right to education and woman's right to do what she can toward self-maintenance. The stand taken by the rector of Trinity church, New York, on the subject of woman's sphere, has awakened pretty lively discussion, and I am rather glad than otherwise that it has been brought so conspicuously before the people. To me it seems little short of the wonderful that the chief of a very prominent church organization, a man presumably highly educated and well-informed, should close his eyes and ears to the demands of modern progress, and assert views which in the days of mediæval despotism and ignorance were prevalent concerning the place and work of woman. Then she had little to do with the affairs of the world; she cooked and scrubbed and spun at home, and nursed and trained the children, and was passively and subjectively ignorant of the out-of-door world. To-day she is found in almost every walk of life, and her usefulness and adaptation in the affairs of business have been so thoroughly demonstrated that in some departments she has become indispensable. What would our schools do without her, for instance? She has become a monopolist in the teaching office, and that at the instance of her brother, who at length discovered her competence for it. And yet the reverend gentleman of old Trinity would exclude her from those privileges of high and liberal education which will the better fit her for the important duties of instruction. His very pronounced stand in the matter has brought out an equally pronounced expression of opinion against him from men of eminence, most of whom are educators of experience and speak from personal knowledge, whereas the

gentleman of Trinity, aside from his own school and college course, knows little about the business of teaching.

To say that high mental training is incompatible with the duties of home-life, is to say what is untrue; for the efficient and thorough performance of household work involves as wide a range of intelligence as any so-called business. To have charge of a large family, to meet its daily wants in food and clothing; to minister to the needs of the sick and regulate the whims and caprices of the young; to maintain a steady methodical routine in the kitchen, dining-room, parlor, and bedroom — making neatness and order wait upon comfort and enjoyment — to be at once wife and mother, companion and adviser — what facilities, what training and development are not essential to the performance of all this?

But women are not constituted alike any more than men are; they have their leanings and their biases; some are not well constituted for the performance of domestic work; some are not adapted to the care of children; yet, take them as they average, the great majority are fond of household duties, and there is less craving in them than in men for change and variety. I know highly educated ladies who enjoy the work of their kitchen and who can prepare a dinner that will tempt the dullest appetite. They superintend the economy of their homes, having regard to minute details, and their homes are charming places to visit.

It is trite enough to say that it is the home that gives character and tone to society — but who makes the home? Has not woman always been intrusted with its direction—or, rather, compelled to take care of it? And to do all that the age expects of her, can she be too well educated or too competent? Cultivated and refined men are exacting; they don't wish ignorant and unrefined wives; they want *help-mates* indeed, and how are they to be supplied with such help-mates unless woman has equal privileges with themselves in education and mental training?

Dr. Aikman in his "Life at Home" says if a woman "would have her husband love her more and more as life advances, she must give him more and more to love—she should endeavor to make herself *mentally* attractive"; and he goes on to say further that it is not strange that many men grow weary of their homes because of the barrenness and dullness of their wives' minds, and seek in other society the interchange of thought and opinion which they enjoy. After marriage few women have much leisure for study and reading, and, if they have not had good advantages for culture previously, they are not likely to feel inclined to make use of such opportunities as come to them for keeping their minds fresh and alert.

BREAKFAST.*

Crushed-wheat Porridge. Potato Puffs.
Oatmeal Breakfast Cake. White Bread.
Canned Fruit. Broma.

DINNER.

Farina Soup.
Roast Chicken. Mashed Potatoes.
Stewed Carrots or Parsnips. Tomato-Bread-Sauce.
Gluten and White-Flour Bread.
Orange Custard.
Fruit.

SUPPER.

Graham Gems. Boiled Rice.
Stewed Fruit.
Orange Sponge-Cake. Cambric Tea.

CRUSHED-WHEAT PORRIDGE.

2 cups of crushed wheat.
2 quarts of cold water.
½ teaspoonful of salt.

Look the wheat over carefully, and having placed it in a double boiler, pour the water on it, stir thoroughly, and cook one hour after it begins to boil. Add the salt about ten minutes before the porridge is done.

POTATO PUFFS.

2 cups of cold mashed potatoes.
2 tablespoonfuls of melted butter.
2 well-beaten eggs.
1 teacupful of milk.

* The right to republish any of the recipes in these formulæ is reserved.

1 cup of cold roast beef, chopped fine.
½ teaspoonful of salt.

Add the melted butter to the potatoes and beat up to a creamy consistence before adding anything else; then stir in the eggs, milk, salt, and lastly the meat. Beat all together and bake in hot gem pans, buttered—using a quick oven—about half an hour.

Farina Soup.

2 quarts of mutton or beef stock.
½ cup of farina.
½ cup of cream or milk.
1 beaten egg.

Mix the farina with the milk, add the egg, and stir all into the stock, and cook half an hour. Flavor with bits of celery, or parsley, if liked.

Roast Chicken.

Pick and draw the fowl carefully so that no intestinal matter remains or any fine feathers on the skin. Wash out well in three waters, and wipe dry with a cloth. Stuff with a mixture composed of one pint of bread-crumbs, one tablespoonful of melted butter, two tablespoonfuls of hot water, and one teaspoonful of salt. Add more stuffing if this is not enough to fill the body and crop; then sew the openings up and lay the fowl in the pan with the wings and legs secured close to each side with skewers. Pour a cupful of boiling water over it and roast in a quick oven about an hour and a half, basting often. In the meantime stew the giblets, neck, and feet in one pint of water, and when tender take them out and chop the giblets fine. When the fowl is done remove to a hot dish and pour the stew water into the drippings; boil up once, add the giblets, thicken with browned flour, boil again, and send to the table in a gravy boat.

The giblets are the heart, gizzard, and liver.

Serve with tart jellies or fruit sauce.

Gluten and White-Flour Bread.

2 pints of gluten flour.
1 pint of white flour.
1 pint of tepid water.
½ of a yeast cake dissolved in water.

This recipe makes one medium loaf. Proceed in the manner described for white bread in the Phrenological for January of this year, using white flour for knead and moulding. Bake one hour in a quicker oven than is used for white bread.

Stewed Carrots.

2 large carrots.
1 cup of milk.
2 teaspoonfuls of flour.
½ teaspoonful of salt.

Chop the roots fine and put them on the stove to cook in a stone pipkin; let them boil two and a half hours, or until they are tender. Make a dressing thus: boil the milk, mix the flour in a little cold milk, and stir into the boiled milk; add the salt and a very small piece of butter if desired. Pour this dressing on when ready to serve.

Tomato-Bread-Sauce.

1 quart of stewed tomatoes.
3 teaspoonfuls of sugar.
1 tablespoonful of Graham flour.
1 cup of milk.
½ teaspoonful of salt.
4 medium-sized slices of toasted Graham or white bread.

Cut the bread, after it has been toasted, into pieces about one and a half inches square and place them on the bottom of the dish to be used for the table. Stir the sugar and salt in the tomatoes, mix the flour in the milk, and stir all together. Boil about five minutes; then pour over the toasted bread and serve. (*W. W. Cure*, adapted).

Orange Custard.

5 medium-sized sour oranges.
½ cup of white sugar.
1 quart of milk.
4 eggs.
½ teaspoonful of salt.
2 even tablespoonfuls of corn-starch.

Peel, seed, and cut the oranges in small pieces, sprinkle the sugar over them and then mix it through and let them stand until the custard is ready. Set the milk on the stove in a double boiler, and when it boils stir in three tablespoonfuls of sugar, the salt, yolks of the eggs well-beaten, and lastly the corn-starch mixed in a little cold milk. Stir all briskly, and when boiling remove from the fire and pour over the oranges. Set away to cool. Now beat the whites of the eggs and one tablespoonful of sugar to a stiff froth, and when the custard is cool, take a tablespoon and drop the white froth in spots over it.

A pretty dish and a delicious dessert.

Boiled Rice.

1 pint of rice.
2 quarts of hot water.
1 teaspoonful of salt.

Examine and wash the rice in several waters. Put the water and salt in a double boiler, then stir in the rice. Cook about half an hour from the time it begins to boil. Don't stir the rice with a spoon, but shake the kettle around occasionally to separate the kernels. Serve as soon as done, as rice loses much of its agreeable flavor and quality by long standing.

ORANGE SPONGE-CAKE.

½ cup of cold water.
2 cups of sugar.
2 cups of flour.
2 teaspoonfuls of baking powder.
4 eggs—yolks and whites beaten separately.
The juice of two small oranges and half of the grated yellow rind of one.

First beat the eggs; then mix the sugar, yolks, and cold water together; stir in the flour and baking powder (well sifted), then the whites, and lastly the orange juice and rind. Bake in a quick oven about half an hour. Do not look at the cake until it has been in the oven fifteen minutes.

REMARKS.

See JOURNAL of Mar., 1882, for Oatmeal Breakfast Cake.
" " May, 1882, for Stewed Parsnips.
" " May, 1882, for Graham Gems.
" " Aug., 1882, for Mashed Potatoes.
" " Feb., 1883, for Broma.

Cut fresh bread with a knife which has been previously heated by dipping it in boiling water. The bread will not be apt to crumble then. Bread of the fermented or leavened kinds generally should not be eaten the same day it is made. MIRA EATON.

USEFUL ANALYSES.—The students of the Michigan State Agricultural College are combining utility with instruction, and are analyzing, in the laboratory, various nostrums with which quacks and speculators are flooding the country. The following, from the *College Speculum*, have been analyzed so far:

"1. *Coaline.* Eight ounces of sal-soda (carbonate soda) in a gallon of water, with a few drops of nitro-benzol to give it an agreeable odor. Costs 3 cents a gallon; retail price 40 cents.

"2. *Silver-Plating Fluid.* An ounce vial of solution of nitrate of mercury, which will form a temporary silvery coating when rubbed on brass, copper, or silver, which speedily tarnishes when exposed to the air. Costs 3 cents; retail price 40 cents.

"3. *Nickel-Plating Fluid* is the same as 2, except that a little nitrate of copper and nitrate of nickel are added to the solution of nitrate of mercury. Costs 3 cents; retail price 50 cents to 75 cents.

"4. *Fire-Test Powders,* to prevent explosions in kerosene lamps, the breaking of lamps and chimneys, and the danger of burning from the use of low-grade oil. These are pill-boxes containing one or two ounces of common salt, colored with aniline red. Costs 1 cent a box; retail price 60 cents, or two for a dollar.

"5. *Fire-Proof Powder,* from Wisconsin, is water-lime. Costs 1½ cents; retail price not known.

"6. *Silver Polish.* Pill-box filled with water-lime. Costs ½ cent; retail price 25 cents.

"7. *Ozone.* A package of about one-half pound weight, consisting of pulverized sulphur, colored with lamp-black and scented with oil of cinnamon. Costs 4 cents; retail price $2.

"8. *Spear's Preservative Fluid* consists of one ounce bisulphate of soda dissolved in a pint of water. Costs 5 cents; retail price $1.50.

"9. *Marie Fontaine's Moth and Freckle Cure.* 'For external use only. Put the contents of this package into an eight-ounce bottle, and then fill with rain water.' The package contains 32 grains of corrosive sublimate, or mercuric chloride. Costs ½ cent; retail price 50 cents."

REMARKABLE VITAL STATISTICS.—The Clerk of School District No. 45, Washington township, Morris County, N. J., embracing Schooley's Mountain Springs, has carefully canvassed the district, and reports the following statistics for the year ending April 15th, 1882:

Persons over 100 years of age, 1; between 80 and 90, 5; between 70 and 80, 10; between 60 and 70, 14; between 50 and 60, 38; between 40 and 50, 30; between 30 and 40, 42; between 18 and 30, 72; between 5 and 18, 88; under 5 years, 34. Total 334. During the year there have been but two deaths in the district, both of them old persons, one 93 and the other 71. Of the resident population under 26 years of age there has been but *one death in nine years.—Sanitarian.*

We know the district and can testify to its healthful character and the beauty of its scenery.—Ed. P. J.

NOTES IN SCIENCE AND AGRICULTURE.

Wind an Electrical Phenomenon.—Mr. H. R. Rogers discusses a theory of wind in *Science* at considerable length, in which he wages the opinion that wind is due to electrical action, and makes several noteworthy statements; for instance:

"The wind is moving air—this will answer for a rough definition, where only effects and not causes are considered. *The wind is the electric force operating on and within the air, variously in different parts and portions of the air*—this may be called a definition which considers causes as well as effects. Faraday says that 'the earth is itself a magnet, pervaded in every part by this mighty power' [magnetism]; and he supposes that it has a purpose. The earth has its magnetic polarity. To its magnetism certain electrical currents are related. Between the magnetic earth and the enveloping magnetic atmosphere and its magnetic clouds there is an electrical commerce and interplay. The law of a necessary equilibrium is proclaimed by every thunder-storm, by every shaft of lightning that visits the earth. Does not the same force find in the air one of its chief agents? Who can doubt it? We can not then be far out of the way when we say that *in the interplay of that subtle, all-persuasive principle is found the key to the theory of the winds.*

"Thus, in viewing the earth and atmosphere as vast reservoirs of that subtle principle shifting back and forth to maintain an equilibrium, we believe that we are enabled to see the workings of the very force which moves and sways the atmosphere; which causes its currents, both general and special; and which gives rise to its more extraordinary and yet unexplained phenomena. It is not excessive boldness on our part to affirm that never as yet has due attention been paid to the electrical changes in the conditions of the earth and of the atmosphere—and, as scientists are beginning to suspect—of the sun also.

"It is known that electricity moves with difficulty through air. It may far more easily be the cause of movement of the body of the air, of which it is itself a vital constituent. By virtue of the associated electricity in each, one body of air or one stratum of air is attracted toward another, or repelled from another, or otherwise influenced, according to the law that likes repel and unlikes attract. But, besides the mutual influence of electrified bodies and strata of air upon one another, there is the controlling influence of the established electric or magnetic currents upon these electrified bodies and strata, and the controlling influence of the magnetic earth itself and her hidden currents. Such are certain necessary elements in the problem of the wind that scientists may not leave out of their reckoning.

"In support of the electrical hypothesis we have the influence of high authorities and the demonstration of constantly observed facts. Flammarion, in speaking of the whirlwind, says: 'We know that a whirlwind is a column of air which turns upon its own axis, and which advances comparatively slowly. This whirling column of air is both caused and set in motion by electricity.' Peltier has established, both by numerous facts and by a series of experiments, that the waterspouts of the land and sea are electrical phenomena."

New Discoveries of Rubber.—Two species of india-rubber-yielding trees have recently been discovered in British Guiana, of a character which insures their future profit to the colony. One is a near ally of the Para rubber-tree, and is known to the aborigines of the country by the name of Hatie, its botanical name being *Hevea spruceana*. It is about sixty feet high, with a trunk diameter of twenty inches, and is found on the alluvial oft-flooded land of the creeks and banks of the lower parts of the rivers, where in places it is abundant. The second is not scientifically known yet, as flowering specimens of it have not been obtained. It is one of the largest trees of a forest flora peculiarly rich in large types. The trunk is four or five feet in diameter, and runs up straight sixty or seventy feet unbranched, above which the head extends many feet more. On its discovery recently a few branchlets only could be obtained by shooting them off with large shot. The bark is thick and wonderfully rich in milk of excellent quality, and the elasticity and tenacity of the rubber seems to be unsurpassed. It is scattered in individual trees over a wide area of the colony. The produce of these trees has not been put on the market yet, collectors apparently being unacquainted with them. Samples, however, have been sent to England to be valued. The discovery of these was made by Mr. G. S. Jenman, Government botanist, during an exploration which he lately made in British Guiana.—*Letter to London Daily News.*

A New Building-Cement.—A German exchange describes under the head of "Tripolith," a material designed for building and cementing purposes, which has been patented by Herr B. Von Schenck, of Heidelberg. It is described thus:

"The new material, Tripolith, or triple stone, is a union of silicum, calcium, and iron oxide. These elements are ground, burned, mixed, quickly cooled, then stirred with water and dried, the resulting product being an extremely firm gray mass. In its characteristics, Tripolith stands between gypsum and cement, possessing great hardness and power of resistance, which increase with the age of the material. The cohesive powers

of the stone are not equaled by either gypsum or cement, and can be regulated in from ten to fifteen minutes, by the addition of lime water, in suitable amount. It can be poured in the soft state into any form, whether of metal, gypsum, lime, or gelatine, and can be taken out of the form in ten minutes, much more easily than can be done with gypsum. In all weathers it is the same, neither changing nor undergoing any chemical alteration when subjected to dampness or placed under water. Paint, applied to it, whether oil or lime, does not loosen or scale off, as is the case with gypsum.

"The experiments and trials with Tripolith have now extended over a space of two years, and the results have in all cases exceeded expectations. A particularly noteworthy instance of this fact is shown in the experiments made upon it by a royal commission for testing building materials at the technical school in Berlin, where its advantages were made so apparent, that it was recommended in place of gypsum or cement.

"Tripolith is largely employed in surgical practice, for bandaging, in place of the gypsum casts previously used. The eminent practitioners, Drs. Von Langanbeck and Czerny, give the Tripolith bandages their unreserved approval, on account of their quick hardening, lightness, and imperviousness to water."

How to Test Flour.—The following is quoted from a provincial paper: "Place a thimbleful in the palm of the hand, and rub it gently with the finger. If the flour smooths down, feeling gentle and slippery, it is of inferior quality, though of fancy brand, high-priced, and white as the virgin snow-drift, and will never make good, light, wholesome bread. But if the flour rubs rough in the palm, feeling like fine sand, and has an orange tint, purchase confidently. It will not disappoint you. Such flour, whatever may be its branded reputation, though its price be at the lowest figure, will make good, nutritious bread."

How a Woman Invented a Fire-Escape.—After the burning of the Newhall House, Milwaukee, Mrs. E. Wilson, who lives in a flat at No. 51 East 125th Street, was kept awake many nights through fear of fire, and she then began to plan a fire-escape. One night she solved the problem in her dreams; and a few days later, at No. 227 Sixth Street, she gave a public exhibition of her device. Several builders and many people of curious minds witnessed the workings of it. The fire-escape consists, in part, of an iron platform, with movable railing, which is fastened with heavy bolts to the window-sill. An iron ladder which can be folded up, or a rope one covered with wire, is attached to the platform. When not in use, the whole is folded up and covered over partly with a false sill and partly with the moulding under the window. The false sill and moulding are intended to form an ornamental piece of furniture. When the escape is used, the moulding is opened on hinges, the platform moved out, and the ladder is thrown down. Several heavy men climbed up and down the ladder, and seemed to think that they could escape from fire by it. A stout belt is attached by a rope to the escape for children and invalids.

Electrolysis in the Arts.—The discovery of electrolysis, or the precipitation of pure metals from solutions of their salts, made by Jacobi in 1837, constitutes the foundation on which some of the most important of modern industries are built. It also furnishes a means of separating one metal from another more completely than by any other known method. Electrolysis has recently been successfully applied to the production of selenium. This element, discovered by Berzelius, near Falun, Sweden, bears some resemblance in its properties to sulphur. The most remarkable property of selenium, however, is that light greatly modifies its power of conducting electricity. Mr. Bell has made an ingenious application of this peculiarity of selenium in his photophone. Hitherto selenium has been manufactured only in limited quantities, and cost about $100 a pound. Late improvements have reduced the price to $4.00 a pound. The source of selenium is a selenide of copper and lead, a native mineral obtained from the Argentine Republic.

The Responsibilities of an Engineer.—An engineer who tries to understand his business must study much; he must be above the common laborer or mill operative, and in fact above the head bookkeeper and confidential clerk in point of education; he must have a clear head, a steady hand, and a brave heart. They have nothing strange or new to contend with; their paths are well-beaten and plain; but with the engineer, how is it? He has that subtle thing, fire, that powerful agent, steam, to handle and control, and out of his own brains he must find many of their laws. Thence the emergencies that arise every day and the responsibility which he carries; he is his brother's keeper; he, by a very small mistake, may hurl hundreds into suffering and death, and he must contend with all these subtle agencies and bear these awful responsibilities, and should be paid accordingly.

Conduct of Water Exposed to High Temperature.—A kettle filled with boiling water was hung with the lid on in the hottest room of a Turkish bath. The temperature of the surrounding air was 262° F. After about an hour the temperature of the water was taken, and indicated, as was expected, 212°. The kettle was then re hung with the lid off. The temperature of the room was now 252°. In twenty minutes the temperature of the water had fallen to 185°; in thirty minutes to 178°; in forty-five minutes to 170°, and was evidently still falling. The manager stated that it generally fell

finally to about 140°, when a point of equilibrium seemed to be established, and the water neither got hotter nor colder. The experimenter, Mr. A. J. Hadcock, supposes the loss of heat was due to rapid vaporization and conversion of the sensible heat of the water into the latent heat of steam, and as dry air is a very bad conductor of heat, the heat required to convert a portion of the water into steam had to be abstracted from the remainder of the water, thus lowering its temperature. In substantiation of this explanation it is well known that if water is placed in a vessel over a large bulk of strong sulphuric acid in the receiver of an air-pump, and the air is exhausted, the rapid evaporation of one portion of the water will actually cause the rest to freeze.

Effects of Iron on Digestion.—In an inaugural dissertation published at Berlin, Dr. A. Düsterhoff records the results of some experiments bearing on this subject. One gramme of fibrin was added to twenty c.c. of artificial gastric juice, and during digestion equivalent quantities of various preparations of iron were also added. At the end of the process the undigested fibrin was dried and weighed, and the quantity of soluble syntonin in the solution was also estimated. The time of digestion was in one case three hours ten minutes, in another it was seven hours and a half. In the first series 0.0614 gramme of metallic iron was in each case added, in the form of pyrophosphate, perchloride, and protolactate respectively. In the second series various other preparations were used, the amount of metallic iron being in each case equivalent to 0.0077 gramme. Other experiments were made with white of egg, the amount of albumen precipitated by boiling after digestion being estimated. The outcome of the experiment is, that the organic salts of iron seriously hinder and check peptic digestion. Probably the hydrochloric acid of the gastric juice displaces the organic acids from the iron salts, and so is used up; while the free organic acids in the digestive fluids are far less powerful digestive agents than the hydrochloric acid. But this can not be the only cause at work, for perchloride and phosphate also tend to hinder digestion. Even reduced iron has a similar effect, for it partially dissolves in the juices, forming chlorides. Its solubility, like that of the phosphate, is, however, not very great. Ferrous salts seem to interfere less with digestion than ferric salts.—*Practitioner.*

Tree Planting.—Ex-Governor Furness, of Nebraska, read a paper on "Tree Planting and Growing on the Plains," in which he related his experience during twenty-seven years' residence west of the Missouri, his object being to show what had been done practically, was being and might be done toward converting a naturally timberless portion of the country into a tree-growing region. Statistics showed that there had been planted within the present borders of Nebraska 244,356 acres of forest, 605,514,168 trees, about a quarter of which did not grow. The spontaneous growth was about one-half that acreage. Ash, oak, walnut, hickory, and other varieties thrived. Seed-planting was a mistake. As a rule, better success was had by transplanting young trees, when as near as possible all the roots were preserved. Small trees cost less to produce, transport, handle, and transplant. Alternating, especially in certain varieties, had not given satisfaction. Thus far few ills have attended timber culture in the State. The great losses and failures have been from careless handling, planting, and afterward neglect. Too much importance could not be attached to spontaneous timber growing. A far greater proportion of the planting and growing stood and succeeded than in the case of artificial processes. Losses were rare, and only from occasional invading fires, and where too thick on the ground, the stronger killed out the weaker—no loss, in fact—simply an adjusting or equalizing. Personal knowledge was had of many instances where lands which twenty or twenty-five years ago were considered worthless, had now grown to be valued at from $20 to $100 per acre, solely for the timber planted and grown.

Farm Life—1786 vs. 1868.—At a meeting of the New York Farmers' Club, in 1868, one of the members read the following, the first lines having been written by Dr. Franklin:

1786.

Farmer at the plow,
Wife milking cow,
Daughter spinning yarn,
Son threshing in the barn,
All happy to a charm.

1868.

Farmer gone to see the show,
Daughter at the piano,
Madam gaily dressed in satin,
All the boys learning Latin,
With a mortgage on the farm.

The Chinese Tallow Tree.—The increasing rarity of tallow of animal origin has attracted the attention of candle and soap manufacturers to a vegetable grease introduced into Europe toward 1848, and the use of which is steadily growing in France and England. The tallow tree is of Chinese origin; it grows also in the north-west of India, and has been introduced into South Carolina, where it has been cultivated for ten years. It produces a fruit the core of which is covered with a layer of thick tallow, and contains a yellowish aromatic oil, used in the same country as a heating agent. After the plucking, which takes place in July in the south, and in October in the north, of China, hot water is poured on them, and the grease is skimmed off, after getting cold, with spoons. The tallow, moulded into the form of bamboo canes, is directly brought into commerce. This tallow presents the appearance of a greenish mass, crystallized, having a peculiar odor. It melts at 44.3°, and becomes solid again at 40.3°.

CHARLOTTE FOWLER WELLS, *Proprietor.*
H. S. DRAYTON, A.M., M.D., *Editor.*
NELSON SIZER, *Associate Editor.*

NEW YORK,
MAY, 1883.

ANCIENT MAN—A RE-CONSTRUCTION.

AN effort has been made recently to represent "primitive man" upon such a basis as the fossil skull-cap, found in the Neanderthal, in 1857, is alleged by some archæologists to offer. The result of the effort is a bust of which the head and trunk at once suggest the gorilla, so much of brutal ferocity are impressed upon the facial lines, while attitude and cranial development approximate those of the fierce quadrumane. This ideal restoration has been on view at the office of the PHRENOLOGICAL, together with a plaster cast of the fossil skull-cap, and so many inquiries have been made concerning our opinion of it, that the editor deems it suitable to occupy a little space in these columns in answering the oft-repeated question: "What do you think of it?"

First. We are not satisfied with the manner of the restoration, as we think that the fossil relic has not received full justice at the hand of the restorer. Taking the plaster cast as it has been furnished us, we are struck at once by its size; and by several peculiarities of structure which indicate an alliance to existing races whose crania are of the long or dolicocephalic type. If this skull-cap be a faithful relic of a "primitive man," then "primitive" men possessed heads and brains fully as large as modern man, as we find him represented in races of low class, as a whole, and as represented by individuals belonging to the civilized races.

The interior or brain space of the cast measures 6½ inches in length, 4½ inches in breadth at the ear openings, 2½ inches in vertical depth at the center, and 2¼ inches in depth in the frontal space, 1½ inches back from the nasal root, while the breadth in the same region is 3¾ inches.

Now taking from the collection of the Institute a skull of average capacity as found in white civilization, we measure its calvarium or skull-cap space, interiorly as we have just measured the cast of the Neanderthal, and find it to be 6½ inches long, 5 inches wide, 3 inches deep at the median region, 2½ inches in the frontal space, and 3⅞ in frontal breadth. This skull, it should be mentioned, is of the broad type, while the fossil belongs to the narrow. A critical comparison of the Neanderthal with a like part of an average negro skull from the Western or Southern Coast of Africa, or with a Patagonian or Australian skull, would not result unfavorably for the "primitive man" as regards brain volume. Mr. Huxley allows its capacity to be 75 cubic inches.

Second. Considerable stress is laid upon the projection of the supra-orbitar ridges by those who would find in this fossil some confirmation of their hypothesis of man's derivation from the lower animals. They point to them, and then to the great

bony eminences over the eye-sockets in the gorilla head, and claim a direct relationship between the two organizations; apparently forgetting the great difference in general structure between them, that whereas the ridges of the gorilla are widely separated from the brain-pan, spread out laterally in a wide border of plate-like process, an inch or more in the mature animal beyond the brain case, and rise considerably above its superior plane, while a strong ridge at the median line of the cranium unites anteriorly with two smaller ridges, one proceeding from the outer angle of one supra-orbitar prominence, and the other from the outer angle of the other. There are also other great bony processes coursing over the occipital portion of the animal's skull and around its base, intimations of the powerful muscular development of its jaws and neck. The ancient relic is smooth and entirely like the modern human skull in its general structure, none of those coronal, occipital, or lateral ridges being suggested by even a salience upon which a Huxleyite could rest an eye-glass. It must be remembered, too, that in producing this fossil, nature has replaced the original salient ridges with earthy matter, which by its accumulation to so great a thickness has probably much increased the apparent extent of the ridges; and consequently a fair estimate of them must take into consideration this tendency of the thickening process, as well as the relation which the inner plate of a skull bears to the outer at the supra-orbitar region.

The projection of these ridges is due, of course, to the breadth of the frontal sinuses, which are generally large in the males of savage races, the American Indian offering a good illustration of the fact. Mr. Huxley quotes Dr. Fuhlrott's language, that "a probe may be introduced to the depth of an inch" in the sinuses of the Neanderthal frontal bone. We have seen specimens of modern skulls in which the separation of the inner and outer tables over the orbits extended fully an inch upward. Mr. Huxley alludes to the large circumference of this ancient skull, 23 inches, due, to be sure, to the great development of the supraciliary ridges, "though the perimeter of the brain case itself is not small." These ridges, he adds justly, "give the forehead a far more retreating appearance than its internal contour would bear out."

A writer in *Longman's Magazine*, in reply to a naturalist who has placed much stress on the supra-orbitar ridges or "bosses" of the Neanderthal fossil, as significant of its "bestial type," says: "What is posed as the 'Neanderthal skull,' is the roof of the brain case, or 'calvarium' of the anatomist, including the penthouse overhanging the eye-holes or 'orbits.' There is no other part of the fragment which can be supposed to be meant by the large 'bosses' of the above quotation. And in this assumption I have to state that the supra-orbital ridge in the calvarium in question is but little more prominent than in certain human skulls of both higher and lower races, and of both the existing and cave-dwelling periods. It is a variable cranial character by no means indicative of race, but rather of sex."

It is in the structure and development of the brain that we should look for points of difference and relation. Open a gorilla skull, and immediately the great distance which separates it in form and volume of brain from man is evident. The gorilla, possessing the largest brain of the quad-

rumana—the highest in the scale of brutes—is thus seen to be after all but a brute. Quoting again from the writer above—"I have found that a vertical-longitudinal section brings to light in greatest number and of truest value the differential characters between the lowest *Homo* and the highest *Simia*."

To realize the character of the man who once thought and lived in the ancient Neanderthal skull, we must consider its interior capacity; and only by considering that, can we realize that he was a man very much like men we meet today in the walks of civilization. The artist may claim to use his skull-cap as a model, and build up a mass of plaster representing a brute-man with giant trunk and semi-hairy back and breast, with grinning savage jaws, and forehead low, in which the "bosses" are brought out into special prominence—and with a crown rising to a cone, unlike enough to the fossil—which is rounded in the coronal region—on which short grizzly hair exaggerates the brutish aspect, but he can not persuade us, who have had one glimpse into that fossil, that his work is faithful.

THE GREAT FLOODS.

THE beginning of the year 1883 has been characterized by the occurrence of disastrous floods in both hemispheres which have scarcely their parallel in the past century. Cities of great size, towns, villages, whole parishes have been inundated by swollen rivers and lives destroyed, property to an incalculable extent lost or damaged, and thousands of industrious people made homeless. In Asia and Europe there have been calamities of this kind which drew upon the sympathy of the benevolent the world over. In our own country the valleys of the Ohio and Mississippi have been the scene of such vast accumulations of water that at many points large lakes were created. Of the terrible sufferings at Cincinnati, Memphis, Louisville, Tiptonville, and other places, accounts have been broadly circulated and organized relief has promptly responded to the cry for help sent up by the great number of wet and hungry unfortunates.

Whether or not the occurrence of great floods in our day is due in some measure to the destruction of our great forest tracts, the encouragement of tree planting must as an important measure of internal economy be a part of our national policy; and the sooner some plan is devised and set in action to prevent the wanton and indiscreet destruction of the forest that remains, the better.

A STRIKING DIFFERENCE.

IN glancing over the weekly returns of mortality in several Southern cities we have been forcibly impressed by the great difference in the percentages of the white and colored classes. We have now before us the report for the week ending February 24th of this year, by which it appears that in the District of Columbia the number of deaths among the white population was according to the annual rate of 13.5 to the 1,000; while among the colored people of that city the deaths were at the rate of 20.4. In Richmond the rates are, respectively: for the whites 15.3, for the colored 39.4; in Lynchburg, whites 5.6, colored 46.5; in New Orleans, whites 24.4, colored 58.1; in Jacksonville, Fla. (report for Feb. 17th) whites 8.6, colored 26.

These figures are by no means exceptional in their showings, but tally closely with the averages furnished by the reports from month to month, and force the inference that the negro element in the South is rapidly decaying.

One of the important reasons for this decadence is the indifference of the masses of the colored people to sanitary conditions; their easy, indolent, happy-go-lucky nature tolerating offenses of uncleanness in diet and surroundings which the white will not endure. To be sure, the squalor and filth of the negro quarters in a city affect in some degree the general atmosphere, but the respect paid to the state of his personal environment by the white citizen of a place like Richmond or New Orleans gives him the capital of better health and endows him with a power of resisting the influences of disease which may be transmitted from the poison-infested cabin of his colored townsman. It pays to be clean.

THE WORK OF THE INSTITUTE.

HAS THE STUDY OF PHRENOLOGY BEEN PROFITABLE TO ME?

[A lady graduate of the class of 1880, who is a teacher, sends us the following welcome tribute to the practical value of Phrenology, even to those who do not purpose following it as a profession. The minister, the teacher, the mother, especially are benefited by the light which Phrenology sheds on their important yet difficult pathway.—ED.]

SAID a friend to me, "You must be extremely interested in the study of Phrenology to incur an expenditure so much out of proportion to your moderate income. Does, then, the outlay which you have invested in going through the regular course of instruction and lectures at the American Institute of Phrenology return an equivalent to you?"

If you are referring simply to the mercenary side of the matter, No—not a special advantage has grown out of it for my purse.

"And yet you do not really regret your doing so?"

It may seem incredible to you, my practical friend; but as for me, I regard the result of those six weeks' study of greater value than if I had gained a million. Let me mention as priceless the lessons that taught me how to live. Important, indeed, is this question; for what can you expect of the mind if not based on and supported by a hale, bodily foundation?

How to live according to the laws of health must be learned. I learned it at the Institute of Phrenology, and my present state of health is sufficient proof of the value of its teachings.

The second equally estimable boon awarded me is the mental light received through those instructions, by which life, mankind, nay, the universe, appears to me in a new aspect and clearer than ever.

And, lastly, does not Phrenology offer the key to the problem of self-knowledge, the first and safest step to self-improvement? Are not those arguments in favor of my study sufficiently convincing? Are not the advantages thereof beyond one's current estimation of the value of money and its powers? S. S.

WOULD you study the science of character, reader? look around you. The materials are abundant on every side, and every step you take will bring fresh experiences, new truth, new revelation.

Our Mentorial Bureau.

To Our Correspondents.

QUESTIONS OF "GENERAL INTEREST" ONLY *will be answered in this department. But one question at a time, and that clearly stated, must be propounded, if a correspondent shall expect us to give him the benefit of an early consideration.*

IF AN INQUIRY FAIL TO RECEIVE ATTENTION *within two months, the correspondent should repeat it; if not then published, the inquirer may conclude that an answer is withheld, for good reasons, by the editor.*

TO OUR CONTRIBUTORS.—It will greatly *aid the editor, and facilitate the work of the printer, if our contributors generally should observe the following rules when writing articles or communications intended for publication:*

1. *Write on one side of the sheet only. It is often necessary to cut the page into "takes" for compositors, and this can not be done when both sides are written upon.*
2. *Write clearly and distinctly, being particularly careful in the matter of proper names and quotations.*
3. *Don't write in a small hand, or in pencil, as the compositor has to read it across his case, a distance of nearly two feet, and the editor often wants to make changes and additions.*
4. *Never roll your manuscript or paste the sheets together. Sheets about "Commercial note" size are the most satisfactory to editor and compositor.*
5. *Be brief. People don't like to read long stories. A two-column article is read by four times as many people as one of double that length.*
6. *Always write your full name and address plainly at the end of your letter. If you use a pseudonym or initials, write your full name and address below it.*

WE CAN NOT UNDERTAKE TO RETURN UNavailable contribntions *unless the necessary postage is provided by the writers.* IN ALL CASES, *persons who communicate with us through the post-office should, if they expect a reply, inclose the return postage, or what is better, a prepaid envelope, with their full address. Personal matters will be considered by the editor if this is done. Anonymous letters will not be considered.*

EVOLUTION.—MRS. G. C.—By reference to a late cyclopædia, you will find this subject described at sufficient length. In brief, the term is applied to the doctrine that the universe as it exists, with all its forms of matter, organic or inorganic, has been gradually evolved from beginnings or sources infinitely simple or primitive.

One of the early apostles who formed a distinct theory of evolution, Lamarck, held that all organic forms, from the lowest to the highest, have been developed progressively from living microscopic particles. Professor Huxley may be said to define the theory as now generally held by its supporters in the following terms: "There are grounds for believing that the world with all that is in it did not come into existence in the condition in which we now see it, nor in anything approaching that condition; on the contrary, the present condition and formation of the earth's crust, the development of land and water, and the infinitely diversified forms of animals and plants which constitute its present population, are simply the final terms in an immense series of changes which have been brought about in the course of immeasurable time by the operation of causes more or less similar to those which are at work at the present day."

The subject has been very elaborately discussed from many different points of view by numerous writers.

RESPIRATION AND IMPURE AIR.—*Question:* Will two persons occupying the same room inhale each other's exhalations? in other words, will a person inhale impure air while there is pure air in the room? or does the impurity mix with the pure air, leaving none perfectly pure? C. L.

Answer: Unless the ventilation is perfect there will be impurities mixing with the atmosphere, impurities arising from respiration and also skin excretion, hence you will see at once the necessity of making such arrangements as will permit the ready admission of fresh air to rooms, especially those which are occupied by several persons.

CLEANSING THE BUST.—SUBSCRIBER.—Use soft water in which a very little washing soda or fine soap has been dissolved, and a soft brush so that the surface shall not be roughened, as would be the case if you used a harsh brush. Unless the soil is difficult of removal, warm water will generally be found sufficient. In using an alkali with water you can scarcely avoid marring the polished surface of a plaster cast.

ELECTRIC BELTS, BOOKS, ETC.—C. L. F.—We have heard of good results following the wearing of an electric belt or pad; whether as a positive result of such wearing or as a coincidence, we are not prepared to say, but we know that there are many devices of the kind in the market, which are simply gotten up to sell, and have nothing of the battery about them. Zinc and copper are the metals usually placed in combination for the production of an electric current. As regards the treatment of disease by electricity, we know that there is much virtue in the application of galvanism under skillful direction, in some forms of nervous disorder. Within a few years the subject of medical electricity has assumed a very important position,

and there are many works on the subject; prominent among them are Beard and Rockwell's Treatise, Pitzger's Manual, Butler's Electricity in Surgery, etc.

VALUE OF WALNUTS AS FOOD.—W. G. D.—We have not at hand an analysis of the nutritive elements of walnuts, peanuts, Brazil-nuts, and other shelly forms of food; as a general rule, however, they are rich in such material. In some parts of France, the people make use of the chestnut as an important part of their table supply; they grind the kernel into flour and with it make a very palatable form of bread. With us of course nuts are used more as a trimming or dessert; as an interjected matter of occasional enjoyment; and very few think of nuts as specially valuable in the economy of nature. According to Letheby, in his table of standard articles, taking human milk at one hundred, maize or indian corn contains one hundred nutritive equivalents. Indian meal is stated as having 11.1 parts albuminous substance; 64.1 starchy matter; .4 sugar; 8.1 fat, and .7 salt, with 15 parts water, making a total of 11.1 nitrogenous matter, and 85 carbonaceous. Comparative values of several foods as ordinarily used have been stated at other times in the health department of this magazine.

BREATHING THROUGH THE NOSE.—C. H. E., of Worcester, Mass., writes in relation to this matter, which we had occasion to consider in a late Number of the PHRENOLOGICAL, as follows: "Since seeing the practice of sleeping with the mouth closed, approved by the editor of the JOURNAL, I have been able to breathe through my nose by a contrivance of my own, worn at night, and made thus: A piece of an old suspender is pinned around the top of my head, the lower part under and supporting my chin. At right angles to this a piece passes around the head and over the mouth, the extremities being fastened by a pin at the back of the head, and where it crosses the first mentioned it is sewn fast. Some care is necessary in adjusting the apparatus, for if the transverse or horizontal piece fall a little below where the lips meet, there is an unpleasant sense of pressure." The plan seems to us a practicable one, and we describe it for the benefit of those who find it difficult to keep their mouths shut when asleep.

What They Say.

Communications are invited on any topic of interest; the writer's personal views, and facts from his experience bearing on our subjects, being preferred.

ADDITIONAL PROTECTION TO OUR PAPER MONEY.—Whatever tends to make our paper money more secure enhances its value. Though many safeguards have been thrown about it, still one quite weak and unprotected point remains. The operations of the counterfeiters have proved that we need additional protection. One of the most difficult, if not *the* most difficult thing, with them at present, is to obtain the necessary quantity of the peculiar paper on which the "greenback" is printed. Putting silk fiber into this paper was a great additional security. Paper with silk fiber being very difficult to obtain, the counterfeiters have resorted to the practice of washing small bills—obliterating all the printing thereon, and then using the paper for printing bills of a larger denomination. Additional security would therefore be obtained if we could prevent this practice.

Now, when the art of putting "water-lines" in paper is so well known, it would seem that it might be applied to this paper. If, after the manner of this "water-line" process, the figures of the different denominations were put upon the paper intended for the different kinds of bills, it would add much to the protection of the "greenbacks." Ten-dollar bills could only be printed upon ten-dollar paper, and so with twenties, fifties, etc.—each denomination on its respective kind of paper.

Argument in the case is hardly necessary. Let this paper be thus marked and the counterfeiters will find it more difficult to continue their illegitimate business, and whatever adds difficulty to the furtherance of their dishonest art tends to enhance the value of the "greenback." It would seem that all honest and intelligent persons would be interested in whatever protects our paper currency—the best the world ever saw. Every point that adds to its security adds a premium to its value and greater security to our business interests. I. P. N.

A PULPIT STATEMENT.—Study yourselves, and strive as you seldom have done to fathom your own actions and discover their causes. It is surprising how little we know of the reasons why we do certain things. Motives of which we take no cognizance have more influence than we are aware. In this connection I may be excused if I leave the direct line of my subject, to say he who neglects to study his mental and moral organization by the light of phrenological science, leaves undone a most important thing. I say phrenological *science*, because I would not have you imposed upon by quacks and charlatans. To be able to judge correctly of character from phreno-developments requires the study and experience of years.—*Extract from a sermon preached to the Third Unitarian Society, Brooklyn, Feb.* 11, 1883. [By L. A. R.]

INTUITION *vs.* HUMAN NATURE.—The name of the organ situated directly over Comparison, or rather between Comparison and

Benevolence, on the median line of the forehead, is commonly given as Human Nature. "This organ (to use the words of the 'Handbook of Phrenology and Physiognomy') furnishes us with an *intuitive* knowledge of character, or enables us to perceive the state of mind or feeling possessed by others, so that we may successfully adapt ourselves to them and operate upon their feelings." This I grant, but believe at the same time that the powers of this organ can not be confined to the intuitive knowledge of the human character. What right have we to think that this intuitive power is confined to this one function? Why should we stop here? If it can be exercised in that direction, why not in others? It has been my experience, and I am sure that of others who have made human character a study, that to a greater or less degree, in every one, there is a certain intuitive judgment of persons, things, etc., varying, of course, in correctness in different people. Now there must be some phrenological organ to show this power, and with this idea in view, I have noticed carefully those who had this power, and have found invariably that it corresponded to the size of the organ of Human Nature. When examining, I generally use the word *Intuition* instead of *Human Nature*, in naming the organ. And in describing the characteristics of the one being examined, I do not confine his intuitive powers to reading character, but make it general.

It might be interesting right here to give Webster's definition of intuition: "A distinct inspection of the mind; direct apprehension or cognition; an act of immediate knowledge, as in perception or consciousness, distinguished from mediate knowledge, as in reasoning." Now, this principle of intuitive knowledge has always been recognized as one of the component parts of the human character. Of course I am aware it has also been denied, but at the same time the great majority, I believe, are firmly convinced of its existence. It has been my experience, and probably that of others, that this organ is generally better developed in the female than in the male. And this reminds me of a remark made by some great French philosopher, that "never after patient toil, earnest investigation, and laborious reasoning, had he arrived at the solution of some great problem, but he found a woman had been there before him, *but she never knew how she got there.*" This was intended for a witty allusion to the opposite sex, as will be seen. We are compelled, however, to decide that she had as much right to her solution as he. The only difference between them was, that she used a different organ to reach it. We consider this indeed the highest development of human reason, and think it is rightly situated in the forehead above the other intellectual organs. It is a grand faculty, and, of course, liable to all degrees of power. Whereas some might rely on it almost infallibly because of its large development in their heads, others would have to be very cautious in accepting its judgments on account of its small degree of development and consequent feebleness. FRANK H. WHITE.

WILL-POWER.—The universe is run by the Divine will-power. Man's will-power is not a peculiar product of his own, but is the offspring of the universal will-power. "The Son is one with the Father," says Christ. Will-power can be condensed or rarefied, grossified or sublimated, but these different forms are one in substance, though different in degree and quality. In the first case we call it anger, wrath, rage; in the latter case it becomes faith or love. Faith and love are forms of sublimated will-power that grow in efficacy by their sublimation. To the degree that we refine and educate our will-power, to that degree we make it useful and applicable. It is the true homeopathic principle in its highest spiritual aspect that pervades all creation; that that which becomes destructive and endangers life and health, when used in condensed form, becomes regenerative and healing when applied in a very much finer and attenuated form. In the sexual effect this fundamental principle of truth becomes of peculiarly striking evidence, and as it is true in the spiritual and moral life of man, we may safely conclude that it will also be valid in his physical life, for the principles and laws of creation are the same in both forms of its manifestation. The same principle is applicable, and is, in fact, the only genuine remedy for the evil of drunkenness. When the life-principle of the cereals is extracted, and in highly condensed or grossified form taken as liquor, it becomes a deadly poison that burns up body and soul. Take it as nature prepared it in finely attenuated form—as unfermented breads and mush of wheat, barley, and maize, with grapes and fruits, and life, genuine life is restored, and the worst drunkard will be redeemed and become a man again.

All diseases can be cured—one might say, can only be cured—by will-power, or faith-power, or love-power. The finer, the more radiant, the more penetrating the power becomes. It is a strange infatuation, or deception, to believe that a physician or a drug cures a patient. The life of man is in his soul, and the life of the soul is its faith. A person that is not entirely grounded in faith to God or to Christ, or believes that the spiritual powers only control his soul and not his body, loses his organic faith when abnormal external conditions produce an acute form of disease. If the organic faith is not lost, any acute disease will be healed by the agency of nature alone, when the abnormal causes are re-

moved and normal conditions are put in its place. If the lost-faith-action is not restored by faith in a doctor or a certain form of medical treatment, the soul becomes sick and chronic disease is established, because the soul has lost its life, that is, its faith.

The faith of the soul manifests itself through the body by corresponding forms of breath, and the breath of faith—that is, the breath of life—is different in quantity and quality from the breath of doubt, or fear, or unbelief; the former gives life, the latter forms give death or paralyze life. When, by prayer or by whatever external cause, the soul is re-established in the attitude of faith, it regains the breath of faith, and thereby life and health are restored.

To the degree that we develop and discipline and educate our will-power, by applying it to uses in finer forms, we master the universe, and become conjoined to the spiritual powers of God. If we rely on our own individual supply of will-power we will find it soon exhausted, but if we tune our own will into accord with the universal or divine will, and subject it to the laws that regulate the latter as revealed, we can draw from the universal fund of will-power, and thereby become supplied with inexhaustible stores.

JULIUS ASHMAN.

PERSONAL.

THE Baron George Washington, of Gratz, Austria, belongs to a branch of the old English stock from which our first President came.

IT is stated that Miss Clara Barton has been offered the position of Superintendent of the Sherburne (Mass.) prison for women by Governor Butler.

GUSTAVE DORÉ was a lover of music. His voice was a rich baritone, and he played on piano, flute, guitar, and violin. When jested once upon his celibacy, he said, referring to his mother and his art, "What would you have? I am already twice married. Must a man be a Turk to prove that he is of domestic turn?"

ALEXANDER H. STEPHENS, one of the most prominent characters of the South, died March 3d, after many years of active industry kept up in spite of personal sufferings that would have compelled ordinary people to keep to their beds. He was born early in 1812. In 1836 he began public life in the State Legislature. In 1843 he was elected to Congress, and he was almost a continuous Representative from that year to 1882, except during the period of the Rebellion. Last year he was chosen Governor of Georgia. His personal appearance was remarkable. He had a large brain, but his weight was only ninety pounds, and in later years he always occupied a wheeled chair, being unable to walk. His voice was like that of a child. He was the author of a "Constitutional View of the War," of which 100,000 copies were sold, and also of a "History of the United States," just issued.

TIMOTHY O HOWE, Postmaster-General of the United States, died at Kenosha, Wis., March 25th. He was born in 1816 at Livermore, Me. In 1845 he removed to Wisconsin, where he became Chief Justice of the State, and afterward for eighteen years was State Senator. He was a member of the Monetary Conference which met at Paris in 1881. In December of the same year he was appointed Postmaster-General.

PETER COOPER, the widely-known philanthropist of New York City, died at his residence on Lexington Ave., April 4th last. A cold, followed by pneumonia, was the cause of his death, although but a few days before he had been out. The news of his death excited deep feeling throughout the city and neighborhood, for Mr. Cooper was one of the most esteemed men of our citizens—and most deservedly so. He was in his ninety-third year, but mentally fresh and earnest. In our next number we shall have more to say about him.

WISDOM.

"Think truly, and thy thought
Shall be a fruitful seed."

GOOD—the more communicated, more abundant grows.—MILTON.

NEVER run into debt if you can find anything else to run into.

FAITHFULNESS and sincerity are the groundwork of all true goodness.—CONFUCIUS.

IF you would lift me, you must be on higher ground. If you would liberate me, you must be free.—EMERSON.

KEEP trouble at arm's length. Never turn a blessing around to see whether it has a dark side to it.

A BAD man is like an earthen vessel—easy to break and hard to mend. A good man is like a golden vessel—hard to break and easy to mend. —*From the Hindoo.*

IT was a French woman who exclaimed, holding up a glass of sparkling fresh water, "Ah! if it were only wicked to drink this, how nice it would taste!"

BOOKS are endless, the sciences are many, time very short, and there are many obstacles. A man should, therefore, seek for that which is the

essence, as a swan seeks to extract the milk which is mixed with water.—*Hindu* (*Vriddha Chanakya*).

HEED how thou livest. Do no act by day
Which from the night shall drive thy peace away.
In months of sun so live that months of rain
Shall still be happy. Evermore restrain
Evil and cherish good, so shall there be
Another and a happier life for thee.
—WHITTIER.

MR. RUSKIN recently said to the English people: "You fancy you are sorry for the pain of others. Now, I tell you just this, that if the usual course of war, instead of unroofing peasants' houses, and ravaging peasants' fields, merely broke the china upon your own drawing-room tables, no wars in civilized countries would last a week."

MIRTH.

"A little nonsense now and then
Is relished by the wisest men."

A MAN lately applied at a butcher's shop for a "liver pad"!

THE perfectly square man is sure to be round at the right time.

"AND you wash your type with lye, do you?" said a visitor in a printing office. "Well, now I know how so many untruths get into the paper."

THAT young lady who made seven hundred words out of "conservatory" last fall has run away from home. Her mother wanted her to make three loaves of bread out of "flour."

A VERY colored man who charged another with assaulting and beating him, on being told by the Judge that no marks were visible, indignantly rejoined, "Does ye s'pose he hit me wid a piece of chalk?" The trial proceeded.

DUMAS one day called upon a lady to present her with a copy of his last play. A physician was present who sneered, "Still dabbling in tragedies?" The dramatist answered, "Come, doctor; no jealousy! You know nobody can mistake my works for yours, as all your tragedies are bound in mahogany—mine in morocco."

"I THINK," said a fond parent, "that little Jimmie is going to be a poet when he grows up. He doesn't eat, and he sits all day by the fire and thinks and thinks." "You had better give him an oil bath," said Aunt Jerusha. "He's going to have the measles. That's what ails Jimmie!"

A TRAVELER was leaning at night against a railing at the Harper's Ferry railroad station. A locomotive came along, and he sprang lightly over the rail to escape possible danger. He thought it was a meadow on the other side, but knew his mistake when he struck a muddy stream forty feet below. On being rescued he was asked his name. "I wouldn't tell you for a thousand dollars," he replied. "Describe me simply as a fool."

A WELL-KNOWN Presbyterian clergyman of one of the lower Delaware counties, somewhat famous as a wit, was approached by a Baptist clergyman with the question, "Well, brother, we are going to have a new bell for our church. What sort would you recommend?" There was a twinkle behind the Presbyterian parson's glasses, and he answered promptly, "By all means, a diving-bell."

MR. STRUT insists that he is "no chicken," but all his friends are ready to admit that he has certain natural claims to being considered "the cock of the walk."

Library.

In this department we give short reviews of such NEW BOOKS *as publishers see fit to send us. In these reviews we seek to treat author and publisher satisfactorily and justly, and also to furnish our readers with such information as shall enable them to form an opinion of the desirability of any particular volume for personal use. It is our wish to notice the better class of books issuing from the press, and we invite publishers to favor us with their recent publications, especially those related in any way to mental and physiological science. We can usually supply any of those noticed.*

POEMS. By Augustus Watters. Paper. Price 50 cents. Published by the author.

Who that loves sweet and tender verse will find this little book acceptable to his taste. The vein of the writer is sad and plaintive for the most part, but the tone and sentiment are high and awaken emotions of the purest character. The Whip-poor-will, Indian Summer, The Robins, and The Haunted Tree, are of a quality much above the average of the verse published nowadays. Mr. Watters' muse is well worth cultivation, and we trust that we shall see more of his work. In saying this we feel that we express the wish of every one who has read his dainty little book.

A HANDBOOK OF ENGLISH AND AMERICAN LITERATURE — Historical and Critical; with Illustrations of the Writings of each successive Period. For the use of schools and academies. By Esther J. Trimble, late Professor of Literature in the State Normal School, Westchester, Pa. 12mo, pp. 518. Philadelphia: Eldredge & Brother.

The aim of the author in preparing this new volume is not so much to furnish the student a view of the beginning and progress of English literature by mere quotations from representative writers, with criticisms of their style and ascriptions of their place in the world's esteem, as to show how the literature of the successive eras from Caedmon to Tennyson reflects the character of its time, while she also endeavors to form a just estimate of the writers. She says well that "it is impossible to appreciate the literature of any period without some knowledge of the every-day life of the people." The work has the form of a connected history; the successive periods respectively having some dependence upon preceding periods. It is divided into seventeen chapters, each of which represents an era, which may be studied with care and elaboration in accordance with detailed suggestions or in an outline manner, which is the better course for the pupil of an average school, and a thorough examination be left to future leisure and opportunity.

The author has made the work an interesting one for school use, especially if in the hands of a judicious teacher; and we are pleased to note that she has not neglected American literature, although the limits of her book compelled a rather brief consideration of its merits.

OUR HOME PHYSICIAN: a Popular Guide to the Art of Preserving Health and Treating Disease; with plain advice for all the medical and surgical emergencies of the family. By George M. Beard, A.M., M.D., assisted by eminent medical authorities. Revised and enlarged edition. 8vo, pp. 1,506. Price $6.00 in cloth and $7.50 in sheep. New York.

We have occasion so frequently to examine and pronounce upon large volumes of the popular medical class, cyclopedias which are highly commended (by their publishers) to people as of great value as private or home advisers in matters of sickness and disease, that we open a fresh publication of the sort with some degree of hesitation, and yet we are gratified by the interest shown by the community in the diffusion of medical information—the growing desire of people to know something of their physical constitution, of the causes of disease, and of the rationale of their treatment when sick.

We are gratified on the one hand by the appearance of such a volume, because we know that the publisher has undertaken the costly work of its production because he is convinced that there is an existing demand for books of its character; and we hesitate in taking one up for reviewal, because we know that not a few of such books are made in a careless and cheap manner as commercial ventures, and a skillfully organized system of advertising is expected to give them a wide sale. The good "Family Physician" possesses a high value; its advice will often prevent serious results following apparently simple illness; in fact, its work is chiefly in the line of prevention, and that compilation which claims to instruct everybody in the treatment of diseases commonly known to society is a dangerous book to be placed in the hands of the masses. Only a quack would profess to furnish such a book.

We have examined this new candidate for popular favor with some interest, because of the name of its editor, Dr. George M. Beard—a man well known in New York scientific circles for his freedom from class bigotry and for his earnest disposition to look into the merits of new discoveries, especially of the biological sort. We regret his early death, for he was one of the few men in medical science who give it a progressive stimulus and whose highly enlightened minds and independent views give it character and dignity. The general arrangement of the topics of the volume show the hand of one familiar with the pen and conversant with their subject matter, and the clear, compendious style is well suited to the purpose of the work.

The space is chiefly occupied with a treatise on the anatomy and physiology of the human body; the influence of occupation on health; the laws of heredity; the nature of diet; stimulants and narcotics; air, sunlight, climate, exercise, electricity, etc.; directions for the care of the sick, the management of children, a description of recent discoveries and improvements in treatment, what to do in accidents, and much other information "adapted to the wants of the household and for those who are beyond the ready call of a physician."

The illustrations are generally faithful, especially the colored representations of skin diseases, and of the plants which have a place in the materia medica of the allopathic, eclectic, and homeopathic schools. A supplement by Dr. Samuel Lilienthal contains "a repertory of homeopathic treatment and remedies prepared expressly for the work," thus rendering it quite complete and a practical confirmation of the late advance in old-school medicine.

PUBLICATIONS RECEIVED.

REYNARD THE FOX. By E. Bulwer-Lytton. Engraved in phonic shorthand, with new and revised plates, by Eliza Boardman Burnz, Principal of Burnz's School of Shorthand. 12mo, cloth. pp. 55. Price 50 cents. A neatly printed book for the use of the student of shorthand. The phonographic characters are very clearly outlined, while the text in the ordinary print assists the young student to an understanding of the shorthand character.

LIFE OF ALFRED B. MEACHEM. By T. A. Bland. Together with his lecture, "The Tragedy of the Lava Beds." pp. 48. T. A. & M. C. Bland, Publishers, Washington, D. C. This is an appreciative sketch of the career of a noble, self-sacrificing man, well worthy the reading of all who feel any interest at all in questions relating to the American Indian. A fine steel portrait accompanies the pamphlet.

THE BATTLE OF THE MOY; or, How Ireland Gained her Independence, 1893–94. Lee & Shepard. Here we have an effort on the part of some sympathizer with the Irish aspiration for liberty which seems to us much after the style of "The Battle of Dorking," which created considerable stir in England a few years since. It is quite possible that Ireland will at some time secure autonomy in British affairs, but how it will be brought about seems to us "a thing which no fellow can find out." The author of "The Battle of the Moy" has produced a sanguinary little book, so far as the fighting is concerned.

TWELFTH ANNUAL REPORT of the Board of Trustees of the Ohio State University to the Governor of the State of Ohio for the year 1883. An elaborate and comprehensive view of work done in all the departments of State education.

LITTLE PLAYMATES' WALTZ, composed by Charlie Baker. Price, 25 cents. F. W. Helmick, publisher, Cincinnati.

SIX FEET OF EARTH. Motto Song. Words by J. A. Guelick; music by James E. Stewart. Price 35 cents. F. W. Helmick, publisher, Cincinnati, O.

PLYMOUTH PULPIT. A weekly publication of sermons preached by Henry Ward Beecher. We have received the weekly issues in this series with regularity from the publishers, Fords, Howard & Hurlbert, New York City.

NEW "NORMAL" BOOKS. J. E. Sherrill, of the Normal Publishing House, Danville, Ind., has in press "The School and Institute," by Prof. J. Fraise Richard; "Methods of Teaching and School Management," by Prof. J. V. Coombs, Pres. of East Illinois College; and "Arithmetical Analyses and Topical Outline Lessons," designed to accompany Ray's Third Part Arithmetic, by Prof. W. H. F. Henry.

HARPER'S NEW MONTHLY MAGAZINE for March gives us glimpses of Holland and Arizona, and also a historical retrospect of the early discoveries on the Canadian frontier by French navigators. A very opportunely and finely illustrated description of Wagner's last opera, Parsifal, is included in the plump Number.

SAFETY ON LAND AND SEA. Time without a watch or chronometer; amusement, instruction, etc.; planisphere of the stars. Improved by Dr. Wm. F. Thoms, Pres. Am. Humane Society, New York Nautical School, etc. An interesting pamphlet, containing in a condensed form a good deal of practical astronomy.

MUNSON'S PHONOGRAPHIC NEWS, Monthly. No. 40, for January, is chiefly made up of matter of interest to the shorthand fraternity, printed in phonographic characters.

UTAH AND ITS PEOPLE. Facts and Statistics bearing on the Mormon problem. By a Gentile. If one-half of the showings of this pamphlet be true, a city controlled by Mormon civilization is happier than it would be under Christian. The taxes are represented as low, so low that Utah ought to be a farmer's paradise; and as compared with other States and Territories, this Gentile says there are few liquor saloons and disreputable places in Utah; and where such places exist, they are run and sustained by anti-Mormons. He also says that 98 per cent. of the gamblers in Utah, and 95 per cent. of the lawyers, are Gentiles. But this sort of evidence, good as it is, would not convert us to Mormonism, so long as polygamy is upheld as a cardinal virtue in its system.

HEALTH "IN A NUTSHELL."

A NEW HEALTH MANUAL. By DIO LEWIS, M.D. 12mo, extra cloth, full gilt, price only **$1.00.**

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The book has just been written in compliance with the urgent solicitations of several prominent educators having a large number of youths entrusted to their care. It is an epitome of the wisdom and the observations of a whole lifetime concerning the numerous topics which most interest all who would like to stand high in the sphere in which they live. While many of the subjects treated are commonplace, such as Climate, Ventilation, Sleep, Food, Mastication, Digestion, Exercise, Cold Baths, Building a Brain, Longevity, Quintessence of the Blood, etc., etc., there is not a paragraph in the book which is one bit stupid or uninteresting. Several copiously illustrated chapters upon "*Curious Fashions*" constitute an invaluable feature of the work. Many of the distortions of the savage, as well as of the civilizee, are fully exposed; and the whole subject is treated in a new light. The hideousness of some of our prevailing fashions are so graphically portrayed that every sensible reader must henceforth look with pity, rather than pride, upon their crippled monstrosities. The book fervently appeals to our youth for reform; and it is believed that parents will eagerly seize upon this opportunity to help their children. It contains interesting and vital facts, the knowledge of which is worth a thousand times the price of the book.

WHAT OUR MOST DISTINGUISHED EDUCATORS SAY ABOUT "IN A NUTSHELL."

Inasmuch as the work had been written at the suggestion of several prominent educators, the publishers, before issuing it in the regular bound form, mailed "Advance Sheets" to heads of our most prominent institutions of learning for the purpose of ascertaining whether it could be improved by their suggestions and criticisms. Hundreds of college presidents, and others, have responded in long letters of their heartiest praise. These letters may be fairly epitomized by the following phrases:

"Very valuable."—*President Porter, Yale College.*

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"Will give evidence of my approval by seeing that copies are laid before all our students."—*Pres Moore, Earlham College.*

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"The work is adapted to all mankind. Shall send an order as soon as published."—*Pres. Spinner, Burlington College.*

"Just the tocsin of warning which this impetuous age needs. Cannot begin to read without a desire to finish, and cannot finish without a strong desire to act."—*Pres. Delong, Lebanon Valley College.*

"If every family had a copy there would be much less suffering and vulgarity."—*Principal Backer, Hinman's Business College.*

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"The more I read it the more I am convinced that it ought to be circulated by the hundred thousand."—*Pres. Hooper, Rust University.*

"The book will be *invaluable* not only to students, but to *everybody* who shall read it. I think I shall put it in the hands of our teachers for daily use in their classes."—*Supt. Hatsler, (Newark, O).*

"It is fitted to seize the attention of students and guard them against abuses. Dr. Lewis has done a real service to the colleges of the country by preparing it, and by making it so short and terse."—*Pres. Magoun, Iowa College.*

"This work alone would be a worthy monument of a useful life."—*Pres. Mayhey, Detroit.*

"Its style beautifully illustrates the power of rhetoric, making the book a useful model for classes in English literature."—*Pres. Murfee, Howard College, Ala.*

"I have read thousands of pages of medical works in search of the very information here given 'In a Nutshell' without being benefited as I have been by this work. It is a gem."—*Rev. Livingston Smith.*

"No one can fail to understand this little book. It should be in the hands of all schools and families that the young may learn to take care of that beautiful temple, the human body."—*Supt. Bond, Connecticut Industrial School for Girls.*

"At what rate could you furnish one hundred copies for distribution?"—*Prof. Weidner, Augustana Theological Seminary.*

"'In a Nutshell' is the best thing of the kind that ever came to my notice. The style is unique, fascinating and vigorous, and the matter deeply interesting and important. It should be in the hands of every young person in Christendom. Thus disseminated, carefully read and faithfully practiced, the benefits that would accrue to the race are incalculable."—*Horace E. Smith, Dean, Albany Law School.*

"If the habits of our children were formed upon his counsels, health and longevity would largely take the place of physical weakness and premature death. Having observed these rules, I can testify to their benign efficiency. I am just entering my seventy-eighth year with a sense of vigor rare with me forty years ago."—*Pres. Thompson, Theological Institute, Hartford, Ct.*

"Warnings are given with great caution, and without exciting those propensities which it aims to control."—*Supt. Drury.*

"One hardly knows which to admire most, the perfect English or the striking presentation of the subject by this the most eminent sanitarian in the United States."—*Prof. Young, Hartford, Ct.*

"I wish it were possible to put a copy of this little volume into the hands of every student—boy and girl—in our land. I do not see how the book could be improved."—*Supt. Ellis, Rochester, N. Y.*

"If students would act upon Dr. Lewis' suggestions their work would increase in quantity and improve in quality."—*Pres. Schuyler, Baldwin University.*

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"My aged mother, now in her 90th year, was so fascinated with it that she read it through at one sitting. Each morning after devotional exercises I read a chapter of it to our assembled students."—*Prin. Allen, West Newton Preparatory School.*

"I wish to arrange with you for a copy for each of our 400 students."—*Pres. Loos, Kentucky University.*

In addition to the "Advance Sheets" above noticed, there have been added several chapters on how to cure Fatness and Leanness, how to cure Bad Breath, Conditions of Longevity, Curious Fashions, etc., with numerous illustrations. The entire work is handsomely printed on the finest paper and bound in the best cloth, *full gilt*. Price, only $1, post-paid.

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For the purpose of introducing "In a Nutshell" to the notice of our readers, its publishers have agreed to supply it for our use at a price which enables us to announce the following unprecedented offers: 1st. The full gilt edition of "In a Nutshell" (price $1), will be mailed free as a premium to any present subscriber of the PHRENOLOGICAL JOURNAL, who shall send us one new subscriber for the JOURNAL before June 1st, 1883, and to the subscriber will be given the choice of the splendid premiums offered to subscribers. For $1 we will mail "In a Nutshell," and the JOURNAL "On Trial" for three months, to new subscribers, both post-paid, to any address; or for four "TRIAL TRIP" subscribers we will send "In a Nutshell" as a Premium. But the order, in all cases, must be *mailed* to us on or before June 1st. Those who wish to avail themselves of these extraordinary terms should do so *at once*, for these offers will positively not be repeated, nor will the time be extended beyond the date mentioned. It should also be stated that we are not allowed to sell the book singly or by the hundred for less than $1 per copy, post-paid. Address all orders to

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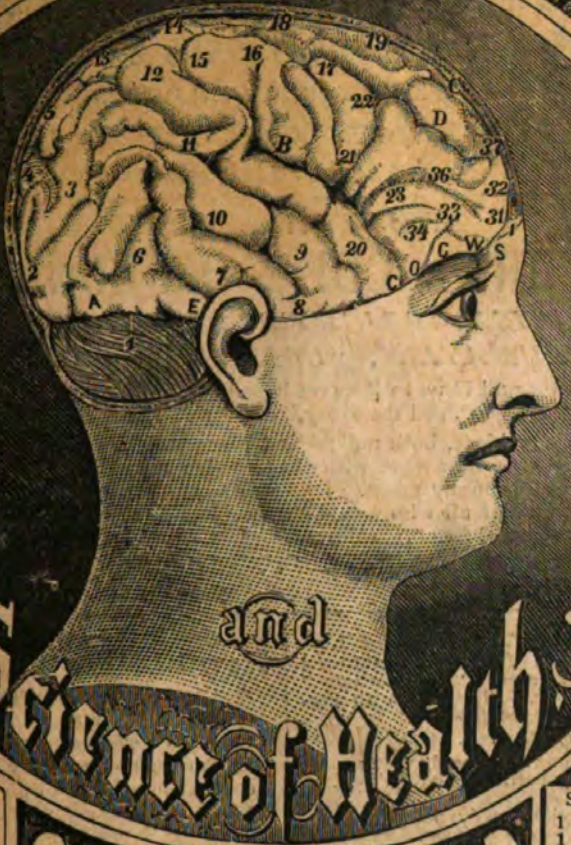

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THE PHRENOLOGICAL JOURNAL AND LIFE ILLUSTRATED.

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PETER COOPER,

THE MERCHANT AND PHILANTHROPIST.

ON the 4th of April last there passed away from earth one of New York City's oldest residents and best citizens. A man by no means remarkable for gifts of intellect or brilliant executive or business endowments, he had, nevertheless, won his way to fortune and the highest round in popular esteem. An industrious

nature, aided by correct habits, had found opportunities in spheres which, fifty or more years ago, were just opening in America, and whose possibilities of expansion were not dreamed of by the practical man. Hence he became rich by the gradual development of his enterprises—a normal development associated with the growth of the community and its resultant demand upon manufacturing interests. It should be said that he helped to stimulate the activity of American manufactures, especially in iron, by his Baltimore investment, and subsequent mills in New York and Trenton.

What he possessed in the way of organization may be summed up in the following concise analysis. He possessed a head bordering on twenty-three inches in circumference, in which the organs of the perceptive intellect, the side-head and the crown, were well marked. His temperament was strongly motive, as appears in the massive bony features, and which imparted strength and endurance to the body and energy to the mind. He was persevering, steadfast, inventive, discerning of practical relations, appreciative of details, a good judge of qualities and condition. Never distinguished for imitation, never inclined to follow the usages of others or caring about the conventions of society, he preferred to follow the bent of his own impressions, to manage his affairs in accordance with a plan of his own devising, and to act in accordance with what seemed expedient and befitting to the occasion.

His social nature was not deficient: he loved home and its relations, was fond of children, retained the friendship of those with whom he became intimate and the esteem of ordinary acquaintances. His Benevolence was large; the organ had developed into its marked prominence after he became forty years of age. It was influential in a restraining, suggestive sense in his early life, but later it became a dominant power in his mental economy—operating upon his strong practical and utilitarian views, and softening and toning them with the gentle spirit of kindness and philanthropy. In his philanthropy, however, strong individuality would be evident; his own plan, rather than that of another, would be carried out. Mr. Cooper was not a man of sentiment, as men of sentiment are generally known, had nothing of the goody-goody in his composition, but he was a man of definite and positive aims, to be reached by straightforward, prosaic effort. He believed in effort, hard work, perseverance as the chief factors of success, and his philanthropy aimed to assist those who possessed the qualities of effort, industry, and perseverance to bring them to bear in the work of life.

PETER COOPER was born on the 12th of February, 1791. His father was a poor man, with a large family dependent upon him, which he endeavored to support by conducting a hat-store. As soon as he was old enough, Peter was set to work in the business with the other children. His first work was pulling hair and cutting fur. The advantages of school were almost entirely denied him, for in all his life he only went every other day for a single year. The father was fond of a country life, and finally sold the hat business to his eldest son, and removed to Peekskill, where he opened a country store and built a little church. Later than this he began the brewing of ale, and Peter was employed in delivering the kegs of ale to the places in town and country where it was sold. The father then removed to Catskill, where he went into the hat trade again, and besides this manufactured bricks. The hat-store

was afterward removed to Brooklyn; and not long after this the family went to Newburgh, where Mr. Cooper opened another brewery. Here Peter remained until he was seventeen years of age, when he came to New York, and, after much seeking, obtained a place as an apprentice in a carriage-shop. There he worked until he had reached his majority, and then, as a journeyman, until the opening of the war of 1812, when he went to Hempstead, L. I., and obtained employment in a woolen factory. There he invented a machine for shearing cloth, which obtained such favor that he turned his attention to the building of such machines, and carried on their manufacture successfully to the close of the war, when foreign competition in cloths discouraged him from its continuance. He then commenced the manufacture of cabinet-ware, which he subsequently quitted and opened a grocery. The selling of sugar, starch, and soap, however, by retail, appeared to be out of his line, for he did not prosper in it, and deemed it expedient to return to manufacturing. A lucky opportunity occurred to him to engage in the manufacture of glue and isinglass. He at once availed himself of it, and in a year or so found himself on the high-road to fortune. He continued this business in the same place for twenty-five years; and when he finally made an alteration, it was only to build a larger factory on cheaper ground, and to remain a glue manufacturer until he died.

He was but a young man when, about ten years later, he became interested in the development of the American iron industry. In 1830 he associated with others in the management of iron-works near Baltimore. Disposing of his interest in these, he started a rolling and wire mill in New York City, where he made the first attempt in the application of anthracite coal to the reduction of iron. This mill was removed to Trenton, N. J., in 1845, where it is still in operation on an extensive scale. It is an interesting fact in his career that the first locomotive in general use on this continent was built by Mr. Cooper at Baltimore, after his own designs, and was worked on the Baltimore and Ohio R.R. The first trip of this locomotive was made under the hands of Mr. Cooper himself as the engineer.

He had for many years been prominently identified with most of the important public undertakings having reference to the development of science and social improvement. In the electric telegraph, for instance, he was warmly interested from its earliest conception, and invested his money liberally for its establishment.

But his name is especially famous through his public spirit and practical charity. Few men have, during their lifetime, expended so much of their money in the cause of public and social elevation, and a grander monument to the earnest zeal of a single man in the education of youth in practical industrial lines, and in the promotion of scientific investigation generally, does not exist than that which the Cooper Institute in New York represents.

When Mr. Cooper was working at the bench of the carriage-shop, he earned a little money now and then at wood-carving; with this money he bought books to read and study, and paid for the services of a teacher in the evening. This period of his life taught him the value of evening schools, and it is said he then determined to devote his years to the accumulation of wealth that he might found an institution where working boys and girls could have free instruction. It was more than forty years before that plan took definite form in an act of the State Legislature "to enable Peter Cooper to found a scientific institution in the City of New York," but the purpose, once formed, he never departed from.

In 1858 the foundation-stone of the Cooper Union was laid. A scroll buried with it has this inscription: "The great object that I desire to accomplish by the erection of this Institution is to open the avenues of scientific knowledge to the youth of our city and country, and so unfold the volume of Nature that the young may see the beauties of creation, enjoy its

blessings, and learn to love the Author from whom cometh every good and perfect gift."

The cost of this building, with its recent enlargement, and the endowments made from time to time to meet the growth of the seven departments of instruction, extends into millions, but its beneficent effects upon the thousands of young men and women who have attended its classes are utterly beyond computation. Upward of 3,000 students attend in the course of a single session, and the instruction and lectures are given gratuitously.

Mr. Cooper had few aspirations of a political nature, although from time to time he accepted official positions in the interest of public improvement. In 1876 he was nominated for President of the United States by the Greenback party, on the basis, apparently of his opinion, which he had made known by an occasional pamphlet, that the Government should make the currency a legal tender for all debts and Government dues, fix its value by the interest paid on it when converted into bonds, prevent over-issues by strict and just regulations as to the issue of bonds or currency, and let the people themselves always regulate the relative amount of each by an interconvertible bond. During his later years, he now and then addressed the public from the platform and through "Open Letters" or a pamphlet, in which he discussed, with sincerity, vigor, and much practical judgment, the financial and social questions of the day. He did not echo the views of the majority in these publications. The laboring man always found him a friend. He aided labor organizations, and frequently in his speeches, and in other ways, took up what he believed to be their cause.

Few persons who have been accustomed to attend public gatherings for the discussion of matters of national or community importance have not seen Mr. Cooper on the platform. His appearance was very striking: a tall man, erect and lithe in movement in spite of his age, with strong features, yet less furrowed than those of many men twenty years younger. His forehead was broad and high, and the lines of the sides of his face tapered from his temples to his chin. A pair of old-fashioned spectacles with green side-shades usually covered his eyes, and his hair, long and silvery, hung down to his shoulders, while a long fringe of white beard surrounded the lower portion of his face.

Instead of abating, his interest in the Institute grew with his years, and though he was willing to put aside the claims of his business, he grew more and more engrossed in his system of industrial education. He used to visit the Institute every day, unless the weather was violently stormy, and nearly every one of the attacks of sickness that came upon him of late years was traceable directly to exposure to cold during these visits, or other out-of-door excursions to which his active mind prompted him. It was his custom of recent years to breakfast in his own room. He was not a late sleeper, and was ready to enter his carriage to ride to the Cooper Union, always before noon, and usually by 10 o'clock. By that time, moreover, he had informed himself of the news and discussions of the day by having the newspapers read to him. After spending about two hours in the building, dividing his time between the office and the various departments, he would drive down-town to his old place of business, No. 19 Burling Slip, or to one or the other of the corporations in which he was interested. Usually by 3 o'clock he was back in his home, where he took luncheon, and rested in an easy-chair till dinner-time. He received many callers, being accessible to every one at almost all hours. In his diet, as in all other personal habits, he was exceedingly simple; milk having formed his chief nutriment for the last ten years.

In his address at the funeral of Mr. Cooper, the Rev. Robert Collyer said, what is strangely true, that the founder of the Cooper Institute "stands alone, so far as I know, among the men who would do some great work for the help and blessing of the whole nation, and have lived to see that work perfected in their own life and time."

Fig. 265.—The Indian Chief.

STUDIES IN COMPARATIVE PHRENOLOGY.

CHAPTER XII.

THE AMERICAN INDIAN—CEREBRAL STRUCTURE AND CHARACTER.

THE American race, or the aborigines of America, next occupies our attention. As typical of organization, no other race exhibits a more pronounced configuration; and although certain elements in language, ancient remains, worship, custom, etc., have been pointed to by ethnologists as intimations of Asiatic, Polynesian, or Egyptian origin, the American Indian stands apart by himself in temperament, physical constitution, cranial and cerebral structure differing widely from the great races of mankind that we have already considered. Professor S. G. Morton says: "It is an adage among travelers that he who has seen one tribe of Indians has seen all, so much do the individuals of this race resemble each other, notwithstanding their immense geographical distribution, and those differences of climate which embrace the extremes of heat and cold. The half-clad Fuegian, shrinking from his dreary winter, has the same characteristic lineaments, though in an exaggerated degree, as the Indians of the tropical plains; and these again resemble the tribes which inhabit the region west of the Rocky Mountains, those of the great valley of the Mississippi, and those again which skirt the Esquimaux on the north. All possess alike the long, lank, black hair, the brown or cinnamon-colored skin, the heavy brow, the dull and sleepy eye, the full and compressed lips, and the salient but dilated nose. These traits, moreover, are equally common to the savage and civilized nations, whether they inhabit the margins of the rivers or feed on fish or rove the forest, and subsist on the spoils of the chase. It can not be questioned that physical diversities do occur equally singular and inexplicable, as seen in different shades of color, varying from a fair

tint to a complexion almost black, and this, too, under circumstances in which climate can have little or no influence.

Fig. 266.—Indian Skull—Front View.

So, also, in reference to stature; the differences are remarkable in entire tribes, which, moreover, are geographically proximate to each other. These facts, however, are mere exceptions to a general rule, and do not alter the peculiar physiognomy of the Indian, which is as undeviatingly characteristic as that of the negro; for whether we see him in the athletic Charib or the stunted Chayma, in the dark Californian or the fair Borroa, he is an Indian still, and can not be mistaken for a being of any other race."*

Van Amringe arrays mankind in four general classes: the Shemitic, Japhetic, Ishmaelitic, and Canaanitic, thus ascribing to Noah a general fatherhood, as it were, for the myriads that people the earth. In the Ishmaelitic class he places the American Indian together with Tartar and Arabian tribes, and formulates a general outline of character as appropriate to these widely-separated races, which is deduced more from apparent similarities of custom and mental habit than from their physical constitution and cranial structure. The Arab is certainly superior to the Indian in almost every quality of physique and mind, while his nomadic and domestic habits, although suggestive of a parallelism with the careless, scattered life of the Indian of the plains and mountains, possess a definiteness of plan and purpose unknown in true Indian life. The Arab understands his relation to the higher civilization contiguous to him, and can adapt himself to it in furtherance of his interests, and in a hundred ways he discloses an order of intellect totally different from the savage of America; his head, indeed, is larger, and the contour and quality of his brain show his affinity to the Caucasian family. The true nomad of the New World is the Patagonian, and he is a low expression of the Indian type, analogous to the Bosjesman of South Africa in his relation to the negro type. Ever erratic since the introduction of houses in South America, the Patagonian tribes have wandered over their sterile plains fierce and untamable, averse to agriculture, and hostile to the arts of civilization.*

The head of an average Indian impresses us at once by its physical characteristics, so powerful is its muscular and osseous anatomy. Scarcely exceeding in absolute volume the negro head, the prominence of the vertex, the thickness of the ridges over the eyes, the plump cheek bones, the ponderous jaws, compressed mouth, and protuberant mastoids contrast with the African, and mark the

Fig. 267.—Indian Skull.—Side View.

Indian as a man whose type of mind is related chiefly to the physical side of

* Essay read before the Boston Society of Natural History, April 27, 1842.

* Prichard's "Natural History of Man."

human life, to the expression of animal force, activity, endurance, contest.

The Temperament is of the motive character, in accord with the predominating bone and muscle. An original peculiarity of the Indian, it has been strengthened by ages of physical activity and exposure, and its influence pervades his whole mental organism. His life in the natural state is one of almost constant movement; hunting, warfare, and a little agriculture constituting its routine. The want of sensibility accompanying this phase of temperament likens him to the Mongol, and is the explanation in great part of that callous indifference with which he is known to suffer most barbarous inflictions of pain, and in his turn to torment an enemy with more horrid cruelties.

It is on account of physical or temperamental similarity in certain respects that some ethnologists of reputation have been led to classify the American aboriginal with the Asiatic Mongol, or to find an alliance of origin between tribes whose habitat borders on the equator and semi-civilized peoples dwelling in the north of Africa, especially the descendants of the ancient Egyptians, and the Arabs. To be sure, the wonderful relics of Toltec civilization in Central and South America have had much to do with suggesting an Eastern derivation for a people who many centuries ago possessed so high a degree of intellectual culture that American archæology has become a serious competitor with Oriental for the attention of the scientific investigator; but we are inclined to think with Humboldt and others that the peculiarities of architecture, rite, and custom which appear to point to Asia and Egypt, are simply those coincidences which would naturally arise from similar wants and impulses in the life of peoples whose circumstances have been in many respects similar. Dr. Caldwell remarks on this point that it "would, indeed, be not only singular, but wonderful and unaccountable, if tribes and nations of men possessed of similar attributes of mind and body, residing in similar climates and situations, influenced by similar states of society, and obliged to support themselves by similar means in similar pursuits—it would form a problem altogether inexplicable if nations thus situated did not contract habits and usages, and instinctively modes of life and action possessing toward each other many striking resemblances."

We are not prepared to insist that the Central American or Mexican civilization of ages ago was the work of the ancestors of the modern Indian, for we must confess our inability to explain the incongruity presented when the refinement and culture of the Toltecs are contrasted with the rudeness and barbarity of the Indian as he is to-day.

Fig. 268.—An Arab.

On coming to consider his cerebral structure, we find him, as it has been already stated, standing by himself; Otomie, Mexican, Patagonian, Botocudo, Sioux, Creek, Seminole, Pawnee, the typical configuration is in each readily identified as substantially the same.

The head belongs to the mesocephalic class, the development of the lower lateral and occipital regions exceeding that of the Malay, while the forehead is less prominent in the superior portion. At the inferior or supra-orbitar part the head is very prominent, the ridges being especially marked and the frontal sinuses extensive. The forehead, however, is narrow, but the lower temporal region swells out rapidly toward the ears, and the lower

parietal border is strikingly expanded. The crown is elevated and cone-like, imparting an appearance of compression and deficiency to the adjoining parts. Toward the occiput the profile falls off rapidly, so that the back-head appears flattened and approximating the perpendicular. Viewed from behind, the breadth from ear to ear is strikingly great, the organs of the physico-preservative class being predominant, while those of the social group are but moderate in development. The elevation of the head is perhaps the most conspicuous feature of its configuration to the casual observer, the peculiar cone-like aspect being due to the remarkable development of the cerebral organs which relate to personality or individuation. In the portrait of Black Hawk, the celebrated chief of the Sac and Fox tribe,* of which a side view is given, this characteristic is pronounced; the lateral development is also impressive. If we glance at the outlines of the Huron and Cherokee skulls we notice a similar contour at the coronal region.

Fig. 269.—Skull of a Huron.

Corresponding with this development, the Indian character has ever been distinguished for determination, persistency, pride, self-reliance, independence. The large and active organs of the lower side-head, together with Combativeness and Caution, combining in activity and influence with his independence of sentiment, have made for him an exceptional record in the history of conflict between civilization and savagery—for while he has been compelled to retreat before the superior arts and organization of the white man, he has never submitted to him; he could be exterminated, but never conquered by force.

The relative development of the head in the moral sentiments is small, hence the prevailing influence of the physico-preservative organs at the base of the brain, rendering them fierce, warlike, cruel, vengeful, brutal. In some tribes, for instance the Araucanian, Choctaws, and Cherokees, variations from the type are found in the development of the superior parts of the brain, the organs of Be

Fig. 270.—Black Hawk.

* This Indian warrior took part with England against America in the war of 1812, and twenty years later obstinately contested the occupation of the territory where his people had been living by white settlers, at one time exhibiting all the ferocity of savage vengeance in retaliation for the encroachments upon what he and his followers deemed their own inalienably, and at another singular heroism and military craft in battling against the superior numbers and equipment of the United States forces that were sent to drive him to the reservation beyond the Mississippi.

nevolence and of the reflective intellect being appreciably larger, and affecting the animal forces in such a manner as to restrain them to the extent of producing a milder form of barbarism. These tribes, the first-named especially, are brave, warlike, artful, proud in spirit, quick to resent indignity and encroachment, but, at the same time, less sanguinary, fierce, and vindictive than the average Indian. The Charib, on the other hand, shows a variation in the opposite direction, the head being lower than the typical form, and more compressed in the upper portion of the intellect, and in correspondence with his cerebral structure his character ex-

Fig. 271.—A Sioux Woman.

ceeds that of any other tribal representative in animality, ferocity, and wild unrestraint.

Intellectually, the great predominance of the perceptive organs over the reflectives is at once evident, and these have been rendered so active by the physical activities of savage life that their acuteness in apprehending the conditions and relations of natural objects is in many respects wonderful. An Indian of the forest will detect at a glance peculiarities in a tree, a bird, a horse, or other animal, which to the eye and ear of the white man, unused to woodcraft, are utterly unrecognizable. The physico-apprehensiveness of the red man, indeed, exceeds that of any other race, while in reasoning, formulating ideas, and logical deductions he is inferior to the Malay.

Of the moral faculties Hope, Conscien-

Fig. 272.—Skull of a Cherokee.

tiousness, and Veneration are the more active in the Indian, and impress him with their respective influences. Hence it is that he has always manifested a belief in an overruling Power and a future state; yet through lack of the rational element he has been credulous, superstitious, and strong in his belief in magic and supernatural powers. Through his Conscientiousness the red man obtains that sense of justice which has distinguished him from the earliest time, making him at once faithful to his word and exacting in his demand of honesty in others. He does not show the readiness of the negro in receiving the teaching of the missionary, and exchanging his spirits of the wood and air for the Gospel of Christ, or substituting the incantations and jugglery of his "medicine man" for the simple faith in one omnipotent Creator and Father. In fact, the individual-

Fig. 273.—Skull of a Carib (Flathead).

ism of his moral character exhibits itself in his proneness, when the restraints and associations of Christian teaching are

withdrawn, to revert to the wild rites and mummery of his old belief.

In the social sentiments the Indian indicates comparatively little of warmth and tenderness, and his moderate development of brain in the occipital region is coincident with the mental manifestation. Inhabitiveness is the most active of the

Fig. 274.—Indians of North and South America.

social group, imparting a love of place, and indisposition to leave the region of his birth and the lands which afford him the means of subsistence. For woman he entertains little of the respect which civilization is wont to accord: she is his servant and drudge, yet in the marital relations infidelity is rare, and harm done to wife or child by another is followed by summary vengeance. His domestic feelings are subject to his self-esteem and the purposes of his bold and warlike nature; he leaves home and its concerns to be managed by women, while the chase and battle find the employment most gratifying to his animal forces. Hence the Indian woman, as a rule, shows a different cerebral organization from the male, much less of the strong individuality, and less of the executive, passional stimuli we have described as peculiar to him, and lying at the base of his inaptitude for civilization. He is gradually fading from the earth. Mr. Combe says, with some appreciation of the Indian nature: "When Europe has been conquered, the victorious and the vanquished have in a few ages amalgamated together, been blended into one, and have formed at last a single and united people. The native Americans have, on the contrary, receded uniformly before the Europeans." Surrounded by civilizing influences the Indian nature is slowly modified; but the race will have disappeared before the missionary and the teacher will have completed their work in transforming the child of the forest to a member of civilized society. D.

THE DEVELOPMENT OF MUSICAL INSTRUMENTS AND MUSICAL CULTURE.

THE feeling or sentiment for music is deeply and broadly planted in human nature. The rudest people of whom we have knowledge furnish some sounding accompaniment to their dance or song. The clapping of hands for encouragement or applause is likewise of early origin and wide use. The striking of sticks and bones together, the beating of skins strained above a hollow cylinder, forming a drum, and the scraping a notched stick by another bit of wood—the original thought of a violin or guitar—are all primitive devices for an instrumental accompaniment to the singing voice or the agile foot.

In Africa, Australia, China, Japan, the Indies, Europe, and among our own native races, the feeling for music has been more or less developed from the earliest days of which we have any fair record. And this feeling has been shown and perpetuated by instruments of various sorts, from the most rude clappers, drums, flutes, guitars, harmonicons, and virginals, to the grand pianos, organs, and varied orchestral instruments of to-day.

The simplest device for marking rhythmical sound is the clapper of bone or wood, held between the fingers and struck together by a peculiar, jerking motion of the wrist, as played by minstrels. Two,

three, or more pieces are used according to the taste of the player. Another form of clapper in use among Asiatics is made by stringing together several bits of sonorous wood which jingle and rattle by shaking. A farther development of the same idea is the rattle made with pebbles and seeds shaken about in dried gourds. This is in use in Africa, among the native Mexicans, and the Alaska Indians.

The tambourine and the drum are universally used among both savage and civilized peoples. The former consists of a skin stretched upon an oval band of wood and generally hung with rattles, the skin being that of human being, of snake, of dog, of sheep, or antelope. They are carried about in African desert journeys and Indian jungle marches; the Turk beats them with lazy fingers, the Chinese make them of many sizes, and the African of Tunis, the Nile, and the Gold Coast dances his wild nature out to the sound of their monotonous jangle.

The Hoopah Indians of North America make a drum by drawing two wolf or dog skins tightly over a square frame; it is beaten with a stick. The Mexicans of Cortez's day covered their drums with snake skins. The Chinese, Japanese, Turk, African, Egyptian, Siamese, East Indian, and New Zealander, all use the drum in various forms, showing the same general design and purpose.

Bells have been as widely used as drums. The simplest form of the bell is a hollow, metal disk having a clapper suspended within. Bronze bells were in use in Mexico and Peru before the Spanish conquest, and Layard found small bronze bells with iron clappers at Nimroud. Bells were made in ancient Egypt, Europe, and Asia. The great bell of Russia has been widely celebrated. During the Middle Ages in Europe there were many bells cast, and ladies often gave gold and silver ornaments to be melted in the mass of iron or bronze, thinking to make the bell-metal more melodious in tone. They were frequently named, and always bore some inscription. The "great bell Roland" of Ghent was celebrated in verse and prose. In the old North Church of Boston, Mass., is a chime of eight lovely bells (each bearing an inscription), which were cast in 1774. They are the oldest bells in America.

In China bells are struck; they have no clappers. It is thought the idea of chimes is shadowed forth by their instrument, made of metallic plates fastened in a frame and arranged in a regular order of musical tones. From these rude beginnings have developed the magnificent chimes whose lovely tones haunt forever the heart and dreams of one who feels their charm.

Clappers, drums, and bells did not satisfy the musical taste of the more advanced races, and other instruments were invented. One, named the wood-harmonicon, is made by binding together several pieces or slats of wood by thongs made of ox-hide into a single instrument designed to be struck with a mallet. They are used in Africa and Asia, and consist of ten bars of wood a foot in length, notched near each end, and held in place by the thongs which, passing around the notched ends, hold them together. This mat of wooden bars is about three feet long. The left-hand bars are narrow and gradually increase in size, the smaller giving the highest sound, which gradually pass into graver tones upon the right. The shape and size of these bars determine the pitch. At the back of the instrument, along the middle, runs a wide piece of wood having in it a row of square holes, one behind each bar, to which is fastened a box or calabash to hold and intensify the sound. Now, if one can fancy this strip of bound slats and row of boxes at the back struck with two wands tipped with some soft material, one in each hand of the performer, he will have an idea of the *maramba*, or wood-harmonicon. These instruments are sometimes suspended by a thong fastened at each end, and sometimes set in an elaborate frame. Some of them, it is said, are tuned to the diatonic scale, in its simplest form of C major. But usually the pentatonic scale is

used, which drops the fourth and seventh tones of the diatonic, giving a peculiar, wild, mournful force, as heard in early Scotch music. The maramba contains in a rude form the germ of our piano-forte, in which graduated wires take the place of the graded bits of wood, and the sounding-board performs the office of the sound-boxes at the rear of the ruder instrument.

The guitar is thought to have been suggested by the twang of the bow-string when drawn to wing the arrow. The guitar with one string, as used by some North American Indians, is held in the teeth and played by the right-hand fingers, while the left hand slides along the string to vary the tone. A similar instrument is used among the natives of the Gold Coast and the Upper Nile, in Bengal, and throughout the Indies.

The native Alaskan plays a two-stringed guitar; the Siamese a two-stringed fiddle, as do also the Chinese and the Moors; the main distinction between the guitar and fiddle being the playing with the fingers or with a bow. The Chinese, Turk, Japanese, and Moor also use three and four-stringed instruments of this class, some having strings of hair, some of silk, of flax, or of gut, either used separately or in combination, to vary the tone. Many of these embryo violins have frets, and oval or round bodies covered with parchment; some are very rude, others quite ornate. The Chinese, Japanese, and Turk have lutes or harps arranged with silken or brass or gut strings, played with the fingers. Some African lyres are said to resemble those of ancient Greece. Lowell has arranged the legend of the origin of the lyre into the pleasing poem of which we give a part:

"There lay upon the ocean's shore,
What once a tortoise served to cover
A year and more, with rush and roar
The surf had rolled it over.

. . . . . .

"So there it lay, through wet and dry,
As empty as the last new sonnet,
Till by and by came Mercury,
And, having mused upon it:
'Why here,' cried he, 'the thing of things,
In shape, material, and dimension!
Give it but strings, and, lo, it sings,
A wonderful invention!'

"So said, so done; the chords he strained,
And as his fingers o'er them hovered,
The shell disdained, a soul had gained,
The lyre had been discovered."

The simplest wind-instruments were made of bone or reeds. A whistle would invariably be invented by the boys of any tribe or people to blow for amusement, to entice birds, or to call companions. The next step would be to the flute. The Indian-American tribes, the Mexicans, Peruvians, Africans, Chinese, and Hindoos have various forms of this pleasing little instrument.

From blowing hollow reeds, bamboo, and palm, to the use of animals' horns, was a step easily taken; accordingly we find them employed in every land, now made of elephants' tusks, then of buffalo, ox, or antelope horns, also of conch shells. From this beginning grew the metal horns, trumpets, and clarions in use among civilized peoples.

It is said the idea of the pipe-organ was caught by a Russian from a wind-instrument of the Chinese, called "Cheng." It consists of several bamboo pipes of varying lengths inserted uprightly in an oval-shaped wooden receptacle, having a tube for a mouth-piece at one side near the bottom. The pipes have finger-holes near the insertion into the oval body. To catch more clearly the idea of this "cheng," take an ordinary china bowl with straight sides and set a row of reeds of different lengths all round upon the inside, pack something in the bowl to hold them firmly, then if you can make a hole near the bottom of the bowl at one side, and insert a tube for a mouth-piece having a connection with every hollow reed or pipe, you will have an imitation Chinese "cheng." The pitch is determined by the length of the pipe; the sound comes from the vibration of a metallic tongue in each pipe.

Although the Hindoos near them use a diatonic scale, the Chinese employ the pentatonic. All the members of a band play the melody only, as they make no

effort at harmonizing different tones. They have attained about the state of musical culture prevalent in Europe until the tenth century, when first slight attempts at harmony were made by using, in similar motion, the fourth, fifth, and octave, whilst the instruments played only the vocal score until the fifteenth century, when musicians began to vary orchestral effects by composing separate parts for different instruments.

In music, as in other branches of scientific and æsthetic culture, the European and his descendants take lead. No Asiatic or African people have as yet attained the grade of development reached by the European and American. Many ascribe this difference between peoples to the influence of climate in unfolding the intellect and sensibilities through the greater material needs of Northern races. But this will not suffice to explain the matter, for Asia is mainly within the same degrees of latitude as Europe, and her most cultivated classes do not equal those of the same class of Europeans. Probably the difference is mainly caused by the cultus given by their respective religions. The high character of the Jehovah of the Hebrews, and the beautiful ideal exhibited by Jesus of Nazareth, with the exquisite purity and simplicity of his teachings and creed, have by degrees elevated the Christian disciple and freed him from the weight of the superstitious beliefs and observances of the Pagan, the Buddhist, and the Mohammedan. The human mind, thus released from the bondage of gods many, and prophets many, and thousands of cumbrous acts of devotion, has had time and scope to observe the beauties of nature and the joyousness of musical sounds.

The birds taught mankind singing-notes, and the rippling brook, the soughing wind, the twanging bow-string, and the murmuring shell suggested the instrumental accompaniment. From these wild sounds and the rude beginnings of savage man has grown the music of to-day. Little by little the piano-forte and the noble organ have gained their present perfection. Step by step the fine effects of harmonized parts and harmonized instruments have been attained. In addition to this, poetry and music, at first rudely joined, have become so closely united that each adds to the charm of the other, and their united influence in molding, cheering, and renewing human nature is something incalculable. From deep and true musical culture, we may expect the highest results in æsthetic growth. Even superficial musical attainments are better than none, and the systematic study of harmony and choral effects promotes intellectual as well as emotional growth. The masses of mankind are not bettered or influenced in nearly so great a degree by that which appeals to the intellect as by that which moves the feelings, excites the emotional nature.

Fine musical results can only be attained by long-continued and thorough study commenced in early youth. The reduced cost of instruments and teaching ought to give us great musical growth as a nation during the coming years. Widespread knowledge and appreciation of the songs of Schubert and Schumann, the sonatas of Mozart and Beethoven, and the oratorios of Haydn and Handel would be a musical blessing. If ever we could live to see the masses gather to entertainments of the music of these masters, as they now gather to hear the prurient play, the cackle of the circus clown, or other rude pastime, we shall feel that we have been present at the day-dawn of the millennium.

VERONIQUE PETIT.

LOVELY SPRING.

FAR in the suddy South she liggers,
Yet slowly cubs alog.
With fairy garlads id her figgers;
With sdadches of sweet sog.

Her eyes with probises beebig,
Her sbiles will rabture brig;
The sudlight frob her hair is streabig—
Thrice welcobe, lovely Sprig.

SNEEZY.

SELF-ESTEEM.—ITS TRUE NATURE.

WITHIN a year, or little more, the JOURNAL has published several articles from able writers in relation to this organ. With much of what they say I agree; in respect to the remainder, I would offer some comments of my own.

1. I deem that the organ needs no new definition. The standard authors on phrenological science have told us what its function is, and to vary from them is to imbibe error.

2. It is no more a part of will than is conscientiousness, firmness, or combativeness. Will is "the action of the whole mind on the whole subject." That is the only true and complete definition of will that was ever given. Of course, large self-esteem might lead to decisions that would not be made with small, and a like thing might be affirmed of any faculty.

3. Let it not be forgotten that this faculty is one of the "individual" sentiments. When large and active it might restrain one from doing something degrading. I simply say it *might*. It might not; and when it did, the motive would be selfish, and the power still the focus of other temptations.

4. Self-esteem is not only a personal faculty, but the very summit of personality. It has been so from the beginning. It has founded tyrannies, justified robberies, instituted persecutions, withheld rights, and so on. The same innate feeling would propose to overthrow thrones and dynasties at once, by wholesale assassination! Does any reader of history, any reader of the news of the present hour, doubt this?

5. In the jails and reform schools which I have visited, it seemed to me the inmates had a full average share of this faculty now under consideration.

6. Any one may observe that self-esteem is usually large, in proportion as the forehead is small and retreating. It has been suggested to me, that this is one of the kind compensations of our heavenly Father, that individuals should be buoyed up by spontaneous self-complacency, in the ratio that the intellect is weak.

7. It is a great annoyance to many persons of fine intellect, and often a hindrance, that they have no more natural self-esteem. Yet a great part of all the good work that is done in this world, at home, in shop and field, for church, State, science, literature, etc., is performed by those possessing not more than average of self-estimation. With these faithful ones, these humble workers, these pillars of the world, it is not unfrequently moderate. The average American has less self-esteem relatively than the average native of any other enlightened nations.

8. It is fashionable just now, not only to "cry up" self-esteem, but to affect it. A lady just going by has arranged the expression of her features, her pose, and carriage, to indicate that she is entirely satisfied with herself. Her brother would be ashamed to exalt humility. He must assume to be perfect in himself and sufficient to himself. Repentance and confession are resisted. We are to let our neighbors know that we are very much pleased with our own precious selves and have need of nothing. We may break; we are not to bend. We are going to be grand or resort to the desperate.

9. Just as fast as the knowledge of phrenology spreads among the people, individuals will be estimated, not by position, not by the estimate they put upon themselves, but by real endowment. The greatest scourges of mankind, the most horrible criminals, have generally had large self-esteem. Look over your acquaintance; find another Dombey; select one who lives for himself and would subordinate others; pick out a shirk; show me one who will tell falsehoods to screen himself and throw blame on another contemplate a man so jealous of encroachment, so assumptive of possession, arrogant, offensive, and we have before our minds, each time, a person whose self-esteem exceeds his conscientiousness.

10. Webster's modesty was as distin-

guished almost as his amazing understanding and grand patriotism. We are re-honoring him and shall be for ages to come. We only err when we would make it appear that he was faultless. If General Grant had very large self-esteem, he would have failed; he would not have come down to facts. He would have stalked about, glorifying himself. He would have been shy about associating with himself the ablest men, or giving them free scope. The South, with less self-estimation, would not have seceded and trusted to prowess. Whoever watches the Southern brain now, will note the rapid development of causality, constructiveness, and the sense of justice. A proud Yankee repeatedly fails; he and his family are too conceited and vain to prosper. A German engages in the same occupation, pays his debts, "lays up" money.

Bonaparte could sleep while he was starving to death the great Ouverture. His fanatical self-esteem betrayed him more and more. A young neighbor of mine has a head which rises high in this locality, and is surmounted by a tuft of hair that causes this portion of the cranium to seem the more elevated. He is never wrong, and always ready to prove it, with no scruple about facts. He can not submit even to look at some of the conditions of any marked success. He walks with a stride, and appears to be gazing into the sky. To be asked to get a pail of water, or to do any small service, offends him exceedingly. His powerful face will put on an almost alarming expression at such times. Yet, there is no evidence that he is a brave man. His anxious, amiable wife is fading in strength, and will probably not live a year longer.

Not a great while ago, a very distinguished lecturer was to speak not many miles from my residence. I went to hear him, and before the time set for the lecture to open, I saw a man go into a barber's shop, whom I divined to be the speaker. Wandering in, I had a fine opportunity to glance at his craniumology. I observed that his self-esteem was elephantine. I listened, in the course of that lecture, to one of the most pitiless, sweeping slanders that ever filled my ear; but it doubtless added to the effect of his address, and made a deep impression in his favor with the multitude. O ye who have suffered so much from deficient self-esteem, who ought to have had more confidence, more hardihood, more brass, a better opinion constitutionally of your own selves (and your number is millions), be a little comforted! We all shall be weighed in a just balance at last.

An humble, patient, conforming spirit, looks above for help, has no confidence in mere personal force as opposed to law, unites itself with the everlasting energies, reveres truth, abhors false estimates of every kind, and grows up as mountains rise out of the sea.

REV. L. HOLMES.

SEED-TIME AND HARVEST.

We stand at morn on border-land of youth,
In joyous sunlight dreaming,
The new-sown fields and meadow-lands of life,
With harvest promise teeming.

Noon comes with radiant bloom and flowers bright,
In summer's roseate glory.
While sweet and strong earth's working-fields among,
Is heard Love's olden story.

And evening cometh, holy, calm, and still,
The lingering sunlight falling,
On golden harvest-fields where sweet and clear
Are heard the reapers calling.

Onward they come thro' twilight's silver glow,
Bringing to heavenly portal
A lasting harvest from the fields of earth
To grace the life immortal.

"Knowledge is power," one wisely said of old,
And they who teach true living,
Earth's first and earliest knowledge do impart,
In fullest measure giving.

In fields of thought the golden seed you sow
Of Life's best use and duty,
That earthly autumn-time in blessings yield
A harvest of true beauty.

CALLIE L. BONNEY.

JAMES B. EADS,

THE EMINENT ENGINEER.

THE portrait before us shows marked indications of talent and power. The head appears to be large, and especially well developed across the brow and up the middle of the forehead: a type of organization giving practical talent, readiness of judgment, retentiveness of memory, power of criticism and discrimination, and that kind of clearness of judgment which is almost intuitive, rendering a man possessing it independent in his judgment, because he feels so certain that he is right. The upper part of the forehead is massive: showing the ability to reason, theorize, investigate, and invent. That long face, belonging as we understand it to a tall body, and the well-marked features, the long nose, and long upper lip, and prominent chin, and vise-like mouth, show decision, resolution, dignity, self-hood; in fine, a sort of consciousness that he is "the hub of the wheel" wherever he moves. We should expect the history of his boyhood to reveal the fact that he was captain of the games of marbles and ball, the leader in

boating, and everything else. If one will partly close the eyes, so as to get an indistinct outline of the head and face, he will be reminded of the portrait of Commodore Vanderbilt; especially in the length of the head and face, and in that fullness and prominence of the forehead, and in the elevation of the head above the ears in the region of Firmness and Self-esteem. Vanderbilt lacked education and the ripeness of the forces of modern civilization which he aided to develop; was obliged to begin at the foundation and work largely as a pioneer.

He, like our present subject, was organized for large affairs, for pushing enterprises beyond the beaten track, for being a central figure, and a ruler in his sphere. In this portrait we see all the qualities which would make a great scholar, especially in science. His head is broad above and about the ears, indicating more force, and at the same time more prudence, than appeared in the head of Vanderbilt.

In this head we see also large Combativeness, and this, joined with his practical talent, and firmness, and self-hood, would lead him to feel that he could overcome any difficulty which could be mastered. He could have become a great military commander, had he been thrown into that line of duty; he might have been a great statesman and scholar; he has more inventive talent than Vanderbilt, more mechanical originality, and has also a great deal more faith, which, working with the inventive, tends to reveal new processes, and new fields and methods of achievement. His Hope is large, hence he is liable to magnify his prospects, and perhaps startle the world by his hopeful projects. To him, however, they seem clear and certain; and with his ingenuity to plan, and his force to energize endeavor, his achievements take a high rank. He would not be willing to dabble in things that are common, nor would he be satisfied to work merely for pecuniary results; he is ambitious, and his ambition takes a higher rank than merely to acquire millions. He would think more of a great name than of a great fortune, yet would regard a great fortune as a convenience, and as an evidence of power in its acquisition.

Such an organization as that ought to be successful in any legitimate field of manly endeavor, whether in scholarship, science, mechanism, finance, the army, or in controlling and managing the affairs of men on a large scale, and we are of opinion that if his life shall be spared, he will do greater things than those coupled with his name.

The work of this gentleman in improving the navigation of the Mississippi River, especially at its mouth, has brought him very prominently before the American public and made his reputation second to that of no other engineer in the world. He is a Western product, having been born in Lawrenceburg, Ind., on the 23d of May, 1820. When thirteen years of age his parents removed to St. Louis, and that city has been his home ever since. His early education was not thorough by any means, as he left school at thirteen on account of his father's inability to pay the expense of his tuition; but out of school he was none the less diligent as a student of the useful and practical, taking advantage of every opportunity that presented itself to enlarge his fund of knowledge, while at the same time he was sustaining himself by clerical services of one sort or another.

For five years he was a clerk in a dry-goods store; but having unusual mechanical ingenuity and a decided taste

for mathematics, he was not contented with such employment. His natural bent was toward engineering; and he determined to fit himself for the profession of a civil engineer, and so devoted all his spare time to the study of that and kindred branches of science. At the age of nineteen he was employed as a clerk on a Mississippi River steamboat; and then he first began to study the peculiarities of the great river and to consider the means involved in its improvement. As early as 1842 he constructed a diving-bell boat, designed to recover cargoes of sunken steamers; and soon afterward he contrived large boats, provided with novel and powerful machinery, for raising the hulls and cargoes of steamers which had gone to the bottom. By these contrivances a number of large and valuable vessels were recovered. The operations of the young engineer extended over the entire river and its principal tributaries, and made him familiar with every part of the Mississippi, and thus gave him the foundation for the theories which he has since demonstrated with signal success. Young Eads was remarkably self-reliant; indeed, many older engineers regarded him as over bold, even to recklessness. In 1856 he proposed to remove all the wrecks and snags which obstructed the channels of the Mississippi, Missouri, Ohio, and Arkansas Rivers, and a bill authorizing him to undertake the work passed the House of Representatives in 1857, but failed to pass the Senate for want of time.

In 1861 he was requested by President Lincoln to confer with him respecting the practicability of constructing iron-clads of light draft for service on the Western rivers. Soon after this conference Mr. Eads designed and built eight iron-clads having a speed of nine knots. The vessels were ready for their armament of 107 guns within one hundred days, and were the first war-vessels constructed by the Government. Some of them were engaged in the capture of Fort Henry, more than a month before the memorable contest between the *Monitor* and the *Merrimac*. In 1862–3 Mr. Eads designed and constructed six turreted iron-clad vessels, all of which were heavily plated. The turrets were of novel construction and their powerful 11-inch and 15-inch guns were worked by steam, and could be loaded and discharged in forty-five seconds. This was the first instance where steam-power was used in the manipulation of artillery.

In the interval between 1867 and 1874 he was chiefly occupied with work relating to the plan and construction of the St. Louis bridge, which in many respects has no superior in the world. At the time this work was undertaken, grave doubts were expressed by experienced engineers concerning the practicability of the project, and few men, either in this country or abroad, would have taken hold of so great a work under the circumstances which surrounded it at the beginning. Mr. Eads, with his rare self-reliance, skill, and perseverance met and overcame every difficulty, and finally accomplished the purpose.

The bridge is built of steel. Its central arch has a clear span of 520 feet, and the side arches have each a span of 502 feet. The piers all rest on the solid rock underlying the river deposits. One of these piers, weighing 45,000 tons, was sunk 136 feet below high-water mark, through 90 feet of sand and gravel; and another, weighing 40,000 tons, was sunk to almost as great a depth.

Among the devices employed in overcoming the many natural difficulties the engineer encountered in this work, were those for the construction of the caissons for sinking the piers through the sand to the bed rock. These devices were afterward adopted in sinking the piers of the East River Suspension Bridge at New York.

Mr. Eads had long had in view the project of widening and improving the mouth of the Mississippi River to the commerce of the world. It was proposed by the United States engineers to relieve the commerce of the river by the construction of a canal from its left bank,

near Fort St. Philip, to Breton Bay, by which the bars at the mouth of the river would be entirely avoided. Mr. Eads opposed this scheme vigorously in several pamphlets, claiming that a canal with locks would be inadequate to meet the requirements of the growing commerce of the river, and proposed the creation of a broad, deep, natural channel through the bar at the mouth of the river by means of jetties or parallel dikes. Mr. Eads maintained that the effect of the construction of jetties would inevitably be to create such a channel, inasmuch as it would result in bringing the current of the river within narrow limits and greatly increase its velocity, and thus augment the force required to carry far out into the deep water of the Gulf the sedimentary matter with which the river is charged. In 1872 a commission, composed of seven United States engineers, was charged by Act of Congress with the responsible duty of devising the best means to open the mouth of the Mississippi to commerce. In 1874 this commission recommended the construction of the canal already referred to, and a committee of the House unanimously reported a bill to appropriate $8,000,000 for the construction of the canal as proposed.

Mr. Eads first went before Congress with his jetty project, and after pointing out the large expenses involved in the canal scheme—that they would probably reach $20,000,000; and urging the inadequacy of a canal, he made a startling proposition, viz., to give an *open river mouth to the commerce of the world*—a broad, deep, unobstructed channel—for the sum of $5,250,000; stipulating that not one dollar of this sum should be required of the Government until he had secured a channel not less than 20 feet deep and 200 feet wide. This amazing proposition was in direct antagonism to the unanimous recommendations of the U. S. Engineer Corps. Mr. Eads thus proposed to assume the enormous financial risk involved in carrying out such a vast work.

This proposal had the effect of postponing the canal project, and Congress appointed another commission of engineers to reconsider the whole matter and report thereon. The new board went abroad during the summer of 1874 and examined many noteworthy works—among others, the jetties at the mouth of the Danube—and then returned home and made another very careful examination of the mouth of the Mississippi, and finally six out of the seven members of the commission reported in favor of the application of the jetty system with this difference: Mr. Eads proposed to construct jetties over the bar at the mouth of the Southwest pass; the committee recommended their construction at the mouth of South pass. Southwest pass was much larger and discharged a greater volume of water than South pass; there was deep water at its head, and it carried 14 feet over the bar at its mouth. In the case of South pass there were two bars—one at its head with 14 feet of water, and one at its mouth with not more than 8 feet. These facts show the reason why Mr. Eads preferred the larger pass. Convinced by the clear statements and able reasoning of Mr. Eads, the House committee reported a bill recommending Southwest pass, and it was passed. But when the bill came before the Senate it was amended by substituting South pass for the proposed improvement, and in this form it was passed and became law.

Mr. Eads now closed his contract with the Government, and engaged in the vast work, and in spite of the supreme difficulties which beset the prosecution of it, his success was complete and brilliant. On the 8th of July, 1879, he had secured the maximum channel required by the terms of the law, namely, a channel 26 feet deep, 200 feet wide, and a central depth through its course of not less than 30 feet. When Mr. Eads began the work there were only 8 feet of water on the bar; there are now 30 feet, admitting of the passage of the largest vessels afloat.

Since that time Mr. Eads has rendered very efficient service on the National Commission for the Improvement of the Mississippi River; and he has not been

silent in the discussion of the canal project for connecting the Gulf of Mexico with the Pacific Ocean. He maintains that a railway is far more desirable than the level ship-canal project of M. de Lesseps, and some time ago presented a scheme for the building of a railway capable of transporting vessels of the greatest tonnage from ocean to ocean. In support of this proposition he appeared before a committee of the House of Representatives.

According to a statement made by Mr. Eads, and published in the *Missouri Republican*, work has actually been commenced on this railway in the neighborhood of Minatillan, and great confidence is felt by many scientific men in its success. The locality for the proposed ship railway is 1,200 miles nearer New York than the Panama Canal.

In the life of Mr. Eads we observe a splendid example of living for a purpose. From his youth he appears to have aimed to accomplish great and useful results, and the record is one which the proudest might covet.

EXPERIMENTS IN PSYCHOLOGY.

A SCIENTIFIC CONFERENCE IN BROOKLYN, N. Y.

WE have obtained a report of a recent gathering of friends of science at the residence of Dr. I. K. Funk, at which representatives of five denominations were present among the Brooklyn clergy, as well as medical and literary people from a distance. The following is a *résumé* of the paper read by Professor E. P. Thwing and of the experiments which accompanied it:

THE TRANCE STATE.

1. What is it? The trance is a kind of sleep, more or less profound, more or less continuous. It may last a moment or it may last months; it is "the supreme expression of involuntary life."

2. Is it natural or artificial? Both. It is artificial when produced by the will of another. It is a condition into which some pass without effort on their part or others.

3. Is it a disease? It is an abnormal state, and yet the trance, or "transit," as the word indicates, is too common to warrant the use of the term "disease" in all cases. Not only women and children, and persons in feeble health, but men of vigor and active wills are subjects of this experience.

4. What are some of its forms? Ordinary sleep is a kind of trance, and the phenomena of dreams are not unlike the experience of those who are controlled by a psychologist. Somnambulism is another. Intoxication produced by liquor, or the ecstasy resulting from hachisch and opium are still others. That wild hallucination of various intensity and manifold forms, known as "Panic," is really a trance. A dozen kinds of trance are now studied. "It unlocks half the secrets of the world's delusions."

5. What is hypnotism? Artificial sleep induced by an operator who is able to concentrate the entire attention of a "subject." It is not like ordinary sleep, gradational, but sudden; not intermittent, but profound; not volitional, but automatic, without guidance or personal restraint of the subject.

(*a*). It is not gradational. We gradually fall asleep, and often after repeated efforts, interspaced by wakefulness. A word or gesture is enough to produce hypnotism or trance. [By a quick gesture Prof. T. threw a patient into a trance.]

(*b*). It is not intermittent. We wake from an ordinary sleep, at least enough to turn over or readjust our bedding, and sleep again; but the trance subject is usually motionless like one chloroformed—stiller even; for stertorous breathing accompanies anæsthetics oftentimes, and

the coma of disease has convulsions frequently.

(*c*). The trance state is not volitional; *i.e.*, the guidance or self-control of the subject is suspended. The vital functions, like breathing and swallowing, go on automatically, as when awake, but the other activities and the sensations are controlled by the operator. He wakes when a word is given. If left by the operator, the subject passes into an ordinary sleep and wakes of his own accord within a few hours, or sooner, if so trained. [A surgeon, present by invitation, applied tests which satisfied all of the genuineness of the phenomena.]

6. What is Unconscious Chronometry? Dr. Carpenter, of London University, uses the phrase to indicate a time-telling power which the mind has when asleep. You say as I do now to the patient—"Count slowly, aloud. When you get to five you will find yourself asleep, but your mind will keep up the unconscious chronometry, and at twenty-five you will be wide awake." It illustrates the power of a dominant impression.

7. What are *Mental Therapeutics?* The treatment of a disease by turning a man's mind upon himself. The emotion of hope, or of wonder, or of expectancy is "incomparably more powerful, both for immediate and long-enduring effects," says Dr. Geo. M. Beard, *North American*, July, 1879, "than hydro or electric therapeutics in many cases." The expectation is enough without the trance, unless we choose to call that very attitude of eager, absorbed, and wondering waiting, or "faith" itself a tranciform condition. Not the feminine, immature, the dull and credulous alone, but scholars and skeptics are also open to these influences, as the biographies of our greatest men and the testimony of every intelligent physician prove. My family physician gave a powerful sedative to a woman. The husband wondered at its power, and asked that he might smell. The doctor, just to experiment, substituted another vial containing an inert fluid, but warned him not to inhale much of it. The effect was immediate. It went "all over his head." The "vitalized handkerchiefs" are of the same nature and work in the same way. Simple-minded people are paying ten dollars each for them. That relief is had can not be doubted. Brown-bread pills would do just as well if only "mixed with faith."

VITALIZED HANDKERCHIEFS.

At this point of the conference, Rev. Dr. Funk's written statement was made as follows:

On April 7, Mr. Lanworth, of West Meriden, Conn., was sent from his boarding-place, 53 Nevins Street, to my residence, 196 Schermerhorn Street, with a handkerchief which Prof. Thwing had loaned him. Mr. L. was assured that the handkerchief was an ordinary one. He was told to hold it before his face to show that it had no magical power aside from the mental impression with which Prof. Thwing chose at any time to connect it. "When you get to Dr. Funk's house, however, and wrap it about your hands you will find," he said, "that all sensation ceases in them, and if it be placed before your face it will act like chloroform." He came to me and I applied the handkerchief to one hand and then to the other. They became numb, so that the puncture of a needle was not felt. The handkerchief was then slowly brought by me toward his nostrils and he instantly became profoundly insensible. Neither could I nor two young men who accompanied him arouse him. A short time afterward Prof. Thwing arrived, and with a word brought him to a normal condition.

SCIATICA CURED.

A gentleman from this city arose and testified to the following facts: "I met this operator a month ago casually in a public building, and requested him to see if he could relieve me of sciatica of nine months' standing. To his question whether I had ever been controlled by any psychologist, I said that I had not. It took but a moment to settle the fact. He then turned his attention to my thigh,

and by manipulations gradually seemed to draw the discomfort away, occupying not more than two or three minutes. Only a slight stiffness lingered for a day or two, and since that time I have had no trouble." This testimony was unlooked for, and to no one more of a surprise than to Professor T. Another present, taking courage, asked him to do the same to his lame limb. In two minutes he was walking with rapid and elastic step, and said, "Only a prickling sensation in my foot remains."

The upshot of all these experiments seems to be this. The confident expectation of a result is one of the best helps in bringing about the result. Not every one is able to create certainty of conviction in others. Some are gifted with this power. They will carry a jury or lead a forlorn hope by a certain indefinable yet irresistible magnetism that compels men to capitulate to their sway. That this power has a place in medical treatment, as it surely has in moral discipline, is clearly shown by these psychological experiments. But to call these faith cures "in the name of Jesus Christ," when they are fruits of faith in *man*, is both irrelevant and irreverent, and with "ten dollars in advance" is a charlatanism which this conference did well to rebuke publicly.

POSITION IN SOCIETY.

NOT long since I was reading a little article about the cities of the United States, in which it was stated that, generally speaking, in New York City wealth was what gave position in society; in Boston it was intellect; in Philadelphia, family; in Washington, office. However correct this might be, none of them, I thought, were true tests of worth. Nor yet do I think that in the good millennium time that is coming will there be a great leveling in society, whereby the rich and the poor, intelligent and ignorant, good and bad will be jumbled into one mass, and all considered on an equality; but that there will then be still nicer distinctions made than now. In that good time coming, wealth, office, family, even intellect will not be the tests of position in society. Yes, when the millennium comes! In imagination I am there now—not that I would even think disparagingly of the glorious present age; but are we not to grow in knowledge, wisdom, goodness, and happiness as the countless years roll on? In thought I am carried forward to that era of golden sunshine when there will be not a dark spot in all the earth, but everywhere has the world been enlightened by glad tidings of Gospel news.

In a city of surpassing beauty, where order, cleanliness, and peace prevail, in fancy I wander along the pleasant streets, drinking in the pure air and loveliness of the scene. Is it the social, intellectual, and moral atmosphere of the place that with the rare purity of nature's elements and the beauty of all about me makes my life-blood bound along in such wild freedom that I stand thrilling in the joyous consciousness that I am a part of this perfectly healthful existence, feeling it to be an exquisite happiness to live and breathe?

As I mingle with the intelligent, good-looking people, I become familiar with the name of one Mr. Sterlingworth, who seems to be a noted man the wide world over, for from bits of conversation that I gather, I learn that he occupies a very high position in society, and is much esteemed by the people of the whole earth; I use the term, "the whole earth," advisedly, for by means of air-balloons and other contrivances, speedy communication may be had between a person who resides at the North Pole and his neighbor at the South Pole, or between one in San Francisco and his friend in China.

But this day appears to be one of

special note. Numerous air vehicles are rapidly alighting in the city, and the people are thronging toward a shady park. I accost a man just arrived from New York City, and respectfully inquire the meaning of this assemblage of persons.

"Ah, do you not know?" he answers politely; "it is a General Assembly from all parts of our world, and is the annual meeting for the purpose of consulting how to further the best interests of mankind. Delegates from all parts of the world are to be here; and one special item of interest at this meeting is to assign to Mr. Sterlingworth the highest position in society; for all agree that he is the richest man in the world, and worthy to be crowned with all honor. Come with me."

"No," I answered, and turned away. "So the richest man in the world is to be crowned with honor." I thought to myself in great anger: "Some ignorant boor that has robbed and cheated others into poverty, and now by his ill-gotten wealth and domineering spirit, he controls men that are his superiors in mind and heart." But here comes a Bostonian. "Allow me to inquire what you find in this man Sterlingworth to admire?"

"A learning and wisdom that is more than can be obtained from man alone," came the reply.

I was much out of humor. Perhaps he might be only some low dog who with cunning and gold had outwitted this people; of course he was possessed of some sort of knowledge to so befool the world. I now see a man just arrived in a palatial car marked in gilt letters, "Philadelphia." I shall ask this Philadelphian if he so highly esteems learning and gold.

"Pray, good sir," I began, "be so kind as to tell me of what note is this man, so honored here to-day?"

"Ah, my friend," he replied, "this man knew his Father's will and did it; he is one of whom the great Christian family needeth not be ashamed, for he is a most worthy member, a true descendant of the Israel of God."

At this I was somewhat perplexed Turning to a Washington delegate I asked: "Is this man Sterlingworth to be the next President?"

"No," he replied; "he is not the one best fitted for that office, although he is the most highly honored man in the world. In a way, better suited to himself, he has accomplished the greatest good, and is deserving all homage given him."

In a state of perplexity I wandered away from the place of interest, for I did not wish to see this man so honored above his fellows. But finally I turned back, for curiosity had gotten the better of me; I would see this man for myself. But when I returned and tried to make my way through the crowd, I could get but a glimpse of his countenance; that I saw was fair, placid, intelligent, noble; and I heard some closing remarks of one of the speakers; he was saying: "Rich, aye, riches of mind and heart; and to belong to the Christian family is to be a member of the highest family ever known by the world. One who goes about doing good, whose life-work has been that of making the best and most of himself and others, and whose influence has radiated great good. Truly honor and happiness are deservedly his in this present life. And may we not believe that such will be still more highly awarded hereafter by our Father in heaven?"

At this I was the more bewildered. "'Tis not the way the world does," I remarked to a by-stander.

"Oh, yes, in this millennium time character is the standard of excellence."

"But may you not be mistaken in people?" I queried.

"Oh, no, sir; in these times every man knows his neighbor as himself; and every man knows what he himself is, and what work he can best do, for no one is without some occupation."

"Pray, sir, is it possible that I can at-

tain to such great knowledge?" I anxiously inquired.

"Very easily, sir; only get yourself a pair of spectacles from the gnome and you can look into a person and see just what his character and talents are; and best of all, you can turn them inwards and see just what you, yourself, are. I am surprised that there is a person living in this age without owning a pair of these most useful spectacles."

"Most wonderful!" I exclaimed; "tell me where they are to be had, and I shall be without a pair no longer."

"Come with me up the next street," said my new acquaintance, "and I will take you to a phrenological office where dwells a wondrous gnome who keeps these invisible spectacles. It will require some study and practice to enable you to rightly adjust them so as to see things as they are, and not as they may appear to be."

"Just what I would like," I replied, "to see people, not as they sometimes appear, but as they actually are."

Together we hastened on to where dwelt the keenest-looking little gnome, who, with cap in hand, bowed us into his elegant domicil. In which place I applied myself most diligently to acquire an understanding of the intricate workmanship of a pair of these curious spectacles. And ere long I found myself looking through a pair with much clearer vision than I had ever before imagined of seeing, and I said to myself: "Heretofore I was blind, now I see." Then I went out and stood on a street corner with eyes looking through my new spectacles that seemed to inquire of each passer-by, "What is this man?" And so satisfactorily I read the answers that I might have stood there in mute wonder until I had become a petrified interrogation-point if the moving crowd had not jostled me back into the present time.

SARAH M. BIDDLE.

THE UMBRELLA-BIRD.

TROPICAL America is the home of a vast number of living creatures which are strangely organized. From the ant to the monkey, from the humming-bird to the black vulture, the naturalist finds there abundant material to feed his curiosity, and to tax his powers of analysis and classification. One of the more interesting species of birds whose habitat is the rivers, is the umbrella-bird. Strictly speaking, there are three species of this bird, all being remarkable for having a crest of long and slender feathers drooping over head and bill, and also an elongated plume extending from the neck down upon the breast. These birds are rarely seen apart from their homes in the trees of the islands of the South American rivers. As described by Mr. Wallace, the umbrella-bird is about the size of a crow, averaging eighteen inches in length. Its color is entirely black, but varied with metallic blue tints on the outer margin of the feathers. It is a powerful bird, the bill being very large and strong, the feet short, and the claws curved. Were it not for the crest and neck plume, it would appear to an ordinary observer nothing more than a short-legged crow. The crest of the male bird is, perhaps, the most fully developed and beautiful of any bird known.

This crest is composed of from fifty to eighty feathers, is five inches in length, and about four and a half wide, somewhat resembling a beautiful blue umbrella. The shafts are white, and the plume glossy blue, hair-like, and curved outward at the tip. When the crest is laid back, the shafts compose a compact white mass, sloping up from the back of the head. Even in this position it is not an inelegant crest; but it is when fully opened that its peculiar character is developed. The shafts then radiate on all sides from the tip of the head, reaching in front beyond and below the top of the beak, which is completely hidden from

view. The top of them forms a slightly elongated dome, of a beautiful shining blue, having a point of divergence rather behind the center, like that in the human head.

The other singular appendage of this bird is the neck-plume. This is a long cylindrical plume of feathers depending from the middle of the neck, and either carried close to the crest, or puffed out, and hanging down in front. The feathers lap over each other scale-like, and are bordered the same as the crest with fine metallic blue.

"On examining the structure of this plume," says Mr. Wallace, "it is found not to be composed of feathers only, growing from the neck, as seems to have been hitherto supposed. The skin of the neck is very loose; looser and larger, in fact, than in any bird of which I know. From the lower part grows a cylindrical, fleshy process about as thick as a goose-quill, and an inch and a half long. From this grow the feathers, to the very point, thus producing the beautiful cylindrical plume quite detached from the breast, and forming an ornament as unique and elegant as the crest itself.

"When in motion, either flying or

THE UMBRELLA-BIRD.

feeding, the crest is laid back, and the plume carried close to the breast, so as not to be conspicuous. When at rest in the daytime the crest is fully expanded, and the plume is rather enlarged and hanging forward. At night, when asleep, all the feathers are puffed out to their fullest extent, and sometimes the head is turned so as to bring the dome of the crest on the middle of the back. It then presents a most singular appearance, the head and feet being quite invisible, the plume and crest alone being conspicuous amid the mass of feathers."

Another species of this bird has a large, naked red spot on the neck, and only a small neck appendage. It is found in Costa Rica; and the third, with an immensely elongated neck-plume, seems to be peculiar to Ecuador.

Its note is a very loud and deep cry, and from this characteristic the bird has received its name, *Ucramimba*, which signifies piper-bird, from the tribes of the Rio Negro. It utters its cry early in the morning and in the afternoon. It frequents the loftiest trees, but is said to build its nest rather lower, which is formed very roughly of sticks, and the young birds are said to be very naked and ugly.

POLITICAL ECONOMY.

TOWARD the middle of the last century, when France, oppressed by the so-called nobility, and still burdened by taxes caused by the wars and extravagances of Louis XIV., was experiencing the bad effects of the Mercantile System, Quesnay and a few other earnest, thoughtful, and self-sacrificing men conceived the idea that all the misery they beheld must have originated in some violation of natural law. They consequently undertook to ascertain on what natural principles human society was based. The conclusion to which observation and reflection brought them was this: that society is based upon certain natural rights, chief among which are freedom of person, freedom of opinion, and freedom of contract. These they believed most conducive to human happiness, and all violations of them inimical to the human race. They were most clearly of the opinion that governments should only be instituted for *preserving and defending the rights of the individual.*

The germ of social revolutions lay in this idea. Who can tell how much of the inspiration of our immortal Declaration of Independence may have been derived from the writings of Quesnay and this little band of peace-loving philosophers? Upon these natural rights as a basis Quesnay essayed to found a science of the rights and duties of mankind in all human relations, including relations to each other, to government, and to property. This science he named Political Economy. Its scope comprehended all ascertainable laws pertaining to man as a social being.

Later writers, finding this field too broad for one science, have divided it. Such laws as appertain to man's relation to government are now made a part of Political Science. Such as pertain to his relations to individuals, as, *e.g.*, the laws of heredity, are frequently given the general name Social Science, though this term, in its broadest application, includes all natural laws that appertain to man as a social being; while the term Political Economy is not only reserved for that portion of sociology which treats of the relations of mankind to property, but is restricted to a consideration of the natural laws which govern the exchanges of property, or, in other words, which govern values. Hence it is variously termed the science of wealth, the science of exchanges (Whately), and the science of values (A. Walker and Perry). That its field is not narrow, will be seen when we have considered what things may be wealth, what things are subjects of exchange, what things may have value.

Wealth, as the term is used in Eco-

nomics, does not signify a large amount of property, but anything that has value, *i.e.*, which may be bought and sold, or, in other words, exchanged for money or any other thing whatsoever. A book or a pen is as truly wealth in this sense of the word, as are houses or manufactories: and so also is labor of all kinds, whether in the form of physical, mental, or moral services, because all these services may be the subjects of exchange, *i.e.*, may be bought and sold.

Political Economy assumes the right of human beings to possess and dispose of things, material or immaterial — of such things, in fact, as are included in the *res* of Roman law; in other words, it assumes property rights.

The species of property, or Economic rights, which may be exchanged or sold, either absolutely, or for a time, are for convenience divided into three classes:

1st. Property rights to material things, such as houses, lands, manufactories and their products, agricultural products, works of art, and also material things which are not the result of labor.

2d. Labor or service of all kinds; brain labor as well as hand labor; the labor of bankers as well as of bakers; of clergymen as well as of carpenters; of doctors as well as dress-makers; of lawyers and day-laborers, of merchants and mechanics, professors and plumbers, teachers and tailors, etc. All these sell their services, the result of their strength or knowledge or skill in certain departments. Their labor is wealth—has value. It is, however, *immaterial* property. Though it can not be seen or touched, it is none the less wealth.

3d. What is called *incorporeal property*. To this class belongs credit. Credit, in Economics, means an existing right to future payments. Some of its leading forms are notes, cheques, bonds of nations, States and individuals, and bills of exchange. The most common form (if we except book-credits) appears in notes and cheques. These are the subject of an enormous trade. The shops where they are most largely dealt in are called banks. Some little conception of the amount of business done by these credit-shops may be formed by observing the clearing-house reports of our larger cities. The clearing-houses are organized to facilitate the daily payment of the cheques held by the banks of a city against one another. The total of the claims thus settled is called the *clearings*. The clearings of the New York clearing-house for 1880 were $38,614,448,223 — more than five billions more than those of London itself—making a daily average of $121,000,000 through this one agency. Had all these payments been made in gold coin, without the employment of clearing, the gold would have weighed 74,000 tons! Or if the gold had been actually paid on the "differences" or "balances" in the clearing-house, it would have weighed 598 tons. In fact, however, the settlements were made in United States notes and gold certificates of deposit. In the London clearing-house the use of money for balances is entirely dispensed with, clearing being made through the Bank of England; and two or three dozen clerks there clear every day, without the use of a coin or note, cheques and bills to the average amount of $100,000,000. Without this machinery, 200 tons of gold would have to be moved every day over distances varying from yards to miles.

It would be interesting to consider this new economic force, which, by the fellowship it establishes among the banks, has proved, in more than one crisis, of great benefit to the community. In the panic of 1873, for instance, the banks of New York City checked the demoralization by combining their entire resources in the issue of loan certificates to the extent of $25,000,000. We can, however, only remark that no such extension of credit transactions can take place save among people who have a keen sense of mercantile honor. By the constitution of the New York clearing-house, any bank may be expelled from membership for sufficient cause; and in another large city, a bank was, in 1881, compelled by its associates to withdraw from the clear-

ing-house, on account of having given the United States Revenue Commissioner fraudulent returns of its taxable deposits. We here see the disciplinary power banks may have over each other.

Thus far we have considered only one kind of incorporeal property, viz.: *credit*. Another species is the "good-will of a business." When a person buys out a manufacturer, or one engaged in other business, the price he will pay is not governed merely by the value of the land, brick, mortar, machinery, or other stock there. Often, indeed, these are but a minor consideration, and the chief motive to the purchase is the amount by which the buyer's future profits will be enhanced by the use of the seller's name or trademark, or, in other words, by the reputation his wares have in market. This consideration is what, in law, is called the "good-will of the business"; and every man of affairs knows how valuable it often is. Boswell tells us that Dr. Johnson was once appointed executor of the estate of a famous brewer, and that, in this capacity, it became his duty to sell the business. "When the sale was going on," says Boswell, "Dr. Johnson appeared bustling about, with inkhorn and pen in his button-hole, like an exciseman; and, on being asked the value of the property to be disposed of, replied: 'We are not here to sell a parcel of boilers and vats, but the *potentiality of growing rich beyond the dreams of avarice*.'" This was the Johnsonian phrase for the "good-will of the business." Now this *potentiality*, though it was the result of labor, was not corporeal. Yet, it could be bought and sold, and was therefore *wealth*. The same is also true of the practice of a lawyer or a physician. Copyrights and patent-rights are other forms of incorporeal property.

Having ascertained what things may have value, our next step is, to learn the cause of value. And just here have arisen more fallacies in the treatment of social and labor questions than, perhaps, from any other source. Many persons, and, unfortunately, some writers of excellent repute, have supposed, because they saw that most of the things which have value were produced by labor, that labor was the cause of value. They confound the thing which has value, with its value. *Producing a thing is not producing its value.* The value of anything depends upon the estimation in which it is held, and is measured by what one will give in exchange for it. How much money (or anything else) one will pay for an article, depends upon the relative estimation in which money (or whatever is paid) and the article in question, are held. Value is a relation. *There is no such thing as intrinsic value.* The phrase is absurd, and when applied to things commonly valued, is misleading. There is nothing on earth of which the value does not change with time, place, or other circumstances.

If labor were the cause of value, what would be the cause of the value of labor? The exchange value of all things, labor included, depends upon human desire, combined with the means of satisfying that desire, or, in economic phrase, on *demand*. Before a man will labor, something must have value to him, to obtain which he gives his labor. Value, then, precedes labor. How much labor one will be willing to expend to satisfy a desire, depends on the strength of the desire and the ability to labor. If many people desire the same thing, and its quantity is limited, the more labor will have to be given to secure it, and *vice versa*.

Though neither labor nor cost of production can cause value, they may indirectly affect it, through their effect on supply. And here let us say that demand and supply are reciprocal terms; for demand being the offering the commodity possessed for the one desired, and supply being the offer made by the one possessing the object of desire, it can not be otherwise than that either term of an exchange is demand, when regarded in connection with the one offering it. When we understand that it is demand that gives value, it will be at once perceived that any change of demand makes a

change of value. The practical bearing of this law will appear when we consider the evils that may arise from a failure to apprehend it.

We have now, in the definition of Economics, or Political Economy, of wealth, value, demand and supply, and a knowledge of the cause of value, the fundamental concepts of economic science. From this point, the science becomes deductive. Of its deductions we can not speak here, save to indicate a few of the evils that may arise from erroneous notions in regard to its fundamental principles.

A wrong idea of wherein wealth consists, leads logically to unjust taxation. The eighteenth century Economists of France, notwithstanding their valuable contributions to the science, held the erroneous notion that land was the source of all wealth, and that the annual increase of a nation's wealth was the net annual product of the soil. Turgot, the Prime Minister of Louis XV., convinced of the truth of this doctrine, conscientiously endeavored to administer the finances of France in accordance with it. He therefore made the whole onus of taxation fall upon the land-holders, while manufacturers and all others who were adding to the nation's resources, wholly escaped bearing their share of the burden, notwithstanding the value of their products. "Thus," as Blanqui says in his "History of Political Economy," "the proprietors of lands were made to bear the fiscal consequences of an error in doctrine, and the Government, with the best intentions possible, was ruining them, even while proclaiming them pre-eminently *the* producers."

Another false idea, generally held until the time of Quesnay, was that wealth consisted chiefly of gold and silver. The so-called "Mercantile System" was one of the outgrowths of this doctrine. Every nation endeavored to obtain all the gold and silver possible from other nations. Laws were even enacted prohibiting the export of the precious metals, and thus international trade was prevented in so far as it required an export of those metals to pay balances. This system prevailed in Europe for two centuries, and gave rise not only to tariff-wars, but to fifty years of war with all its blood and desolation. Nations had not then learned the very simple fact that in a trade both sides may gain, because each may receive something of more value to itself than that with which it parts. They supposed that what one nation gains by international trade, another must lose. Moreover, though Europe had seen Spain grow more and more impoverished, despite the argosies of gold and silver from her American colonies, all nations still held to the doctrine of *balance of trade*, *i. e.*, that if a nation did not have such an excess in value of exports over imports as to receive a balance in money, the trade was not advantageous. Quesnay exposed this error: so, later, did Adam Smith; and after him, J. B. Say; and since then, Bastiat, Blanqui, J. S. Mill, and nearly every economist of this century has testified to its fallacy. Political Economy thus adds its influence to that of Commerce, to maintain peace among nations, by proving that the good of each is best promoted by the well-being of all.

A wrong theory of the cause of value has been nowhere, perhaps, more productive of mischief than where it has given rise to errors in finance. Without going to England or France for examples, of which they afford many, we shall find in our own country and our own generation sad confirmation of this truth. The extensive issue of paper money during our civil war diminished greatly the value, *i.e.*, the purchasing power, of each unit of the money. Owing to the large increase in quantity, and the fact that the area for its employment was narrowed by the withdrawal of the Southern States, the value of the money was cheapened, and more of it had to be given to obtain a given quantity of any commodity. Consequently, the Government itself had to pay greatly higher prices for everything required to carry on the war, and thus the national debt was increased by a

needlessly large amount. Moreover, this excessive issue of money altered in fact the value of every contract in the United States solvable in money, as these contracts were paid in a cheapened currency, and injustice was thereby wrought.

No less an error was the subsequent contraction of the currency from 1875 to 1879. This so diminished the amount of money in the country, that all persons had to give more labor or more commodities of some sort, to obtain a given amount of money; or, in other words, there was a fall of wages and prices. In economic phrase, there was increased demand for money. In consequence, persons who had incurred obligations under the preëxisting money scale, were obliged to give more days' work than before to discharge those obligations: so that many a poor man lost his home by the foreclosure of mortgages, and tens of thousands of laborers and mechanics, merchants and manufacturers, had to face a financial ruin for which they were in no way responsible. The burden of national taxation, too, was thus made to fall more heavily on the people; for, to pay one's share of the national debt (though it be by indirect taxation), every person must give more days' labor when lower prices rule.

Not a few of the labor troubles of today may have had their root here. But here we enter upon problems which do not come within our limits to discuss. Enough has, however, we trust, been said, to make it evident that, since human weal or woe is linked to so small a thing as a wrong definition of wealth, or a wrong theory of the cause of value, no one can afford to be ignorant of the principles of Economic Science, and their practical application in human affairs.

Meriden, Ct. EMILY J. LEONARD.

THE PLANET SATURN.

THE specialist can never believe that his subject is narrow: to him it widens and widens. When the theological professor said to the astronomer that his department was the Old Testament, the astronomer replied, "So is mine, with the difference that mine is older." On the other hand, when the astronomer boasted to the entomologist that his department covered the whole earth, the entomologist said, "Insects do."

I have perceived, in studying the planet Saturn, how many incidental questions come up in other departments of physical science; I must know something of chemistry, of natural philosophy, and especially of celestial mechanics and mathematics. Saturn alone showed itself a universe made up of systems within systems.

To the eye, Saturn is far less conspicuous than Jupiter. It is smaller; it shines with a pale, white light; it might be mistaken for one of the countless stars. The first look with a telescope is a revelation. Like Jupiter, it has its satellites; like Jupiter, it has bands crossing its surface nearly parallel to its equator; but, unlike every other planet we see, it is surrounded by a ring generally so inclined that it stands out like a plateau in front of the planet. It is not a ring, it is a bottomless placque.

Why is Saturn thus girded about, like a high-priest, among the hosts of the firmament? This ring is so posited around the ball that permanence of relative position of ball and ring is secured. In a few hours, ball and ring turn around on their axes and show to us different faces; but another change is going on slowly in years, that of the inclination of the ring to our line of sight. From this change of inclination the ring is now a broad, flowing river of light surrounding the ball; the position of earth, Saturn, and sun changes, and anon it is a silver thread crossing the glowing disk, and, once in the average life of man, it defies the power of ordinary glasses; it presents its

edge directly to us, and we can not see it.

We say "Ring," but the ring is made up of many. An ordinary glass will show that this broad, flat ring is divided, and dark bands of sky show through the opening rifts. A narrow ring seems to have separated from the original one, as if parting the close companionship; the most powerful telescopes show other separations. We detect these changes mainly at the extremities of the longer axis of the plane of the ring.

Separating from the *inner* edge of the plane of the ring is what is called the dusky ring—seeming to tend toward the ball. Reflecting little light, it extends a wide surface toward the ball, seemingly shelving like the sea-shore toward the ocean; and, when seen obliquely, it appears to lie upon the ball, and was long talked of as shadow, although no light was there on sea or land to cast shadow in that direction. There can be little doubt that this crape-like, dusky ring has changed in the last century. Are these changes the result of the action of the ball upon the substance of the ring? When the ring is so tipped that the bright edge toward us is projected upon the ball, dark markings appear upon the ball; they border the ring on one side as the dusky ring does on the other; we call them *shadows*, but are they shadows? They do not follow the curve of the ring; they do not follow the usual law of light and shade. So, too, upon the brilliant ring are very black irregular spots; we call them shades thrown by the ball; but the ball shows no prominences which, by intercepting the sunlight, could throw such shadows.

The astronomical observer is fortunate if he can call in some *in*experienced friend, if possible an artist, to assist his judgment in lights and shades. Above all other combats, the experienced observer has that with his own perceptions and favorite prejudices. If he has conceived an hypothesis, it becomes his tyrant and oppressor, warping judgment.

Minute objects which will bear no illumination of the telescope, but must be seen in intense darkness, are detected by the eye, but can not be measured with apparatus. To these, different eyes must be called in place of micrometer, and the opinion of the novice as to which is larger and which is brighter is a wholesome correction to the prejudiced observer with his pet bias.

If we look at Saturn only for its picturesque interest, it is wonderfully beautiful. Its variations from uniformity add to its charm. It is not a sphere; it is perceptibly flattened at the poles. Surrounded by the broad, bottomless placque, it is not centrally posited within it, but is visibly on one side. Accompanied by eight satellites, these circle around it in such different orbits, at such different distances, with such different rates of motion, that the configuration of ball, ring, and eight moons never repeats itself. Now, the moons range themselves in a straight line on each side of the ball as sentinels; now, they cluster around one point of the ring as jewels dropped from the circlet; and again, they form a curve as a coronet above the central body.

Like the traveler in mountain regions who tries to think, "Given the mountains, could I gather them together into the picturesque slopes and hills and dales of the vista," so the astronomical observer learns his impotence when he attempts to conceive the outlines of beauty in the arrangement of points of light. You will never see the same combination a second time. If you changed the grouping of moons in one line only, you would make tens of thousands of changes; if you consider the changes of inclination and of distances of these eight moons, of their combinations with Saturn, and Saturn's changing position of ball and ring, you can never exhaust the variety of the celestial kaleidoscope.

Let us consider the little moons themselves. They pass and repass one another; Titan, with its orange light, comes between us and the pale Rhea; Tethys, with its peculiar sparkle, is followed by

the faint Dione; Euceladus and Mimas cling for a while close to the ring, then shoot out with hasty step and quickly return; while afar off, distant many times the diameter of the planet, shines Japetus, now brilliant as Titan, now faint as Dione. Hyperion, the last discovered, is seen only with the largest glasses.

We might think these names absurd; but some nomenclature is necessary; we acquire a habit of speaking of them as members of a family, and so familiar do we become with their peculiar features, that if the family of Saturn passes in its orbit near a *star*, we know at once the stranger in its solitary fixedness.

Modern scientists consider the rings and the moons to have had a common origin; that the rings are made up of crowded moons not yet separated. If the satellites have, in different ages, separated from different portions of the rings, it seems likely that the rings are not homogeneous. The rings show lighter and darker shades, but scarcely the variety which is so marked in the moons. Titan and Rhea are so unlike in color that any ordinary eye would see it at once.

I know of no telescope which shows other than a smooth edge to the ring; roughness may be indicated by the shadows. Larger telescopes in more favorable climates may lead to the detection of inequalities of surface; new moons may be found; the eight known moons may develop duplicity, as they seem now to show variability.

There is always work for *small* telescopes, and into this work women should come, and especially *young* women. The very faults of a girl's education should lead her into the study of nature. She is trained to observation of minute detail; her eyes and her perceptive faculties are always developed; she is learned in shapes and forms, colors and positions. Her very needs should lead her to the study of Nature, for Nature must be studied out of doors, in good air. The most thoughtless girl is awed when she first looks through a telescope and sees Jupiter or Saturn, and the step from the beauty of the vision to the question of cause underlying it is quickly made. For beyond all scenic effect is the beauty of the *law* by which permanence and stability are secured. Where fancy fails to depict, mathematical computation traces the curves of beauty. If the earth shows His handiwork, if the sea is His, the heavens declare the glory of God.

MARIA MITCHELL.

A CONSIDERATE FATHER. — Jonathan Edwards, the celebrated theologian and the first president of Princeton College, was not only possessed of great learning in matters of a theological nature, but also knew something of human character. One of his daughters, it is said, had some spirit of her own, and also a proposal of marriage. The youth was referred to her father.

"No," said that stern individual, "you can't have my daughter."

"But I love her and she loves me,' pleaded the young man.

"Can't have her," said the father.

"I am well-to-do, and can support her," exclaimed the applicant.

"Can't have her," persisted the old man.

"May I ask," meekly inquired the suitor, "if you have heard anything against my character?"

"No," said the obstinate parent, "I haven't heard anything against you; I think you are a promising young man and that's why you can't have her. She's got a very bad temper, and you wouldn t be happy with her."

The lover, amazed, said: "Why, Mr. Edwards, I thought Emily was a Christian. She is a Christian, isn't she?"

"Certainly she is," answered the conscientious parent; "but, young man, when you grow older, you'll be able to understand that there's some folks that the grace of God can live with that you can't."

CAUSES OF MALARIAL DISEASES—SUGAR-EATING.

MALARIAL diseases, probably more than most others, are popularly supposed to be due to locality or climate. Malaria, indeed, is known to arise largely from decaying vegetable or animal matter, taken into the system by one method or another. Time would fail to tell of the cases where the accumulated vegetation of many years decaying upon the surface has proved inimical to the settlers in new countries, until the soil was well under cultivation and the crops harvested and carried off instead of decaying on the ground; of places peculiarly healthy which suddenly became noted for fevers and congestions; where land was overflowed by a mill-pond, and of the well-known malarial tendencies in the vicinity of marshes, and in countries where there are vast periodical inundations, and a hot sun to act quickly on the exposed vegetation when the water receded, notably in the African and South American low countries.

Of the miasms that come from decaying animal matter, we have more striking cases in more thickly-settled countries, where the conditions of cleanliness are neglected in the virulent typhus or typhoid, so greatly dreaded in England, and from which even the royal family were not exempt, when the sewerage at Sandingham was defective. The case of New Orleans being purged from yellow fever, or rather kept from it by enforced cleanliness under military rule, and of Memphis suffering fearfully from its own neglect and restored to a habitable condition by better sewerage, are all too recent to escape the memory of our readers as illustrations of this general law. If medical authorities were needed, we could quote many, but our hygienic authority, the "Hydropathic Cyclopedia," puts it so comprehensively, we will quote that:

"The precise *modus operandi* by which the infectious element is first produced can not be precisely explained, but the principle or law of its generation and operation is sufficiently obvious. Vegetable ferment, called yeast, it is known, is produced from decomposition of vegetable matter. This is, in reality, a rotting process, by which certain proximate principles are decomposed and so rearranged as to constitute an entirely new product. The new product, of course, holds an unphysiological scale of chemical affinities in relation to the constituents of healthy fluids; and hence, when brought into contact with those fluids, another set of chemical actions, decompositions, and re-combinations take place, by which some element is changed, modified, or destroyed.

"We know, too, that when animal secretions or excretions are in a certain decomposing state, which is exactly analogous to vegetable fermentation, they will, by being brought into contact with the blood of a healthy person, produce more

or less of a similar change or decomposition in its elements. Poisoning from dissection is a familiar illustration."

A notable illustration of this was the death of twenty-seven school children, who drank of a brook in which was afterward found the decaying body of a small animal; and cases are continually occurring where entire households using the water of some well contaminated by sewage, suffer and individuals die from this cause. We resume the quotation.:

"All large collections of rotting or decaying vegetable or animal substances engender the poisonous ferment of contagious and other fevers; the grave-yards and cesspools of all large cities are constantly sending forth streams of death in all directions, and hardly a country place can be found where there are not local sources of this deadly ferment in the shape of hog-pens, distilleries, slaughter-houses, etc. And when the infectious ferment is once produced, it has the power of propagating itself whenever it can find congenial elements in the fluids of our bodies, our only defense being vigorous functions and pure blood—good health."

It is well worth our while then to look up carefully all the possible sources of contamination, and see to their immedate removal; not to allow any decaying matter about our houses, especially to look after the stores of animal matter which decays so quickly and is so very obnoxious to health, and not less carefully to the fruits and roots stored too often under the living rooms. Do not wait for the good old-fashioned "cleaning out" of the cellar, which comes with the other house-cleaning, but often comes too late to avert the "spring sickness" which may enter this open door, to throw its blight over the loveliest season of the year.

But let us never forget that our best safeguard comes from within, or rather we should say that all our care about what we breathe is of small avail, if we are not also careful of what we eat and drink. That our food and drink are entirely untainted with decay, should be one of the very first requisites which we are, as yet, very far from observing. Our drinks are too often fermented, our meats are "high," our bread might often be sweeter and more nutritious than it is, our fruits and vegetables fresher and freer from decay, and all to our very great advantage.

But besides this, we must remember that we can not go on indulging in "rich" food and over-eating, and still remain in the good condition requisite to enable us to resist malaria whenever we may be exposed to it.

A very instructive case came under my notice recently, which may be useful to others, so I give the main points. A lady, usually very strict in her diet, had learned, both by theory and by practice, that sugar is unwholesome. Enjoying an unusual degree of health, she yet found that indulgence in sugar or in highly-sweetened food produced some sort of disturbance, more or less prompt, but usually within twenty-four hours. The disturbance was slight; most people would hardly have noticed it, or would have attributed it to some other cause, or more likely have failed to attribute it to any cause; but she was a close and accurate observer, had studied much, and had brought herself up from debility to a health and strength now of many years' standing. One day she carelessly transgressed by eating over two ounces of fresh maple sugar on an empty stomach. When she realized what she had done, her first thought was, "Now, I shall suffer from this, in some way," but the day passed with no sign, and the next likewise, and being busy, she ceased to think of it. On the third day, however, she was exposed to sewer-gas; not more than she had often been before, but it took immediate and unusual hold of her; she was nauseated for half an hour, and commented to herself, "I have taken in the malaria this time, and I wonder what will come of it?" But this occupied no further place in her mind, even so much as to question what form it might take, and within a week she had a short but distinct chill, followed by a fever. She now remembered the sewer-

gas, but failed to recall the sugar until the second chill and fever compelled her attention to the circumstances of the case. She then concluded that the sugar had paralyzed the liver, and put the system in a condition to be incapable of resisting the malaria. She had a well-defined, but not very severe, three months' siege of chills and fever, which might doubtless have been cut short either by quinine or a more thorough application of hygienic remedies. However, she took no medicines, pursued her business through the day, and treated herself as well as she could mornings and evenings, and at last got quite rid of it, without any of the unpleasant "reminders" which might have followed quinine treatment.

This is enough to set one thinking, and I decided to give you the benefit of my thoughts on this subject. The liver is the great blood purifier of the system, and it is usually, if not always, out of order, as a preliminary to febrile diseases. Sugar is known to have an unfavorable effect upon the liver; indeed its unhealthiness as an article of diet is often shown in this way. I am aware that the functions of the liver are only imperfectly understood, but I believe there is no dispute about these two items. Now, I am not contending that it is sugar *instead* of malaria which causes febrile diseases, but the question which I wish distinctly to have considered is whether the free use of sugar is not often the cause of such a bad condition of the liver that the system is not able to resist the presence of malaria.

It is but fair to say that the relations of pure sugar to the system are, as yet, but imperfectly explained by medical authorities. It is known that starchy matters are changed into sugar by the liver, and disappear in the lungs; but it does not follow that because the liver makes sugar, that we should overload it with that article ready made. That might be like "carrying coals to Newcastle," and the market would be glutted. Besides, it is usually found best to let each part of the system do the work assigned to it, if we wish to keep it in good working order. If the liver be not in good working order, we do not find that sweets help it, but exactly the contrary. Nothing is worse for "biliousness" than cake, syrup, honey, candies, and sweetened food generally. This is commonly understood, though the course of it is not explained by our physiologists.

Their theories are very nice about sugar burning up in the lungs to keep the body warm; but the fact is, the lungs are no warmer than any other part of the body. Neither is it found that people who eat much sugar are any warmer than those who do not. If we should institute a comparison between the English, who eat little sugar, and the Yankees, who eat much, we should prove nothing in favor of the heat-making properties of sugar in the human body. Animal heat is largely, if not entirely, dependent upon health, and is now conceded by the best physiologists to result from the perfect working of the vital processes. Everything, therefore, that promotes health consumes heat, and if sugar does not promote health, it does not produce heat. It is not a question of chemical, but of vital action. If, as we surmise, its use predisposes to the reception of malaria, and therefore of fevers, it proves nothing, for the chills come first, and you can hardly say that one of these is a result of sugar-eating, and not the other. Argument of this sort is trivial and inconclusive, like most of the arguments about vital processes which look simply to chemistry for their solution.

Nor would I be understood as intimating that the bad results of sugar-eating are even mostly to be seen in the ready reception of malarial poisons. It is well known that many other complaints spring from a bad condition of the liver. Nasal catarrh is often so directly affected by it, that the subject can not eat sugar, cake, candy, or sweet puddings without a speedy attack, more or less severe, of bleeding at the nose. The worst case of nasal catarrh I ever knew (indeed the only directly fatal case), owed it confessedly to liver complaint, to which there was a strong

hereditary tendency, fostered by gross and continued indulgence in cake, pie, puddings, candies, and other sweets. While I would not, on any account, that public thought should be turned aside from the most careful attention to removing all sources of malaria; I may, perhaps, help some of the few whom these lines reach from predisposing their own systems to the ready reception of those germs of the disease to which they may be exposed. And in these days, when the use of sugar in all forms, and especially in confections and candies, is so rapidly increasing, it behooves us to look well to the results which we may expect from their use. The increase in the use of candies alone is something marvelous. New stores spring up everywhere, and soon assume palatial dimensions, and they seem never to be lacking in customers. Early, and especially late at night, we see their counters crowded, and even on Sunday they are permitted to ply their trade and entice from the Sunday-school children the pennies given them by their parents for other purposes. And the Sunday-schools themselves sanction it by giving candies in abundance to the children on high days and holidays, especially on Christmas and Easter Sunday. And people know that these candies are unwholesome, pernicious; that they are often adulterated with matters even worse than sugar, and colored with absolute poisons. And yet they go on winking at all this, eating candies themselves, and allowing their children to eat them. I remember the time when candies were considered bon-bons for children only, when adults no more thought of eating them than of playing with dolls and marbles, but it is not so now. Not only do they appear at dessert and refreshment-tables with other confections, but grown women, staid matrons have their little private packages of candies which they pass around to each other with as much assurance as the men pass around their cigars and papers of tobacco. "Well, what is to be done about it?" inquires some mother, despairingly. "It is impossible to keep my children from eating candy, though I have done my best to prevent it!"

Yes, I know, and a part of the difficulty lies further back. The children of to-day are not taught self-denial for the sake of health. They must have what their eyes crave, and they cry for it till they get it, and the result is fast coming of a race that are slaves to their appetites. We are slow to perceive that our higher civilization, as we call it, by bringing within our reach a greater variety of things for the gratification of the senses, entails upon us a necessity for greater self-denial, or we become the slaves instead of the masters of the situation. The boy who has not learned the virtues of self-denial is just the one who can not say "No!" to the poison cup, and who goes away down the grade of intemperance; and the girl who is always sucking at candy is preparing herself for a miserable dyspeptic, if not worse, and preparing miserably defective constitutions for her future children. We *can* learn about these things, and teach our children, if we will give the subject proper attention.

We can have plainer dishes for our tables, and use less sugar in our foods, and none at all in the shape of candies. We can teach our children that they enjoy their plain food with a better relish than dyspeptics do their dainties, and they must take their choice between the two; and, above all, we must set them the example. Do not hesitate to refuse candies when offered either for yourself or your children. Say boldly, "We never eat them." If discussion arises, say but little at the time, but say it kindly and pleasantly; say, We find ourselves better off without them; and if circumstances favor, say you would like to have them read something on the subject, and then send them some tract or article or pamphlet embodying the gist of what you would say. If we act up to our light and keep up agitation, we may hope for good general results in this direction; but if those who see the truth do not act up to it, what have we to expect?

JULIA COLMAN.

GETTING USED TO IT—No. 2.

TOUCHING the question of "getting used" to unhealthful habits and conditions of living, including also the use of food that is not best, a correspondent remarks, truly enough, that "a pudding or piece of pastry which would completely unsettle a hygienist, is eaten daily by people who seem to suffer no evil effects from it: it would seem as though the plain, abstemious liver was more easily poisoned of the two." I am asked my opinion as to the theory, or the advantages and disadvantages of "hardening the system to these unfavorable conditions." Experience and observation along this line do *seem* to indicate that when the digestive organs are subjected to a degree of ill-treatment habitually, it has the effect to prevent, and, indeed, it does tend to prevent *acute* disturbance from continued dietetic sins. "Are the uses of hardship confined to the moral world?" asked an eminent divine. "May it not be that the physical system requires for its full vigor the discipline that comes with the effort to accommodate itself to harsh natural conditions? Is there not," he urges, "a modicum of truth in the homely saying that 'every man must eat his peck of dirt,' not as a disagreeable necessity which he can not avoid, but as a condition of vigor in his digestive functions? As the bird fancier mingles bird-seed with fine gravel to insure the health of his feathered protégés, so Providence, as we call it, compels us to become robust by a miscellaneous and provoking diet." In another paragraph this observing clergyman says, speaking of his own experience: "The faculties have been less keen and patient than they would have been under a strictly natural regimen. [Reference is here made to the *moderate* use of tea, coffee, and wine]. My present habits will not, it is likely, be changed, unless circumstances compel me to change them; but I should earnestly advise young people who are forming habits, to rely on their natural resources of power, and to keep those resources full by natural means: wholesome exercise, a plentiful supply of air and light, sufficient sleep, and the 'food that is convenient.'" Further on, and in concluding his reflections upon this theme, he says: "With the best conditions there will always be friction enough; for, as the conditions are improved, the standard of bodily and mental health will be raised, and the 'struggle for existence' will be transferred to a higher plane." I have quoted thus at length from a work before me, because the writer of the letter from which these remarks are taken, is evidently disposed to treat the subject fairly, and does present the case in a most rational manner; and because he is a logically-minded man, and not given to vagaries or vaporings. Nevertheless, there are in these very sentiments, certain inconsistencies which I will point out. As to the comparison of the traditional peck of dirt with the gravel which the bird must have as a means, not only, of facilitating the digestion of his food, but without which it can not be digested; it is "gravel or blood" with the feathered tribe, to modify the starving striker's cry. But the dirt, or a little gravel, even,—the peck rounded up, in a really natural life of four or five score years,—would be a mere bagatelle for the human organism to withstand; besides, a peck of clean dirt, eaten within a reasonable time, would be far less injurious to a typically healthy man than barrels of pudding or pastry! The "clay-eaters" live, on an average, longer than excessive "pie-eaters"; and I have not the least doubt that if one of the former were to take, for the first time, as much mince pie or pound-cake as he habitually swallows of clay, the result would be violent gastric disturbance; and it is equally probable that a pie-eater who may be in the habit of living chiefly on fancy "gimcracks" would be somewhat inconvenienced by the Indian's dose of clay. It remains, after all, for each individual to decide for himself how far it is desirable

to go in the matter of self-abuse, in order that he may not experience immediate inconvenience from such abuses as he wishes to indulge in, or such as, under prevailing social conditions, he may feel himself liable to have to withstand. The fact is, that the addition to a full hygienic meal, of a substance which is absolutely innutritious, and, at the same time, impossible to be absorbed into the circulation — an innoxious and non-corrosive substance, I mean, as sawdust, or gravel— would occasion less injury to the person swallowing it, than would result from the addition of a corresponding amount of any one of certain dishes universally found upon the tables of the great proportion of our people; it being understood, of course, that I am supposing the case of a person wholly unused to both of the questionable substances. The symptoms would be dissimilar, in the two cases (unless the addition were so trifling in amount as to occasion no disturbance); the sawdust, for example, might occasion a griping in the intestines, some irritation and purgation; the mince-pie, fried pork, or lobster salad, nausea, vomiting, or a severe heart-burn, with headache.

In the one case there is simply a mechanical injury sustained which will readily heal (if absolute rest from food be allowed, the restoration would be speedy, though the original lesion were severe); in the other case there results—unless the stomach clear itself by vomiting — absolute blood-poisoning. Given a healthy man, and acute abuse produces acute disorder; chronic abuse, chronic disease. A man accustomed to an outdoor life, and to the habit of letting outdoors in during the hours spent in the home; or in other words, one accustomed to the use of pure air twenty-four hours of every day, would receive a shock upon entering the average sitting-room, and would be positively distressed, and would refuse to remain ten minutes in some homes whose occupants sit for hours entirely oblivious to their filthy surroundings. I am not supposing a den in the slums of a great city; but I have in mind many homes of wealthy or well-to-do people in town and village, and the great proportion of farmers' houses in localities where the residents boast of the salubrity of the climate and air.* This point may be illustrated by the result of an experiment made with two healthy canaries; one was placed under a glass cover which inclosed him in an air-tight space, where he was allowed to remain until he had so far exhausted the oxygen of the air and replaced it with carbonic acid, that he was in a limp and almost lifeless condition. At this point the second bird was placed beside the first. In a short time, almost immediately, in fact, bird number two began to struggle violently, and continued to struggle and gasp until he became exhausted, when both birds were uncovered to the air. Bird number two was dead; his mate recovered. This is of course an extreme case, but it illustrates well the fact that Nature endeavors to accommodate herself to circumstances; and does, in fact, take measures to extend to the last possible moment, the life of a creature under all circumstances and conditions. If I knew that I should be necessarily subjected, during the entire year of 1884, to an atmosphere which, while being extremely noxious, would still not prove fatal, providing that I were to accustom myself gradually to impure air, I would endeavor to so regulate my breathing during the present year as to be in the fittest condition to withstand the coming hardship. But, on the other hand, if the next year's test were to be beyond the power of man to withstand, I should endeavor to increase the purity of the air breathed this year, in order to insure quick work when at the close of next December my friends should wish me a "happy new year!"

So, likewise, if it should become neces-

* In ninety-nine homes of the one hundred there is no pretence of *constant* ventilation. There *is* no constant ventilation beyond the miserable pittance of air filtering in through the crevices of windows and doors. Even this source is cut off by many who can afford weather-strips or double windows, while *poor* fools often paste paper over the cracks as if insuring instead of guarding against the deadly "miasm"!

sary to live upon an exclusive flesh diet, I should gradually accustom myself to animal food; and the same with the ordinary mixed diet. But while it is possible, and so far as it is practicable, I should deem it wise for every man to accustom himself to what, as near as he can inform himself, appears to be a typically natural regimen; and when he finds himself in a "tight place," do the best he can under the circumstances. And perhaps it may be well to particularize a little, or to speculate as to what may happen to unsettle our model hygienist during the coming year, and how he may manage when brought face to face with danger. If at any time it should become necessary to call at the home of a friend who does not ventilate his dwelling, and if it seems impossible, without rudeness, to withdraw in five minutes, do the next best: shorten the call as much as you can, and repeat it as seldom as possible. Arrange to draw him into a purer atmosphere, rather than accommodate yourself to his filthy air. If you have temporarily to live in a family whose table is supplied largely with "rich" and pernicious articles, take the best you find —the vegetables, bread, the lean meat, the latter sparingly, but in preference to pastry, cake, etc. From these and the pickles, hot sauces, fat gravies, etc., beg to be excused, amiably but firmly. The case we are supposing is not in Deadwood, Leadville, or Bloody Gulch, where a man must "take" what he is invited to or run the risk of having a bullet put through him.

Eat lightly rather than too freely. If you do this, you may find that you voluntarily restrict yourself in amount, no more than nausea or lack of appetite limits the eating capacity of the friends about you, who are accustomed to the regimen. If you indulge freely, you are liable, as we admit, to be seriously inconvenienced. By pursuing a really wise course—eating moderately, "skipping" a meal occasionally, as the "pie-eaters" are themselves often forced to do for want of appetite, or using fruit only at some meals, etc.—it will happen that if there is a sick-headache, or a fever, or an "attack" of any sort, during your stay, the victim will be one of the regular members of that family and not yourself. As for coffee, tea, wine, or tobacco, one may decline them without giving offence. Quite a season of use, gradually pursued, is necessary if one aims to become hardened to the use of any of these things. They are better abstained from totally; if used at all, the less, less strong and less frequently, the better. While, I repeat, this is a matter for each one to decide for himself, and while it is often disagreeable, even vexatious, still, the conscientious person must remember that his duty is to preserve his health, that he should be allowed the same liberty in selecting his diet that he accords to others, and that, since he can not be subjected to so radical an experiment as were the canaries, nor to an extended diet of pastry or outrageously unhygienic articles of "food," he had better, while he may, live the best he knows how.

The acute disturbances which will come to him from possible indulgences will serve to "point a moral," and will be less injurious than the chronic ailments which would surely result from undertaking to "harden himself" to this sort of abuse. As to the analogy between the uses of hardships in the moral and the digestive worlds, so to say, my readers may rest assured that the reverend gentleman who made this comparison would be the last to counsel his congregation to indulge in some degree of immorality, in order that their consciences might not be subjected to a moral cholera-morbus to eliminate the loathsomeness of certain influences which might by some chance be thrust upon them in the future. The true lesson as taught by the experiment with the canary birds is, to maintain a normal sensitiveness to disease-producing causes, and, at the first indication of distress, to withdraw from the danger. We are seldom compelled, like the poor little canary, to remain *under the cover* till asphyxiated with carbonic acid or poisoned with

bad food, or debauched morally. *Hardships* are one thing; physical or moral *sins*, another. There is a better way to avoid sickness than voluntarily to swallow impure articles of food, or to breathe willingly impure air, or to undertake any injurious practice whatsoever, in order, simply, to be prepared for a possible abuse in the future.

Blessed are the pure in heart who would be shocked at the thought of an impure act; blessed, too, the stomach which is always disturbed by impure food.

DR. C. E. PAGE.*

(* Author of "How to Feed the Baby," "Natural Cure of Consumption, Dyspepsia, Bright's Disease, etc." "The Horse's Feed and Feet").

OILING THE WATCH.

THE Rev. Dr. F. R. Zabriskie somewhat quaintly illustrates a true principle of eating, in the *Journal of Education*, as follows:

I meet the old Deacon occasionally on the cars. He is not much of a gossip, and usually sits quietly thinking, and now and then closes his eyes as if in communion with better company than his fellow-passengers. And I live too much on the brink of headacne, either to read or talk on the rattling train. But to-day he proved unusually communicative. He came over to me, where I sat, and made some kind inquiries about matters which are just now of special concernment to me and my friends. In return, I congratulated him on his firm and rosy health; for his step is as vigorous, if not as springy, his eye as clear and penetrating, his frame as fitly joined together and as devoid of all superfluous tissue, and his whole person as hale and radiant of vitality, as it was a score of years ago.

"I do not know what a headache is," he remarked; "and have scarcely had an ache or pain in my life."

"How do you account for it, Deacon?"

"I reckon," he replied, "that I owe it mostly to living on a principle which I learned early in my life. You may not know that I was a factory boy, obliged to earn my own living when a mere child. For a long time it was my duty to watch the looms, keeping them clear from refuse matter and well oiled for smooth running. There was associated with me another boy, who sported a silver watch which did not keep good time. One day he broached to me his theory that what his watch needed was a good oiling, and proposed to apply some of the oil we were using on the machinery. I remonstrated with him, and tried to show that a treatment which was adapted to a cotton-factory might not answer for the delicate works of a watch. But he was headstrong and opinionated, and straightway proceeded to open his timepiece, and poured it full from the oil-can which he held in his hand. Of course, the poor little thing's life was utterly quenched in the unctuous deluge, and whether it ever recovered from the rude treatment is questionable.

"That incident," continued the Deacon, "made a practical impression on my mind, which I have never lost. That boy unconsciously oiled the entire machinery of my life, in a way that has helped much its smooth running, and not injured the woven fabric. It has taught me the science, philosophy, and religion of 'moderation in all things.' You can easily see for yourself how widely and constantly the principle can be made to apply, if one has it in mind."

"But, Deacon, how have you applied it to the matter of health?"

"Oh, in many ways; but especially as to food. It seems to me that most people, in their eating, are all the time pouring their oil-cans into their watches. They deluge their stomachs—which are the works of their whole physical, mental, and, to a great extent, their moral mechanism—with what is not adapted to them either in kind or quantity. They glut and clog the delicate machinery, so that

it is never able to work freely, and spends a good part of its spring and energy in merely keeping itself in motion. By and by it stops altogether, and then we hear about the silver cord and the golden bowl being broken at the fountain. Pshaw! Solomon said that about extreme old age. Better say—the silver watch stifled by the oil-can. There was an instance in point only the other day. It was not the pistol-shot in his hand that killed Gambetta at forty-five years old. It was the 'red-hot ball' in his stomach, that a life of '*gourmandise*'—as they call it over there, but which we flatly call gluttony—had slowly accumulated. Even during his last sickness, the doctor could not restrain the voracity of his appetite. On the other hand, you remember what Mr. Beecher told the students at New Haven, when they asked him why he kept so strong and buoyant under all circumstances. 'Why,' said he, 'I use my stomach just as I use my stove. I regard food as the fuel of life, and I always put in just the kind and quantity of fuel which will give out the most heat with the least wear and tear of the stove.'"

"How about the times and the seasons, Deacon?"

"There is a time to eat, and a time to fast. When the meal-time comes I eat a 'square' meal, though always making it a rule to stop while I feel that the oil-can has not quenched all my appetite; and I absolutely and invariably refrain from eating anything at all between meals. What is more, I never eat anything after my regular hour for tea. If prevented from taking it then, I give it up altogether, believing it to be far better to go fasting to bed than to eat a late supper. The result is, that I sleep all the night through as soundly as when I was a boy."

"I wish, in that respect, Deacon, I could plead not guilty of clogging the delicate watch-work of my brain with the 'midnight oil.'"

But here the train stopped, and the old gentleman jumped nimbly off the platform, and went down the street at a deliberate but alert pace.

DIDN'T WANT MEDICAL ADVICE ON THAT POINT.—General Wolsely, of the British Army, is a thorough temperance man, and in the Red River expedition, contrary to the advice of the physicians, he decided that no spirituous liquors should be taken for the troops. No troops ever did harder work. In South Africa his body-guard were all teetotalers, and there too the doctors predicted all sorts of ills from the lack of grog; but the result was, they had little or nothing to do. Gen. Wolsely has long held that drink is the great source of crime, disobedience, and other evils in the army, as well as elsewhere. He ought to know from experience.

KITCHEN LEAFLETS.—No. 17.

FOOD AND HEALTH—INSANITY AND CRIME—BILL OF FARE FOR JUNE.

IF there is anything in our lives which proves the great truth declared by St. Paul, that man is constantly erring against his better judgment, it is found in the eating habits of society. People know from the widespread teachings of hygiene and physiology, and from experience that certain things are unsuitable for their use as food, yet they persist in eating them and bring upon themselves the necessary consequence of indigestion, sickness, and disease more or less severe, and medical treatment more or less repugnant to their sensibilities, and expensive. The intelligent world knows that health and strength are dependent upon good food, and it is folly to expect body and mind to be sustained by a diet of innutritious articles, or of substances whose nutritive elements are greatly impaired, if not quite

destroyed by the way in which they are prepared by the manufacturer or the cook. Well-to-do people who are supposed to "fare sumptuously every day," will sit down to a table on which the castor with its biting spices, sauces, and condiments is a conspicuous object and which is deemed an indispensable accessory. It is not enough that the roast or fry comes steaming hot from the fire reeking with lard or butter, and coated with pepper and salt; more salt and pepper, and mustard, and catsup, and some extra combination of seasonings must add their fiery excitement to awaken the dull sensibility of the palate, and cups of almost scalding coffee or tea must be at hand to wash down the incongruous mixture. The poor stomach, goaded and stung by the condiments, can not half perform its work, can not resolve the food that comes in with the condiments, and scarcely half the little real nutriment there is in the food is sent into the intestines in a condition to be appropriated by the absorbent vessels and made serviceable for the wants of the body. There are thousands of people around us who eat in this way, and who are tormented with dyspepsia in one or other of its thousand forms, and are literally starving to death in the midst of plenty.

We have seen lately in the newspapers, accounts of the most horrible deeds by women belonging to the educated class. In paroxysms of madness, they have murdered their own children or committed suicide. Previously esteemed for amiability and refinement, they have unexpectedly exhibited the wildest insanity, and shocked the community by acts of terrible inhumanity. Some of our moralists may endeavor to trace the cause of such occurrences to unhappiness in the domestic relation, and hint at this or that possible irregularity on the part of husband or wife. I think, however, it were better in the first place to look at the women themselves, their mental organization, and next to their mode of living. In the case of that lady in New York who killed her children and then took her own life, I should have expected to find a very sensitive temperament, with a wide head from the ears to the crown; strong Destructiveness, Caution, and Approbativeness, and a very full development of the social organs. I think her Firmness was not very strong, and that Hope and Faith were not specially active. It is likely that she had shown indications of mental unbalance previously, which had been accounted for on plausible grounds, no one dreaming of the sad ending. But if her case were fully described, I doubt not that one important cause of the mental disturbance would be found to be insufficient nutrition. The elements of an active nervous system were not met in the food she ate, and there was a consequent decline in tone and capacity, until intellect and moral sentiment broke down completely, and the animal impulses took uncontrolled possession.

New cookery-books are appearing, highly praised and much advertised. On examining them we find the same old story, pepper, salt, mustard, curry, onion, spice, lard, excessive sugar, etc., etc. There are ladies who find it profitable to lecture and give lessons on buying and cooking beef, mutton, pork, etc.; why will not some who are versed in the simple ways of hygiene, go before the public and teach them the principles of physiology and how to meet the wants of nature. It is a work which ought to be done. There are many mothers and housekeepers who would be glad to have such instruction. I know from my own experience that many a woman has tried to make gems, biscuit, cake, and pie according to hygienic formulas, and failing repeatedly, has given up the attempt. More than one has told me plumply to my face, that it was *impossible* to make such things as are daily on my table without using yeast or shortening, because she had tried it. The very simplicity of the procedures in hygienic cooking is the reason in most cases of failure. But if some women well versed in this "art preservative" of the virtues of food were to open schools in our larger cities, and show how to make,

boil, stew, and bake, the number of hygienic advocates would be greatly enlarged, and there would be fewer cases of madness and crime for the newspapers to comment upon.

BREAKFAST.

Gluten Porridge. Stewed Potatoes.
Oatmeal Puffs. Fricasseed Eggs.
Dried Apple and Raisin Sauce. Bread. Broma.

DINNER.

Baked Fish and Egg Sauce. Snow Potatoes.
Asparagus. Lettuce. Graham Bread.
Strawberry-Cake and Cream.

SUPPER.

Graham Biscuit. Crackers.
Lemon Jelly. Cambric Tea.

GLUTEN PORRIDGE.

Put three pints of water, slightly salted, on the stove, in a double boiler, to boil. Take two-thirds of a pint of gluten flour, mix it to an even consistency with warm water, and then stir it into the boiling water. Stir for a few minutes, until thoroughly mixed with the water, and place the boiler where it will cook slowly and steadily for about three hours. If the porridge is too thick, add a little more water. If the flour is not mixed with water before putting it into the boiling water, it is likely to be lumpy.

FRICASSEED EGGS.

Boil eggs long enough to have the yolks stiff; divide them lengthwise and place them on a hot dish with the yolks uppermost; pour over them a simple sauce, or milk gravy. Ornament the dish with parsley, or any green salad you may happen to have.

OATMEAL PUFFS.

½ pint of fine oatmeal.
½ pint of Graham flour.
1 teaspoonful of sugar.
½ " " salt.
1 pint of sweet milk.
2 eggs, (beaten).

Mix the oatmeal, flour, sugar, and salt together; add the beaten eggs and milk. Bake in hot gem pans, in a quick oven about twenty minutes. This recipe is sufficient for eighteen or twenty.

DRIED-APPLE-AND-RAISIN SAUCE.

Look over carefully, and wash the amount of dried or evaporated apples needed and put them on to cook, with one-third their quantity of raisins, or more if liked; add cold water enough to cover. When nearly done, add sugar to suit the taste. If the apples are put to soak overnight, as I prefer, they must be cooked in the water they are soaked in; if not, some of the flavor will be lost. All dried fruit should be cooked slowly.

BAKED FISH.

Select one weighing not less than three pounds; clean, wash, and wipe dry. Make a stuffing with bread-crumbs soaked out with a little milk, and mixed with a small piece of butter, a pinch of salt, and a beaten egg. Stuff the fish, not too full, and sew up the opening, which should be only large enough to permit thorough cleaning. When the fish is in the baking-pan, pour a cupful of hot water over it. Bake in a quick oven about one hour, basting frequently. When done, remove the thread, place on a dish and cover to keep hot until served. An egg-sauce is proper for dressing.

EGG-SAUCE.

1 tablespoonful of flour.
1 " " butter.
½ teaspoonful of salt.
1 beaten egg.
1 boiled "
1 pint of boiling water.

Beat the flour and butter to a cream, add the boiling water and mix well until smooth; now boil until it thickens, then remove to one side of the stove, and stir in the salt and beaten egg. Cut the *boiled* egg into small pieces and just before serving the sauce, stir them in.

STRAWBERRY-CAKE AND CREAM.

Make a sponge-cake, and bake it in two thin layers, in a long biscuit-pan. Select ripe berries, and place a thick layer, with sugar sifted over them, between the layers of the sponge-cake, while it is yet warm. Place a thick layer of the berries also over the top. Put a pint of sweet cream on the ice to cool; and when cold beat it to a froth and pour over the berries and cake when they are cold. Cream can not be beaten to a froth unless it is very cold.

GRAHAM BISCUIT.

Take very thick warm Graham porridge, cover the kneading-board with Graham flour, and knead the porridge into it until the dough is stiff enough to roll out nicely. Roll about an inch thick, cut in any shape preferred, and bake about half an hour in a quick oven. Look at them when they have been in twenty minutes.

LEMON JELLY.

2 ounces of Cooper's Gelatine.
1½ pounds of sugar.

2 quarts of water.

½ teaspoonful of salt.

The juice of four *large* or five *small* lemons.

Put the gelatine in a dish large enough to hold about three quarts of water. Pour one pint of cold water over it, then let it stand about fifteen minutes. Squeeze the juice of a lemon in it, add the salt and sugar; stir all together, then add three pints of boiling water, and stir again until gelatine and sugar are dissolved; now strain through a jelly-strainer and set away to cool. If made the day before it is wanted the jelly will be better. In summer use a half pint less of water. If poured into moulds, they should first be washed interiorly with the white of an egg and water, to prevent the jelly from adhering.

REMARKS.

See JOURNAL of Jan., 1883, for Stewed Potatoes.
" " " " " White Bread.
" " Feb., " " Broma.
" " May, 1882, " Graham Bread.
" " June, " " Asparagus.

If you wish to preserve the green color of peas, asparagus, beans, etc., boil them uncovered. Butter should never be allowed to *cook* into vegetables; if used it should be added after they are done, otherwise its flavor and quality are impaired greatly. Fresh ripe strawberries, crushed and sweetened, make a good sauce for boiled or baked puddings.

The art of cutting bread evenly and smoothly is an accomplishment. Bread which is roughly cut of varied thickness is uninviting to the eye. Our simplest food should be attractively served.

MIRA EATON.

THE DECAY OF TEETH.—A German observer concludes that the tooth most often affected by decay is the third molar, such cases forming one-half of the total number. The teeth begin to decay in a certain successive order, the lower third molar being first attacked, then the upper, then the lower fourth molar, and so on, the incisors and the canine teeth of the lower jaw being the last reached. The upper teeth are more durable than the lower in the proportion of three to two. The right teeth show a greater vitality than the left. The durability of teeth is less in light persons than in dark, and less in tall than in short persons. These results were obtained by an examination of 650 Russian soldiers, of whom 258 had unsound teeth.

NOTES IN SCIENCE AND AGRICULTURE.

Dangers of Antiseptic Surgery.—Prof. J. W. Wright is thus candid in speaking of the use of carbolic acid in surgical operations:

"The dangers of poisoning by carbolic acid in the treatment of open wounds, especially where considerable quantities are used, as in the syringing out of the cavity of a large abscess, are not so trifling, nor are cases of this kind so rare, as many of its warmer advocates would have us believe. Like other novelties in medicine and surgery, carbolic acid has been the popular craze for the last fifteen years. It has been used externally or internally, in some form or other, for almost every ill that flesh is heir to. That it has been the means of saving many lives, no one who has been at all observant can deny; that it has killed a considerable number of people is equally certain; that it will not cure everything, or always prevent blood poisoning where the constitution of the patient is depraved and the blood vitiated, is a proposition too self-evident to require argument.

"That the majority of simple wounds, occurring in a healthy subject, and treated under local sanitary conditions, will heal equally well without it, is generally acknowledged by a large number of careful, conscientious surgeons. In a word, carbolic acid, considered as a panacea, has had its day: like bromide of potassium, like chloral hydrate, and many other new drugs, after having turned the heads of more than half the medical world for a few brief years, it has, like them, come to occupy a definite place in the minds of the majority of physicians, and is valued by them for what it is worth, neither more nor less."

Animals as Weather Prophets.—Carefully recorded observations extending over a period of twenty years have shown Dr. C. C. Abbott that the autumnal storage of nuts by squirrels, the building of winter houses by muskrats, and other habits of these and other animals, or the absence of such habits, have no relation to the mildness or severity of the winter which follows. It thus appears that such creatures are no more reliable as weather prophets than the human charlatans who claim to foresee storms months in advance, and another widespread and deep-rooted notion is proven to be groundless.

Weather Prediction Frauds.—The Chief Signal Officer of the United States, in view of the wide publicity given to the wild Wiggins letter, has written to the *N. Y. Tribune* exposing the absurdity of the preten-

sions of the "weather prophets" in general, and of Wiggins in particular. He shows that no storm-track has ever been observed which moved in the path indicated in the Wiggins letter, and that such a path would be impossible for a storm to follow; while the threatened submersion of low lands by "planetary force," and the terrible destruction by the air currents east of the Rocky Mountains, are shown to be equally preposterous. He says:

"It is absolutely impossible to predict a storm for more than a few days in advance. The information can not be too widely distributed, that no one can foretell even the general character of a coming season, much less the occurrence of a particular storm in that season. It is possible that the advance of our knowledge may at some time enable us to predict the weather for many days in advance, but this is not possible at the present time. Meteorology is yet in its infancy, and no one is yet able to anticipate the occurrence of a meteorological phenomenon for more than a few days—a week at the most. If any one will take the trouble to verify the weather predictions which in these days are so frequently made by the actual weather experienced, he will find that about half of them are fulfilled and half fail. When a given prediction is fulfilled it is often made a matter of marked comment, while the unfulfillment of a similar prediction at another time is passed over in silence. The impression, therefore, prevails that reliance can be placed upon the forecastings of weather prophets, but this impression will be removed by any one who will give attention to the subject. A series of simple guesses, based upon no reasoning whatever, will come true in the long run as many times as they will fail. Until, then, weather predictions are fulfilled more times than they fail, they must be regarded as equivalent to guesses and as having no value whatever. All predictions of the weather to be expected a month or more in advance, whether based upon the position of the planets, or of the moon, or upon the number of sun-spots, or upon any supposed law of periodicity of natural phenomena, or upon any hypothesis whatever which to-day has its advocates, are as unreliable as predictions of the time when the end of the world will come."

Do You Give Your Hens Water?—"Duz your hen lay any egg dis cold wedder?" said a respected neighbor to me. They do; and our spring pullets commenced laying the middle of September, and they have laid eggs every day through November and December. He replied: "I vish you tell me how I make my hen lay in de cold wedder. I haf got sixty hen, and dey don't got a one egg a day all vinter." Do you give your hens water this cold weather? "*Vauter*, you say, is it, for hen?" Yes; do you let them have all the water they want to drink? "To trink, is it? Hen trink vauter? Ha, ha, ha! I tought you so much *sanctumonious* man you never choke enny." I'm not joking, my good neighbor. I was simply inquiring after the management of your hens, that I might tell you how to make 'em lay. "To you gif your poolet vauter to make egg?" I do, every morning; and during freezing weather I see that they have all the water they will drink, whenever they want water. "Ha, ha, ha!" shouted my friend, and said, "I know dey put vauter in de milk; but I neffer before heard dey put vater in de egg." I replied: Can a brewer make lager without water? "Oh, no; but lager is not egg." Can your wife make good bread, cake, or coffee without water? Can you make corn, potatoes, or anything else grow without water? "My cracious, I never thot pefore vauter vas goot to make hen lay egg. I vill gif my hen two parl [barrels] of vauter to-morrow, and see ef dey got vone egg for sixty hen." You will probably find that two barrels of water placed where sixty hens can have access to it for only one day, will not make even half an egg, I remarked. "My hen eat snow ven dey vants vauter." When there is no snow, what do they drink? Every morning, I said, as soon as my hens can see to leave the perches, they want to drink; and, with more regularity than I take my own breakfast, a dish of clean water is placed where they can drink. If the weather is freezing cold, I take a tea-kettle full of hot water to the hennery, and fill their dish with water, always exercising care to temper it with ice or snow, so that the water will not scald their mouths. Warm water, during a cold day, will not freeze in several hours. Every morning our hens drink and drink, and go and take drink after drink; and just before they go to roost (even in freezing weather) they will all drink several times before they are satisfied. If water was not really needed to promote digestion, they would not drink. Fowls will become exceedingly thirsty, when they do not have access to water, before they will eat snow. Then, when they have no water, nor even snow, laying hens suffer with slow digestion, or with indigestion, simply for want of water. A laying hen is simply a miniature and living laboratory for making eggs. A large proportion of every egg consists of water. Now, then, when a hen receives dry corn and other dry feed, how can she be expected to make eggs without water, any more than a cow can yield a full pail of rich milk when she is fed on nothing but dry meal, hay, and cornstalks? Yet, after all this twaddle about water, and the important part it plays in numerous instances, water alone will not make eggs, nor beer, nor bread. Respected reader, if you are not accustomed to lead or "ride your rooster to water," place a dishful of the luscious beverage where they can have free access to it in the morning, and then notice how many will drink as if they were thirsty. Fowls will live and thrive without water. So will sheep and neat cattle. Yet, domestic animals of all sorts will thrive far more satisfactorily when they have free access to water.

Orange, N. J. SERENO EDWARDS TODD.

Tracing Contagion.—A number of cases in the same herd, owned by a farmer at Salem, N. J., having died very suddenly, the veterinary surgeon submitted a specimen of the blood from the last victim to Professor Leidy for microscopical examination. The animal was apparently well on one evening, and was milked as usual; it died the next morning. The cause was not clear, but was suspected to be the result of anthrax, or splenic fever. A post-mortem examination was made the following day, and the abdominal viscera were found much congested, especially the spleen, which was gorged with blood. The specimen of blood from the spleen was examined and found to be teeming with bacteria of the form known as *Bacillus anthrax*, which is now viewed by most competent authorities as the cause of anthrax. The bacilli were actually more numerous than the blood corpuscles, which appeared unchanged.

This case shows that milk is forwarded to market drawn from cows which are within a few hours of their death from splenic fever. Such milk can hardly be wholesome, and doubtless contains the bacilli capable of giving contagion.

Let us hope that the fat from the carcasses of such animals is not sent to the nearest oleomargarine manufactory, as this substance is rendered only at a temperature under 120°, by the patent which is now supreme. We need not state that the thermal death-point of bacilli is far above such a temperature, and we leave our readers to draw their own conclusions respecting the results when such uncooked animal produce is used as an article of diet.—*Medical Record.*

Experiments with Fertilizers.—According to a correspondent of the *New England Farmer*, Mr. Alden Jameson gave quite a detailed account of the Gilbert and Lawes Experiment Station at Rothamsted, England, and the result of its operations. He thinks that every farmer is or should become the head of an experiment station located on his own farm. He gave as the result of his experiment in chemical fertilizers some very useful hints, but previously he had said a good word for the Connecticut State Experiment Station under the charge of Prof. Samuel W. Johnson, of Yale College, which seems to be doing something in the interest of practical farmers. Mr. Jameson, on his private Experiment Station, had already arrived at much the same conclusion that Professor Johnson has since, in relation to chemical fertilizers, and that is that the manufacture of specific fertilizers for each crop is somewhat doubtful in practice. Of the value of chemical or commercial fertilizers there is no doubt, but Mr. Jameson has come to the conclusion that but two varieties really avail with him—one that is applicable wholly to root crops, as potatoes, beets, etc., and the other to all crops except roots. For root crops he gave the following formula for one acre:

Sulphate of potash, 35 per cent	350 lbs.
Dissolved bone	150 "
Sulphate ammonia, 25 per cent	250 "
Sulphate of soda	50 "
Gypsum (land plaster)	200 "
In all	1,000 lbs.

And for all other crops the following:

Muriate of potash, 60 per cent	100 lbs.
Dissolved bone	150 "
Sulphate ammonia, 25 per cent	150 "
Sulphate of soda	50 "
Gypsum (land plaster)	150 "
In all for an acre	600 lbs.

As a cheap and effective top-dressing to grass land he gave the following, though the last formula is adapted to that, but more expensive than this:

Nitrate of soda	150 lbs.
Gypsum	200 "
Dissolved bone	150 "
In all for an acre	500 lbs

B.

Fence Posts that will Last.—A writer in an exchange says: "I discovered many years ago that wood could be made to last longer than iron in the ground, but thought the process so simple that it was not well to make a stir about it. I would as soon have poplar, basswood, or ash as any other kind of timber for fence posts. I have taken out basswood posts after having been set seven years that were as sound when taken out as when first put in the ground. Time and weather seemed to have no effect on them. The posts can be prepared for less than two cents apiece. This is the recipe: Take boiled linseed oil and stir in pulverized coal to the consistency of paint. Put a coat of this over the timber, and there is not a man that will live to see it rot."

"Doctoring" Farm Animals.—It is a poor practice to be continually dosing animals. When we see a farmer frequently visiting the drug-store for medicine for his stock, the impression is that there is something radically wrong in his management. He is the "sick one," and needs the aid of a good physician—some one to show him that sickness rarely happens on a well-ordered farm; that clean, warm stables and plenty of good feed, pure water in abundance, etc., are far better than their opposites, with all the physic that the largest drug-store can supply. Nothing is more clearly proved than the importance of care and keeping of the right sort for the health of the farm animals, and their profitable growth and increase. Sickness will sometimes come with the very best management; and when it does, it is better to employ skilled hands to cure than to "doctor" and "physic" and perhaps kill the valuable animal yourself, that under proper treatment might have been saved at a trifling expense. —*Agriculturist.*

CHARLOTTE FOWLER WELLS, *Proprietor.*
H. S. DRAYTON, A.M., M.D., *Editor.*
NELSON SIZER, *Associate Editor.*

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MODERN ÆSTHETICS.

THERE are many people among us who claim to belong to a select class or stratum of society by reason of a certain peculiarity of mind. This peculiarity exhibits itself in several ways, but all are allied to what is termed "art." Some of these people, for instance, devote much of their time to the study of painting, and are given to what is called "decorating" clay, glass, silk, cotton, etc.; others spend much time and a large proportion of their money in gathering collections of curious articles in glass, china, bronze, pottery, tapestry, etc.; others indicate a devout admiration for music and poetry of the dramatic order, and are eager to hear every new opera of foreign birth and to read every new composition of the Rossetti school. These people claim a higher grade of intellection than the average of the fairly educated, on the score of being more sensitive to the expression of beauty in nature and art. They are "æsthetic." What does the term itself mean? As a Greek derivative simply this: capable of perception, or apprehensive through the senses. But the scholar has applied it to a technical use, and made it to signify that philosophy or science which treats of the beautiful, or the principles of *belles-lettres;* and the child of fashion, borrowing from the scholar, has found it a convenient term for a capricious and vacillating humor.

We will not say that this application of the term is altogether improper, for such is not the case. The fashion for painting, decoration, *bric-à-brac*, music, poetry, is an outgrowth or manifestation of the faculties of Ideality and Sublimity which are inherent in the human mind; but it is not a regular or symmetrical manifestation because of the imperfect, uncultured state of the faculties. Certainly no argument is required to show that one's discernment of the beautiful is a matter of culture, for every faculty of the mind must be trained ere its judgment can be regarded as comprehensive and equitable. A man may be well educated intellectually, and have fairly developed Ideality and Sublimity, yet, when brought face to face with a fine picture, exhibit much crudity of judgment because of his lack of experience in art. He will show much natural fondness for beautiful things, and perhaps discourse well about the features of nature with which he has been familiar from childhood; but, lacking in experience and knowledge about works of art, he is an untrustworthy critic. So, also, is it with regard to music; it matters not how bright a man is as a lawyer or physician, how quick his organs of hearing are, his opinion of a musical performance will be narrow and juvenile to the experienced musician.

To be "fond" of anything—as people generally express their sense of pleasure when a faculty is gratified—does not imply capability of discriminating quality and value in the object of the "fondness."

Such capability is the result of observation, study, and training, and is acquired in most cases by slow degrees. We are too much inclined to mistake our likings or quickness of æsthetic sensibility for this capability; but when we test ourselves in comparison with a cultivated mind, we are awakened to a disconcerting consciousness of our ignorance, and discover that while nature has endowed us with a delicate susceptibility to what is beautiful and elevating, there remains for us the practical work of developing and instructing the faculty so that its delicate apprehensions shall give us solid, because intelligent, pleasure.

True æsthetic culture has a mellowing, harmonizing effect upon the character. It refines and sweetens the expression of the intellect, the moral and religious sentiments, and the social affections. They who affect æstheticism, and are, nevertheless, rude in manner, coarse in speech, or empty and superficial in thought, are manifestly ignorant of its meaning. They who adore the "ideal" and sneer at the every-day affairs of life, or complain that their aspiring souls are robbed of their birthright by being forced to take part in the service and care of home, to associate with the commonplace and "vulgar," are greatly lacking in knowledge of the first principles of æsthetics. Society is overweighted with the light and flimsy things, who, to change somewhat a humorous fling, would pursue

> Pastimes merely ornamental,
> And with a princely retinue
> Bask in savors sentimental,
> For idle change turn in the dance,
> Or paint on china, read romance,
> And when sensation's lost its power,
> In listless state lament the hour.

Verily, his mind is in a state of unbalance when one can not take any interest in common things — when his mind can not respond to the impulse of duty, and find welcome food for reflection in the routine which fortune has imposed. The sense of the beautiful has been given us for the very purpose that its influence shall refine and sweeten common things, and render our daily tasks, duties, and even struggles with adversity, instrumentalities of real soul growth. We have met in the walks of poverty and sorrow more than one who exemplified our idea of æsthetic culture, and whose beautiful resignation, coupled with patient labor, filled us with more delight than even the contemplation of a glorious sunset. Such a one could receive a dainty flower, and eloquently speak of the light and beauty it brought into his poor room, yet mix with his admiration no sigh of regret because there was no beautiful vase at hand in which he might fittingly set the flower. His frank admiration honored the flower, and it was fittingly enshrined when under the care of one who appreciated it.

NOT ALTOGETHER THE DIME NOVEL.

NO one doubts the harmful influence of that class of cheap literature which goes by the name of "dime novels"; but is attention enough given by the moral guardians of our girls and boys to the kind of reading furnished by the tens of thousands of weeklies and monthlies which are scattered broadcast over the land, and are found on the tables of homes deemed among the highest in culture and refinement? Stories, stories, stories, light, aimless, sensational, occupy their pages; stories of wonderful juvenile exploits and adventure, on land and sea, among Indians and wild animals, are

found between the covers of monthlies and weeklies issued by reputable publishers. Writers of some note are employed to supply tales for these, and their fascinating productions turn the heads of hundreds, perhaps thousands, of the boys and girls who read them. We know a boy whose reading has been confined to what are deemed the best juvenile weekly and monthly published, and who often sighs to be out upon the prairie or in the trackless forest, like Dick, or Will, or Joe, with fishing-rod, and gun and dog—and complains with much bitterness of the necessity of staying home—a home half rural in its character—and studying "all the time." We know girls whose little heads are full of unrest and dissatisfaction because they can not be dressed like Sallie, Margie, and Lita, in the "lovely stories," and go to parties, and travel in Europe, and have "such good times."

There are thousands of books in private and public libraries, which exert a harmful influence upon our young people; they present false views of life, or impart an unhealthful coloring to realities, and so imbue the immature intellects and weak sentiments of youth with extravagant notions. Many of the volumes in our Sunday-school libraries should be thrown into the fire. Not a great while ago we noticed a child of eleven reading "Peg Woffington," on the cover of which was pasted the library card of a certain Sunday-school. We had supposed that the books of that Sunday-school were under a strict censorship, but an evident laxity had crept into its methods, and suffered a book which should not be in such a library at all, to come into the hands of a mere child.

We do not ask for severity of phrase and Puritanic morality as cardinal elements in our juvenile literature—although we think that a little of Puritan strictness would be helpful in suppressing the prevalent tendency to reckless freedom in all branches of literature, in the illustration of moral subjects—but we do ask for an appreciation of the absolute needs of the young mind; that it may be trained symmetrically, nourished with good food, made broad and strong through a perception of the true and earnest in human life, and thus fitted for a useful, active future.

A WOMAN DOCTOR.

WE were told one day that Miss B. was ill, and unable to leave her room, and desired to see us. Miss B. is a lady on the border of middle life, with very few if any family relations in our city, and quite dependent upon her own exertions for maintenance. She was then living alone in a building not far from our office, where the apartment she occupied served for office, parlor, and dormitory. We knew that she was engaged in a rather hard struggle for existence, and feared that worry and work had at length broken her down. We called at her room and found that she was ill, indeed, with rheumatic fever, and so weak that she could scarcely sit up. She was alone, and upon our saying that she needed attendance, especially a nurse, she replied in a cheerful tone that the janitress of the building looked in occasionally, and was very kind.

"But you need more than the occasional looking in of a janitress," we urged. "At night, especially, you should have care, and some one should be here

to prepare such food as your case demands."

While we were talking a light step was heard in the hall, and soon the door opened, and Dr. S., a lady also of our acquaintance, entered. After an exchange of greeting we remarked: "I am glad to know that Miss B. receives your attention, doctor. She certainly needs it, and may for several days to come; but I am concerned about the way she lies here in solitude, and what she has to eat; for while she may not require much in quantity, she needs that which will nourish." Dr. S. smiled, and returned: "We'll take care of her." At the same time she threw aside the folds of her carriage-circular, and produced a large dish or bowl of something steaming hot, covered with a cloth. Setting the dish upon a table, she removed the cloth, and disclosed to view a custard, delicately browned and tempting. "I had this made while taking dinner, and think a little of it now and then will do you good, Miss B." We glanced from the doctor to the patient, whose face beamed with pleasure. "Ah, my comments were unnecessary," we broke out, "and I have now little apprehension that the patient will be neglected; I most heartily approve the plan of treatment of which this is a specimen prescription."

A week or so ago we attended the graduating exercises of the Women's Medical College of New York, and were deeply interested by the essays and remarks made by several of the lady professors, and by the class valedictorian; they expressed the sentiment of practical utility which every physician should illustrate in his or her calling, not only to prescribe what should be done, but to minister according to their ability to the wants of the sick and suffering. Welcome every woman physician who comes from her three years' course of medical study, deeply intent upon doing a good work! Thrice welcome every woman who, like Dr. S., unites the medical adviser and nurse in her code of professional duty.

CHARACTER-READING A GIFT AND AN ART.

HUNDREDS desire to learn to read human character at sight. The most successful men in business or in public life, and the most influential women who shine in and mould society, are those who have natural ability to read the dispositions and comprehend the talents of strangers. They know people at once, and can influence them as the skillful musician can read his musical score and make the instrument eloquent in rendering its magic strains.

But all are not endowed with this gift of character-reading, and therefore need to study character as a science through phrenology and physiology. In fact the phrenologist learns to read the bare skull which, like "Poor Yorick's," has finished its work; or, on the other hand, the traits in the child which in years to come are to bless or to blight the world.

Phrenology will double the power of the observer of mankind, although he may be regarded already as a genius in the knowledge of men; while all others who do not claim or possess special gifts in this direction, will find human nature revealed to them with wonderful distinctness, and will seem to be in a new world.

THE LAWYER, who has to deal with men when their selfish elements are stimulated by litigation, or with witnesses whose judgments and morals are warped by friendship and prejudice; or with jurymen who are unwisely biased, needs all that phrenology would teach him to measure and manage those with whom his profession brings him in contact.

THE MINISTER will find indispensable the aid which the doctrine of temperament and mental development will afford him in calling into action the better sentiments, and allaying the base monitions of depravity and passion; and he will seem to know how each person can best be approached with the truth, in order to obtain the best results.

THE TEACHER will find himself the master of a new revelation in reference to the talents and traits of his pupils, and how to awaken the best impulses, and modify and govern the worst traits, in those under his charge.

THE MERCHANT and business man desires to please and to influence successfully those with whom he must come into negotiation, and the difference between him who can read and understand customers, and him who lacks facility in knowing and managing men, is as wide as that between success and failure.

THE MOTHER in whose care the young life is placed, and which needs to be trained and moulded in spirit and disposition, as well as in mind and talent, needs quite as much as any the aid which phrenological instruction would impart to fill the most important if not the most conspicuous position in life.

For the aid of all such, quite as much as to train and instruct persons for professional practice in the field of Phrenology, the AMERICAN INSTITUTE OF PHRENOLOGY was established by legislative enactment in 1866, and in which every year, beginning the first Tuesday in October, classes of students are taught in everything that pertains to Mental Science as related to development of brain and body. No merchant, lawyer, minister, or teacher can afford to remain without the instruction which the Institute of Phrenology imparts. Circulars sent on application giving full information.

Our Mentorial Bureau.

To Our Correspondents.

QUESTIONS OF "GENERAL INTEREST" ONLY *will be answered in this department. But one question at a time, and that clearly stated, must be propounded, if a correspondent shall expect us to give him the benefit of an early consideration.*

IF AN INQUIRY FAIL TO RECEIVE ATTENTION *within two months, the correspondent should repeat it; if not then published, the inquirer may conclude that an answer is withheld, for good reasons, by the editor.*

TO OUR CONTRIBUTORS.—*It will greatly aid the editor, and facilitate the work of the printer, if our contributors generally should observe the following rules when writing articles or communications intended for publication:*

1. *Write on one side of the sheet only. It is often necessary to cut the page into "takes" for compositors, and this can not be done when both sides are written upon.*
2. *Write clearly and distinctly, being particularly careful in the matter of proper names and quotations.*
3. *Don't write in a small hand, or in pencil, as the compositor has to read it across his case, a distance of nearly two feet, and the editor often wants to make changes and additions.*
4. *Never roll your manuscript or paste the sheets together. Sheets about "Commercial note" size are the most satisfactory to editor and compositor.*
5. *Be brief. People don't like to read long stories. A two-column article is read by four times as many people as one of double that length.*
6. *Always write your full name and address plainly at the end of your letter. If you use a pseudonym or initials, write your full name and address below it.*

WE CAN NOT UNDERTAKE TO RETURN UNavailable contributions unless the necessary postage is provided by the writers. IN ALL CASES, *persons who communicate with us through the post-office should, if they expect a reply, inclose the return postage, or what is better, a prepaid envelope, with their full address. Personal matters will be considered by the editor if this is done. Anonymous letters will not be considered.*

BOOK AND INSURANCE AGENT.—*Question:* What would be the comparative success of a person as an agent who had Benevolence very large, Veneration and Conscientiousness very large, and Mirthfulness, Friendship, and Agreeableness only moderate? P. H. F.

Answer: If with this organization there be associated a strong perceptive intellect with a good degree of Combativeness and Destructiveness, also Firmness and the Motive temperament, the individual might become an admirable agent. It would need time for breaking in, and it would be better that the wares he dealt in were of a staple, necessary, definite character; articles which he could talk about earnestly; for which he would have some respect on the score of their high utility to society. One of the important elements to successful agentship is Agreeableness together with large Firmness and gen-

erally well-poised individuality. He ought also to have Human Nature well indicated, that he can judge quickly of character and adapt himself to the people he comes in contact with and to whom he would show his samples. A man with the combination specially defined ought to deal in books of a moral or religious sort. As an insurance agent, he should have to do chiefly with men in the ministry, we will say, or those connected with charitable and religious work. Secretiveness is an organ of no little value to the negotiator or solicitor, for the reason that it contributes tact and policy. Men are often required to deal with those who have this organ largely developed in their mentality, and to meet its shrewd influence the solicitor should possess it in a good degree also.

INTUITION AND SMALL SPIRITUALITY.—*Question:* How can a person having Spirituality moderate, therefore having little faith, and insisting on proof, yet have Intuition described as large?

Answer: The organs are distinct, and one may be large and the other small. Intuition has to do with one's impression of persons and things. A person may be very quick in discerning truth or reality, and so form impressions amounting to convictions, and yet have small Spirituality, and be therefore inclined to require a positive demonstration of things which strike him unfavorably, through intuition, before he will be won over. We often find people who have very strong convictions and yet possess very moderate faith; are exceeding cautious about taking matters on trust, especially those which may render them somewhat responsible by their acceptance.

LIME-KILN.—One of our correspondents wishes to know how to build a lime-kiln so that the draft shall be perfect; he wants especially to know how large the flue should be in relation to the size of the eyes. The correspondent is Mr. G. B. McCoy, of Girard, Crawford Co., Kansas.

POSE AND SELF-ESTEEM.—P. F. F.—A man having large Self-esteem walks uprightly, with his shoulders thrown well back, the head erect and the chin well forward, and is rather stiff in his gait. With Approbativeness large he walks with a somewhat oscillating motion of the head; may at times straighten up; throw his head and shoulders back for the sake of improving his appearance, and so winning the admiration of observers; but usually the chin and nose are elevated above the horizontal; while a man with Self-esteem walks with the head set squarely and with a firm tread. A man with strong Combativeness walks in a straightforward fashion, planting his feet with a sort of hammering motion; the head is drawn somewhat down, as it were into the neck, or at least that is the appearance, suggesting the idea of an assault. With Firmness Combativeness, and Self-esteem all large, the attitude is rigid, and the person walks stiffly upright; the muscles of the neck appear to have set in a state of contraction, and the whole air is one of confidence and positive self-reliance.

DOUBLE CHIN, CURLING LIPS, ETC.—A. U.—A double chin is more indicative of temperament than of special mental organism. One with a strong tendency to fatness will show the duplicature, while those with the Lymphatic temperament generally possess it. To be sure, where the feature is excessive, it is indicative of a slothful nature, with fondness for eating and drinking, ease, and comfort. Associated with curling lips and thick, puffy mouth, the character is strongly vain, passionate, and sensual.

THE MASTOID PROCESS.—*Question:* I should like to know if the mastoid process indicates character, especially when it is very large? H. O. R.

Answer: The mastoid process, as you probably know, serves the purpose of nature for the insertion of the sterno-cleido muscles which support the head laterally. Its large development indicates, or is associated with a strong osseous frame, which again is indicative of the Motive temperament. Taken in connection with the physical expression, the mastoid serves as a help to the phrenologist in estimating the temperament.

BONE-MATTER IN FOOD.—L. K.—The cereals, among which are wheat, oats, barley, and corn, are rich in bone-making substances; so also are beans and peas, the latter standing at the head, perhaps, of phosphatic and lime foods; next are wheat, oats, barley and so on. See late Numbers of the Phrenological department of SCIENCE OF HEALTH for analytical lists.

FOOD IN HYPERTROPHY OF THE HEART.—A. M. D.—In cases of enlargement of the heart, the food should be as free as possible from exciting substances; whatever conduces to heat the blood should be avoided. We do not object to the use of a little lean flesh food, but we advise mutton, poultry, and fish as preferable to beef. It is quite unnecessary, however, for one to eat flesh, but those who dispense with it should select farinaceous food containing a large proportion of nitrogenous matter.

What They Say.

Communications are invited on any topic of interest; the writer's personal views, and facts from his experience bearing on our subjects, being preferred.

LEARNING CHINESE AT EIGHTY.—One of our old friends, faithful and true, Mr. J. S. F.

G. Mittag, of Lancasterville, S. C., has recently given some attention to the study of the Chinese language. He says, "I am trying to learn if a man in his eightieth year can attain to a respectable knowledge of it." He sends us a card on which is written a sentiment in Chinese characters handsomely executed. Some day when we have an abundance of leisure, we shall endeavor to decipher it, provided we have, like Mr. Mittag, made some progress in Chinese. We believe that Cato when well advanced in life took to studying Greek; so we don't see why Mr. Mittag can not indulge his fancy for Chinese; who knows but in the other life he may have occasion to talk it among genuine "Celestials."

WHY SO BLIND?—Editor PHRENOLOGICAL JOURNAL: Mr. B. F. Underwood, one of the editors of the *Index*, has just been West on a lecture tour. One thought stated by him at a public meeting in Chicago was, that "Morality is the result of experience; that there is no innate conscience in man only as created by his environments."

If there is any truth in Phrenology, and I hold that it is all truth, then this statement from a thinker such as Mr. U. is a very serious error, and it seems passing strange to me that despite all the teachings of Gall, Spurzheim, George Combe, and others, there are men of mind who will still continue to lead the masses astray. If they would but open their eyes to the world around them, it is so full of facts contradicting their statements, they certainly would be admonished of their error. I am put in mind of a thought sent to the writer in a letter from Geo. Combe in 1856, in which he said: "The world is dreaming over the truths of Phrenology as they did over the rotation of the globe and the circulation of the blood, *and some generations must die ere* one arises which shall not only talk and study about it, but which shall practice it in thought, word, and action."

I am forced to ask, What, in some men's opinion, constitutes Mind? Is it made up of environments, or is it an entity in and of itself?

If man has no innate sense of justice, as Mr. Underwood contends, then we ask, What is it that constitutes an action right or wrong? The answer probably would be that a savage who stole a horse belonging to another brave and had his skull split open for so doing by the wronged one, had a sense of right taught him and his fellow Indians, so that they let horses belonging to others alone in the future.

The question arises: What put the idea in the wronged brave's mind that the thief of his horse deserved to be punished? You may run the thought away back for thousands of years to the first man who had any article belonging to him stolen, and that first man did not require to be taught by his environments that an act of injustice had been done him by the theft.

If man has not got a conscience, then he has no moral faculties, and is only an intellectual brute. The eye is not sight—it is only the organ of sight, and as no man can see without an eye, so no man can see an action to be right or wrong unless he has organs in the brain by which the moral quality of an act can be perceived.

Environments surround animals as well as men; why, then, don't they become moral beings like men? Phrenology says, because the proper brain cells have not been given to them.

Phrenology! how plain, how simple, and how true! We are truly sorry that powerful intellectual men do not hail it as a great beacon-light, to light them on a road which without it they must continue to wander in darkness and, in our humble opinion, act the part of the blind leading the blind. WM. B. FYFE.

Pontiac, Ill.

HOW HE LEARNED OF PHRENOLOGY.—Some time in 1877 I noticed in the *Primitive Christian*, of Huntingdon, Pa., a short notice of (your) Daniells' "How to Sing," and being interested in music, I concluded to procure a copy. I sent to you for a copy of the above, and you kindly sent me with it an Annual of Phrenology for 1876 and your catalogues. From them I received my first knowledge that there was such a science as Phrenology.

I remembered having seen in my father's secretary, an old paper containing the biographies and phrenological characteristics of the Presidents, also a phrenological map, which I soon hunted up and eagerly read, resolving to know more of the then, to me, new science. The next step was to send for a copy of Wells' "How to Read Character" and some odd Numbers of the PHRENOLOGICAL JOURNAL that you offered very cheap. After reading them carefully, I resolved to subscribe to the JOURNAL, which I did, and have been a subscriber ever since, and shall remain one so long as it remains as readable as it now is. I next purchased at one time, some $20 worth of your books, and have since sent you orders amounting with this one to considerably more than $100. Of course others have done far more perhaps than I, but you must know that I am a country boy and school teacher. It is hardly necessary for me to add, that I have been incalculably benefited by Phrenology. It naturally led me to the study of physiology, etc., which taught me how to live so as to be of the most use to myself and to my fellow-man. Your examiner gave me in 1871 a delineation of my character from photographs which has been of great benefit to me. He says therein that I would make a good phrenologist, and indeed I am greatly pleased with the idea. I have been studying and saving money with that end in view for some time. G. B. H.

Bridgewater, Va.

PERSONAL.

MR. J. OSGOOD, one of the later students of the Phrenological Institute, is perseveringly at work in Ohio, and has thus far met with encouragement.

KING HUMBERT, it is said, is falling into a confirmed melancholy, and speaks very little to anybody. What's the matter? Is it a broken-down constitution, so much the case with young gentlemen of royalty?

BRONSON ALCOTT is so far recovered that it is expected he will be able to discharge his duties as Dean of the Concord School of Philosophy at the approaching summer session, and also to deliver the course of lectures assigned to him in its programme.

CLARA FISHER (Mrs. Maeder) has been sixty-five years on the stage, and is seventy-two years old—a vigorous and spirited lady. The time was when the name of Clara Fisher was even more famous in America than that of Patti. This reputation she has outlived—it being evanescent like everything else—evanescence of that kind which depends upon the approbation of the multitude.

WISDOM.

"Think truly, and thy thought
Shall be a fruitful seed."

FALSE modesty is the last refinement of vanity. It is a lie.—*Bruyere.*

WHEN there is much pretension much has been borrowed; nature never pretends.—*Lavater.*

THE most beautiful ear-rings are those which can not be seen, not even with a microscope.

THE truly illustrious are they who do not court the praise of the world, but perform the actions which deserve it.

THERE iz a great deal ov poverty in the world, and we find it az often among those who hav too much welth as among those who hav too little.

POWER, in its quality and degree, is the measure of manhood; scholarship, save by accident, is never the measure of a man's power.

WHAT is a good life worth if it be not crowned by a good death? Yet a good life is the nearest approach in our power to a good death. There have been comparatively few good deaths which have not come at the end of good lives.—*Faber.*

THE earnest men are so few in the world that their very earnestness becomes at once the badge of their nobility; and as men in a crowd instinctively make room for one who seems eager to force himself through it, so the way is made open to one who rushes zealously toward some object lying beyond the crowd.

MIRTH.

"A little nonsense now and then
Is relished by the wisest men."

IF the doctor orders bark, has not the patient a right to growl?

SIDNEY SMITH said to his Vestry, in reference to a block pavement proposed to be built around St. Paul's: "All you have to do, gentlemen, is to put your heads together and the thing is done."

BOY: "Please can yer let mother 'ave a couple a' dips and a bundle of wood?" Shop-keeper: "I don't know. Is your father got anything to do?" Boy: "No; but mother's got plenty to do—to keep father sober."

"I DON'T ask for any man's advice!" said the man with big self-esteem. "I can do my own thinking." "Yes," returned his neighbor, "I think you might, and not be greatly overworked, either."

"I DO wish you would come home earlier," said a woman to her husband. "I am afraid to stay alone. I always imagine that there's somebody in the house, but when you come I know there ain't."

Two Irishmen were traveling when they stopped to examine a guide-post. "Twelve miles to Portsmouth," said one. "Just six miles apiece," said the other. They trudged on apparently satisfied at the distance.

THE addresses of a certain young man having been declined by a young lady, he paid court to her sister. "How much you resemble your sister," said he on the evening of the first call. "You have got the same hair, and the same forehead, and the same eyes—" "And the same noes," she added quickly.

THEY were at the theatre and he had been out between the acts. "John," said Mrs. Smith, "what smell is that?"

"Cloves."

"But what other smell?"

"Allspice."

"But isn't there another?"

"Yes—Apples."

"Just one more."

"Cider—my dear."

"Well, John," she said, "if you'd only go and drink a little brandy now, you would make a mince-pie." And this is what some people go to the theatre for!

In this department we give short reviews of such NEW BOOKS *as publishers see fit to send us. In these reviews we seek to treat author and publisher satisfactorily and justly, and also to furnish our readers with such information as shall enable them to form an opinion of the desirability of any particular volume for personal use. It is our wish to notice the better class of books issuing from the press, and we invite publishers to favor us with their recent publications, especially those related in any way to mental and physiological science. We can usually supply any of those noticed.*

CONGRESSMAN STANLEY'S FATE. By Harriet A. Harp. 16mo, cloth, pp. 403. Price, $1.25. New York: National Temperance Society, J. N. Stearns, Agent.

A new story, which illustrates a too common feature of American public life, and depicts in striking colors the fact that moderate drinking is but a stepping-stone to drunkenness. The subject of the story, Mr. Stanley, had inherited a liking for alcoholic drinks, and his only safety lay in his abstaining entirely from their use. When first overcome, being warned and ashamed, he decides to abstain. When elected to Congress, however, he finds the allurements and claims of society too strong for his weak nature, and, admired and flattered by all, he easily falls a victim to the pernicious, convivial wine-cup.

LOOKING DOWN THE AGES FROM A PROPHETIC STANDPOINT. By John T. Walsh. 12mo, pp. 260. St. Louis: John Burns.

The author has undertaken the difficult task of interpreting Bible prophecy in a spirit of earnestness and deep reverence. Believing it to be the duty of a Christian to study the Bible with a view to understanding its meaning, as well with respect to its predictions as with respect to its moral injunctions, he has striven to contribute something to the world's knowledge or intimations of future events. In some of his views there appears to be a vein of speculation and impracticability, yet we doubt not Mr. Walsh's sincerity, and his by no means inconsiderable capacity as a biblical scholar. The latter appears clearly enough to the reader. Some of the principal views which he deems warranted in holding by Bible authority are the final restoration of the Jews, the personal reign of Christ on earth, and the inauguration of a new and glorious era in which the saints will reign. He treats some declarations which are regarded by commentators as figurative or symbolical, as literal and positive in their bearing upon future history. He is a Literalist without being a sectary, and speaks from conviction, which, in itself, is a matter to his credit.

THE INTERNATIONAL REVISION COMMENTARY of the New Testament—Based upon the Revised Version of 1881. By English and American Scholars and Members of the Revision Committee. Edited by Philip Schaff, D.D., LL.D. Vol. V. The Acts of the Apostles. By J. S. Howson, D.D., and H. D. M. Spence, M.A. 16mo, pp. 420. New York: Charles Scribner's Sons.

To the Bible student the book of the Acts is one of the most interesting in the New Testament, on account of its matter-of-fact record of the work of St. Paul and his associates in disseminating Christianity among the nations of Europe. When read with suitable aids, it is found replete with information concerning the history and characteristics of the Mediterranean peoples. The present volume is an abridgment of the Illustrated Commentary of Dean Howson and Canon Spence to the Revised Version, valuable additions and notes being supplied by Dr. Schaff. It is of course altogether superfluous for us to say a word of commendation on the work, after mentioning the names of the gentlemen who have compiled it.

HOW TO BUILD A HOUSE—Co-operative Building Plans. Containing the most approved Designs for Villas, Cottages, Farm Houses, etc. New York: Published by the Co-operative Building Plan Association. Price, 50 cents.

What married man or woman does not wish to live in his or her own house, or to have one arranged and fitted up to their notion? Thousands of dollars are expended in vain directions by people who want such a house, but do not know anything about the details of building. This handsome publication comes in to offset or prevent such vain expense, and to instruct people with regard to the useful and beautiful in housemaking—how to attain their end without much trouble.

IN A NUTSHELL. Suggestions to American College Students. By Dio Lewis, author of "New Gymnastics for Men, Women, and Children," "Our Girls," etc. 12mo, pp. 178. Price $1. New York: Clarke Brothers. Supplied by Fowler & Wells.

In this volume the author has presented many of the principles of hygiene in the lively, humorous fashion which has made his books generally acceptable. He is emphatic and sincere, while funny and jolly, illustrating in his manner the importance of good nature to right living and good health. He tells in brief epigrammatic statements and by short stories what is right and what is wrong in our every-day habits; suggests improvements in our practices of breathing, eating, sleeping, dressing, etc., etc. The book is indeed a condensation of vital truths which society should know.

TOBACCO: Its Effects on the Human System. By Dr. Wm. A. Alcott. With Notes and Additions by Nelson Sizer. Illustrated. New York: Fowler & Wells. 151 pp. Price by mail, post-paid, 25 cts.

When one observes the prevailing use of tobacco on the streets, on the boats or trains, and especially at hotels, watering-places, and wherever men meet to recreate, the question is forced upon the thinker, what must be the effect on the present and coming generation of such a use of so powerful a poison? It is a costly indulgence, and if it be not a benefit, but an unquestionable damage, why should not sensible men and boys, ambitious to be great and good men, full of power to win success and renown, rise above the habit and become released at once from the expense, the inconvenience, and the damage to health and strength? The body of this work by Dr. Alcott has been previously published, and hundreds of thousands of copies have been circulated, and uncounted numbers of persons have been saved from contracting the habit or reformed from it. The new matter, embodied in the NOTES AND ADDITIONS by Mr. Sizer, who has made the subject a study, and has had a large experience in aiding people to throw off the habit, gives to the book a new and fresh interest. Perhaps the most practical and valuable feature of these additions is the presentation of a feasible way to overcome the habit. The greatest slave of tobacco may learn herein how to give it up without much difficulty or the feeling of nervous loss, and so become thoroughly restored to self-mastership and health.

PUBLICATIONS RECEIVED.

THE EARLY AMERICAN CHRONICLERS. By Hubert Howe Bancroft, of San Francisco, Cal. An essay by the historian of the Pacific Coast, in which he considers certain charges made against his works and his methods, and endeavors to establish his views with regard to Mayo and Aztec civilization. He gives some inside glimpses of the character of his investigations, which have been so fertile in their results, especially the extended series of volumes on the natives of the Pacific States.

THE POPULAR SCIENCE MONTHLY (D. Appleton & Co.) for May seems more voluminous than usual. The titles in its table of contents cover a pretty wide field of scientific thought. Among them are: Remedies of Nature for Consumption, Microscopic Life in the Air, How much Animals Know, How the Ancient Forests became Coal, Gymnastics, Why we are Right-handed—in which the author derives one reason, from the fact of the larger size of the left hemisphere of the brain, and therefore its more important influence in the physical movements of the right side of the body.

THE TEMPERANCE TELESCOPE, by S. Conant Foster; illustrated by C. J. Howard, is a very striking and practical presentation of temperance principles. There are fourteen different views of the effects of intemperance; with illustrations effective in enforcing the moral of the text. Published by the National Temperance Society, at 50 cents a copy.

SCIENCE; a weekly published by Mr. Moses King, of Cambridge, Mass., makes its weekly visits to our *sanctum*, and is found a useful paper. The current work of the world's scientists is succinctly reported, and we trust that the publisher is solidly sustained in his endeavor to disseminate useful information.

W. H. CARSON'S SEED CATALOGUE for 1883 comes to us from Tuttle, N. Y., and is a very satisfactory list; especially of the products of the kitchen garden. It contains a good many novelties and specialties which truck-men can appreciate. Flowering plants also form a considerable list, and are illustrated with more than usual fullness.

THE NEW YORK ASSOCIATION for the Protection of American Industry. Proceedings of a mass-meeting held at the Cooper Institute, Feb. 1, 1883. This association is an important one; among its members are some of the most prominent men in our community; and its meeting as shown by this report was an affair of moment. We are earnestly in favor of the development, protection, and advancement of the various industries in the United States, by means at once reasonable and altruistic; not selfish and exclusive. We believe in the restoration and development of ocean navigation in behalf of Americans, and through the use of ships built and owned by Americans. We are earnestly in favor of the workingman, and think there is too much said and done for the capitalists, or the mere money owner; while the workingman is neglected in some respects and even oppressed.

CORNELL UNIVERSITY REGISTER for 1882–83. A very full description of the departments of this progressive and highly useful foundation of the late Ezra Cornell, at Ithaca, N. Y.

THE AMERICAN ART JOURNAL is well sustained by Mr. W. M. Thoms, who succeeded the late Mr. H. C. Watson as proprietor and editor. We notice an appreciative sketch of the pianist, Mr. H. G. Hanchett, in the Number for April 21st.

F. R. PIERSON'S (Tarrytown, N. Y.) Catalogue of Vegetables and Flowers is well packed with standard and new varieties for home and farm use. Collections of seeds are offered in variety which will meet the need of many garden lovers for a good supply at a nominal cost.

Publishers' Department.

NOTICE.—The Phrenological and Publishing Business, which has been conducted by S. R. WELLS & Co., is continued under the firm name of FOWLER & WELLS. Correspondents, Agents, and others, when communicating on business matters connected with this office, should address their orders to FOWLER & WELLS, 753 BROADWAY, NEW YORK, and not to any PERSON connected with the office. Postage-stamps received for fractional parts of a dollar. Do not tear them apart, and do not stick them to your letter. Prepay all letters in full with 3-cent stamps. Give name and full address every time you write.

Volume 76, Number 1.—With this Number begins the seventy-sixth volume of the PHRENOLOGICAL JOURNAL, and the forty-fourth year. That the JOURNAL has, during its publication, contained that which has been of vast interest and usefulness to mankind, we believe no one will question. It has filled a very conspicuous place in the efforts that have been made to better the condition of humanity; its records will show that it has been on the right side in all questions of reform, and we are quite willing to submit the JOURNAL to the public, and rely on its merits as our claim for reward. We, as all others who are engaged in reformatory efforts, whether in the interest of religion, temperance, or what not, find obstacles, and need the co-operation of those who have an interest in the improvement of men physically, mentally, and morally. Thankful for the past interest of our friends, we would bespeak their continued co-operation. Much has been done by the JOURNAL readers to extend its circulation, for which we are thankful. We feel that all who are interested should work for it, and those who have been benefited by phrenology, should consider it a debt of gratitude, which can be repaid in no other way as well as by interesting others. We are also willing to reciprocate fully, and to pay for the work that is done in this direction. Send for our premium list.

A Word with New Readers.—This Number of the JOURNAL reaches a large class of new readers, those who have not before this year been regular subscribers, and from such we ask for it a careful examination, and if the contents of the JOURNAL are such as to meet with approval, and such as to make its extended circulation a benefit to the people, we would ask your interest in accomplishing this; showing the JOURNAL to your friends, and speaking for it a kind word of recommendation, would be a means of widely extending its circulation.

Agents Wanted.—An agent is wanted in every neighborhood to canvass for the PHRENOLOGICAL JOURNAL AND SCIENCE OF HEALTH, and to take orders for our publications. We would especially like the co-operation of those interested in the subject, and persons who have leisure time can make it pay. For full particulars as to terms, etc., send for our confidential circular, and terms to agents. Our premium offers to subscribers greatly facilitate the efforts of agents. With the facilities we offer, agents will find it a pleasant and profitable employment.

The Next Phrenological.—The February Number will contain a sketch of Sir John Lubbock, the eminent English Naturalist; the first article of the series on Language, which was announced for this Number, but unexpectedly crowded out; portraits of several of the new governors of States in different parts of the Union; some account of the celebrated operations on the human stomach, by Dr. Billroth, with illustrations, and a variety of other topics. The first of a series of articles by Rev. Prof. E. P. Thwing, on "The Four Windows of Character—the eye, the voice, the hand, the step."

Our Health Almanac and Annual for 1883 will be printed immediately after the printing of this Number of the JOURNAL, and will be sent out at once to all who order it. Among its contents will be found the following:

Modern Education; Horse Heads and Horse Character; Egypt; Physical Training; An Eminent Phrenologist's Experience; also a Portrait and Life Sketch of Dr. Nathan Allen, the eminent Physiologist of New England; A Descriptive Account of Miss Helen Potter, the well-known reader and personator; besides numerous paragraphs on all sorts of subjects entertaining, instructive, profitable. The illustrations are more than usually abundant, with the usual Monthly Calendars and Astronomical Calculations, with a complete list of our publications, and advertisements of the leading Health Institutions.

Although the Almanac is nearly as large as the JOURNAL, it is published at the low price of ten cents per copy, and should have a wide circulation, and friends of the cause can do no better missionary work than to distribute this. For this purpose we supply it at 75 cts. per dozen copies, by mail, post-paid.

"Bullion Certificates."—This is the title of a pamphlet recently prepared by Mr. I. W. Sylvester, of the United States Assay Office in this city, in which he advocates the issuing of Bullion Certificates on deposit of gold and silver in bulk at the Assay Offices and Sub-Treasuries in different cities throughout the United States; the gold and silver to be made into bars, and stamped at their market value, and the certificates to be made redeemable on presentation. This plan should receive the consideration of our law-makers, as it has the merit of avoiding the necessity for the circulation of cumbersome coin, also the saving of the expense of making the coin, and it would result in the uniformity of value, as it would make no difference to the business community whether the certificate presented was a gold or a silver one, the market value of silver being based upon its gold value.

There is no doubt but that our monetary system requires consideration, and we are glad to see any efforts being made in directing and educating the people on this subject.

NOTES ON OUR PUBLICATIONS.

THIS present Number of the JOURNAL, the first for 1883, goes to press in the last month of the year 1882, and it is fitting that we as publishers should review briefly the work done during the past year. Our standard publications have met with fair sales, showing that there is a continual and steady interest in the subject to which they are devoted. It is especially true of the works devoted to phrenology, physiognomy, and health subjects, while our miscellaneous publications have also been in good demand.

The new books brought out during the year have been very popular, undoubtedly owing to the fact that they are devoted to important subjects. The "HISTORY OF WOMAN SUFFRAGE," edited by Mrs. Stanton, Miss Anthony, and Mrs. Gage, the first volume of which was published in 1881, has met with a hearty reception from the friends of woman suffrage, also from those who are not especially interested in the subject. The second volume was published this year, and surpasses, if anything, in interest the first volume, as it deals with subjects of more recent occurrence. As has already been announced, this work is to be completed in another volume, now in preparation.

For Girls, by Mrs. Shepherd, was published in the summer, and the first edition of one thousand copies was very rapidly called for, and a large number of the second edition are already sold. The following letters, recently received in regard to this work, speak for themselves, and are a fair sample of the many testimonials received in its favor.

Mrs. Belva A. Lockwood, the celebrated woman lawyer of Washington, says:

"Messrs. Fowler & Wells—Gents: I have carefully read and considered Mrs. E. R. Shepherd's 'Physiology for Girls,' and find it a plain, simple, scientific, and rational guide for mothers and teachers in the education of girls. It is a useful and valuable book that may safely be placed in the hands of, and should be read by, every young girl in the land. It takes hold of the structure and functions of the human system just where the physiology of the schools leaves off, and in a clear and simple explanation, tells what to do, and what not to do. The language is pure and chaste, and the writer has avoided the technical terms which would have rendered the book too intricate for the class it is designed to benefit. Mrs. Shepherd has conferred a practicable and available blessing upon the world, and upon young girls in particular, in the production and publication of this book. I have had an experience of fifteen years in the education of girls, and feel that the writer of this physiology has solved a problem over which many a teacher's head and heart have ached. Very truly yours,

"BELVA A. LOCKWOOD."

Sarah M. Ellis, M.D., of New York, says:

"I have just read 'For Girls' with the utmost satisfaction. It is a book that every mother and daughter ought to read. The subjects are treated with the most consummate delicacy, and yet with great force. Would that every word might be read and treasured as deserved. Really it is *the book for the age*. I wish it could go forth freely. I feel that the needs of such a book are pressing. I have spoken of the book, and my friends are eager to possess it, have promised to send for it. SARAH M. ELLIS."

How We Fed the Baby, by Dr. Page, has been carefully revised and enlarged, and is published under the more general title of "HOW TO FEED THE BABY." Dr. Page has followed out the line of his investigations and observations still farther, only to have his past experiences more fully confirmed by himself, and also by the experience of others who have been led to adopt the plan laid down in this little work. The ideas set forth are new to many people, but they are practical, and it is safe to say there is not a mother of a young child who would not be greatly profited by the careful reading of this work, as the author gives many suggestions which can be followed to advantage.

Dr. Oswald, who is one of the soundest-minded of men, a frequent contributor to the *Popular Science Monthly*, and well known as the author of a number of popular works, says:

"I have read and re-read this work with wonder and interest. It is a powerful appeal on a subject that ought to recommend itself to all rational parents. I do not believe the book contains two superfluous lines."

We have also nearly ready for press, the book announced some time since, by the same author,

Natural Cure of Consumption, Rheumatism, Bright's Disease, Constipation, Colds, Fevers, Wakefulness, etc. The work on this in the hands of the printers has been somewhat delayed, but it is hoped soon to have it ready for delivery, and those interested in the above complaints, whether as existing in themselves or their friends, will be well paid for investigating and studying Dr. Page's work.

How to be Weather-Wise.—In this little pamphlet we have something tangible at last on the subject of the weather, and our experimental weather prophets will find that their guessing and humbugging will hardly take with the people. Mr. Noyes explains plainly and philosophically the nature of the United States Signal Service, which is but little understood, even by the people who read the daily indications, and those who have no special need of prophesying what the weather will be, will be interested and profited by reading this little pamphlet.

How to Keep a Store.—The first edition of this work is nearly exhausted, and a second edition will be put in press at once. It is meeting with the hearty approval of business men of experience, and being warmly recommended by them to young men, and those with less experience in general business matters. It has been observed that the best chemists are the ones who are the largest buyers of works on chemistry, and so in all of the professions. The most successful storekeepers, those who have already met with success, are ready purchasers of this book, believing that it may contain suggestions which will be valuable to them.

Forty Years in Phrenology.—This work, in which Mr. Sizer has recorded his recollections and experiences of more than forty years, is now being read by those who sent in early orders, and we know that it will prove most interesting to the many readers; in fact, it is impossible that the experiences of any one in this line should not be full of interesting facts, and when they are clearly and carefully recorded, the result is a volume of unusual interest.

Traits of Representative Men.—Mr. Bungay's book is the latest on our list of publications, this having been sent out at the same time with "Forty Years in Phrenology," and it is now being read and

criticised. It is certainly a handsome volume, well printed, with fine illustrations, on fine paper, and handsomely bound; it can but prove an acceptable holiday present whenever used in this way.

The *Mail and Express* says: "Mr. Bungay writes with fervor and enthusiasm, and while we do not always agree with him in his estimates of men, we can not but respect the sincerity of his beliefs and the strength of his convictions, which always lean to virtue's side. He writes from his feelings, and writes, therefore, with force and directness. His sketches are all, we believe, illustrated with portraits of the men whose traits he traces, and who as a rule are very personable people."

A New Theory of the Origin of Species.—We regret to say that this book is not yet ready for delivery, but it is now printing, and there can be but little farther delay, and the proof-reading connected with the making of the book has confirmed our previous opinion that it will be a work of unusual interest.

An Explanation.—We are often asked how we can afford to make such liberal premium offers, and we wish to say that it is only by special arrangement. The premium books are made up in very large quantities, and in this way, at a greatly reduced cost in paper, printing, binding, etc. For this reason we can only afford to give books offered, and can not afford to substitute others of the same size and price, and when the regular premium edition is exhausted, the offer is withdrawn. In regard to premiums for clubs on account of advertising we do, and the publicity given to the articles offered, we are enabled to make very favorable terms with the manufacturers, and we give to our agents the benefit of these reductions. This is an explanation of the whole matter.

The Century Magazine.—An examination of the *Century Magazine* makes one wonder at the perfection which has been reached in the art of making magazines. Its wonderful illustrations, the press-work, and the whole make-up of the magazine, and then the quantity, when the price is taken into consideration, it is quite as surprising. Certainly no lover of good reading need be deprived of choice literature when *The Century* can be obtained at the subscription price of $4.00 per annum.

St. Nicholas.—This is a fit companion for the *Century Magazine*, and is published also by the Century Company. It covers the whole ground of young folks' literature, and from our own experience we know it is of interest to all, from the youngest child who is interested in the pretty pictures, even to the grown-up members of the family, with stories that are bright, sketches that are sparkling, and pictures that are produced in the highest style of the engraver's and printer's art. It is all that can be desired.

A Pictorial View of the World.—In reply to inquiries we would say: The price of this chromolithograph, for which agents have been advertised for in the JOURNAL, is $4.00. It is certainly a splendid chart, and would prove an attraction and a source of improvement in every school-room and family. We can send on receipt of price as above.

Our Hats Off to the *American Queen*, which says of the December Number: "This venerable magazine appears upon our table with its usual punctuality. It is the sixth number of volume 26 of the new series, and volume 75 of the old series. Its past record is one of great benefit and usefulness in the departments it so ably represents, and as such has now special distinction among current periodicals. Its publishers promise that its future shall be as fruitful of good as the past, and much more abundant, and from our knowledge of its editors and conductors, we can assure our patrons that such promises from so responsible a source will be honorably fulfilled. We wish them prosperity and success, and long may they flourish and receive what they so richly deserve—a bountiful recompense for their labors."

Our Premium List.—On another page of this Number of the JOURNAL will be found our table of premium offers for 1883; we ask for this a careful examination. Please note the value of the articles, and the liberality of the offers which are made, and if you, reader, do not need to take advantage of its liberal propo-ition, will you not call the attention of some person to it whom you know would be greatly benefited by the opportunity of making up a club for the PHRENOLOGICAL JOURNAL, and taking advantage of our premium offers? We will send our illustrated and descriptive catalogue, giving a complete description of the articles offered, and other information to any address on receipt of stamp. We would also add that we will fill orders for any of these premiums offered at the cash price.

A Supplementary Premium List.—In addition to our regular list of premiums, the table of which is published in this Number of the JOURNAL, we have arranged for the offering of a large number of premiums not mentioned in this, by taking advantage of a combination premium list, prepared for the use of different publishers, who may desire to take advantage of it. This is a large quarto catalogue, containing the names, illustrations, and descriptions of nearly all articles, including sewing-machines, musical instruments, silver-ware, jewelry, and a great variety of useful and ornamental articles. While some of these are not such as we should have selected to meet the special wants of our own readers, still the list contains a large number of most useful articles, and undoubtedly will prove an attraction to many. This large catalogue, the pages of which are of course too large to print in the JOURNAL, will be sent to any address, on receipt of stamp for postage.

Appreciative.—A RHODE ISLANDER in renewing says: "It is with no small degree of pleasure that I once more renew my subscription to your truly valuable JOURNAL. My fondness for it increases with every new Number, and I consider it worth many times the amount which I pay for it. I think the readers ought to be very grateful to you for manifesting such a vast amount of forethought in providing us with such sensible premiums as are offered in connection with the subscriptions."

The Institute.—A very successful session of the Institute was brought to a close on the 14th of November last. The attendance was larger than it had been for several years past, and the students generally exhibited a deep and continued interest in the studies of the course. The February Number of the PHRENOLOGICAL JOURNAL will contain the usual supplement, in which a report of the closing exercises and distribution of certificates will be published.

To Letter-Writers.—It will be an advantage for many of our readers to know that stamped envelopes will be sold to the public after January 1, 1883, at a reduction of 10 per cent. on present prices. The Post-Office Department has also arranged to print special return request notices upon envelopes without additional charge, when ordered in quantities of 500 or more. General Hazen states a fact not generally known, that stamped envelopes, when spoiled through misdirection or other causes, can be exchanged for a postage-stamp of the same denomination at the nearest post-office.

The American Institute Fair.—The exhibition of the products of industry for 1882, under the auspices of the American Institute, is decidedly superior in our opinion, to what has been afforded the public any similar way for several years past. The array of new mechanical devices for the house, farm and factory, is large, and in some respects remarkable, while the exposition of different branches of industrial art is for the most part well calculated to interest the visitor. Silk weaving in fancy patterns, box making, pottery, moulding, the artificial incubation of chickens' eggs, scroll cutting, iron forging, stone and iron drilling, pin making, flour grinding, etc., etc., are among the illustrated exhibits. We noticed a very neat and small water-wheel, so inclosed and adjusted as to be driven with considerable power by the ordinary flow from a croton faucet. This wheel has force enough to operate a sewing-machine, and the compactness of its adjustments makes it available to the uses of a family. The display of articles and apparatus for kitchen and household purposes is very large, a bewildering and delightful show to the cook and housekeeper. The electric illuminator and the excellent music make an evening visit to this fair an exceptionally pleasing and profitable entertainment.

Building.—This is the title of a new architectural magazine, published by Mr. Wm. Comstock, No. 6 Astor Place, and at the low price of $1 00 per year. We are certain that it must prove valuable to all who are interested in building in any way. It is handsomely printed, well illustrated, and practical. For prospectus and additional particulars, address as above.

Fine Grapes.—There is a certain point on Put-in Bay, Lake Erie, Ohio, where most excellent grapes are raised. We can speak from experience, having received several boxes of delicious Catawbas from Mr. John Brown, Jr., who has a vineyard there. In common with people of hygienic predilections, we have a lingering fondness for good grapes, and our friend Mr. Brown's were found to have a flavor which insisted upon our indulgence in them, to an extent which perhaps was a little excessive, but followed by no unpleasant consequences.

Fire on the Hearth.—This is the name given to one of the best devices we have ever seen for heating living and sleeping rooms. It was first introduced a few years ago, and at that time we investigated the claims of this stove, and predicted for it great success. Since its introduction, great improvements have been made in the manner of manufacture, and the use to which it is placed. The principle includes a drum above an open fire, which is surrounded by an air chamber for the warming and circulation of fresh air, and which secures all the advantages of an open fire-place, including the very best of ventilation, and at the same time, overcomes all the disadvantages of this plan of heating, including waste of heat, etc. The circulation of the air about the stove is shown indistinctly in the above cut. Cold air can be taken directly from the room, warmed and distributed, or fresh air can be brought from outdoors, warmed, and introduced into the room. A peculiar feature of this stove is, that, on account of the circulation of air produced, it warms distant parts of the room quite as thoroughly as places immediately around the stove, thus securing an even temperature, except immediately in front, where the heat from the open fire radiates to the floor. It is also so arranged that the heat can be conducted to the rooms above, either from the ordinary stove form, or from the air-warming grate which is set under the mantel in the ordinary way. This certainly is unequalled in warming and ventilating powers, and at the same time attractiveness, making it far superior to any known method of house warming. On another page will be found an advertisement of this, and we would recommend our readers to by all means send for an illustrated circular If the stove is not wanted now it may be soon by yourself or your friends.

James Vick.—We are certain that our readers will be glad to be assured of the fact that the death of James Vick will not interfere with the conducting of the horticulture business established by him, but that his sons will continue the business in the same name, and in the same thorough and business-like manner. His floral guide should be in the hands of lovers of flowers, and every person having the use of a rod of land should be a reader of Vick's Illustrated Magazine, which is published at the low rate of $1.25 a year.

Plymouth Pulpit.—The weekly publication in pamphlet form of Henry Ward Beecher's sermons has been resumed by Messrs. Fords, Howard & Hulbert, of this city. It is to be a continuation of the second series, in large 12mo form, printed in clear type, at the subscription price of $2.00 per year, but we will club it with the PHRENOLOGICAL JOURNAL at $3.75, both for one year.

Publishers' Department.

NOTICE.—The Phrenological and Publishing Business, which has been conducted by S. R. WELLS & Co., is continued under the firm name of FOWLER & WELLS. Correspondents, Agents, and others, when communicating on business matters connected with this office, should address their orders to FOWLER & WELLS, 753 BROADWAY, NEW YORK, and not to any PERSON connected with the office. Postage-stamps received for fractional parts of a dollar. Do not tear them apart, and do not stick them to your letter. Prepay all letters in full with 3-cent stamps. Give name and full address every time you write.

The next Number will contain sketches of Sir John Lubboch, the banker-naturalist; Leon Gambetta, the late Republican Leader of France, with portraits and other biographical notes; Articles on the Hygiene of Walking; The Diversity of Language and the Discovery of Letters; The Hand as a Window of Character; Was Bryant a Great Poet? March, its suggestions; The Olive Tree, history and uses; Scolding scientifically explained; Brain Weight and Brain Power, etc.

Postmaster's Report.—Through our old-time reporter, Mr. E. D. York, we have received a report of the Third Assistant Postmaster-General, Mr. A. D. Hazen, to the Postmaster-General, showing the operations of the department under his charge for 1882. This is an interesting document to those interested in Government statistics, and contains information with which the people should make themselves familiar, and especially in view of the proposition to reduce the cost of letter postage.

Half-Hours with the Lessons for 1883.—Chapters on the Bible texts chosen for Sabbath-school studies for 1883 in connection with the International lesson series, 12mo, 475 pages, extra cloth, Philadelphia Presbyterian Board of Publication.

The study of the Scriptures in connection with the International series of lessons for Sunday-schools, is almost universal in all Protestant Christendom, and the study is not only widespread, but earnest, and made with a desire for a critical and careful understanding of the subject; and in this connection, "Half-Hours with the Lessons" will be found most useful. The matter has been prepared by a large number of eminent clergymen, including Rev. Drs. Hall, Cuyler, Crosby, Ganse, Booth, Reed, Hannah, Parkhurst, Knox, Witherspoon, Cooper, Mitchell, Craig, and others equally well known. Each lesson is taken up and carefully considered in its scriptural and practical bearings. It will be found invaluable to Sabbath-school superintendents and teachers, and of interest to Bible students generally.

Lieutenant Danenhower. — We have received from Pach's Photographic studio, 811 Broadway, a very fine imperial photograph of Lieut. J. W. Danenhower, taken in the costume worn by him during his terrible winter's experience on the Jeannette. It is said by the Lieut. to be a very excellent descriptive portrait.

NOTES ON OUR PUBLICATIONS.

NEW BOOKS.

A New Edition.—The lectures on The Science of Human Life, by Sylvester Graham, have been out of print for a short time, but a new edition is now ready, printed on good paper, and well bound. A correspondent inquires if this is printed in German, saying: "I have the English edition, which I have read carefully. I have read a large number of works on the subject of health, and I consider this as the best. For years I lived on two meals a day, never eating late in the day, and still I was in a miserable state of health, and continually taking medicine until I read this valuable work, then I avoided flesh food and all drinks except water, and now I am enjoying perfect health. I wish that every one could be induced to read and investigate this valuable work; not an hour passes over my head while awake that I do not think of the author, and were he living, I should certainly endeavor to see him, for I feel I could never thank him enough for the writing of this invaluable work." The work is not published in German, although it is well worthy of it, as the principles laid down by Dr. Graham have been, in a very large degree, the basis of the most of the efforts that have been made in the direction of health reform, and his investigations were certainly thorough and conclusive, and reached after a careful course of reasoning.

How to Keep a Store (price $1.50).—The second edition of this work is nearly exhausted, and a third edition will be put in press at once. It is meeting with the hearty approval of business men of experience, and being warmly recommended by them to young men, and those with less experience in general business matters. It has been observed that the best chemists are the ones who are the largest buyers of works on chemistry, and so in all of the professions. The most successful storekeepers, those who have already met with success, are ready purchasers of this book, believing that it may contain suggestions which will be valuable to them.

A Business Instructor.—One of our customers to whom we sent a copy of "How to Keep a Store," in acknowledgment of it says: "I received the book, and am well pleased with it as a business instructor; it is worth a hundred times the price paid for it." This may sound like an extravagant statement of value to be placed on this work, but we can assure our readers that it is not out of the way. There are but few merchants or business men who fail in making a success of their undertakings, but what are well aware

that their failure comes from the lack of some special information. The overlooking of some little detail leads to failure, and an avoidance of this might come from the suggestions in this little volume, which would lead to success. It has been remarked by many that it was not necessary to be a store-keeper to be intere-ted and profited by the owning of this valuable manual.

The *Evening Telegram* of this city says: "No firm except that of Fowler & Wells would have been likely to have issued the instructive book 'How to Keep a Store.' It consists of twenty-four chapters brimming with information, and an appendix of thirteen pages is full of mercantile forms and problems. As a stimulant it can be recommended to those who have business brains absorbent in quality."

"For Girls."—This work is very rapidly passing through the second edition, and continues to receive the most kindly words of commendation. It has been introduced quite extensively into young ladies' schools, and the following letter received from a principal of one of these schools speaks for itself. We also add other commendations just received.

Mrs. C. F. Ballentine, the superintendent of the Somerville school on the St. Clair River, Mich., writes:

"We have forty copies of Mrs. Shepherd's book in use in this school—it seems to us as a strong and bright light, illuminating many very dark places in human knowledge. A wide introduction of this valuable little book into the schools for young ladies, in this land and over the seas, would bring out of the depths of human misery, multitudes of poor women who have so sinned against their delicate organizations solely on account of ignorance; and would save still greater numbers from ever bringing upon themselves the evils incident to a blind warring against nature's laws."

Mrs. L. E. Shipherd, editor of the Home Department of the *New York Tribune*, says:

"I have read Mrs. Shepherd's 'For Girls' with great interest and care. So well am I pleased with the book that I have placed it in the hands of several girls for their instruction in things that every girl should know. The unwise custom of bringing up the young of both sexes in utter ignorance of the most vital truths relating to their being, has never found in me an advocate. The truth makes us free, and it belongs not less to children than to adults. Mrs. Shepherd, in language clear and plain, answers all the questions girls would ask if they felt at liberty to do so, respecting the sexual part of their natures, and sets before them in forcible phase the facts which it is for their best interest to know. As an aid to mothers in the endeavor to teach their daughters what they should know regarding the knowledge and care of themselves—their physiology, dress, sexuality, and their qualifications for wifehood and motherhood—this little book is invaluable, and meets a long-felt want."

Mrs. Amelia Bloomer, who introduced what has been known as the Bloomer costume, says:

"Though I have no girls of my own to read it, I will try to place it where it will do good. Had such a book been placed in my hands when I was a girl, it would have been of great benefit to me."

Miss Frances E. Willard, President of the Woman's National Christian Temperance Union, says:

"Mrs. Shepherd's 'For Girls' is the book I have long been looking for. In my life, as a teacher, I have had nearly two thousand pupils, most of them girls. We have had 'health talks,' to be sure, but I always felt that we did not treat them fairly, did not furnish them fully for life, as it was to unfold to their ignorant surprise in later years. Then there was the difficulty of handling subjects so delicate, and the absurd, yet almost universal repugnance of mothers to speak frankly to their daughters, instead of leaving them to pick up fragments of surreptitious knowledge from ignoble sources at home and abroad. But here is a book which covers the ground fairly, clearly, and in chaste language. The chapters on dress are particularly excellent, and take it all in all, our temperance women can not, I am confident, do better than to give wide circulation to this unique little volume."

A New Theory of the Origin of Species (price $1.50.)—In this work will be found a clear and candid statement of the theories of Darwin and others, with a brief review of them, with the author's new and certainly feasible views on the subject. The following from chapter headings will show something of the nature of the work:

Theories of Lamarck, Darwin, and others; views of Owen, Huxley, Spencer, and others in relation thereto; laws of heredity; what is life? views of Buchner and others; speculations and definitions of Herbert Spencer; difference between animal and human life; difference between mind and instinct; difference between men and animals in brain capacity; antiquity of man; is there an intelligent first cause? theories examined; the order of creation; the new theory.

Forty Years in Phrenology (price $1.50.) This is a volume of over four hundred pages, in which Mr. Sizer has recorded his recollections, his impressions, and his experiences during forty years of active, practical phrenological life. This includes the time he was traveling, lecturing, teaching, and examining, previous to his connection with this office, as well as something about his more than thirty years' experience here.

The Christian Standard says: "This book, which is handsomely printed, and contains over twenty illustrations, will interest readers, young and old. Derived as the matter is from more than forty years of active work as a lecturer on phrenology and phrenological examiner, the author has had abundant opportunity to come in contact with every kind of human being. For more than thirty years he has been the chief examiner in the office of Fowler & Wells, and in his experience has come in contact with more than two hundred thousand persons. The author says in his preface, that he 'has been invited to visit schools and colleges, asylums for the insane, poor-houses and prisons—rare and peculiar persons—those endowed with genius in special directions; the eccentric, those idiotic in whole or in part; in fact, every odd, strange, and singular character has been hunted up, and brought to test phrenology or its exponent, and in many instances to gain hints for the better treatment and management of these peculiar cases. Thus many curious incidents have occurred which throng the memory and demand recognition and record. No matter what one may think of phrenological science, he will find enough of interest in this book of human nature to make its perusal most pleasant and profitable."

How We Fed the Baby, price 50c., by Dr. Page, has been carefully revised and enlarged, and is published under the more general title of "How to Feed the Baby." Dr. Page has followed out the line of his investigations and observations still farther, only to have his past experiences more fully confirmed by himself, and also by the experience of others who have been led to adopt the plan laid down in this little work. The ideas set forth are new to many people, but they are

practical, and it is safe to say there is not a mother of a young child who would not be greatly profited by the careful reading of this work, as the author gives many suggestions which can be followed to advantage.

Dr. Oswald, who is one of the soundest-minded of men, a frequent contributor to the *Popular Science Monthly*, and well known as the author of a number of popular works, says:

"I have read and re-read this work with wonder and interest. It is a powerful appeal on a subject that ought to recommend itself to all rational parents. I do not believe the book contains two superfluous lines."

Traits of Representative Men.—Mr. Bungay's work continues to be popular, and is meeting with an extended sale. To show something of what is thought of it, we publish the following brief extracts from the many

NOTICES OF THE PRESS.

"George W. Bungay is one of our ready writers. He has a faculty for literary portrait painting."—*N. Y. Herald.*

"He writes from his feelings, and writes, therefore, with force and directness."—*The Mail and Express.*

"It is shown wherein and how these men have made themselves the names and power that they are. The book will doubtless be read and enjoyed, and is fitted to do good."—*The Christian Intelligencer.*

"The author does not rehash well-known facts in the lives of these men, but brings out many points of interest that are new and interesting."—*Phila. Evening News.*

"He has succeeded in giving very life-like pictures of the persons, and in a few words has made us feel their individuality, and recognize the aspects under which they are to be classed as representative men."—*Pittsburgh Telegraph.*

"The author is a master hand in this line of writing; he has made character a study, and no modern writer has been more successful in its portrayal."—*Indianapolis Daily Sentinel.*

"There is nothing hackneyed nor statistical about the sketches, but every one is a fresh and breezy character study."—*The Cleveland Leader.*

"The author has acquired a reputation for his off-hand pencil sketches."—*Presbyterian Banner.*

"Mr. Bungay is a veteran journalist, and has had opportunities exceptionally favorable for the study of varied human characters. We get the ripe result of his experience in the present volume."—*Boston Commonwealth.*

"It contains quite as much biography of the characters considered as the average reader cares to know, and in addition to that a kind of analysis of the character of each, which makes the reader feel acquainted with the subject. The book is an inspiration to young and old, to foster and develop their God-given qualities to their utmost, and reap success as their reward."—*The Burlington Hawkeye.*

A Knabe in the White House.—There was seen yesterday at Messrs. Knabe & Co.'s factory a magnificent concert grand, just finished by them for the presidential mansion. President Arthur, who is a thorough connoisseur of music, in selecting a piano for the White House decided in favor of the Knabe piano as his preference, and ordered accordingly the instrument referred to. It is a concert grand of beautiful finish, in a richly carved rosewood case, and of superb tone and action—an instrument worthy in every respect of the place it is to occupy. It was shipped to its destination yesterday.—*Baltimore American.*

Hygienic Foods. — Mr. Chas. H. Hoyt's Son, who has for many years given special attention to the manufacture of improved foods, has issued a very fine descriptive pamphlet or price list, of wheatena, graham flour, and other hygienic foods; in addition to the general information on the food question, this gives descriptions of his specialties, with recipes for cooking which will be found of interest to his patrons who would like to eat to live, instead of living to eat. Among his specialties is what is called health coffee, a combination of cereal grains which produces an admirable drink for those who are in the habit of drinking tea and coffee; it is nourishing and strengthening, and very palatable; we have tried this, and so far as we know it is the best cereal coffee made The pamphlet referred to will be sent to any of our readers who will address Chas. H. Hoyt's Son, 56 Hamilton St., New York.

Our $10.00 Battery.—We have arranged for the supplying to our readers the Family Battery, manufactured by the Electro-Medical Manufacturing Co., and we have just received the following from a subscriber to whom one of these has been sent: "Gents: The faradic battery which I ordered, was received very promptly, and I am much pleased with it. It is a real beauty, and works splendidly; is far ahead of my expectations. I desire to thank you for your promptness, and shall deem it a pleasure to order from you from time to time, what I need in your valuable publications.—L. E. B." The price of this is but $10.00, and, for the money, we know of nothing that will equal it.

N. W. S. A.—The National Woman Suffrage Association will hold its regular mid-winter Convention in Lincoln Hall, Washington, D. C., on January 23d, 24th, and 25th. For fourteen consecutive years this society has held meetings at the National Capital. Its object is to secure such an amendment of the National Constitution as will procure women citizens of the United States the unrestricted exercise of the right to vote.

Further particulars in regard to this association and its work may be procured by addressing Miss Susan B. Anthony, Riggs House, Washington, D. C.

Fruits, Small and Large.—In this Number of the JOURNAL will be found the advertisement of Mr. J. T. Lovett, Little Silver, N. J., who, although a young man, has already acquired an extensive reputation on account of his efforts made for the introduction of new varieties of small fruits, etc. He introduced very widely the Cuthbert Raspberry and the Manchester Strawberry, and he is now calling especial attention to the Hansell Raspberry, for which he claims very many points of excellence. Our readers will be interested and profited by sending for his special descriptive circular.

He has also a fine stock of new and old varieties of all kinds of small fruits and orchard fruits. His full catalogue is ornamental and useful, and can not fail to prove interesting to all who will send for it. Address as above.

Remember that all letters should be addressed to FOWLER & WELLS, and not to persons connected with the office. This is necessary to insure prompt attention, as individuals are frequently absent from the office.

Vick's Floral Guide.—Of all the publications issued for distribution by the seed men, we know of none that surpasses in elegance and also in practical information, "*Vick's Floral Guide.*" The Annual for 1883 is an elegant book of 150 pages, with three colored plates, and more than one thousand illustrations. This is a guide to the proper treatment and culture of all kinds of flowers and vegetables, and will be sent in response to all applications enclosing ten cents. Our readers will be attracted by Vick's large advertisement in this Number of the JOURNAL, and it is hardly necessary for us to recommend the quality of his seeds.

D. M. Ferry & Co., the celebrated seedsmen of Detroit, Mich., send us a copy of their elegant catalogue for 1883. This is very profusely illustrated with wood-cuts, in addition to a large number of colored plates of vegetables and flowers. The directions given for the planting and care of flowers and vegetable gardens in this catalogue are very complete, and especially useful to those who are planting on a large scale. In addition to their stock of seeds, they also advertise a very complete list of trees, grape-vines, and small fruits, which they send by mail.

Messrs. Hiram Sibley & Co., of Rochester, N. Y., and Chicago, Ill., send to us their catalogue of flower and vegetable seeds for 1883. This is a handsome publication, illustrated with many wood-cuts, also with colored plates. It is a very complete list of standard vegetable and flower seeds, and contains useful and practical directions as to cultivation, etc., including an essay on the care and planting of forest-tree seeds, by Dr. John A. Warder.

A Suggestion.—We wish to suggest to our patrons that it is of some importance in sending orders to remember to do some things; for instance, it is quite necessary to give your name, and it is also of some importance to give your post-office and State. We have some customers who think this is of very great importance, and who always do it; as a result their orders are filled promptly and correctly. Then we have some correspondents who seem to think this is of no importance. We have now before us a postal-card which reads: "Please send me agent's price of 'How to Keep a Store,' and of your *Journal*." No doubt this individual will be condemning us for not giving this request proper attention. Then we have another letter dated December 11th, saying: "Dear Sir:—Please find enclosed to the amount of $2.00, for"—and here comes the order, but the letter gives neither name of the writer, post-office, county, or State, and no doubt this person will put us down as perfect frauds, and caution all of his friends against ever sending anything to Fowler & Wells, probably adding that it is impossible to get orders promptly filled. From this it will be seen that the points referred to are of sufficient importance to require attention. We trust a word to the wise will be sufficient on this point, but we wish also to say that all letters in relation to business connected with this office should be addressed to Messrs. Fowler & Wells, and not to individuals, for the person addressed may frequently be absent from the office, and in this way answers to important questions are often delayed.

An Explanation.—We are often asked how we can afford to make such liberal premium offers, and we wish to say that it is only by special arrangement. The premium books are made up in very large quantities, and in this way, at a greatly reduced cost in paper, printing, binding, etc. For this reason we can only afford to give books that are offered, and can not afford to substitute others of the same size and price, and when the regular premium edition is exhausted, the offer is withdrawn. In regard to premiums for clubs on account of advertising we do, and the publicity given to the articles offered, we are enabled to make very favorable terms with the manufacturers, and we give to our agents the benefit of these reductions. This is an explanation of the whole matter.

Brain and Mind.—The additions made to our missionary fund for the purpose of distributing among clergymen copies of "Brain and Mind" enable us to continue the offer to send this, the latest and best text-book on the subject of Phrenology, to any clergyman who is sufficiently interested in it to be willing to send 15 cents to pay the cost of mailing, and who will promise to examine the book carefully. From the testimonials received from clergymen, we feel sure that the distribution of this work has already done much good, in giving to the clergymen who receive it a knowledge of the science. One to whom it was recently sent in Mississippi says: "I received the book 'Brain and Mind,' and am much pleased with it, and feel assured that it will do good. It is a contribution to science that will awaken that practical metaphysical thought based upon the true principles of mental development. I am grateful to the publishers, and will value it as an addition to my library. Respectfully, Rev. J. L. C."

Our readers are at liberty to call the attention of wide-awake clergymen to this offer, and may we not hope that those who have been benefited by the knowledge of phrenology, will aid us in extending a knowledge of the subject by a distribution of this work? We would state in this connection that our offer is to supply the book at cost for distribution in this manner, so that, say, ten dollars will go very far toward placing the book in the hands of this class who would be so greatly benefited by it, and it would undoubtedly result in many others becoming interested in the subject.

A New Game.—The Phrenological Character Game has just been published by Milton, Bradley & Co., and it constitutes a very attractive game, and one that will prove amusing for an evening party of children or adults. It is so arranged that the size of the organs is established by chance, and the hits are sometimes truthful, and at other times so contrary to the facts, that a great deal of fun is afforded the players, and while the hits are oftentimes very sharp, they are never offensive. It embodies about a hundred quotations from the poets, and is certainly novel in idea and method. Believing it would be a source of entertainment to our numerous readers, we have arranged for the supplying of it, and will send it by mail, postage paid, on receipt of price, 80 cents. It is put up in a neat and attractive box, and is worthy of a wide circulation.

The Health Food Company continue to manufacture their most excellent food products, and to call attention to the same through our advertising columns. All who would live well by eating wisely should send to them for circulars.

Peter Henderson & Co.'s Catalogue seems to contain a list of everything for the garden and in addition to being a very complete catalogue of Seeds, Plants, and Garden Supplies, is a manual of instruction as well. It is, as usual, handsomely illustrated.

Bliss's Handbook for the Farm AND GARDEN FOR 1883.—Many of our readers have come to look upon Bliss's Annual Handbook as necessary as an almanac. Messrs. Bliss and Sons have become widely known on account of the efforts they have made in the introduction of new varieties of farm and garden seeds, potatoes, etc. Their American Wonder Pea, advertised in this Number, is certainly a wonderful pea, as we have proved by a thorough trial. Read their advertisement and give them a trial.

RATES FOR ADVERTISING.

One Full Page	$75.00
One Half Page	40.00
Less than Half Page. .50 cts. a line, agate measure.	
Second or Third Page of Cover, or First and Last Page of Inset	$150.00
Last Inside Page	150.00
Fourth Page of Cover	Special Rates.
Business Cards	75 cts. a line.
Business (Reading Matter)	$1.00 a line.

Advertisements must be sent in by the first of the month, to be in time for the month following. No extra charge for inserting cuts. No objectionable advertisements accepted at any price

BUSINESS CARDS.

The Hammam, a Family Hotel, with Turkish Baths, 81 and 83 Columbia Heights, Brooklyn, N. Y. Three minutes' walk from Fulton Ferry.

Hygienic and Turkish Bath Institute and HOTEL, 13 & 15 Laight St., New York. M. L. Holbrook, M.D., Proprietor. Circular free.

Healds' Hygeian Home, Wilmington, Delaware. See advertisement. Send for circular. PUSEY and MARY H. HEALD, Physicians.

Kilbourn Hygienic Institute. Quiet Home and Skilful Treatment. Kilbourn City, Wis. Drs. McELROY. Send for circular.

The New York Medical College and Hospital FOR WOMEN, and Homeopathic Dispensary for Women and Children. 213 West 54th Street, New York.

Printer and Stereotyper.—EDWARD O. JENKINS, Steam Book and Job Printer, and Stereotyper No. 20 North William Street, New York

Agents Wanted to sell our "**GOOD BOOKS FOR ALL.**" Special terms given. Send for Premium List. Address FOWLER & WELLS, 753 Broadway, New York.

For Sale.—A Fine Telescope, 3-inch aperture, with excellent astronomical mounting, 3 eye-pieces and high tripod. A very superior instrument for general uses. Address the EDITOR of the PHRENOLOGICAL JOURNAL.

GOLD MEDAL, PARIS, 1878.

BAKER'S

Breakfast Cocoa.

Warranted *absolutely pure Cocoa*, from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical. It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

FOOD BETTER THAN MEDICINE

We provide vital, blood-making foods for all diseases. Sufferers from Dyspepsia, Constipation, Nervous Prostration, and Diabetes, should send for our free pamphlets.

HEALTH FOOD CO.,
74 Fourth Ave., New York.

Brooklyn office—9 Clinton Street.
Boston office—63 Commercial Street.

FOOD.

Our Hygienic Foods still continue to be a benefit to all troubled with any degree of Impaired Digestion. All who stand in need of Nutritive Muscle-Making Food, should use them. Send for free circulars.

CHAS. H. HOYT'S SON,
86 HAMILTON STREET, NEW YORK.

Fire on the Hearth

In various forms, viz :—
Air-Warming Grates, Fireplace Heaters, School-Room Heaters, Stoves, Double Heaters. Each combining the ventilation of an open fire with the power and economy of a warm-air furnace. *The best thing in the world for French Flats.*

Open Stove Ventilating Co.,
78 Beekman St., New York.

PHYSIOGNOMY.

Lavater's Essays.

Translated from the German, by Thomas Holcroft; also one hundred Physiognomical rules, and a memoir of the author. Seventeenth edition. Illustrated with upwards of 400 profiles. We are now prepared to supply the English edition of this work, and will send by mail, post-paid, on receipt of price, $4.00.

Fowler & Wells, Publishers,
753 BROADWAY, NEW YORK.

SEEDS, PLANTS, AND SHRUBS.

Publishers' Department.

NOTICE.—The Phrenological and Publishing Business, which has been conducted by S. R. WELLS & Co., is continued under the firm name of FOWLER & WELLS. Correspondents, Agents, and others, when communicating on business matters connected with this office, should address their orders to FOWLER & WELLS, 753 BROADWAY, NEW YORK, and not to any PERSON connected with the office. Postage-stamps received for fractional parts of a dollar. Do not tear them apart, and do not stick them to your letter. Prepay all letters in full with 3-cent stamps. Give name and full address every time you write.

NOTES ON OUR PUBLICATIONS.

THE "HOW" BOOKS.

The publications of the house of Fowler & Wells have the reputation of being practical and useful, giving to their readers information which is valuable, and which in many other cases can be obtained from no other source. Books that answer the question how to accomplish a given purpose, are invaluable to those seeking the special information indicated, and in this connection we wish to call the attention of our readers to the "How" series of books. The latest addition to this list is one of the most popular books we have published recently.

How to Keep a Store (price $1.50).—This book answers many questions constantly arising in the conducting of a retail mercantile business. It answers questions that can only be answered by the light of experience, and the author, Mr. Terry, has had an experience of over thirty years, and having also referred to the experience of others, he covers the whole ground of store-keeping in all of its branches, and the demand that has already been made for this book shows that it is appreciated by merchants and their clerks.

How to Read Character, price $1.25, is a manual of character-reading, based upon phrenology and physiognomy. One who wishes to get a practical knowledge of the subject in the shortest possible time, and without burdening his mind with theoretical speculations, will find this just the work he needs; it is very methodical, and at the same time simple, concise, and popular in style; it is illustrated with nearly two hundred engravings.

How to Teach (price $1.50).—In this work Mr. Sizer has pointed out the qualities which should be taken into account in the education and training of children, caused by the difference in temperament and mental development. One of the greatest difficulties in the training of children comes from not understanding their peculiar characteristics, and this work will aid in this direction more than has ever been done in any other way. The *New England Journal of Education* says:—"It should find its way into the library of every parent and teacher."

How to Educate the Feelings (price $1.50.)—Educational efforts have been mostly in the direction of educating the intellect, while the feelings and affections, which have so much to do with the happiness of individuals and those associated with them, have been entirely overlooked. The English edition of this work has been carefully edited by Mr. Nelson Sizer, and with the addition of many notes and illustrations, gives full and definite directions for the cultivation and restraining all the faculties relating to the feelings and affections. The education of each is considered separately—self-esteem, firmness, conscientiousness, benevolence, cautiousness, etc.; parents and teachers should take advantage of the information given here, which will also be found invaluable for self-improvement.

How to Feed the Baby (price 50 cents).—The third edition of this work has been carefully revised and enlarged. The author, Dr. Page, having continued his investigations and become more fully convinced than ever of the importance of a radical change in the manner of feeding infants, has brought additional facts to bear on the subject, and it is quite safe to say, that if the teachings of this little book were followed by mothers, the amount of sickness, and the mortality among children would be very greatly decreased. There is no reason why children should be more subject to disease and death than the young of the lower animals. A single suggestion of the work in many cases would prove invaluable.

How to Grow Handsome (price $1.00).—That it is possible for all persons to be what is called "beautiful" in form and feature is probably not true, but that it is possible for all people to grow handsome, that is, to improve their personal appearance, is not doubted. This volume containing hints toward physical perfection, and showing how to acquire and retain bodily symmetry, health, and vigor, and secure long life, and avoid the infirmities and deformities of age, is undoubtedly one of the best works on physical culture ever published. It has already had a wide sale. It should be read by ladies especially, and many of the suggestions will be found valuable in the training of children.

How to be Well (price $1.00).—This work on common sense hygiene contains the results of the author's experience from many years' practice in the treatment of acute and chronic diseases with hygienic agencies.

How to Write (price 75 cents).—This is a manual of composition and letter writing. It is not a book of forms like the most of the letter writers, but a book of suggestions in relation to the subject of composition in general, and letter writing in particular.

How to Behave (price 75 cents).—A manual of republican etiquette, and guide to correct personal habits. This is a standard work of good behavior and the habits of good society. It should be placed in the hands of young people, as it is full of suggestions on the subject.

How to do Business (price 75 cents).—A manual of practical affairs and a guide to success in life,

containing also a collection of legal and commercial forms. All people, both men and women, should understand the simple rules of business; this is necessary in order to be successful in the ordinary affairs of life, and this work contains no information but what would at some time be found valuable by every individual.

How to Read (price $1.00).—We have here a volume containing suggestions in regard to the choosing of books and courses of reading, with classified lists of the best works on biography, history, science, poetry, religion, fine arts, foreign languages, etc. It answers fully the common inquiries of reading people in regard to books and authors.

How to Sing (price 50 cents).—A manual on the voice, and how to use it, containing suggestions that have been found invaluable by those desiring to arrive at a point of excellence in singing, also to readers and speakers, and all who would cultivate their vocal organs.

How to Paint (price $1.00).—This is one of the best brief works on the subject of painting ever published, and has had an immense circulation. It is designed for the use of tradesmen, mechanics, farmers, and others, as well as for the professional painter. It contains plain common-sense statements of methods employed by painters to produce specified results in plain and fancy painting of every description, including kalsomining and paper hanging, with formulas for mixing all kinds of paints, description of pigments used, tools required, etc. The knowledge contained in this, will make "every man his own painter."

How to Raise Fruits (price $1.00).—A guide to the cultivation and management of fruit trees, and of grapes, and small fruits. There can be no difficulty in meeting with success in fruit-raising where a person has the necessary knowledge on the subject at hand. This work treats of how to plant, how to trim, how to transplant, etc., with suggestions as to location, soil, selection, disease, cultivation, etc., with directions for layering, budding, and grafting. It is a most complete guide to small fruit culture, with many illustrations and descriptions of the latest varieties. The *Rural New Yorker* says: There are books on fruit culture four times its size, with one half its information.

How to Live (price $1.25).—In this work by that well-known and attractive writer, the late Solon Robinson, we have the subject of domestic economy illustrated by the life of two families of opposite characters, habits, and practices, in a pleasing tale of real life. It is full of useful lessons in house-keeping, and hints on how to live, how to have, how to gain, and how to be happy, including also the celebrated story of "A Dime a Day."

How to be Weather-Wise (price 25 cents).—In these times of weather prophets and prophecies, it is well for the people to know all that can be known in regard to the weather, and in this little book, Mr. Noyes has presented a new view of our weather system, and in plain English has pointed out the indications in regard to the probabilities of the weather, which may be read and understood by any intelligent person.

How to Learn Short-Hand (price 25 cents).—We have here a simple and practical system of short-hand writing, arranged especially for the use of those who desire to acquire the art without the aid of a teacher, and at a price to place it within the reach of all who would take advantage of phonography as a means of taking down important notes, memoranda, etc., as well as those who desire to prepare for the profession of reporting.

How to Magnetize (price 25 cents).—A very complete little manual on this subject, with practical hints on the choice, management, and capabilities of subjects, with instructions as to the methods of procedure. It contains more than has before been published in so small a space.

How to Study Phrenology (price 10 cents).—This answers the question so often asked, as to how to take up the study of this important subject. There are suggestions to students as to what books to read, and also in regard to personal observation, a list of the best books, etc.

How to Conduct a Public Meeting (price 15 cents).—This work contains directions for conducting meetings, both public and private, according to the best parliamentary rules, including rules for order, lists of questions for debate in lyceums, literary associations, etc. It contains as much information on the subject as most of the larger volumes.

We wish to call attention specially to the above works. With very few exceptions every one of our readers would be benefited by owning the entire list of "How" books, the possession of the information would be found useful in the practical affairs of life. Any or all of them will be sent by mail, post-paid, on receipt of price.

The Origin of Species.—This work has now been sent to all whose orders were received in advance of publication. That it may be fairly said to be interesting will be shown by the following extracts from the

NOTICES OF THE PRESS.

"Mr. Ferris, the author of this work, states that 'the doctrine of evolution is founded on facts inconsistent with the old faith,' and that 'evolution of some kind has become the prevailing idea of men of science, and the aspect is that it will generally prevail.' 'Evolution,' he continues, 'divides itself into that of the theist, and that of the strict materialist, and the real controversy is between the two.' 'Among the problems to be solved in this contest are whether matter is self-existent, and from its self-constituted properties originated living forms; or whether it was created and made recipient of inflowing life from a personal and intelligent first cause.' Various theories relating to the origin of animals and men are discussed in this work, and an exposition of the views of the most celebrated writers on such subjects is given, by which the reader can make comparisons and form a theory of his own. The similarity between animals and man is closely defined, and sexual difference between males and females of the kingdom of brute and mankind is treated at length. Physiological, psychological and natural laws and qualities are spoken of in their interrelations and transmittence. The subject is broad and broadly treated by the author, who, however, writes with delicacy as well as earnestness. He seems neither a materialist, sentimentalist, nor strictly speaking a theorist, but rather an analyzer of evidence given in nature and the human race. The book he presents is interesting, promotes new thought and explains many features in science. It deserves serious consideration."—*Boston Sunday Globe.*

"Mr. Ferris has the rare faculty of giving in a brief citation, the gist of the quoted authority's whole argument, and the subject is presented in a style so clear and cogent that it makes an abstruse subject interesting to the unscientific reader."—*Ithaca Democrat.*

"Mr. Ferris accepts evolution in a general sense, but is of opinion that creative intelligence and power were

employed in the production of the successive steps of the process, his suggestions pointing to a possible reconciliation of biological science with an orthodox belief in overruling providence. His book will be found interesting."—*New York World.*

"Mr. Ferris in this book presents a fair and sufficiently full view of the theories and speculations, Darwinian and other, of the origin of species; discovering and cleverly exposing weak points in them all. A vein of dry humor occasionally crops out, as, for instance, in presenting Spencer's persevering, but rather discouraging efforts to frame a definition of life satisfactory to himself. The chapters on the 'Question of a First Cause,' and 'What is Life,' are especially commended to the general reader. The book covers much scientific ground besides that indicated by the title, bringing in review before the reader a variety of valuable information that he otherwise would have to look through many books to find."—*Ithaca Daily Journal.*

"Mr. Ferris' views are certainly worth the careful attention of those who feel the presence of modern scientific thought so much as to be doubtful of their religious ground, as his suggestions point to a possible reconciliation of biological science with a belief in a Providence, who not only creates, but who overrules all nature, animate and inanimate."—*The Kingston Freeman.*

How to Keep a Store. From the *American Grocer.*—We have great pleasure in publishing the following letter which indorses all we have said in commendation of the little work "How to Keep a Store." The writer is one of the well-known Cheney family, whose store at South Manchester, Conn., has been often described as the model retail store of New England. He supplies some interesting facts respecting the author of the volume in question, and nothing could be stronger than his cordial testimony based on close acquaintance with Mr. Terry and his book. Mr. Cheney is himself an experienced and very successful store-keeper, and one may be quite certain of the merit of anything that has his recommendation:

SOUTH MANCHESTER, CONN.,

Editor American Grocer:

I was pleased to see in your edition of October 19 a highly commendatory notice of that model little volume "How to Keep a Store." The author, Mr. Samuel H. Terry, with whom I have the pleasure of a personal acquaintance, speaks from the experience of many years, and that he has practiced his own preaching successfully is evidenced by the responsible position he now holds in the well-known house of Cheney Brothers, silk manufacturers. As a merchant of over twenty-five years' standing, I can heartily indorse the author's statements and recommend his method of "How to Keep a Store," not only to clerks, but to merchants themselves. It is an invaluable book, which I read and have my clerks read to our common profit. To my mind, the most important lesson the author enforces, although not, perhaps, in so many words, is the desirability and necessity of a systematised mode of doing business. Too many country store-keepers fail because they deserve to fail. They do not seem to grasp the idea that there is as much need of system in their business as in that of a large wholesale house. This volume on "How to Keep a Store" strikes at the root of this evil, and I am persuaded will be of great assistance not only to the young clerks behind the counter, but to the merchant at the desk. Yours very truly,

W. H. CHENEY.

Farms and Gardens.—It is safe to assume that a very large proportion of our readers are interested either in farms or in gardens, and with all such we wish to have a word. The time for old-fashioned farm and garden work is past—the people are now on the lookout for new and improved plans, methods, varieties, etc., and in this connection we wish to call attention to our advertisement of farm and garden supplies of all kinds. In the JOURNAL for last month and this will be found a large number of advertisements of seedsmen, nurserymen, florists, etc., offering novelties, as well as the standard varieties. Every owner of a rod of land will gain some new suggestions from the reading of the seedsman's catalogue. They all contain something new and suggestive, and we would therefore recommend our readers to send for them as per terms given in the various advertisements, and we would also recommend the testing of the new varieties. While it is not true that all new things are better than old ones, it is true that the great improvements which have been made in the varieties of grapes and small fruits, vegetables, etc., have come from the introduction of new varieties, and more skillful culture, and we would like to know that every one of our readers were trying something new. The great superiority of the "American Wonder Pea," the new kinds of corn, cabbage, and cauliflower, the great attractiveness of the "Little Gem Squash," the value of the "Manchester," the "Hansell," and other berries, could only be established and taken advantage of by their being widely tried and introduced. A small amount of money spent to start with, will result in your having greatly improved varieties; then by a careful system of exchanging seeds, plants, etc., the whole neighborhood is benefited. We therefore say, send for catalogues, and then send for the novelties and new varieties.

Silk Culture.—The new industry of silk culture will, and is now receiving, very general attention from land-holders, for the reason that fence corners, banks or ravines, and unproductive places can all be made valuable for the production of trees. It is said that the health of both the worm and the trees is very much impaired in foreign countries, from being grown so long on the same ground, and they now seek fresh territory for the propagation of the race. The United States affords the best facilities for this, and silk factories are now springing up at our doors in all directions, making a reliable market for cocoons. In this connection, we would call the attention of our readers to the advertisement of Messrs. Hance & Borden, who are prepared to supply trees in all quantities. They also advertise Capsadell's Guide to Silk Culture, which would be a matter of interest to our readers. See advertisement and send for catalogue.

Small Fruits.—We have received from Mr. G. S. Wales, of Rochester, N. Y., his spring catalogue of small fruits, plants, carnations, pansies, roses, etc. This pamphlet contains, in addition to descriptions and illustrations, a great amount of useful information, in regard to culture especially, with colored plates of some of the new grapes. No matter how many catalogues we had, we should want this one of Mr. Wales for the special information which it contains.

Buist's Almanac and Garden Manual for 1883.—This Annual has been published regularly for more than fifty years. In addition to the usual astronomical calculations, and monthly calendars, it contains a great deal of useful information in regard to garden and farm work, together with descriptions of new and standard varieties of flower, vegetable, and farm seeds.

A Spring Campaign. — While the first of the year is in some respects the best time to canvass for subscribers, our readers and agent-friends should remember that the spring months also furnish favorable time for canvassing and extending the circulation of the JOURNAL. People feel that the pinch of winter is over, and they feel ready for a little enterprise and something new. Taxes have been paid, and money circulates more freely. Our premium offers hold good, and we can continue to furnish back Numbers to the first of the volume when desired.

To Secure an Organ.—On another page will be found an offer to which we wish to call the attention of our readers. We refer to the Companion Organ. There are many families, Sunday-schools, and day schools, who would like to possess an organ, but have not felt able to purchase one on account of the price. We have arranged for the furnishing of a really good, low-priced organ, on such terms as to place it within the reach of all. This Companion Organ is made at as little expense as possible consistent with quality, and is sold at the low price of $20, and we offer it for only twenty-four subscribers to the JOURNAL, or we will supply it for part subscribers and part cash, or will send to any address on receipt of the price, $20. There is not a school, either day or Sunday, which could not be supplied with one of these organs, simply by a little effort on the part of the teachers and children. Let an effort be made—if the people do not wish to subscribe to the JOURNAL, let them pay a small amount of money, and the amount will soon be raised. For a more complete description of the organ, with a cut showing its appearance, terms, etc., see advertisement on another page.

The Sanitarian.—We have received the February Number of this health monthly, published by the author of "How to Be Well," Dr. Fairchild, Quincy, Ill. This Number contains articles on pork eating, laws of life, lager beer and health, besides a great variety of editorial matter. Dr. Fairchild is certainly making a periodical which should do much to enlighten people in regard to the laws of health.

The "Century" for February.—In this mid-winter Number of "The Century" will be found many attractive features. It contains the beginning of a new story by Mr. W. D. Howells, entitled "A Woman's Reason." "The Led-Horse Claim" is continued, as well as Mrs. Burnett's "Through One Administration." In addition to the large number of illustrations accompanying the text, there is a magnificent portrait of Geo. Wm. Curtis, engraved by Mr Cole, which is, we think it safe to say, one of his best. There is a larger supplement than usual of poetry by leading writers, and the Number more than sustains the past reputation of this wonderful magazine.

Wall Paper.—Our readers will find a large and fine assortment of wall papers of every kind and description at the stores of H. Bartholomae & Co., 124 and 126 W. 33d Street, in this city, who are manufacturers and importers, and prepared to fill promptly all orders large or small.

The Richmond Tooth Crown.—We take pleasure in calling attention again to this innovation in Dentistry. Several of those connected with our office have put the claims made for it to a practical test, and have found it to be all that was claimed for it, and that the results were in the highest degree satisfactory. The advertisement will be found on the 4th page of cover, and to this we would refer our readers. To all who are interested will be sent circulars giving more full particulars than could be given in an advertisement. Send address as per advertisement, and mention the PHRENOLOGICAL JOURNAL.

For Sale.—Under this heading in our advertising department, will be found an opportunity for a wide-awake hygienist who would like to take charge of and build up an institution. See advertisement and send for particulars.

Hardy Plants.—We have received from Messrs. Woolson & Co., of Passaic, N. J., their catalogue of hardy perennial plants, bulbs, ferns, etc., a publication of 72 pages, containing a complete list of herbaceous and other hardy plants. It is the most complete catalogue published by any dealer in this country, and through it is placed within the reach of all, plants that are hardy, and will thrive without special care or attention, including the old standard varieties, many of which are overlooked very much by the present generation, together with new and imported varieties. Many of our readers have but little idea of the great variety and beauty of many of these plants; for instance, the iris is known to many simply as the common blue flag, while there are nearly fifty different varieties, ranging in all shades of color, many of them fragrant, and very ornamental. There are also an almost unlimited variety of narcissis, lilies, tulips, ferns, etc., all hardy and worthy of special attention. Every owner of a garden should send as above for this complete catalogue.

Not too Late.—It is not too late to subscribe for the JOURNAL for 1883. We can still supply Numbers from the first of January to all who desire, and we date all subscriptions from the first of the volume unless we receive special directions to the contrary.

Tempting Offers.—We refer to the offers made in this Number of the JOURNAL, by Messrs. B. K. Bliss & Sons, to which we would refer our readers. It seems as though all owners of land would be tempted to try one or more of these offers. In addition to the "Wonder Pea" which they have introduced, we see from their Catalogue a description of "Bliss's American Racer Pea," which certainly promises well, and may yet be a competitor with the other, which has become so well known. Their list also contains descriptions of new varieties of corn, oats, wheat, potatoes, etc. See advertisement and send for catalogue.

Appreciative. — The *West Branch Star* says: "This journal is doing a good work in the ever-expanding domain of self-culture, self-preservation and enlightenment."

Our Little Ones and the Nursery.—Of all the publications issued for little children, we know of nothing that will compare with this. It is most carefully edited, and the illustrations are both artistic and attractive. It is published by the Russell Publishing Co., Boston, Mass., at one dollar per year.

Pomona Nursery.—Mr. Wm. Parry advertises this old established nursery in this Number of the JOURNAL. He has a large stock of new and standard varieties which he offers at reasonable rates. Catalogues sent free. See advertisement.

Roses.—In this Number of the JOURNAL will be found the advertisement of the Dingee & Conard Co. the well-known growers of roses. They have made this a great specialty for many years, and their catalogue gives descriptions of their very large variety. Their new guide to rose culture, a beautiful publication, giving directions for the culture of roses, and descriptions of the different varieties, will be sent free to any of our readers who will send address. See advertisement.

The Spring Catalogue of James T. Philips, of West Grove, Chester Co., Pa., containing descriptions of roses, green-house and bedding plants, trees, etc., has been received. This is a compact, well-printed manual, and without any flourish gives careful descriptions of many varieties, and special directions for culture. We have for several years received roses from Mr. Philips' grounds, and can speak from experience favorable of their excellent qualities, being well grown, and received in good condition. Our readers should send as above for catalogue.

The Hansell Raspberry.—This is the name of a new raspberry being introduced by Mr. J. T. Lovett. It is a red berry, and earlier than any now grown. Its quality is said to be unsurpassed; it is firm, entirely hardy, and will undoubtedly prove a very great acquisition. We shall test it ourselves and would recommend our readers in all parts of the country to give it a trial. What we want is the very best of all kinds of fruits and vegetables, and therefore we feel like encouraging men like Mr. Lovett, who are introducing new varieties, after having tested them on their own grounds. Mr. Lovett is also selling the Manchester Strawberry and all other kinds of new and standard varieties of small fruits. Read his advertisement and send for copy of his catalogue.

Trees.—In this Number of the JOURNAL Messrs. Ellwanger & Barry advertise their nursery business. They are well and favorably known throughout the country for the fine quality of their nursery stock. They offer a large quantity of standard kinds, with many new varieties of fruit and ornamental trees, shrubs, vines, etc. See advertisement and send for catalogue.

Gregory's Catalogue.—We have received from Mr. James J. H. Gregory his large and finely Illustrated Catalogue for 1883, containing descriptions of many new and desirable novelties. Mr. Gregory has a wide-spread reputation as the introducer of valuable farm and garden seeds. See advertisement.

Peter Henderson & Co.—In this Number of the JOURNAL will be found the attractive advertisement of Messrs. Henderson & Co., announcing their special offers in new and scarce vegetables. This is something which appeals to the wants of every owner of land. Who would not raise the best sweet-corn, peas, squashes, watermelons, etc.? Every variety offered in this advertisement should be found in every garden, and we consider that these enterprising seedsmen are doing a great service to the public by placing these within the reach of all. Their beautiful catalogue will be sent to any of our readers who will send to them for it.

"*May your days be lengthened as a friend of humanity.*"

We borrow another letter from our friends, the Health Food Company, and print it here, believing that it will interest all our readers.

Hoffman Ave., East Dayton Bluff, St. Paul,
January 30, 1883.

Health Food Co., 74 Fourth Ave., New York.

I would be glad if you would establish an agency in our city for your valuable foods. I believe there are many who would buy them if they were only here, and be thankful after they had tried them. The Franklin Mills Company have established an agency here. Two of my acquaintances came in Saturday to see if I know anything about the entire wheat flour made by the Franklin Mills Company. I told them I knew of it to my heart's sorrow, and that I had sent to Chicago for a barrel once, and paid $8, and it came near finishing me, and hurt all my family; I finally sold it to a German woman for $3, and thought it a good sale. She said she would mix it with rye flour, and thought she could use it that way. The two parties that came in to see me about the flour said they had purchased a few pounds of the entire wheat flour to try; so they both concluded it was dangerous and would get no more, but send for some of your good flour. I am in usual health, and am so thankful I learned of your valuable foods. Indeed I don t know how I could live without them, and my family enjoy them so much. May your days be lengthened as a friend of humanity, is my prayer.

RACHEL HOPKINS.

Our Cabinet.—We would repeat the invitation to our readers and friends to visit the Phrenological Cabinet when they are in the city. Our rooms are always open, and free to visitors during business hours, and the large number of people who call here, spending, sometimes, hours of their leisure, is the best testimonial that can be given as to its interest to the public. A few days since, a gentleman from San Francisco, who was visiting the city, spent an hour in looking over our large collection of busts, skulls, portraits, etc., and on leaving declared that he had never learned as much in any whole week spent in New York city before, as he had in the hour spent in this office. It is seldom that any further argument is needed to convince one of the truth of phrenology, than that which is afforded by a careful examination of the specimens of crania, etc., consisting of casts from the human head, of persons of every grade of intelligence and morality, together with many paintings, skulls, etc. Our readers are free to visit our rooms, and to ask any questions which may occur to them.

Publishers' Department.

NOTICE.—The Phrenological and Publishing Business, which has been conducted by S. R. WELLS & Co., is continued under the firm name of FOWLER & WELLS. Correspondents, Agents, and others, when communicating on business matters connected with this office, should address their orders to FOWLER & WELLS, 753 BROADWAY, NEW YORK, and not to any PERSON connected with the office. Postage-stamps received for fractional parts of a dollar. Do not tear them apart, and do not stick them to your letter. Prepay all letters in full with 3-cent stamps. Give name and full address every time you write.

Time to Get Ready for It.—Every year, persons write to us: "I am sorry I did not think of the course of instruction in the American Institute of Phrenology early enough to make the necessary preparation to be absent from home during the session, and also plan for the funds necessary to carry me through." We suggest that the first Tuesday in October, on which the Institute will open its session, is not very far off, yet far enough, we trust, for our friends who desire and expect to attend, to make all the preparation which may be required. We have often embarked on a steamboat for journeys or excursions, and in every case some come hurrying at the last moment, and just get aboard, and generally some rush with red faces to enter, and find the gang-plank taken in and the engine started. We like the early and prompt people, whether the matter of interest be a breakfast, a steamboat excursion, or a course of instruction. To any who contemplate attending, or who have a desire to acquire information relative to the course of instruction, topics taught, teachers, terms, time required, etc., it will give us pleasure to send full information. Please address this office, asking for "Institute Extra."

A Suggestion. — Mr. Howell B. Parker, a graduate of the American Institute of Phrenology, has been for a number of years teaching in Georgia, and now writes: "I have the largest and best school that I have ever taught, and I tell you honestly that Phrenology has paid me back in teaching, far more than it has ever cost, and it would be a good investment for every county to have all its teachers take a thorough course in some institute of Phrenology. Seven years ago when I went to New York, everybody, nearly, said I was ruined as a teacher, but now many send to me because of my knowledge of Phrenology. They say, Well, he teaches good schools, and knows how to manage children."

There is no doubt but that the power and influence of teachers would be very largely increased by a knowledge of this subject. How can it be otherwise, when it deals so directly and so practically with the human mind, which is the object which teachers have in view. It has long seemed to those who have a knowledge of the subject, as though it would be impossible to teach as successfully without this knowledge as with it. There is no other system or method by which character in its various manifestations can be properly estimated; we therefore say to teachers who look forward to making their profession a life-work, to by all means investigate the claims of Phrenology.

Alcott on the Use of Tobacco.—The little work published many years ago by Dr. Wm. A. Alcott on the use of tobacco, and its effects on the human system, physically, intellectually, and morally, has had an immense circulation, edition after edition having been called for, many of which have been distributed by those interested in the reforming of others who were addicted to the use of tobacco. Since it was published, many additional facts in relation to its use have been discovered and thoroughly established, and at our solicitation, Mr. Nelson Sizer has supplemented Dr. Alcott's work with very extended notes and additions, about doubling the size of the former work, including all that is new in relation to the subject; also the confessions of a tobacco user, a story of thrilling interest; and the experience of one who gave up the use of it, with portraits showing how he was affected thereby. The new edition is printed on larger and fine paper, well bound in paper covers, and will be sent by mail to any address on receipt of the price, 25 cents. It will be supplied for distribution at the rate of $1 for six copies, or $2 a dozen. This work should be placed in the hands of every boy, whether he has or has not become addicted to the habit.

The Natural Cure, etc.—We feel that an explanation is due to our many friends for the long and continued delay in the publication of this work. It has seemed to be unavoidable. There has been one delay after another, but we are glad to say the author has taken advantage of this, and has made many additions and revisions since the book was first placed in the printer's hands; it is now about ready for press, and will be sent to those who have ordered it in a few days. It is an excellent work, and should be in the hands of all those who are afflicted with any of the troubles to which it is devoted, namely, Consumption, Rheumatism, Bright's Disease, Constipation, Wakefulness, etc.

Horse Hygiene.—We have in preparation a new and important little manual on the subject of horse hygiene, covering ground not covered by any other publication, and one which will be of great value to every owner of a horse. Further announcement will be made of this work in our next Number.

The Origin of Species.—"The New Theory of the Origin of Species" is being well received by the public, and is having many highly commendatory notices, and is receiving attention from thinkers and scholars in all parts of the country. The subject is one well worthy of study and investigation, and all who buy Mr. Ferris' book will be well paid for the time and money spent. See contents and notices of this on another page.

The Plant Fumigator. — Messrs. Ives & Co., of New Haven, Conn., are the manufacturers of one of the most ingenious devices for fumigating plants for the purpose of destroying insects, etc., we have seen. It is a way of using tobacco smoke, and the only way we know of which is likely to prove harmless and unobjectionable to others, and we would that tobacco was used only in this way. Their advertisement will be found on another page.

The American Seed Warehouse.— We have received from Messrs. Cowan & Co , proprietors of the American Seed-House, 114 Chambers Street, this city, their annual catalogue for 1883 ; this is very complete in all its departments, and they offer some very attractive specialties ; a new cauliflower, and a new wax bean ; with new beets, peas, tomatoes, squashes, pumpkins, etc. We would say to our readers, send for this catalogue, and we would repeat what we said last month in regard to our readers trying the new and novel seeds and plants offered by the seedsmen and the florists. They have also a fine stock of thoroughly tested seeds of standard varieties.

Small Fruits, Plants, etc.—Mr. John S. Collins, of Morristown, N. J., sends us his catalogue of trees, plants, shrubs, etc., containing a fine colored plate of the Kiefer Hybrid Seedling Pear.

The Ægis.—This is the title of a paper devoted to woman's interests, published at 209 W. 5th Street, Cincinnati, Ohio, by Annie Laurie Quimby. It contains some excellent and strong arguments on the Woman Suffrage Question, and also considers many other things of interest to women, and to the public in general. It is published at $1 a year. We see no price for single copies, but have no doubt a sample copy will be sent to any of our readers who will address as above.

John Saul's Catalogue.—We have received from Mr. John Saul, of Washington, D. C., his catalogue of plants, etc., for 1883. This contains descriptions and prices of a large number of very interesting plants, and especially is the department relating to hot-house and semi-tropical plants very full. He also issues an interesting rose catalogue.

Price Reduced.—The price of the cast of the head of Charles J. Guiteau was set by the artist who took it at $10, and at this price, copies which have been sold have been paid for. But we have now made arrangements for the selling of this cast at the reduced price of $5, and we are prepared to fill all orders we may receive for it at this rate. It is a head of peculiar interest, and one which should be in the hands of every phrenologist and student of human nature.

The Sanitary Institute for the preservation of health and the cure of chronic diseases is located at 21 W. 27th St., in this city, under the direction of F. G. Welch, M.D. All kinds of hygienic and curative agents are applied, including the various kinds of baths, the health lift, the Swedish movements, massage, galvanism, electro-magnetism, and a new method for the treatment of diseases by statical electricity, called Franklinism. The institution is well worthy a visit by our friends in and about the city who are seeking healthy conditions.

Dress Reform.—The subject of reform in dress continues to attract increased attention, and more women and children are now dressed with a view to the promotion of health than ever before, and this is due largely to the efforts of enterprising ladies like Mrs. Fletcher, whose advertisement will be found in this Number. Our readers should send to her for her illustrated and descriptive catalogue.

Ropp's Calculator. — Believing a work of this nature will be very useful to many of our readers, we have arranged to supply it, to such as may desire it, by mail, post-paid, on receipt of price, only 50 cents for the work bound in cloth, and it is really "MULTUM IN PARVO." See advertisement in this Number, and we think it safe to say it will be found almost indispensable to all farmers and mechanics.

The Phrenological Character GAME is meeting with extended sales among our readers. It is a most pleasing game to those somewhat interested in the subject, and affords an easy way of introducing the subject to others and awakening thought.

The Cayuga Lake Nurseries.—The descriptive catalogue and price list of the Cayuga Lake Nurseries contains descriptions of the new varieties of berries, grapes, ornamental and fruit trees, etc. These grounds are located in a fruit-growing section, and therefore a good place to order from. Catalogue sent free to all. See advertisement.

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Sample Copies.—We frequently receive inquiries for sample copies of the JOURNAL, sometimes from strangers, and sometimes from present readers who desire copies for distribution. We would like to furnish these freely, but the cost of publishing will not admit of this to any great extent; but to such as wish to examine the JOURNAL before subscribing, and to such of our readers as desire Numbers to distribute or lend, we will furnish the January Number, of which a large edition was printed, for ten cents a copy. We wish every one of our readers would send for at least five copies of this Number, and keep them lent out among their friends and neighbors, and we feel well satisfied that this would result in largely increasing our list of subscribers for the coming year. Now is a good time to do missionary work; to sow the seed as it were for another harvest.

The History of Woman's Suffrage.—As the subject of Woman's Suffrage continues to attract attention, so does also this history. The work must be seen, yes, must be read to be appreciated, and we are glad to hear that subscribers to the work are more than pleased. Those who have not before been interested in the subject, express great surprise that the work should be so comprehensive and so full of general interest. Two of the editors, Mrs. Stanton and Miss Anthony, are now in Europe travelling and lecturing and visiting the leaders of the suffrage reform, both in England and on the Continent, and will there gather a great deal of information in regard to the movement, which will appear in the third volume.

Works on Magnetism.—The subject of Animal Magnetism or Mesmerism, Psychology, etc., is attracting continually increasing attention, and thinking people are investigating its claims. Professor Thwing's articles in the JOURNAL are extending this interest, and in this connection we would call attention to the works we have. To those specially interested in the methods of procedure, undoubtedly one of the best works is "Instruction in Animal Magnetism," by Deleuze, price $2.00. To those who are interested in the theories and somewhat in the history of the subject, we would recommend the "Library of Mesmerism," price $3.50. A complete list of the works on this most fascinating subject will be sent to any address on application.

Back Numbers.—We can still supply the back Numbers of the JOURNAL to the beginning of the present volume, and all subscriptions are dated from the January Number, unless we receive directions to the contrary.

Our Phrenological Cabinet is open and free to visitors every week-day, and our readers are cordially invited to make the Phrenological rooms their headquarters during their visits to the city, and it will be found a pleasant and profitable place in which to spend an hour while waiting for a friend.

Traits of Representative Men.—One of the most interesting subjects about which we can read, is that relating to the traits and peculiarities of public men. There have been many volumes of biography and sketches published, but they are usually in a stereotyped, hackneyed form, without sprightliness or interest beyond that attached to the individual. In the "Traits of Representative Men," written by Mr. George W. Bungay, we find much to interest us in the subject of which he treats. He omits what is generally known, and only attempts to give information that is out of the usual way, and thus he helps us to become better acquainted with these men of whom we hear, and of whom we know something. His work can not but be of value when placed in the hands of the young.

Our Premiums.—We still continue to offer a choice between the Phrenological Bust, either the large or small size; Bell's "Anatomy of Expression," or Capen's "Reminiscences of Spurzheim" as a premium to every subscriber to the PHRENOLOGICAL JOURNAL, whether new or old; but in order to be entitled to the premiums, we in all cases require the 25 cents extra. Persons desiring the bust as well as the book premium will be entitled to it by remitting 50 cents extra, making $2.75, and giving the JOURNAL, the bust, and one book premium.

For Girls.—Our "Manual of Health and Hygiene for Girls," by Mrs. Shepherd, is continuing to meet with hearty approval and a more widely extended circulation. We have just published the third edition, which has been revised and enlarged somewhat, and fathers and mothers of girls can not consider their full duty performed until they have placed this book in the hands of their daughters. It is free from the objections brought against some books of this class, and furnishes information which is essential to the health, and oftentimes to the lives of girls and women. It has been widely read by thinking, intelligent people, and we have yet to hear of a single criticism. A descriptive circular with table of contents and the author's address to mothers and teachers, with opinions of representative people, will be sent to any address upon application.

NOTES ON OUR BOOKS.

"GOOD HEALTH."

That many people suffer from avoidable causes of disease is not doubted, and that many people suffer from sickness brought on by want of a proper knowledge of the laws of life and health, is certain. During the spring and early summer months, additional attention and care are necessary in order to preserve our health and strength, and no better investment of money can be made than that spent in purchasing books which will furnish information relating to the subject. We receive at this office, almost daily, the testimony of people who find themselves entirely or comparatively free from sickness and the ordinary ills of life, by following the suggestions given in our publications on the subject of health and hygiene. In this connection we would call special attention to a few of our many works on the subject. The most recent of these is

The Natural Cure of Consumption, Constipation, Rheumatism, Bright's Disease, Neuralgia, Insomnia, "Colds" (Fevers), etc. (Price $1.00). This work, which has been announced for some time, and even promised to our readers, is at last on press, and well under way, and we can confidently say that it is quite impossible that there shall be any further delays, and we expect to be able to fill promptly all orders received after the 25th of April.

How to Feed the Baby (Price 50 cents), by the same author, is being found invaluable in many families. The third revised and enlarged edition has been published, and is being rapidly called for. Mothers who realize the dangers of babyhood during the spring and summer months, are sending for this book, reading it carefully, and heeding its teachings and suggestions. The author is already receiving the thanks of many parents for the information imparted.

Horses: Their Food and their Feet (price 50 cents) is a manual on horse hygiene, by the same author, now in preparation. While it is small and compact, it is very exhaustive on this subject, covering the whole ground philosophically and practically, and it is safe to say that no owner of a horse can afford to be without it; the price will be only 50 cents.

For Girls (price $1.00) is a manual of health and hygiene, or special physiology, intended to supplement the school physiologies, indeed it might even precede them in some cases. If it is true that the present girls are the coming women, it is certainly very important that their health shall be conserved as much as possible; therefore the knowledge contained in this little manual, should be wide-spread; and mothers who would aid their daughters in avoiding some of the pain and suffering to which they may have been subjected, will do well to place this work in the hands of the girls.

How to Be Well (price $1.00) is a manual of common-sense, practical hygiene; a book for the people, giving directions for the treatment and cure of acute diseases without the use of drugs, with general hints on health. Families who would reduce the amount of pain and suffering, as well as doctor's bills, should have this.

A Sober and Temperate Life (price 50 cts.) This volume, containing the discourses and letters of Louis Cornaro, has been out of print for some time, but a new edition is now ready, and those who would strive for a long life such as that acquired by the late venerable Peter Cooper, Mr. Bryant, and others, should read these letters and profit by Cornaro's experience.

The value of Dr. Trall's work is well known; a careful and clear writer, with practical ideas plainly stated.

The Hydropathical Encyclopedia (price $4.00) is consulted in thousands of families, and is considered the standard work on the subject of domestic hygiene.

The Hygienic Hand-Book (price $1.50) is arranged alphabetically, like a dictionary or encyclopedia, and is intended as a special guide for the sick one.

Fruit and Farinacea the Proper Food of Man (price $1.50). This work was carefully edited by Dr. Trall, and it will be found especially valuable at this season of the year, when it will be found desirable to avoid a meat diet.

Digestion and Dyspepsia (price $1.00) explains the physiology of the digestive processes, with the symptoms and treatment of dyspepsia.

The Mothers' Hygienic Hand-Book ($1.00) should certainly be in the hands of every mother, and we would even say of every woman. The directions given for the care of the health of women, and for the care and training of children, and the treatment of their diseases will be found most important.

The Bath (price 25 cents), its History and Uses in Health and Disease, gives special rules for bathing, and directions for taking the various kinds of baths, either as a preventive or as a cure for disease.

Accidents and Emergencies (price 25 cts.) is a guide containing directions for the treatment in bleeding, cuts, sprains, ruptures, dislocations, burns and scalds, bites of mad dogs, choking, sun-stroke, drowning, etc. The timely use of the information contained in it has been in many cases invaluable.

The Hygienic Home Cook-Book (price 25 cts.) is undoubtedly the best book of hygienic recipes yet published. It is not on the philosophy of food, but on its preparation, containing directions for the making of all kinds of bread, mushes, pies and puddings that are hygienic, how to cook vegetables, the preparation and use of fruits, and also how to preserve them. No possible better investment of 25 cents could be made than to send for this little book.

Dr. Shew's Family Physician (price $3.00) is another complete work on the subject of hygiene. The descriptions of the symptoms of various diseases, and their treatment with various remedies, are very complete.

The Manual of Medical Electricity ($2) is one of the best and most practical works on the subject yet published, showing the scientific and rational application to all forms of disease, and the different combinations of electricity, galvanism, magnetism, etc. It should be in the hands of every owner of a galvanic machine or battery.

We have not room in this department to refer to all the works that we have relating to health, but after referring to these we call the attention of our readers to our catalogue for further descriptions of these and other works.

In a Nutshell.—This is the title of the latest work written by Dr. Dio Lewis. The title does not well convey the nature of the book, except as indicating that it is condensed. It is in fact an epitome of the wisdom and observations of the author's whole life time, concerning the numerous topics connected with health subjects, such as climate, ventilation, sleep, food, mastication, digestion, exercise, cold baths, longevity, etc., with illustrated chapters upon curious fashions, etc. The whole written in the Doctor's pleasant, we might almost have said playful, yet forcible manner, and it is a work which even a child might be interested in reading, and would indeed to a certain extent thoroughly understand. It is handsomely published, bound in extra cloth, with gilt edges, and is sold at $1.00.

The publishers desiring to introduce it to the public as rapidly as possible, are willing to supply it to us on such favorable terms as will enable us to offer a copy to any present subscriber who will procure one new yearly subscriber for the JOURNAL at $2.00, between now and the first of June; and to the subscriber is given the choice of the splendid premiums offered to subscribers. This offer is only made to our subscribers. 25 cents extra is required for postage; for $2.25 we give the PHRENOLOGICAL JOURNAL $2.00, the premium book $1.50, "In a Nutshell" $1.00, making $4.50 for $2.25, or, for $1.00 we will send "In a Nutshell" and the JOURNAL to new subscribers on trial for three months. This offer also expires with the first of June. Or we will send the book by mail, post-paid, to any address, on receipt of the price, $1.00.

How to be Weather-Wise.—In this time of prophesying and speculation with regard to the weather, it would be found interesting and useful to our readers to obtain our little pamphlet, called "How to be Weather-Wise," and study the subject up for themselves, and watch the indications of changes in the weather. It will be sent by mail, post-paid, on receipt of price, only 25 cts.

The Best Paint.—In reply to inquiries in regard to the best of the ready-mixed paints, we would say we have tried both of the kinds referred to, and have found the Rubber Paint to be in every way the best and entirely satisfactory. The other paint not proving satisfactory, we have declined to continue the advertisement. Our experience with the Rubber Paint a number of years ago fully established its merits, and we can heartily recommend all readers of the PHRENOLOGICAL JOURNAL to send for their sample card of colors and descriptive book, which will be sent free. Address Rubber Paint Co., 750 Washington St., New York, and mention the PHRENOLOGICAL JOURNAL.

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One Full Page	$75.00
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Less than Half Page, .50 cts. a line, agate measure.	
Second or Third Page of Cover, or First and Last Page of Inset	$150.00
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Fourth Page of Cover	Special Rates.
Business Cards	75 cts. a line.
Business (Reading Matter)	$1.00 a line.

Advertisements must be sent in by the first of the month, to be in time for the month following. No extra charge for inserting cuts. No objectionable advertisements accepted at any price.

BUSINESS CARDS.

The Hammam, a Family Hotel, with Turkish Baths, 81 and 83 Columbia Heights, Brooklyn, N. Y. Three minutes' walk from Fulton Ferry.

Hygienic and Turkish Bath Institute and HOTEL, 13 & 15 Laight St., New York. M. L. Holbrook, M.D., Proprietor. Circular free.

Healds' Hygeian Home, Wilmington, Delaware. See advertisement. Send for circular. PUSEY and MARY H. HEALD, Physicians.

Kilbourn Hygienic Institute. Quiet Home and Skilful Treatment. Kilbourn City, Wis. Drs. McELROY. Send for circular.

The New York Medical College and Hospital for WOMEN, and Homeopathic Dispensary for Women and Children. 213 West 54th Street, New York.

Printer and Stereotyper.—EDWARD O. JENKINS, Steam Book and Job Printer, and Stereotyper, No. 20 North William Street, New York.

Annie Smith, M.D., 154 E. 49th St., City.

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We provide vital, blood-making foods for all diseases. Sufferers from Dyspepsia, Constipation, Nervous Prostration, and Diabetes, should send for our free pamphlets.

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HYGIENIC FOODS.

We manufacture the greatest variety, and best Healthy Foods in the country. Send for free pamphlet.

CHAS. H. HOYT'S SON,
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GOLD MEDAL, PARIS, 1878.

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Breakfast Cocoa.

Warranted *absolutely pure Cocoa*, from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical. It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

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Letters of inquiry are promptly responded to, catalogues, price lists and samples sent, estimates given for Bridal Trousseaux, Mourning and Travelling Outfits, School Girls' and Infants' Wardrobes, and also Upholstery Furnishings for rooms and houses. All orders filled with care and dispatch. Address,

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THE MOST DELICIOUS AND THE MOST POPULAR MAYONAISE FOR ALL KINDS OF SALADS, RAW TOMATOES, CABBAGE, COLD MEATS, FISH, ETC., ever offered for sale.

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COLUMBIA BICYCLES.

Made of the very best material by the most skilled workmen, expressly for road use.

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are the favorite with riders, and their superiority in beauty, structure, and finish is acknowledged by all.

Send 2-cent stamp for new, elegantly illustrated, 36-page Catalogue, with price-lists and full information.

The Pope Manufact'ng Co.,

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BOOKS ON BUILDING, Painting, Decorating, Etc. For my eighty-page Illustrated Catalogue, address, enclosing three 3-cent stamps.

WM. T. COMSTOCK, 6 Astor Place, New York.

Publishers' Department.

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Announcement for July.—In the next Number of the PHRENOLOGICAL JOURNAL several articles of unusual interest may be expected by the subscriber. Among them a sketch of Fredrika Bremer, Sweden's most popular author; an essay on Woman in the Industrial Arts; a thesis by a late student of Harvard College, entitled, The True Basis for the Science of Mind and Study of Character; Contagious Diseases in Paris, by our special correspondent; God, Immortality, and Duty; an illustrated description of the Yellowstone country, and other topics.

Tobacco:—Its effects on the Human System, Physically, Intellectually, and Morally. By William A. Alcott, M.D., with Notes and Additions by Nelson Sizer, author of "How to Teach," "Choice of Pursuits," "Forty Years in Phrenology," etc. Illustrated. New York: Fowler & Wells, Publishers, 753 Broadway. 151 pages, price, 25 cents.

When one takes notice of the extensive and increasing use of tobacco by men, and even little boys, the question is forced upon the thinker: If tobacco is a rank poison, what must be the effect on the present and coming generation of such a use of so poisonous and so powerful a drug? What kind of men can these eight-years-old smokers of cigarettes ever hope to become?

Hundreds find it a habit far too costly for their slender income, and must do without some things they sorely need, in order to continue in a pernicious indulgence. If, in one instance in a million, there could be derived the least benefit, the case would be different; but when it saps health, growth, and memory, shortens life and depletes the pocket, to say nothing of the nuisance it is to all who do not use tobacco, does it need an argument to make out a verdict against it?

The body of the work by Dr. Alcott has been previously published, and thousands of copies have been circulated, and through its influence uncounted numbers of persons have been saved from entering or reformed from the habit.

The new matter embodied in the "Notes and Additions," by Nelson Sizer, who has made a special study of the subject, and for many years has been successful in reforming thousands from its use, gives to the book a new and startling interest. Perhaps the most practical and valuable feature of these additions is a feasible, easy, and certain way out of the habit. The most inveterate slave of tobacco may herein learn how to give it up without difficulty or a feeling of loss, and become thoroughly restored in habit and health.

THE AMERICAN INSTITUTE OF PHRENOLOGY opens its Annual Session the first Tuesday in October. "Institute Extra," giving full particulars, sent by FOWLER & WELLS, New York.

End of the Volume.—This No. closes the 74th volume of the PHRENOLOGICAL JOURNAL, and with the July No. is commenced the 75th volume, so that now is a good time to subscribe. Subscriptions can date from July No., or we can, when desired send from the January No. The terms, premium offers, etc., remain the same, that is, yearly subscribers from July are entitled to the same premiums as though beginning with the year.

"On Trial."—As a means of introducing the JOURNAL, we offer it "on trial" for six months at the regular subscription, which would be $1 for six months. This gives all a chance to try it, and our friends a chance to introduce it.

To Agents.—We would call the attention of agents to the "trial trip" offer made on the JOURNAL, and would say that two subscribers for six months will count on the premium list the same as one yearly subscriber. All premium offers hold good.

A Good Letter.—The following letter tells its own story:

"TERRE HAUTE, IND., *April* 24, 1883.

"FOWLER & WELLS, GENTLEMEN: Inclosed I hand you, as per your catalogue, $1.50, for a copy of your 'How to Keep a Store.' Ordinarily, one would suppose that I knew *something* about the same subject, having had twelve years' experience as a merchant; but we are none of us, ever *too old to learn*. So, as the idea is a novel one, as well as promising instruction, I am induced to secure a copy of the book referred to. It might be a source of satisfaction to you, possibly, to add that I may be more or less indebted to you for my past success in business, viz.: Seventeen years ago, just after my discharge from the army, the all-absorbing question was no longer, *Soldier, what next?* My father, who was an earnest advocate of the science of phrenology, and a subscriber to the JOURNAL, and had purchased and perused several of your works, was induced to have you make a chart of my head from photograph, and you recommended mercantile pursuits, so I *sailed in*, and for the past twelve years have been in my present business, at the head of the house.

"But for your timely assistance I might have been *floating* yet. Many a man floats about aimlessly for years without striking his element. Pardon my lengthy letter.

"Very respectfully, "H. S. RICHARDSON."

How to Feed the Baby.—The third revised and enlarged edition of this work is being rapidly sold, and the books are proving a blessing to the parents and children wherever they are read. That the work may be considered worthy of a wide circulation may be seen from the following, selected from many Notices of the Press:

"The book should be read by every person who has the care of children, especially of infants, and those who have the good sense to adopt its suggestions will reap a rich reward, we believe, in peace for themselves and comfort for the babes."—*Boston Journal of Commerce.*

"We wish every mother and father too could read it, as we believe it is founded on common-sense and the true theory of infantile life."—*Eve. Farmer*, Bridgeport, Conn.

"This treatise ought to be in the hands of young mothers particularly, who might save themselves a deal of trouble by studying it."—*Brooklyn Eagle.*

"Should interest mothers; for it is a really scientific and sensible solution of the problem of health and happiness in the nursery."—*Courier*, Buffalo, N. Y.

"'How to Feed the Baby' ought to do good if widely read; for there can be no doubt that thousands of babies die from ignorance on this very subject."—*American Bookseller.*

"It is as odd as its title, and is funny, interesting, entertaining, and instructive."—*Times*, Biddeford, Me.

"We know this manual will be welcomed by many mothers in all parts of the land, as one of the most important questions with parents is how to feed the baby, to promote its health, its growth, and its happiness."—*Christian Advocate*, Buffalo, N. Y.

"Our author makes plain how infantile diseases may, in great measure, be avoided, and infantile life made as free and joyous as that of the most fortunate among the lower animals."—*Central Baptist.*

"Dr. Page is a benefactor of this age, in having made it a special study—the care and feeding of the infant."—*People's Journal.*

"If mothers would read this book, we think fewer infants would 'make night hideous' with their cries."—*Homestead.*

"'How to Feed the Baby' should be taken home by every father to the mother of his children, if he values quiet nights, and is not inclined to pay heavy doctors' bills, or bring up sickly children."—*Food and Health.*

"It is safe to say that in proportion as this book is circulated and its teachings followed, will the rate of infant mortality decrease."—*Christian Standard.*

It is a handsome volume of 160 pages, bound in heavy paper covers, and sold for only 50 cents. In extra cloth covers for 75 cents; by mail, post-paid. Address this office.

Red Ink.—Some of our correspondents send us letters written in red ink. Now in the interest of good eye-sight we must protest against this. Red ink, and especially pale red ink, is very trying to the eyes under the best of circumstances, and very hard to read, and to one who has hundreds of letters to read daily, and often by a dim light, or a gas-light, it is especially trying, therefore we would ask our readers to write with good black ink; even a lead pencil is better than red ink. State what is wanted briefly and concisely, and your letters will receive prompt and careful attention.

The Century Magazine.—The May *Century* makes appeal to a large variety of tastes. By way of history there is a paper on the Aborigines and the Colonists, by Edward Eggleston; H. H. has a paper entitled, "Father Munibero and his Work," relating to the Spanish missions in Southern California; and Frank H. Cushing one on his adventures in Zuni. There is a sketch of Cardinal Manning, with fine portrait; an illustrated paper on the Philadelphia Public Library; with stories and sketches of interest; with a spicy letter from Oliver Johnson in reply to Dr. Bacon's attack on the Garrison Abolitionists, etc.

St. Nicholas, for May, is a Spring No. with much that is suggestive of out-of-door life, etc. This magazine continues to hold its place with the young people, and indeed we can hardly imagine we would be willing to give it up, even after the children become adults.

The Southern Broad-Axe.—This is the title of a live paper published at Nashville, Tenn.; is specially devoted to the Temperance question, and also to the right side of every reformatory subject. It is probably the largest prohibition paper published in the South. The subscription price is $2 a year. A sample copy will be sent to any of our readers who will write to the above address.

Daniel F. Beatty's Name must have become very familiar to our readers from the appearance of his advertisement in our columns. Mr. Beatty is certainly a wide-awake business man, and knows how to put a good article before the people. He is shipping a large number of organs daily, and running his factories at night in order to fill his orders promptly. The Washington, N. J., *Star* says: "The Hon. John Hill, member of Congress, of Boonton, N. J., accompanied by his wife, visited the Beatty organ factory at Washington, N. J., on Tuesday last. He expressed himself not only gratified, but astonished, at the extent and activity of Mayor Beatty's organ works. The prejudice which every young business man has to confront, whose success is rapidly achieved, is giving way before Mayor Beatty, and his wonderful business capacity is coming to be generally recognized and acknowledged. We clip the following editorial from last week's *Christian at Work*: 'Hon. Daniel F. Beatty, whose indefatigable pluck has raised him from a poor boy to a reputed fortune of half a million, is an example of what can be done by fair dealing and persistent effort. He has the largest organ factory in the country, and makes from fifty to sixty instruments daily.'"

Chastity.—We can send Dr. Dio Lewis' work on chastity by mail, post-paid, for $2.00. It is a work which should have a wide circulation, and be read by every intelligent man and woman.

Boots and Shoes.—This is the title of a monthly journal devoted to the interests of those who retail these necessary articles, and we do not see how any merchant who deals in them can afford to be without it. It is published in handsome form, with illustrations, at $1.00 a year. A sample copy will be sent free to any of our readers who are merchants, by the publisher, Mr. M. T. Richardson, address 47 Barclay Street, New York.

The Otis Parlor Bed.—This is by far the most perfect folding-bed we have ever seen. It is simple and complete. It is not, in fact, a folding-bed, as it simply turns up on the side after the bed is made; and so easily that a child can do it. It has most perfect ventilation when up.

It is designed to meet the wants of the large class who have sleeping-rooms that it is desirable, either in summer or winter, to use also as sitting-rooms, and those who reside in flats or floors where economy in space is desired, as well as for hotels and boarding-houses who have a large demand for rooms that may be used as both sitting and sleeping rooms. We would call the special attention of the proprietors of health institutions to this bed, as something that will meet their wants. For descriptive catalogue address the Otis Parlor Bed Company. See advertisement.

MR. PARKER'S LETTER.

Wellington, Lorain Co., Ohio, *Dec.* 18, 1882.

HEALTH FOOD CO:—Gentlemen—During the past three and one-half years you have seen and heard from me occasionally, nor can you forget my sorry figure, gaunt, sallow, and wretched, from our common disease dyspepsia.

After three and one half years of Health Food, "Richard is himself again." I weigh in dress-suit 165 pounds; can digest anything; sleep well; no pains or aches; and *am well*; not a happier man living than I, and I place it all to the credit of the Health Food Co. Although having used their products so long and almost continuously, I love them still. They are all (to me) palatable, and although quite well, yet I cling to their Universal and Whole Wheat Gluten. I am grateful to God that He made them instrumental in making me whole; and many in my circle of acquaintances, as well as strangers, bless the *same means* which have restored them to health. Long live the Health Food Co.

S. S. PARKER.

A New Premium.—Among the useful articles that should be found in every household is a combined barometer and thermometer, and in this connection we wish to call attention to what is known as Pool's signal service barometer, or storm-glass and thermometer combined. It is one of the best articles of the kind manufactured. It is handsomely finished in black walnut with silver plated mountings, being beautiful as well as useful, and is found to be very accurate in foretelling the changes of the weather. It will detect and indicate correctly any change in the weather, twelve to forty-eight hours in advance. It will tell what kind of a storm is approaching. *Farmers* can plan their work according to its predictions. It will save fifty times its cost in a single season. There is an accurate thermometer attached, which alone is worth the price of the combination. It usually sold at the retail price of two dollars, but we will send one as a premium to any person who will send us two subscribers to the JOURNAL at two dollars each, giving to the subscribers the premiums offered by adding twenty-five cents to each subscription.

For Sale.—Dr. Cunningham advertises in this Number of the JOURNAL a manikin and other lecturing apparatus for sale. Our lecturers should write to him for terms.

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Kilbourn Hygienic Institute. Quiet Home and Skilful Treatment. Kilbourn City, Wis. Drs. McELROY. Send for circular.

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MRS. LANGTRY—FROM A PHOTOGRAPH BY VAN DER WEYDE LONDON.

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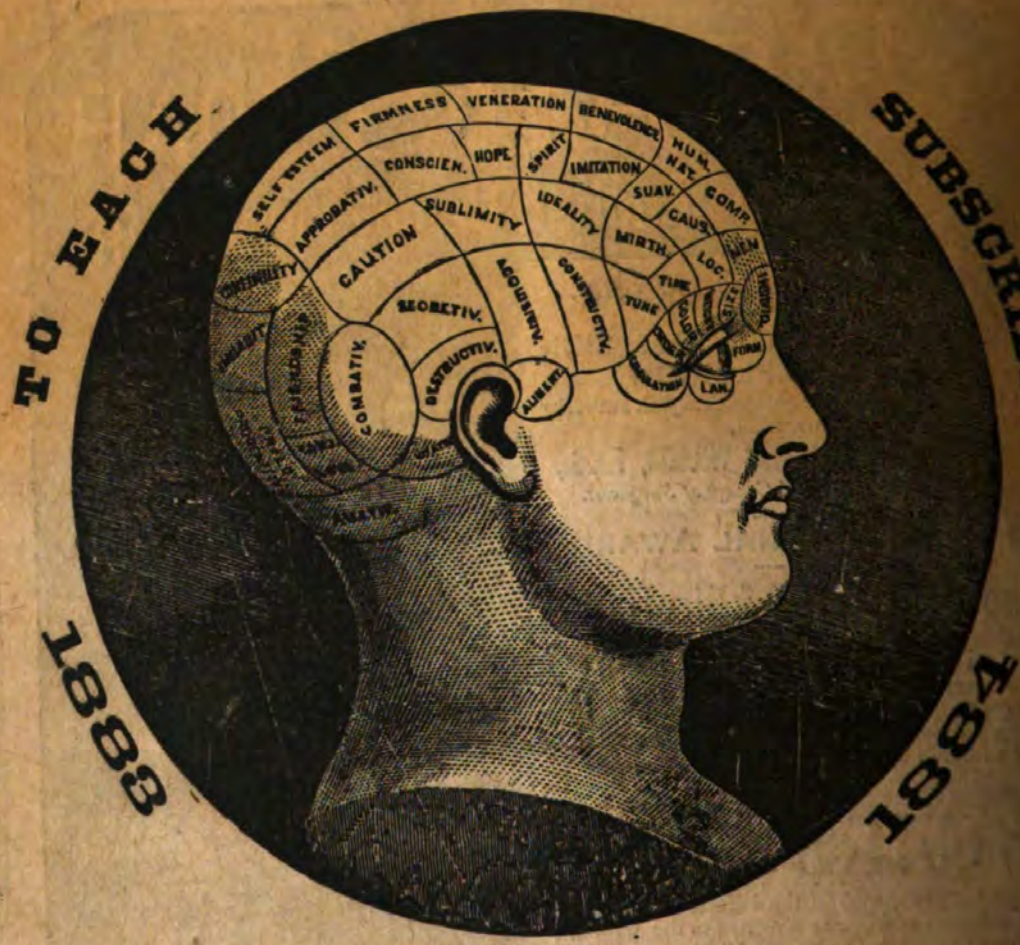

TO THE

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JULY TO DECEMBER, 1883.

H. S. DRAYTON, A.M., AND N. SIZER, EDITORS.

NEW YORK:
FOWLER & WELLS, PUBLISHERS, 753 BROADWAY.
1883.

"Quiconque a une trop haute idée de la force et de la justesse de ses raisonnemens pour se croire obligé de les soumettre a une expérience mille et mille fois répétée ne perfectionners jamais la physiologie du cerveau."—GALL.

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"To Phrenology may be justly conceded the grand merit of having forced the inductive method of inquiry into mental philosophy, and thus laid the permanent foundations of a true mental science."—*Encyclopedia Britannica*, 8th Edition.

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July, 1883.

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THE PHRENOLOGICAL JOURNAL AND LIFE ILLUSTRATED.

VOL. 77. 1883.

NUMBER 1.] *July, 1883.* [WHOLE No. 525.

MODERN DRAMA AND SOME OF ITS REPRESENTATIVES.

JAMES E. MURDOCH—JOHN M'CULLOUGH—CLARA MORRIS.

MANKIND has always shown a deep interest in the drama. As far back as authentic history reaches, we find that the "mimic stage" had a place among the institutions of social life. With the progress of civilization, the field of dramatic representation has expanded, and to-day the proper understanding of a well-written and well-acted play is regarded as an evidence of culture.

With the growth of public interest in the stage, many corruptions have crept in.

Caricature, buffoonery, burlesque have been found to "draw" with the masses,—in other words, to be pecuniarily profitable, and theatrical managers, for the most part, viewing the stage as a means for money-making, have aimed to supply that sort of tragedy or comedy, burlesque, or variety show which would fill their theaters, little regard being paid to literary merit or moral tone in the play. The very few honorable exceptions who have shown a desire to furnish a class of dramatic performance which should illustrate the works of great authors, like Shakespeare, Goldsmith, Sheridan, Bulwer, have found it quite necessary to procure actors of high reputation to insure an audience that would pay expenses.

To be sure, a play of high character needs actors of ability and experience for its fair interpretation, and it may be that the managers of to-day are not altogether to blame for the want of interest on the part of the public in Shakespeare and Bulwer. Those who would care to attend a representation of Hamlet or Richelieu are for the most part educated and cultured, and a small fraction in a large community; and they would go more to be instructed than simply entertained.

Unless, therefore, actors of positive reputation were announced for the leading parts, such people would not be found in the seats, and their places on such an occasion are not usually filled by the lovers of caricature and buffoonery.

There has grown within a few years, among the educated in our larger communities, a disposition to form associations for the study of the drama, and the results of such study tend to a more exacting expectation from those wearers of the buskin who essay the parts in classical plays. In America there are men and women who can sustain the ordeal of criticism by their rendering of a classical personation. We can count them on our fingers, and their excellence is the result of devotion to dramatic art.

Among these are the persons whose portraits accompany this article. The reader has perhaps seen one or all of them on the stage; if not, he has heard of them often enough, and has no doubt concerning their merit.

Mr. Murdoch is an aged man, long ago retired from the scene of many well-earned testimonials to genius and art, yet the part he took at the Dramatic Festival held in Cincinnati last spring, indicated that his dramatic power, despite his age, had suffered little diminution. That subtile magnetism with which the great actor fascinates his audience had not departed from him. He was Murdoch still.

Miss Morris and Mr. McCullough are active members of the "profession," and deserve commendation for their earnest endeavors to sustain the respectability of the modern theater, or, at least, to prevent its falling altogether into the jaws of the Moloch of claptrap and questionable burlesque.

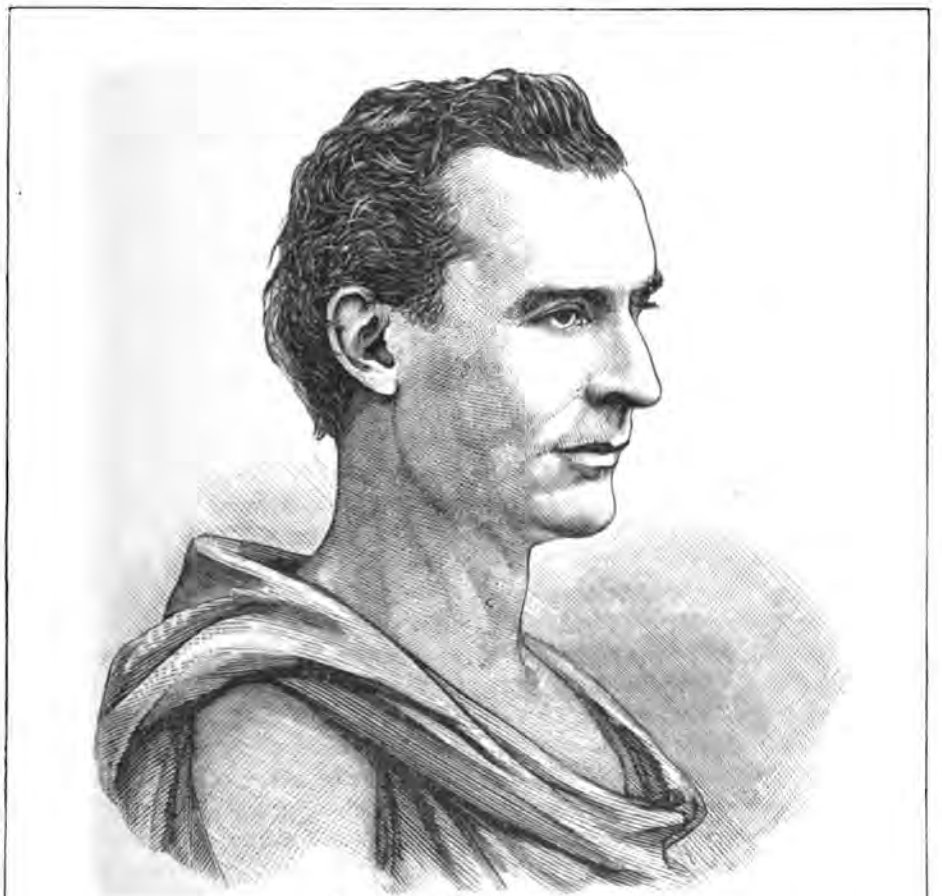
The portrait of Mr. Murdoch indicates a person with a strong predominance of the motive temperament, which is the basis of restless energy and vigorous activity; he has also a considerable degree of the mental temperament, which gives a studious cast of the mind, and a great deal of susceptibility to mental impressions. In early life he was distinguished for muscular power and for a restless mental enthusiasm. Age has increased his moral and spiritual developments, while the intellect also has been ripened and strengthened.

There are three or four characteristics which have been the source of his success as an elocutionist, or orator; and as an actor. The reader will observe the immense development across the brows, showing great length from the opening of the ear to that region; this development gives a bright, quick, clear, practical cast of mind, the desire for knowledge, the ability to gather it and retain it, and the power to reproduce acquired knowledge on the instant. Had he been a lawyer he would have been remarkable for his power of extemporaneous debate and sharp repartee. Nothing escapes his notice; in a landscape that to most people would seem sterile and uninteresting, he would

see a thousand forms or variations of shades. Even a dead tree, whose gaunt limbs are outlined upon the sky, to him is full of meaning; he thinks of its history, the glory of its youth, of its tottering age, and its not distant decay; and thus he would derive sentiment from what appeared an unpromising source.

special use. His Comparison is enormously developed, which gives him a spirit of sharp distinction; he recognizes shades, resemblances, or condition, and is not inclined in his mental action to generalize, but rather to specialize.

He has wonderful knowledge of human character; the length of line from the



JOHN MCCULLOUGH AS BRUTUS.

With his fine development of Language he expresses his knowledge with readiness. He ought to be a great story-teller; as a man of years he should be full of anecdote, and his stories should be pertinent, because his memory and power of comparison are such that he will select an anecdote for any occasion, that will seem to have been made for that

opening of the ear to the upper central part of the forehead where it joins the hair, is long, and the prominence at that point is the location of the organ by which human nature, disposition, character, and motive are intuitively discerned. He has always been remarkable for that, and it is this faculty which gives him a taste for the drama, and for elocutionary expres-

sion of character and feeling. He is always sympathetical; any man's friend who is in trouble; and there is also a religious sense which gives him a reverence for the higher Power.

He has very strong Firmness, which renders him unflinchingly persistent when he deems his course to be right. He has independence of spirit, but a great sensitiveness to the good or ill opinion of others, so that while he feels his own power, he is inclined to defer to the wishes, prejudices, preferences, and even caprices of others; he is a man who is very tender in his affections and sympathies and calculated to win the personal confidence and friendship of any one who can appreciate his type of character and life.

The social brain is strongly marked; he is a natural lover, and there is such steady loyalty, sincerity, steadfast truthfulness in his affections that he wins and holds friends; the element of conjugal love is uncommonly well marked in him; and his whole history is believed to be an honorable exemplification of the integrity of that part of his nature; and so far as we ever heard, no word, question, or criticism has ever been uttered disparaging the loyalty of his love, or the correctness of his conduct in the domestic sphere.

That is a very good and strong face; it is the type that belongs to old age and temperance, not in eating and drinking only, but in self-control in most respects. He is not likely to be affected with weakness of the heart's action; is likely to attain to a great age, and not to die suddenly.

That is the kind of head for an editor and teacher, especially a teacher of physiology and pathology in a medical college. It is the right head for a historian, and is adapted to oratory, and to the expression of feeling and sentiment as an actor; but he is not a copyist, and can not well act a part which he may not honestly adopt and feel as his own. A man with large imitation and less individualism than he, can adopt any character from grave to gay, can play the saint or villain, and "frame a face to all occasions"; but Murdoch must believe in what he is doing, and do it from a hearty approval and sympathy with the thing done.

JAMES EDWARD MURDOCH was born in Philadelphia on the 25th of January, 1811. He was intended by his father for his own business, that of account-book making; but as he early manifested a taste for reading and study, he was permitted to follow the bent of his mind. At fifteen years of age he announced his purpose of becoming an actor, although he had witnessed but one theatrical performance, Shakespeare's "Much Ado About Nothing," and was permitted to enter at once on a course of training in the dramatic art. In a few years he had made such progress that he was urged by teacher and friends to enter upon his public career, and he accordingly appeared, in the fall of 1829, at the Arch Street Theater, Philadelphia, and was received with decided marks of approval. He selected parts in minor plays, discreetly preferring to render them acceptably, and so gradually develop his powers before attempting a great personation. In 1838 he appeared in the Park Theater, New York, in support of Ellen Tree. Three years later he withdrew from the stage, to devote himself to the teaching of elocution—a vocation which appears to have possessed a great charm for him, and which he interrupted at intervals, to accept an engagement for a professional tour in this country or England.

In October, 1845, he acted in Hamlet, before large audiences, in the New York Park Theater, each time winning enthusiastic applause by the maturity, power, and spirit of his conception of Shakespeare's masterpiece. The success of this performance proved the wisdom of the actor in advancing slowly from the minor to the greater parts, in not venturing to interpret publicly a difficult character until he had fully mastered it in detail. "He fairly carried the weanling lamb be-

fore he attempted to shoulder the bullock."

Earlier in his career he fell in with Mr. Forrest, at Augusta, Ga., who, discovering his qualities, requested him to play as Pythias to his Damon. The manager of the theater protested that Murdoch was "too young and slight" for it, but Mr. Forrest insisted, in his peremptory fashion, and "a well-won and well-preserved favor with the public confirmed this friendly confidence." Mr. Forrest used his influence in behalf of the young actor, toward securing him a favorable hearing in the highest walks of the drama.

As a teacher of elocution, Mr. Murdoch formulated a system, with the physiology of the vocal organs as its basis. He was intimately acquainted with Dr. James Rush, of Philadelphia, the author of "The Philosophy of the Human Voice," and from him many suggestions were received, which he applied in his teaching. In connection with his professional labor he has lectured in different parts of the country, before lyceums, colleges, and other institutions, and before select audiences in the leading cities, and probably more than any other man has contributed to the development of the interest in elocutionary studies, which is a feature in cultivated circles. During the civil war Mr. Murdoch gave elocutionary entertainments throughout the North, in aid of the Sanitary Commission, and devoted himself to the care of sick and wounded soldiers, and served for a while on the staff of Gen. Rousseau. At present he resides in the suburbs of Cincinnati.

JOHN MCCULLOUGH. The portrait of Mr. McCullough, as we have it, is strongly marked in physical and phrenological respects. It shows a tough, enduring type of organization, in which there are elements of delicacy and susceptibility. The brain is of good size, developed well in the base, and also in the upper lateral parts, especially in the temporal region. The face has well-marked and powerful features, yet over it is drawn a veil, as it were of transparent silk, which softens the massive and rugged characteristics and imparts an artistic or refined effect. In Edwin Booth's face there are striking esthetic qualities, and to us Mr. McCullough's features are not unlike Mr. Booth's. The contour of the forehead

CLARA MORRIS.

shows a fair blending of the perceptive and reflective organs, ability to estimate facts according to their special constitution, and to apply them in the deductive sense.

At the upper part of the forehead the fullness indicates his possession of more than average capability in comprehending the motives and purposes of others—of reading between the lines of the living biography of men. We judge that the head is broad over the eyes. Form and Order appear to be large, and Mirthfulness also appears prominent—a develop-

ment which is not often seen in the typical tragedian's head. The height of the head above the ears shows a strong personality, with not a little of ambition and sensitiveness. He is courageous, but not particularly self-assured; not the man to talk about himself and vaunt his performances. He is rarely sure at the outset of the result of an impersonation, but throws himself into a part, however often it may have been repeated, with earnestness, determined to do his best, and, if possible, impart to his rendering a new and better phase. He is endowed with organs which render him cautious and guarded, yet the executive faculties impart to his disposition characteristics of emphasis and spirit, rendering him prompt to resent injury, especially that which affects his reputation and his social connections. He likes notice, favor, and applause, but is not likely to be spoiled by admiration.

John McCullough comes of Irish parentage. He was born about the year 1837. In 1862 he was poor and unknown, struggling with the asperities his profession throws around the beginner, and playing minor parts in Philadelphia. He then gave no promise of the eminence to which he has since risen, but he had proven himself a careful, conscientious student, and by his attention to his studies had attracted the attention of his manager. One day when Mr. McCullough paid a visit to him he met Mr. Edwin Forrest, and was introduced to him. He had always looked up to this great actor with reverence and awe, and to be made acquainted with him, and allowed to take him by the hand, seemed to the struggling young man to be a very high honor. The next day he met Mr. Forrest on the street; and, to his surprise, the great actor stopped and spoke to him. They walked along together, and Forrest suddenly asked Mr. McCullough if he would like to go to Boston in his troupe.

"I hear very good accounts of you," said he, to the astonished young man. "I hear you are careful and studious, and if you will go I think I can obtain your release from your engagement here."

Eagerly accepting the offer, Mr. McCullough hurried off, with Forrest's promise to communicate with him in a few days.

"I waited ten days," said Mr. McCullough; "to me ten days of hope and anxiety, ten days of wretchedness, but heard nothing. One night I was playing, when word came to me to go to the box-office, where Mr. Forrest was waiting for me; and when I arrived there he told me my engagement had been canceled, and that I must meet him in Boston on the following Tuesday. He asked me if I had money, and when I told him I had a little, he pulled out some, and made me take it."

Mr. McCullough went to Boston, and found he was cast for Pythias to Mr. Forrest's Damon. Here we notice a repetition of Mr. Forrest's relation to Mr. Murdoch. He learned the part, and went to the first rehearsal. To his surprise Mr. Forrest didn't know him, but still he played until he reached a passage which he asked leave to play a little out of the orthodox method.

"Play it as you always have," ordered Forrest, peremptorily.

Mr. McCullough explained that he had never played it before, to Forrest's amazement, who complimented the ambitious young man upon his ability, and then and there was cemented a friendship between the two that lasted until nearly the close of Forrest's career.

Having thus become attracted to the promising young actor by the merest accident, Forrest, whose idiosyncrasies of character had scarcely a parallel in any actor of the time, seems to have adopted him in his mind's eye at once. With the same marked autocracy of temperament, the language of which signifies, "I know what I am about," the "old man," at his first performance with him, threw young McCullough into the brilliant part of Pythias to his Damon. He had found a dramatic kindred soul, but not a rival; therefore he at once became attached to him. He had found a kindred physiological type, yet still not a rival; therefore in that, also, McCullough was the very one

to transmit the American Damon of the stage to another generation.

Edwin Forrest was one of the most remarkable physiological specimens of men that ever trod the stage. The first and crude conception of him was what he himself wrought in the public mind in such characters as Jack Cade and the Gladiator. In them he moved the populace as no other man could. In Great Britain, performing in this primitive role, when Europe was astir with revolution, he would have been a revolutionary hero, and a most dangerous man to the Government. Hence, Macready was the more acceptable there, not merely because he was "to the manner born," but because he was more in harmony with British ideas and culture. But Macready was not the superior dramatic subject, as he certainly was not nearly so remarkable a physiological one. This Ajax of the stage was, so to express it, endowed with the genius of size. There was a metaphysical Forrest to be elaborated. It was that which made the man a complex problem, and it was only to the subtle critic that this metaphysical Forrest was palpable. On the other hand, Macready was not endowed with the genius of size, but was the martinet of the stage.

Notwithstanding their structural difference, Forrest was more akin to Edmund Kean than to Macready. Hence, as culture unfolded him he rose to the personifications of Richelieu, Lear, and Coriolanus. His genius at length took him above Jack Cade, the Kentish bondman, and Spartacus, the slave gladiator. Going back to old Rome, it inclined him to Coriolanus instead of Spartacus; and going over to England in his later aspirations, he renounced Jack Cade in his thoughts of an Oliver Cromwell, who was at once the soul of a great constitutional revolution, and finally the autocratic embodiment of a famous commonwealth. Such a character would have suited Forrest beyond all parallel; and it is said that before his death he had collected eleven plays of the Great Protector, at an immense cost, in working out an idea that he did not live to realize on the stage. Evidently at the latter period of his life he saw another dramatic programme to be worked out, at which, however, he could hint, but could not consummate.

Mr. McCullough has all the physical force and intellectual daring which enabled him on a first performance to withstand the shock of Forrest's Damon. He is in the prime of life, well preserved by temperance and a generous disposition, which is always favorable to healthfulness of body and soundness of mind. He is five feet eight inches in height, has a large, well-developed chest, a big heart to send the hot but healthy blood in swift currents through his veins; powerful shoulders, and a large, muscular neck. We are inclined to think that physiologically considered, he is one of the best endowed actors living, possessing a most available type of structure, so that he can play his master's Gladiator, while he is fitted to parts that the physique of Forrest forbade.

THE part that woman has borne in American drama for many years has been singularly wanting in strength and high culture. It may be due to the attractiveness of the light and easy rôles provided by the prevailing type of social comedy, or it may be on account of the severe thought and protracted study imposed by the classical playwright, that scarcely one woman in a thousand of those who walk the stage dare venture to personate a character in high tragedy. Of the less than half dozen who may be said to sustain the leading female part in a standard dramatic representation without exhibiting too great a contrast of weakness with the skill and vigor of such actors as Booth, Salvini, Barrett, and McCullough, Miss Clara Morris certainly takes a foremost place, and is worthy the encouragement she has received for the faithful and persevering study she has given to the characters she essays.

In her organization we perceive at once the characteristic workings of the motive

temperament; the large frame, wide jaw, prominent cheek-bones, and salient brows are co-ordinates of the type. She inherits from her father, or the masculine side of her mother's family, traits of disposition by which she is most commonly known. Decision, perseverance, aspiration to accomplish whatever she undertakes, and executive capacity, are among the elements especially marked in her every-day life. She is firm even to inflexibility, and definite in the expression of her conclusions. She is a sensitive, excitable woman, but possesses remarkable control over her feelings. Her affections are warm and lasting. It is in the department of her attachments that she will least brook offence or injury, and yet exhibit the tenderest consideration and make the broadest allowance. It is probable that one might search the dramatic field and not find another woman who has less trouble in her relations with managers and actors. She is appreciative of her rights and courageous in demanding them, yet not the woman who frets and chafes and scolds when she has been aggrieved. She is disposed to set about obtaining redress in a quiet, resolute fashion, and consequently she rarely has occasion to demand justice. Managers know as a rule that she will meet her engagements, and that she expects them to perform their side of a contract faithfully. That is a firm mouth, but also a kindly-natured one. She is sympathetic, generous, and altogether reciprocal in her social connections. We notice that the organ of Form is remarkably well developed, giving her an exceptional understanding of the relations of configuration in material objects. She could have become an excellent artist, having ability to reproduce with great fidelity any object in nature.

The brief sketch of Miss Morris' career as an actress is adapted from a recent notice of her given in a contemporary. She was born about the year 1846 in Cleveland, Ohio, her parents being in humble circumstances. Having shown talents for recitation and acting, she prepared herself by study and practice for the stage, and in 1869 was engaged to play in minor parts at Wood's Theater, Cincinnati. Her performance was acceptable, and she grew in favor with the Cincinnati theater-goers. Later she came to New York and was engaged by the manager of the old Fifth Avenue Theater. Here she was associated with a company of talented actors, and after awhile an opportunity occurred which brought to view her peculiar dramatic genius.

She was called upon to fill the place of the leading lady of the company at short notice. The part was Anne Sylvester, in Mr. Collins' play, "Man and Wife." She astonished the audience by a performance so intensely dramatic, so weirdly psychological, that old play-goers were aroused to great enthusiasm, and the applause of that assemblage fixed Clara Morris' status on the boards. When her engagement was concluded she accepted a position in the Union Square Theater. Whether the acquisition of Miss Morris caused or accelerated the immediate popularity of the then new house or not, it is certain that the Union Square quickly became the leading theater of the city. In "Miss Multon," "The Geneva Cross," and "The New Magdalen" Miss Morris achieved exceptional fame. Her engagements later have been only occasional, but always pecuniarily successful.

Miss Morris is married to a New York merchant of ample means, and her domestic life is said to be very happy. Mr. and Mrs. Harriott—this being her name, outside of theatrical circles—seldom appear in public except in the society of each other. Their home is at Irvington-on-the-Hudson. Miss Morris is not a handsome woman, but her figure is good and her face, especially in repose, is sweetly placid.

It should be mentioned that for many years this lady has been afflicted with a very trying malady affecting her spinal column, and often she has performed before a delighted audience while suffering acute physical distress. D.

THE TRUE BASIS FOR THE SCIENCE OF MIND AND STUDY OF CHARACTER.

THE study of man, although of the utmost importance and undoubtedly the most interesting of the whole field of human inquiry, has not received the careful consideration it justly merits from those who aspire to be teachers of men.

The poet in the warmth of his imagination, the historian and the novelist with the accuracy of observation, have often described men with their passions, animosities, longings, aspirations, and all the various feelings which make up the characters of men. But their pictures, though vivid, lack the uniformity and distinct analysis which should constitute a science of character. It is truly wonderful that man has occupied so little of the attention of those whose peculiar duty it was to make him a study. The types of human character are so abundant and prominent that it seems hardly credible that the science of character only dates as far back as the eighteenth century, and had its origin with Francis Joseph Gall. True, there were attempts to describe and classify men according to their dispositions before the days of Gall, but they were so superficial, unsatisfactory, and unscientific as to be unworthy of notice. As far back as human records reach, the human race has always presented types of character unmistakably different from each other. The history of every nation and observation of the men of our time reveal this fact. Geology, which goes back farther than any human record, reveals man as an intelligent being, the tool-maker, and even then showing his great superiority over the brute creation. History is but the record of types of character. There are Nero and Caligula, imbruing their hands in human blood to satisfy a savage propensity, which forms the principal motive in their character. There is Pope Alexander VI., steeped in hypocrisy, reeking with the crimes of incest, poisoning, and murder. There is King John, full of blasphemy, foul with unnatural vices, inconstant, fickle, yielding before the threat of his barons. There is the religious enthusiast, Peter the Hermit, kindling Europe into a blaze of religious excitement, compelling the noble, the powerful, and the weak to leave their homes and engage in a long and desperate crusade. There is Henry VIII., reveling in amatory pleasures. There is Lucretia, even in the face of death, faithful to her marriage vow. There is the philosophic type, buried in deep abstraction—Aristotle, Socrates, and Plato. There is the poetic type—Homer, Virgil, Milton, Shakespeare.

The observation of men of our time reveals the same diversity of types. We have brutal murderers, Burke and Hare and Pomeroy; religious fanatics, Freeman, Guiteau, and others; sublime poets, Longfellow, Browning, Tennyson. The student of history and observation therefore can not fail to perceive that the human race has ever been divided into well-marked types of character.

METAPHYSICS, DISCURSIVE AND SPECULATIVE.

The neglect to form a science of character is in part attributable to the metaphysical school of philosophy, which has cared more for idle disputations and long-winded discussions upon matters of very little importance. Vain theorizing characterized the systems of philosophers before the time of Gall, who had directed their attention to the study of man. It has been the unsatisfactory state of the science of mind which has retarded the science of character, for as the mind is the foundation of the character, it was necessary that its fundamental organs and functions should have been analyzed; for it is by the fundamental powers singly and in combination that all the types of character are produced.

The metaphysician, whose task it was to accomplish this analysis, has given us nothing but vague generalities. We are struck with feelings of melancholy regret for the sad waste of time and choice intellect, when, surveying the whole field of

metaphysical inquiry, we behold nothing but campaigns of endless battles, interminable disputes, hair-splitting distinctions, and the ceaseless warfare of words which have ever been its leading features. For more than two thousand years the best intellects of every period have been engaged in such intellectual combat with each other, and the field still remains strewn with the sad wrecks of fatalism, materialism, transcendentalism, and pantheism. What absurd and extravagant doctrines have not had their origin in the minds of those who looked to consciousness alone as a guide! After two thousand years of vain speculation, philosophers are still on debatable ground; some maintain that there is an external world, others that no external world exists; some maintain that we think and feel through material organs, others that the mind is ethereal and not connected with the body; others again are divided even upon the fundamental powers of the mind.

"CONSCIOUSNESS" AS A FUNDAMENTAL PRINCIPLE.

The chief faculty through which they derive all their knowledge of the mind has its functional nature still under discussion—I mean consciousness. Some philosophers maintain that consciousness consists of an Ego only, others of a non-ego. Others again assert that the Ego and non-ego are mysteriously combined and act as one. Leaving the dispute as to the function of consciousness, their principal fundamental faculty, still undecided, they carry on long discussions with each other respecting what are fundamental faculties, the consciousness of one philosopher declaring that such and such are fundamental faculties; the consciousness of another philosopher as triumphantly evolving another set of fundamental powers, in opposition to those of his opponents. Some reduce everything to sensation and permanent possibilities of sensations (J. S. Mill). Others struggle fiercely for innate powers; while others create all the powers which form the characters of men by laws of association, attention, and habit.

The history of philosophy is but a history of a cycle of these disputes. One theory arising in one age and supported by some eminent thinker is popular for a time, then gradually loses its hold upon men and glides into the realm of forgetfulness, to be revived in another age, only to undergo the same painful road of popularity, opposition, and neglect. Metaphysicians have no science of the mind. All their fundamental faculties rest upon the testimony of each individual consciousness, and are subject to its ever-varying changes and fanciful modes. They are not connected with organs. They have no physical seat in brain or body; without a resting-place, devoid of bones and flesh, they have taken up their eternal wanderings through the realm of consciousness, invisible spirits, ghosts of the imagination.

That the systems of mental philosophy are formed upon insecure and conjectural bases, is evident from the fact that no system has maintained its ground for more than a limited number of years. Each age has had its distinguished philosophers with their peculiar views, and the people of that age have looked up to them with awe and respect as the intellectual giants of their time. But scarcely has age begun to dim the power of thought of these representative philosophers, when some intellectual prodigy evolves a system more in accordance with the time in which he lives, and demolishes the doctrines of his predecessors. Thus mental philosophy is built upon the shifting sands of time, ever changing her fundamental powers, now fixing apparently beyond dispute the laws and principles of mind, then tearing down the fabric so firmly built. The cause of failure of the metaphysical school to establish a science of mind and character is apparent. Each philosopher has endeavored to evolve a science of mind from his own self-consciousness, and the result has been confusion upon confusion; for each philosopher has only acknowledged as funda-

mental faculties those which were the most prominent in his own mind. They scorned an appeal to observation; they shut out the world of things and men entirely from their minds; and instead of observing the action of men to find what was in others' consciousness, they sought to find the faculties of mind solely by self-introspection. Once in a while they appeal to a blind man or two, to support their theories, as, for instance, in the discussion concerning our knowledge of space; both those who maintain that a knowledge of space is obtained by an innate power, and those who assert that it is wholly an acquired product, appeal to the experience of the blind to support their theories; but they have never made a systematic collection of the facts of nature to support and prove their theories, and yet this ought to be done in order to arrive at a complete analysis of the powers of mind.

Suppose, for instance, that the fundamental powers could be ascertained by self-introspection, it is evident this could only tell half the story, for it is well known that men differ widely in mental character from each other, so that what one philosopher considers as fundamental, would only be those qualities which happened to be uppermost in his mind at the time of his meditations. This is borne out by fact; for a long time the faculties recognized as fundamental consisted only of intellectual faculties; now, it is evident that, engaged in abstract thought, and in intellectual meditation, the intellectual faculties would be the uppermost in the mind, hence the faculties recognized as forming our mental nature by the metaphysician are of an intellectual character. Of the other powers which form the characters of men, the propensity to fight, to kill, the love of offspring, the instinct of propagation, the love of approbation, they have said almost nothing.

NECESSITY OF CONSIDERING MIND OBJECTIVELY.

The metaphysical analysis of the mind is extremely one-sided. If a careful observation of the mental dispositions of others had been considered and applied as a corrective to their self-introspective method, it would have been more complete. But the metaphysician up to recent times has always treated with contempt facts derived from observation; thus setting at naught the experience of mankind, and absorbed in his own selfish observations, it could not be expected that the science of mind thus evolved would consist of more than vague generalities, and flat denials of some of the most evident innate powers. The philosophers of this school, in their desire to get rid of the objective side of thought, have appealed to the subjective side entirely, and thus lost the most universal field of proof—the observation and experience of mankind. Neither did they escape as they hoped the objective side of thought, for there is really no such thing as thought without its objective side. Let any one try, for a moment. to evolve from his own consciousness the various faculties of his mind, and he will find that before he can form any conception of the nature or function of a faculty at all, the faculty must be presented to his mind in an objective aspect; and in order that it may be presented as an object to the mind, it must present itself in one of its distinct modes of activity. The question, then, arises to perplex the inquirer: Is the mode of activity thus presented the function of one fundamental power or of many? To answer satisfactorily this question would require careful reflection upon the modes of activity of the various faculties presented, from time to time, to self-consciousness. Now this process is analogous to the observations of nature; it is a species of mental observation, and as such, the analysis of mind thus founded will depend for its completeness and accuracy upon the skill and range of the mental observations. It would therefore appear that observation forms even a very important part in mental introspection, and can not be shuffled aside, as the metaphysician strives to do. It is evident also that this kind

of mental observation, from the very nature of the difficulties which surround it, is apt to be extremely one-sided, limited, and inaccurate, and stands in need of thorough observation of external facts to enlarge and confirm any analysis of the mind based upon it.

The futility of establishing an analysis of the mind by the method of self-consciousness alone, appears in the various systems of mental philosophy. The dust of ages has accumulated upon libraries of books full of endless discussions concerning the fundamental powers of mind, yet no complete analysis of the mind has been attained. Take for instance memory, which is recognized by many philosophers as a fundamental power. If this be a distinct fundamental power it ought to perform one distinct function, namely, memory, and should be able to retain and recall all things with equal facility; but what do we find by actual observation of men? That some have good memories for events or historical facts, and poor memories for figures. Some have poor memories for colors, and yet can remember the situations of places with facility. So others again can not remember locations, but remember numbers. Some remember all the varied harmony of time and tune, in vocal or instrumental song; while others with good memories for almost everything else, can not distinguish one tune from another. This evidently points to powers behind memory, which are in some cases deficient and in others well developed. Memory, therefore, is not a fundamental power, but only a mode of activity of fundamental powers.

The same may be said of conception, perception, and imagination. If perception and conception were fundamental powers, we ought to be able to perceive and conceive of all objects with equal accuracy and vividness; but so far from this being the case, it is notorious that there are persons unable to conceive or perceive of many, while their perception and conception of other things is not only good, but intensely keen. So with almost every faculty the metaphysical school calls fundamental.

THE INCOMPETENCE OF METAPHYSICS IN ANALYSIS.

If we attempt to apply the mental analysis derived from self-consciousness alone, to explain the varied states of mental phenomena, its incompleteness and unsatisfactory condition become at once apparent. This analysis can offer no adequate explanation of idiocy, insanity, or of partial genius. Nor can it tell why some have talents for mathematics, and none for poetry; why one person's soul kindles with oratorical fire and utters burning words which another with equal intellect can not command. It can not tell why one man is a clown and another is a consummate tragedian; why one man can express himself with ease and facility, and another man with even more intellectual power can not command sufficient words to express his ideas clearly. The metaphysician may attempt to account for diversity of talents by habits of association, attention, and the force of circumstances, but the observed facts of nature do not support their conclusions.

Individuals have been found to manifest powers for music, oratory, mechanical invention, who have been brought up in the most unfavorable circumstances, and so early in life as to preclude the possibility of association, habit, or education, having moulded their minds in this direction. To enumerate examples would only lengthen this thesis unnecessarily. A few may suffice. George Bidder, in early childhood, had a talent for mathematical pursuits. Pope was only one among a thousand poets of whom it could be said they "lisped in numbers, for the numbers came."

It is a well-known fact that youths who apply themselves assiduously to the same task and spend the same time will, nevertheless, show diversity of acquirements. Children brought up in the same family and under the same instruction differ often in character and talent. Association, habit, circumstantial environment, or any other law of the metaphysician,

can not account for the diverse dispositions and talents of men.

The metaphysical analysis of the mind is equally futile in its explanation of insanity or mental aberration and idiocy. In former times, when the self-introspective school had full sway, the soul or mind of man was thought to be spiritual, and entirely independent of the body; so, in those days, when men had a passion for blood, or were troubled with some mental aberration, or a fit of insanity, they thought he must be possessed by some evil demon, and they called in a priest to exorcise him. Nor has the metaphysical school of our day made much advance beyond this puerile stage of thought. It is still undecided as to the relation of the body to the mind; the seat of their various faculties still unascertained, they can offer no adequate explanation of mental aberration, disease, or insanity. When a man is insane, they say he has lost the command of his faculties. But what faculties, we may ask? for the manifestations of insanity are not the same, but even more diverse than the manifestations of men in the natural state. Some lunatics, for instance, are subject to the most absurd delusions, believing themselves to be popes, kings, emperors, and other great men. Some believe themselves attended by spirits; that the Virgin Mary awaits upon them, etc. Some are harmless and full of kindness, others are possessed with a desire to fight and kill, and would tear their fellow inmates or keepers into pieces. It would be a long story to enumerate the different phases of insanity. The metaphysician can not account for these phases. He might say that the mind was diseased, but in what place and in what respect, he is unable to tell. The intellect of some is apparently sound, and yet they are subject to the most ridiculous delusions. Why can these lunatics reason intelligently upon almost all subjects except the one which is the form of their insanity? So useless is the metaphysical analysis for any practical purpose, that a metaphysician is never called in to pronounce a man sound or unsound; and yet who ought to be better able to decide such cases than those who claim to have analyzed the mind? The truth is undeniable, that by self-introspection we can not ascertain any organ, either of mind or body. No one can, by merely thinking or reflecting upon the various thoughts or emotions which arise from time to time in his mind, tell whether they depend for their manifestation upon material organs or not. The very looseness of the phraseology we are obliged to employ proves this emphatically. We speak of heart forces, of brain power, of the swellings of the soul, and such like terms, and yet we do not really mean that the heart is the seat of any faculty of the mind. Whatever we may be able to ascertain by self-conscious reflection, we can not ascertain the seat of individual organs, nor their exact function, nor the process by which thought or feeling is developed. No knowledge of physical organs was ever obtained by the self-conscious method. If physiologists had not long ago given up this process and resorted to observation and experiment as a basis for reflection, we would still be in the vale of ignorance with respect to the function of the multitudinous nerves of the body. It was only by accurate observation that the motor and sensory nerves were separated, and their functions ascertained. So, also, with every bodily function, experiment and observation were at the basis of its discovery. The same law must regulate the investigation of the mental functions, if they are connected with material organs. We love, we hate; we are urged by an instinct to propagate our species, or an instinct to defend ourselves or property; but consciousness can not tell the seat of these feelings, nor has anatomy, in her search for the fundamental or genetic faculties of the human constitution, been more successful. The brain has been dissected for ages, and anatomists have examined its various parts, and have failed to find the genetic powers of thought or instinct hidden away in its convolutions. No one could tell by merely looking at a convo-

lution in the brain that it was the seat of instinct, feeling, or memory.

THE EARLY WORK OF THE PHRENOLOGIST.

When Gall appeared upon the arena of investigation into the genetic powers of mind, he found everything in the mental field in a deplorable condition. Philosophers of the introspective school were still debating among themselves upon those very faculties necessary to form an accurate judgment of anything. Anatomists and physiologists were still undecided that the brain was the organ of the mind. It is true they had partitioned off the brain into a few compartments and had added barbarous names to them, but these names indicated nothing but ignorance of the function of the parts to which they were affixed. Gall had, therefore, not only to combat the erroneous analysis of the mind, as given by the metaphysicians, but even to revolutionize the science of anatomy. He taught the composition of the brain. He proved the brain to consist of fibers and cells, and separated the white from the gray matter. When we read the account of Dr. Spurzheim's dissection of a brain, in presence of the learned anatomists and professors of medicine in Edinburgh, we find that so ignorant were these professors of the composition of the brain, that some of them shook their wise heads and said they *thought* they saw fibers. The theory of the brain composition is now a settled fact, yet Gall had to combat this point against the learned of his day. He taught a more satisfactory method of dissecting the brain, a method which undoubtedly laid the foundation of the present experimental school, at whose head are Ferrier, Goltz, and others, yet some of the disciples of this school, ignorant of what they owe to Gall, are still in the habit of sneering at him and his mental philosophy.

It is not within my province to give an account of the discoveries Gall and Spurzheim made in anatomy and physiology. I mention these only to show that the founders of Phrenology were not unskilled in anatomy, as the opponents of Phrenology have asserted. It was the opponents of Phrenology who were unskilled in anatomy. All the discoveries in anatomy and physiology made by Drs. Gall and Spurzheim, and which were bitterly opposed at the time, are now acknowledged by the leading anatomists and physiologists to be sound and correct. The condition of mental and anatomical science being such as we have described, we must acknowledge the fathers of Phrenology to be men of rare genius. The force of mind which enabled them to break away from nearly all the recognized channels of investigating the mind, and seize upon a system of investigation which included all the benefits obtainable by other methods, and added a means of determining the organs and functions of the brain entirely overlooked by all who cultivated the science of mind, is surely worthy of the name of genius. Their superior minds surveyed the whole field of mental inquiry. They saw at once the imperfections which necessarily followed from investigating the mind by self-consciousness alone. They saw the futility of anatomy unaided by physiology to determine the organs and functions of the brain, and formulated a method at once simple, natural, accessible, and within the range of thorough demonstration; a method destined to lead to a science of mind and character founded upon a physical basis. As the truth of Phrenology depends upon this system of investigation, I think it necessary to show in detail, and yet, as concisely as possible, the method of proof and its attendant advantages. Especially do I think this necessary, as Professor Bain, while aided in the composition of his works on the study of character by the analysis of the human mind supplied by Phrenology, and also by the new light thrown upon many obscure physiological facts by deductions obtained from the phrenological methods; yet, after examining Phrenology and acknowledging its merits and the general truth of its inductions, he professes to

steer out upon a course of self-conscious reflection, to discover the fundamental powers of mind. I will not discuss Bain's work upon the study of character here, but will leave it till later, and in the meanwhile go on with the method of phrenological investigation.

Ever since the Baconian philosophy laid down the grand principle of first accurately ascertaining facts and then drawing inductions from them, the domain of speculative philosophy has been growing narrower and narrower; science after science has freed it from the trammels of the purely speculative school, and established itself upon the solid basis of inductions gleaned from a wide field of observation. For ages the science of geology offered ample scope to the speculative philosopher to engage in endless disputations; but a few men by patient observation of the phenomena of nature put to naught all their vain speculation, and established a science of geology on the basis of induction; so, also, the sciences of chemistry and physiology never made any positive progress till men of patient inquiry, undaunted by vague theories, urged with all the vehemence of authority, established them upon the basis of observed facts. They constantly observed the various organs of the body in activity until they learned their functions. If they had merely speculated upon the probable function of the heart or liver, they would be speculating still. Thus every science has progressed in proportion as it has been freed from the shackles of speculation and guided by the light of observation.

THE PHRENOLOGICAL METHOD INDUCTIVE—BAIN.

Phrenology was an attempt to rescue mental science from the region of speculation, and subject it, like other sciences, to experiment and observation. Phrenology claims that it should be investigated according to the principles upon which all sciences having a physical basis are investigated. Bain evidently deals unfairly with Phrenology when he declares that he is unwilling to follow its long, though correct method, in determining what are and what are not fundamental powers, and seeks to settle the truth or falsity of the phrenological analysis by what he calls an appeal to consciousness. No physiologist would submit to have the functions of the various parts of the body discussed in this way. He would insist upon an examination of the observed facts by which the functions of the different bodily organs had been established. What physiologist, for instance, would now submit to a long discussion upon the functions of the liver, the kidneys, the heart or lungs, whether it were possible that these could perform the work respectively assigned to them. Every physiologist would, most assuredly, protest against such a course, and insist emphatically upon an examination of the observed facts of nature; yet, this is the way the modern school of mental philosophy persists in determining the merits of Phrenology, which claims to be founded upon the observation of physical and mental phenomena connected with material organs.

The method of discovering the organs and functions of the brain pursued by Gall was similar to that which, pursued by the physiologists, led to the discovery of the different organs of the human body and their functions.

It was a method only such as a genius would ever have thought of applying to the discovery of the functions of the brain. Thousands had daily observed the falling of apples to the ground, but it took a Newton to discover, by the application of this fact, the universal law of gravitation. Steam had always issued from the mouth of a kettle, but Watt saw not only the steam, but the power it contained. The blood had coursed through the arteries and veins of men ever since the creation, but no philosopher of the speculative school ever evolved and demonstrated a theory of its circulation; this was the glorious achievement of Harvey, by dint of patient observation and thoughtful induction. Anatomists, before the time of Gall, had dissected the brain by slicing it

as one would a cabbage, and theorized concerning the functions of its various parts, but no system of mental philosophy was devised. Men have differed in disposition and talent ever since the world began, but no philosopher, before the days of Gall, ever clearly traced the connection of these dispositions and talent with special developments of the brain. Much speculation no doubt existed before Gall as to the seat of the passions, intellect, and emotions, but nothing was clearly demonstrated. Many of the erroneous theories then promulgated still retard the progress of mental philosophy. Gall was the first philosopher who conceived the most accessible system of proof capable of determining and demonstrating the organs of the brain and the dependence of mental manifestation upon these organs. The method of his discovery was unique, but wonderful in its results. Who would ever have supposed that the form or shape of the head, that particular excesses or deficiencies in different parts could tell such a marvelous tale, and settle the debatable points which had been discussed for more than 2,000 years? In truth there is still something incongruous in the idea of telling a person's disposition by the appearance of the skull, and the science of Phrenology is even now mirthfully called Bumpology; yet, if we patiently follow the investigations of Gall, we will find that the science of Phrenology is not so ludicrous as many suppose. So men ridiculed Harvey's theory of the circulation of the blood, and no contemporary of his of any renown ever accepted or adopted it. Yet so perfect was his demonstration, that no essential improvement has been made to it, and its universal acceptance is the monument accorded to genius.

But let us see how Gall proceeded. Having gleaned from the field of observation facts to show that men differed widely in dispositions and talents, he next endeavored to ascertain whether these diverse talents and dispositions were connected with any physiognomical development of body or brain. He observed that certain parts of the skull were more developed than other parts, and he wondered if these developed parts might not be a sign of the disposition he had observed. How was Gall able, amid all the multiplicity of human dispositions, to connect one fundamental quality with a particular portion of the brain? There lay the Pyrenees to be crossed before success could gleam upon him. Here is one of the principles of the phrenological method which the learned have failed to comprehend, else they would cease from the unsatisfactory, if not the futile, attempt to discover the fundamental powers of mind by slicing, cutting, and subjecting the brains of animals to shocks of electricity. The expedient hit upon by Gall in order to separate the dispositions and actions of men and connect them with special cerebral developments, was as follows.

DIFFERENCE BETWEEN THE PHRENOLOGISTS AND EXPERIMENTALISTS.

He discovered in his investigations that nature had performed what the experimental school at the present time vainly tries to perform, namely, to obtain negative and positive proofs of the functions of particular portions of the brain. The school of Ferrier, Goltz, and others is wont to take living animals and remove portions of their brains, and ascertain by their actions what faculties seem to be lost. They hope in this way to discover the functions of the various parts of the brain. But Gall discovered that nature had already performed this process, for she had given birth to men and animals, with portions of their brains excessively developed, and the same portions in others exceedingly depressed. Gall, by a series of observations on men of peculiar and special talent or character, succeeded in connecting certain dispositions or tendencies with particular portions of the encephalon. This discovery was of immense importance to Gall, or rather to the science of mind. It was impossible to get a more extensive field to prove any system of philosophy. Nature had spread out in unlimited profusion the means of making and verifying observa-

tions. Not only the human race, but all animal life was subject to this method of investigation. Neither did time place a limit to these observations, for men and animals could be observed, not for one day only, but for months and years. The experimental school can boast of no such opportunities; their labors must necessarily be confined to a few animals under the effects of anæsthesia, and reluctant responses from the fundamental powers of mind can only be dragged from them amid scenes of blood, torpor, and stupor. These responses consisting mainly of bodily movements, will be interpreted with difficulty as the signs of the functions of cerebral organs.

Gall having thus discovered that the talents of men were connected with particular portions of the brain, he next proceeded to gather a number of skulls showing abnormal developments and depressions. He took casts of the heads of such persons as were noted for special talent or traits of character and also casts of those who were deficient in these same traits of character, and on comparing them together found that the former had certain portions of the brain excessively developed and the latter had but a small development of the corresponding portions of brain. When in many cases he found certain talents or traits of character to exist in the person with a particular portion of the brain developed, shown by prominence or fullness on the skull, he found that the same talents were absent or weakly manifested in those whose skulls were depressed at the same place. When the prominence existed in the other cases, he concluded that these traits of character were connected with a portion of the brain contained within the skull. Thus he had proofs both positive and negative.

He did not rest satisfied with the observations of a few persons, but extended them to thousands of persons, making casts and collecting skulls. To extend the range of his observations, Gall visited schools and colleges, insane asylums and prisons, and wherever he had hopes of getting persons distinguished for special talents or noted for anything peculiar. Their faculties were carefully noted, casts of their heads were taken, and special development recorded. Thus the science of Phrenology was really discovered through observations made upon prominences and depressions of the skulls, and ridicule was thrown upon Phrenology because its principles were thus discovered.

But this, instead of being a demerit to Phrenology, is its chief glory. If phrenologists had not taken advantage of the negative and positive proofs thus supplied by nature they never could have established a science of mind or character. The botanist takes advantage of abnormal development in flowers to clear up difficult points of morphology, and many important truths have been discovered in this science by such sports of nature which could never have been ascertained in any other way. Nature always supplies means for the ascertainment of truth, although these means may seem ridiculous in the eyes of some. The trouble too often lies not with nature, but with a certain class of scientists who prefer to make an abstruse problem rather than follow her plain teachings. Men may call Phrenology a science of bumpology because its principles were first suggested in this way, but it was only by these abnormal developments in connection with leading mental characteristics that a knowledge of the primitive faculties could be discovered; for it was necessary that the manifestation of one particular faculty should far outstrip in power and activity all the other faculties of the mind in order to ascertain what dispositions could come under that faculty. In other words, some means should be supplied whereby the function of one organ could be studied to the neglect, for the time being, of the functions of the other organs, so as to distinguish clearly what were the actions belonging to that organ from the actions belonging to the others. And this the great and small development of different parts of the head, called Bumpology, conveniently supplied. Yet

it ought to be remembered that although the organs and functions of the brain were correctly ascertained and their sphere of action and location discovered by special protuberances and depressions of the skull, that these protuberances can not be found upon all heads. These developments are abnormal. The harmoniously developed head does not have these special prominences on the skull, but there is no difficulty in reading character from such heads, as the location of each organ has been accurately ascertained by means of the abnormal developments.

THE BRAIN ACTUALLY EXAMINED.

Dr. Gall next, when the death of these persons offered an opportunity to get possession of their heads, removed the skull and found that the cerebral mass corresponded in every case with the abnormal developments of skull. He found that when there was no prominence of the skull, but a depression, the convolutions were small or entirely wanting, and where there was a protuberance of the skull, the convolutions swelled out and completely filled the cavity made by the protuberance. Thus the labors of the neurologists were at an end; a resort to clinical and pathological or experimental methods were not absolutely necessary. But Gall and Spurzheim, with that indomitable zeal to prove all things beyond a possibility of a doubt which ever animated their professional career, followed up their investigations by these methods. It would be a long task to enumerate the catalogue of cases confirmatory of the location and functions of the various organs they had thus established. Injuries to the brain, accidental or purposely induced, revealed the fact that the organs of the mental faculties had been truly located. Persons who had received a blow on the part of the brain where the phrenologists locate the organ of Color were known to be deprived of that faculty. So men who had been suddenly possessed with an irresistible desire to kill, or to gratify sexual love and other desires connected with the primitive instincts, were discovered by phrenologists on removal of the skull to have the portion of the brain under the skull, where the organs of such propensities were situated, diseased. Though the organs were first discovered by the shape and form of the skull, yet by repeated observations the distinct convolutions or parts of convolutions connected with special dispositions were accurately named and marked out. So that by the situation of the convolutions themselves without the aid of the skull, the analysis of a person's character could be given. Spurzheim gave such readings on several occasions.

The assertion, therefore, of Bailey and other philosophers that Phrenology is at best only craniology, or a science of the cranium, is not strictly correct. The phrenologists never attempted to connect the dispositions of men with developments of the cranium; they always maintained that the brain mass gave size and shape to the skull, and not the skull to the brain. This doctrine they proved by many facts. They showed, upon the removal of many skulls, that the convolutions did not all run in one direction, that some of them swelled out more in the middle than at the end, some ran transversely, vertically and some horizontally and actually moulded the developments of the skull to correspond with these portions. The fact that the size and form of the organs of the brain can be predicated by the general appearance of the skull does not necessarily constitute Phrenology a science of the cranium. The size and form of the muscles of the body may be determined through the skin; the space which the lungs and other organs of the body occupy is determined by measurements of their bone or skin covering; but does this constitute physiology a science of skinology or boneology?

But it has been asserted by some writers on mental science that Phrenology will have to give place to the doctrines deduced from the more accurate experiments of Goltz and others. It has even been asserted that if Gall and Spurzheim

were now living they would give up Phrenology and betake themselves to the experimental school. But this is purely a matter of conjecture, and there is nothing in the facts of the case to warrant any such supposition. That Gall and Spurzheim, if they were now alive, would engage in experiments similar to those of Ferrier and Goltz, is probable; but that they would decide these experiments to be more efficacious than their own method is monstrously absurd. While they lived they did not neglect any opportunity which they thought would prove or throw light upon the science of the mind. They employed the clinical, pathological, and galvanic experiments which gave results similar to those obtained at the present time by Ferrier and others; but they employed these methods, not because they thought them more efficient, but as an aid to their own system, and more especially to convince opponents who had a taste for such experiments. They always maintained that these methods were insufficient to determine the functions of the brain.

ARE THE METHODS OF THE EXPERIMENTALISTS BETTER?

The experimental school as conducted to-day offers no better method of determining the organs of the brain than the phrenological method. In order to establish clearly an organ and its appropriate function four conditions are necessary: (1) The probable location and size of the organ; (2) The natural language, action, or process which constitutes its function; (3) It must be experimented upon without affecting neighboring organs; (4) The organ when experimented upon must be in a normal condition in order to manifest its functions correctly; and a fifth condition might be added, viz., an extensive field for experiment and observation, which, although not as necessary as the four previous conditions, would seem requisite because of the vital importance attached to the deductions from the experiments. The experimental school, it is needless to say, can not comply with any of these conditions. They neither know the extent nor location of the organs they seek, whether they occupy a whole convolution or a part of a convolution as they experiment upon the convolutions in a hap-hazard manner. They have not systematically studied the language or processes of the organs they seek; hence their ridiculous interpretation of the responses they have obtained. They have exhausted the entire cerebral mass in the performance of such ridiculous functions as a center for wagging the tail, a center for the advance of the right foot, a center for twitching the eyes, which latter they call the organ of sight. They experiment under very disadvantageous circumstances. They have recourse to anæsthesia, which puts the organs of the animal in an unnatural stupor. It is not, therefore, possible to get the clear responses which express the function of an organ in the natural state. It is hardly possible to excite one organ by the electrode without exciting a neighboring organ. And it is extremely doubtful, nay, impossible, to get anything but bodily movements from these organs in such a condition and by such a process. How can thought, intellect, or emotion be communicated in this way? Indeed the science of the mind, as presented by these experimentalists, is nothing more than a science of electrical gymnastics. The cutting and mutilating of innocent animals to acquire a few gesticulations and twitches of the body and limbs, is, to say the least, reprehensible, and contrary to the best feelings of our human nature. The reader can easily imagine how difficult it would be for an animal subjected to stupefying drugs and deprived of parts of his brain and irritated by shocks of electricity, to express the various faculties of his mind. The extent of the field of experiment is confined to a few animals, and the experiments must be performed and the responses obtained before the animal dies. If these gymnastical performances and the ridiculous interpretations drawn from animals in stupor and mutilation, by a process revolting

and unnatural, are capable of superseding Phrenology, I should like to see the evidence. If the experimenters had taken Phrenology as an aid they would have been more successful; they would then have had some idea of the extent, location, and language of the organs for which they were in search. Even supposing that they could succeed in determining the functions of the brain in this way, they can only extend their conclusions to man by analogy, for public sentiment will never submit to have men experimented upon as they now experiment upon animals.

So far from the experimental school superseding Phrenology, it has much to do before it can arrive at any one of the demonstrated principles of Phrenology. In many cases the responses obtained by Goltz and Ferrier, when rightly interpreted, support the doctrines of Phrenology, and one of the latest announcements of Ferrier is that the phrenologists have good reasons for locating the intellect in the frontal lobes.

Not any of the inconveniences attending the experimental method is incident to the phrenological. Its field of observation is wide; men and animals in their natural state its objects of investigation. All the actions and language of the faculties can be gathered and systematically arranged. It knows the position and extent of the organs it seeks. It can summon the clinical, pathological, anatomical, and even the experimental school itself, to support the truth of its principles. The superiority of its methods is shown by the fact that it has already mapped out the convolutions of the brain into distinct organs and described their functions, and has built up a science of mind and character upon principles not yet disproved. Gall, like some other geniuses in other departments of knowledge, has mapped out the field of mental science so extensively that it will take a long time for men of moderate talents to reach the utmost lines of his demonstration. Much, no doubt, remains to be done. Phrenologists never claimed that their science was complete in all respects. Yet the survey has been made and the true road to travel is open, and, like the railway, may have steel rails in due time.

Phrenology being founded upon inductions from observed facts demands our investigation of these facts and disclaims to be investigated by self-consciousness alone. It is surprising that the gauntlet thus defiantly thrown down by phrenologists has never been taken up.

Cambridge, Mass. THOMAS A. HYDE.

KRAO—THE "MISSING LINK."

IT is not many months ago that public attention was called to the discovery of the "missing link" in the shape of a strange being which had been found in Borneo and was exhibited in London. We were informed in phrases of gravity becoming a scientific disquisition that this strange "find" united animal and human characteristics in such a fashion that the doctrine of evolution now had testimony in its behalf which could not be gainsaid. The anthropologist and the scientist generally were of course deeply interested in the matter and awaited anxiously for further information, and a possible opportunity to see and examine the creature itself. But how has the matter turned out? Much after the manner of similar announcements which have been foisted upon the public in times past.

The strange creature is simply a hairy child about six years of age, an excellent specimen of hypertricopherosis, or superabundance of hair, cases of which have been recorded at intervals. The engraving represents the child as taken photographically, and she is described by a correspondent of the Leipsic *Illustrirte Zeitung*, who views her as a cross between the ape and man, as follows:

"Kra-o is about six years old; she is

of the same size as other children of her age, but of a finer build; thick, jet black hair covers her head and reaches down to the backbone, and forms a perfect mane on the shoulders; the eyebrows are wide, glossy, and silky, and the eyes are of a deep black with open pupils, and the iris is missing entirely, as in the gorilla; the resemblance to the face of the latter is very great and astonishing; the nose is flat, and has wide nostrils inclined diagonally toward the cheek-bones; the cheeks hang down and are baggy, and in them Kra-o stores her food and carries it about with her in the same manner as her cousins of the ape tribe.

"Her head, like the human type more than any other part of her body, and the intelligent eyes, the agreeably rounded mouth with the full lips, which can smile very pleasantly when Kra-o plays and talks, do not at all correspond with the ape-like body of the child. Kra-o is of a brownish-yellow color, and the hair extends from the crown of her head to the soles of her feet. She is generally very jolly, loves to play, and is more thankful than most children if persons take the trouble to amuse her. If she is molested and teased, her wild nature shows itself; she throws herself on the ground, screams, strikes the person, and finds great pleasure in tearing out some of her superabundance of hair."

With the engraving before us we can not see the resemblance to the gorilla which is mentioned above as very great and astonishing. On the contrary, the head is very unlike the ape in development of crown and jaws, and aside from the hairy growth, we'll warrant her a good, average specimen of children born in the Laos district of Borneo.

She is reported by those who have seen her in London as possessing fair intelligence, which is sufficiently demonstrated by the fact that she has acquired enough knowledge of the English language within a few months to be able to make herself understood; and this is an ample proof that, although her outward appearance has much of the animal, she has a bright mind and considerable intelligence. The ethnologist would look at once to the hands and feet for evidence of linkship in a case of alleged close relationship to the Simian form; in Kra-o we find simply well-formed extremities of the human type, and nothing of the claw-like monkey "hand," or prehensile foot.

LITTLE BIRD IN LONELY PRISON.

FROM THE GERMAN.

LITTLE bird in prison lonely,
Lonely heart within my breast,
Mourning for the spring-time only,
Both by sorrow's gloom distressed.

For the waving tree-top longing,
There from bough to bough to fly;
On a tender bosom nestling,
Guarded by a loving eye.

Little bird, sing forth thy grieving
Till thy breast can throb no more;
Beat my heart against thy prison
Till thy last faint sigh is o'er.

LYDIA M. MILLARD.

GOD, IMMORTALITY, AND DUTY.

THESE three words combine the talisman of destiny. They fill up the three sides of human responsibility, the triangle hung up in the heavens for the guidance of all souls; and if one part is effaced the two others are rendered useless. Like a perfect triangle one part is equal to the other. If God is removed, Immortality fades; and if Duty is struck out, man becomes a solecism in creation—a being severed from the well-being of the whole, with intellectual and moral faculties serving no perceptible purposes. With God denied and Immortality relegated to the limbo of Agnosticism, certain writers might marshal a fine array of glittering verbiage; but addressed as they would be to mere sentiment, to a conscience subject to no law or Lawgiver, no approval would be given from the heart of humanity. Those who talk in this way forget that they have stolen the plumage of their speech from the Bird of Paradise, and that this recording pen was plucked from its ample wings.

A very forcible writer, in giving a delineation of the genius of George Eliot, tells us of her impressions when walking with her on a rainy evening in May. As if stirred somewhat from her wont, she took for her text these three words, so often used as an inspiring trumpet-call to mankind, saying with terrible earnestness, "God, Immortality, Duty." "How inconceivable was the first, how unbelievable the second, and yet how peremptory and absolute the third!" She believed in the sovereignty of imperial and unrecompensing law. We are convinced that the race will never be obedient to a law divested of all mind, to that which neither rewards nor punishes; which is the expression of no will and devoid of all sanctions. If there are laws which

carry with them recompenses of weal or woe, they are as surely the expressions of a Lawgiver as was Magna Charta the outcome of the minds of the barons of King John.

She believed "in the expansion of human fellowship into an impulse strong enough to compel us to live for others, even though it be beneath the on-coming shadow of eternal night." This reads well, but where is the proof in the work? Atheistic philanthropists are and always have been very rare. No better test of morals was ever given than "Ye shall know them by their fruits." We have looked in vain over the earth to find in the outcome of atheism the institutions of self-denial and benevolence. Grasses do not grow on thistles.

Poor Sarah Martyn, the dressmaker, and John Pounds, the cobbler, left behind them institutions for the elevation of their race, but with all her literary remuneration, what fabrics of Philanthropy remain to speak for her principles to coming times? What duty did she render to the sacredness of the marriage relation? In labors of love for mankind she would appear poor indeed, contrasted with a Countess of Huntingdon, an Elizabeth Fry, or even an Eliza Garnaut.

"George Eliot," we are told, "recognized the terrible probability that, for creatures with no future to look to, advance in spirituality may oftenest be but advance in pain. She saw the somber reason of that grim plan which suggests that the world's life-long struggle might best be ended—not indeed by individual desertions, but by the moving off of the whole great army from the field of its unequal war—by the simultaneous suicide of all the race of man." Surely the Lord or Nature or fortuitous molecule have made all men in vain! The whole race had better commit suicide. Life is not worth living. Oh, ye Agnostics and Atheists! Such philosophy could no more produce the martyrs and confessors of the race than an Alpine glacier could germinate an oasis! Advance in spirituality would surely be an advance in suffering. To have a vision of perfectibility never to be realized; to see what should be, yet never can be; to feel as such must feel that sublimity, veneration, conscientiousness, imagination, and hope were only given to tantalize the intellectual and moral faculties, would be like taking a man from Nebo to the Stygian Erebus.

> "Oh, starlight science, hast thou wandered there,
> To bring us back this message of despair?"

Science, did we say? No, Science is knowledge; while such is but the expression of a morbid intellect wandering where it should never enter; following blind Reason where Experience should be the guide; where the intuitions are better instructors than barren speculations; and especially where the movements of Instinct, if carefully followed, can not lead astray. Does a child reason in order to come to its mother's breast? Does Reason lead the migrating bird to seek a warmer clime from winter's cold? The instincts of human nature are the impressions of the finger of the Almighty Father guiding us to our sure destiny. Had these two representatives of purely intellectual womanhood, George Eliot and Harriet Martineau, been hallowed with the cares of maternity — had they watched the expanding faculties of a beloved child, gazed into the eyes of a little one sinking into the invisible, and laid its loved form into the narrow grave, they would have heard still small voices from a region which their barren skepticism would have receded from as the needed consolation from the Life Essential.

She wrote, "I have no controversy with the faith that *cries out and clings from the depths of man's need.*" What is it that cries out and clings from these depths? What but the unerring voice within; that which an apostle calls "the stretching forth of Nature's neck" for better things to come. We may distrust Reason, but not Nature. Leaving her logic in abeyance, in writing to a friend

under the first anguish of bereavement, she says, "For the first sharp pangs there is no consolation." But soon her heart speaks out true to its instincts. "All the experience that makes of my communion with your grief is summed up in 'God bless you,' which represents the swelling of my heart now that I write thinking of you and your sense of what was and is not." Here we have an unsophisticated touch of true nature; for what is nature but the Divine mode of operation?—and had she listened to this more, her questioning atheism would have been silenced. The outburst of the Divinity within will well up in the heart if left to itself. The Atheist of the Freethinkers' Convention in Watkins, on receiving a donation, uttered a "God bless you!" and doubtless if this class of thinkers believed there is no God, the necessities of human nature would compel them to proceed to the fabrication of one. Priests never made a Deity, but the people have made the priests. There is no creed so pitiless as that which would eradicate from the human heart that which cries out from its depths of need to the Governing Ruler of the Universe. The tendrils of a rooted tree feel their unerring way to the river's side for sustenance; and are the aspirations of the human soul less guided? Does that Power which never deceives a germinating plant, feeling its way to the surface for light and air, mock the tendencies of a thinking mind?

We are told, "She held there was so little chance of man's immortality, that it was a grievous error to flatter him with such a belief." How did she know that there was so little chance? From human probabilities? But they will be found generally on the other side. To say that there were no probabilities of a future state, or immensely preponderating ones, would be a sin against all evidence. Probabilities have guided Discovery, Invention, and Commerce to their successes, and that they have failed in the search of Immortality would be the affirmation of prejudice. The doctrine can be tested by experience. There are vast numbers who can no more doubt Immortality than they can Mortality. If this fine writer never breathed its air and felt its powers, more's the pity. A man can not doubt his own experience, and there is no greater folly than for an individual to set up his Agnosticism against another's knowledge. If one receives a telegraphic response beyond the seas, he can not doubt that it was dictated by intelligence. Leaving probabilities, it may be affirmed that we have demonstrations of the life beyond the tomb, and yet Mrs. George Eliot would esteem it flattery to tell a sorrowing mother over the bier of her child, a dying man lingering on the border land, or a broken-hearted mourner for the light of his household just gone out in time, that there is a better life beyond this as a counter-balance for the evils of the present. We would rather believe with Addison that with less proof it is wiser to hold than reject it. That can not be an evil which makes mankind everywhere happier and better, and until we have proof of its non-existence, it would be an unspeakable evil to reject it. To admit the fact is to love existence for its highest purposes. All truth reveals the Creator, and prompts the hope of a perpetual supply. Tell a man that tomorrow will be the end of him, and what reason can he have for thankfulness? All the emotions proper to a moral and religious nature imply deathlessness; as reverence, love, conscientiousness, and hope. We would not desire this extinction in any being; and to go to a fellow-being and say, "Your desire for continuance in virtue and happiness is very commendable. You would no doubt desire a continuance of your being beyond the grave; for the prospect of future happiness is certainly comforting, but growth in spirituality is only progress in unnecessary solitude. The fact is, you are nothing but an animal, and you will soon be as if you never were; therefore, put a stern face upon your despair!" such is all the consolation such principles can

convey; and Duty, so much talked about, is but submission to annihilation. It would place it in an exhausted receiver where it could not breathe. The doctrine received would be the imposition of a sunless day, with a nightmare on all moral advancement. It would be the whirling of the temperate and torrid zones into an eternal Arctic. Without God there would be no religion; without religion there would be no morality—all its standards and motives being removed; and without morality the world would become an Aceldama. We wonder not, when we read this statement of her own case, that there were many "who could not readily acquiesce in her negations, nor range themselves unreservedly as the *fellow-workers of her brave despair*."

So we say the banner of despair is not our excelsior. It will never be the device of the world's philanthropists and regenerators. Negations never embolden virtues. Unbelief is no discoverer or inventor. It never gave the world a spring carriage, a saw-mill, an iron steamer, a railroad, or an electric light. It can only aim at the destruction of all the results of martyrdom, and the triumphs of faith which have made the world the theater of the noblest deeds.

REV. JOHN WAUGH.

LOGIC IN COURTESY AND HABIT.—Plain speaking is considered a duty by the Quakers, but they do not practice it as much now as formerly, perhaps. Yet we now and then hear of a good illustration of its effective use.

Recently a Quaker was traveling in a railway carriage. After a time, observing certain movements on the part of a fellow-passenger, he accosted him as follows:

"Sir, thee seems well-dressed, and I dare say thee considers thyself well-bred, and would not lower thyself to do an ungentlemanlike action, wouldst thee?"

The person addressed promptly replied, with considerable spirit—

"Certainly not, if I knew it."

The Quaker continued:

"And suppose thee invited me to thy house, thee would not think of offering me thy glass to drink out of after thee had drank out of it thyself, wouldst thee?"

The interrogated replied—

"Abominable! No! Such an offer would be most insulting."

The Quaker continued:

"Still less would thee think of offering me thy knife and fork to eat with, after putting them into thy mouth, wouldst thee?"

The interrogated answered—

"To do that would be an outrage on all decency, and would show that such a wretch was out of the pale of civilized society."

"Then," said the Quaker, "with those impressions on thee, why shouldst thee wish me to take into my mouth and nostrils the smoke from that cigar which thou art preparing to smoke, after sending the smoke out of thine own mouth?"

TRUTH.

ROLL on, thou mighty tide of truth,
And deluge all the land;
Sweep error from those honored posts
Where now it holds command.

Roll on, roll on, nor cease thy flow
Till every seed shall die,
Of worthless tares, and bitter fruit,
Sown by the enemy.

Too long already has this tide
Set back upon its source;
Still it is gaining added strength,
And a resistless force.

And when the rains from heaven descend,
'Twill swell a torrent deep;
And foam and dash impetuously,
And every barrier leap.

Then raise the flood-gates, free its course,
And let it onward go!
The thirsty earth will drink it in,
And better fruits will grow.

Why should we spend our precious time
In beating back the truth;
And see grim want and famine gaunt
Still stalking o'er the earth?

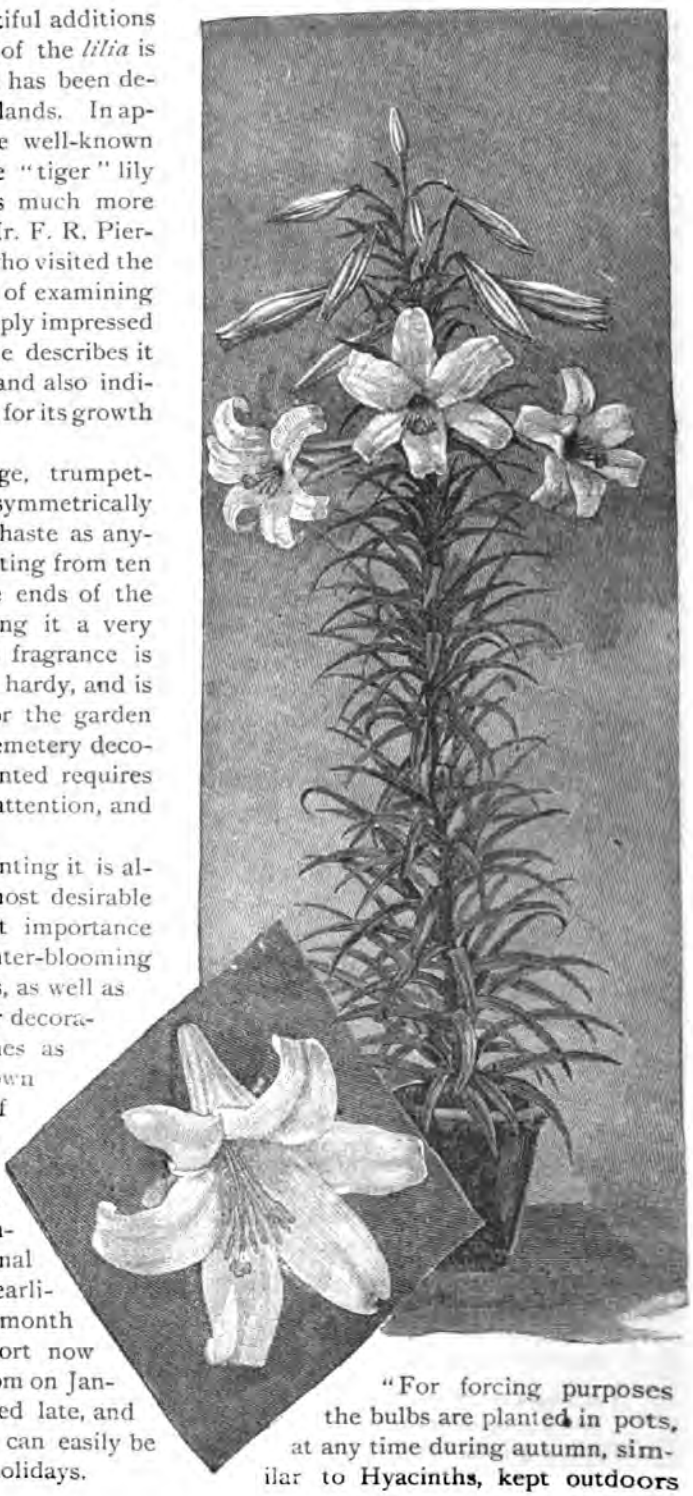
Why not set free this blessed stream
To irrigate the land?
Why not go into all the world
Obeying Christ's command? A. E. B.

THE BERMUDA EASTER LILY.

ONE of the most beautiful additions to the large family of the *lilia* is this recent variety, which has been developed in the Bermuda islands. In appearance it resembles the well-known *lilium longiflorum*, or the "tiger" lily of our old homes, but is much more beautiful and striking. Mr. F. R. Pierson, of Tarrytown, N. Y., who visited the Bermudas for the purpose of examining it in its native soil, was deeply impressed with its rare qualities. He describes it in the *American Garden*, and also indicates the proper treatment for its growth in our gardens:

"The flowers are large, trumpet-shaped, pure waxy white, symmetrically formed, as beautiful and chaste as anything can be imagined, lasting from ten days to two weeks. The ends of the petals are recurved, giving it a very graceful appearance. Its fragrance is delightful. It is perfectly hardy, and is one of the finest plants for the garden border, shrubberies, and cemetery decoration. A bulb once planted requires very little after-care and attention, and lasts for years.

"While for outdoor planting it is already recognized as a most desirable acquisition, its paramount importance lies in its value as a winter-blooming plant for market purposes, as well as for conservatory or parlor decoration. Three or four times as many flowers can be grown with the same number of plants and the same expense as from the old varieties—a very important consideration with the commercial florist. An additional superiority consists in its earliness, being more than a month earlier than any other sort now grown. I had some in bloom on January 22d, from bulbs started late, and I am confident that they can easily be forced for the Christmas holidays.



"For forcing purposes the bulbs are planted in pots, at any time during autumn, similar to Hyacinths, kept outdoors

until the pots are well filled with roots, when they are removed to a higher temperature. The soil should be kept moderately moist, and receive an occasional application of liquid manure. For outdoor culture the bulbs may be planted in the spring or fall, but unless they can be planted very early, the latter season is to be preferred. The soil should be deep, mellow, and rich, without containing fresh manure, and must be well-drained. The bulbs should be planted about four inches deep, and be mulched during winter."

He mentions a plant which he raised last year, which produced seventy perfect flowers; but even that was exceeded by one brought from Bermuda, which bore one hundred and forty-five blossoms on a single stem, and was mentioned in the New York papers as a "Floral Wonder."

A GREAT LEVELER.

AT the present day when the demand for workers with hand or brain is met at once by an almost unlimited supply, the popular suburban impression that a great city is the best place in which to further one's fortune, seems as firmly fixed as ever. Neither the assurances of friends, nor the warnings of the press avail to dissuade young men in the country from leaving their homes and going to the city with the belief that they are needed there, and that the chances are all in their favor for a start which will surely and quickly end in opulence. In this belief they are too often aided by parental blindness. The doating father or fond mother sees the budding of genius in the son, and feeling that it will be at least cramped, if not blighted, in the quiet country village, or that it will not have large enough scope in the country town, lends a willing ear to the suggestion that the boy betake himself to the great city, and there develop fully the latent ability that is to give him a high place among men.

This would be well—very well—were it not for the unfortunate fact that ten thousand others are thinking the same thing daily, and almost as many carrying it into effect. Great cities attract the very best talent the country can produce; and as a natural result, when a young man of mediocre ability comes upon the scene, he finds himself compelled to compete with those who much surpass him in attainments. In New York City a person must be well qualified for any position worth having, by experience, education, and natural adaptation, else he will be pushed aside to give place to another, whom his employer will have no trouble in finding, and who possesses the desired qualifications.

The city is the place where a man is sure to find his intellectual level. By a law of mental gravitation he will rise or sink according to his ability, until his true plane has been fixed, and there he will stay; and according to his ability, so is his acquirement of the object which brought him to the city, viz., money. It is impossible to keep down, anywhere, a man with real capacity; and the health and spirit to exercise it. His employers will see and recognize it, and should they be so obtuse as to pass him over, it will be known and felt elsewhere, and ere long he will unexpectedly find himself in demand.

Every one here must stand upon his own foundation, and according as that foundation has been laid in truth, honor, virtue, and ability, so may his success be. We do not wish to be understood as asserting that ability of head or hand is fittingly compensated in the cities, for it is not, save in some instances that form a very small minority; but we do say that ability, coupled with a sincerity of purpose, and a determination to make that ability known, felt, and acknowledged, will, in the great majority of cases, conquer the difficulties that beset the path, and finally secure for a man the respect of his associates. W.

FREDRIKA BREMER.

THE most inadequate biography of any celebrated woman is that of Fredrika Bremer. A small volume comprises letters, unpublished sketches, autobiography, and a brief account of her life and death, written by her sister.

Doubtless much more was written of Sweden's most popular author, by her countrymen, than this unpretentious volume which alone reached translation and the United States. But as America's

courted guest in 1850–51, associating with Emerson and Channing, Lowell and Whittier, Lydia Maria Child, Catherine Sedgwick, and Mrs. Sigourney, our interest impels a closer inquiry into her character.

America was her other home. She loved its people. She felt its newness and brisk enterprise invigorate her own spirits. And when she departed, taking with her the friendship of America's noblest representatives, she sang unto the Lord that new song which we find immediately after in her "The Homes of the New World," "The Four Sisters," "Father and Daughter," etc.

No works of one author differ more widely in their views of life than Fredrika Bremer's before and after her visit to the United States. And precisely because our people, institutions, customs, and laws have made such a deep impression on the whole tenor of her after-life, do we want to know something more of her.

To have her works is to have her. They are all mirrors reflecting herself with all her aspirations, fears, doubts, and humility. In her the spirit of inquiry rules supreme, and a warm, enthusiastic faith in humanity inspires her eloquence, infusing charity into the hardest, and hope into the saddest, heart.

Her earlier novels, apart from their graphic delineation of Swedish character, indicate that restless, undefined longing of her searching spirit which was the consuming fire of her prisoned girlhood, and the powerful impetus of her matured activity. First, it is the chafing spirit crying: I seek something great and good; I long to do something for eternity! Later, the rounded, deedful life which says so eloquently: I am finding, I am accomplishing, I am at peace. The works of her youth portray her mind's growth, her soul's struggles against the bondage of blind faith, and the joyless freedom of utter unbelief. Those of her mature years reflect her life's light, sending abroad the glory of its hope and the warmth of its love.

Hers is so eminently the history of all active, inquiring minds in their premature grapple with questions which have baffled the wisdom of ages, that the sequel is an anchor to all unquiet ones. It is, therefore, in that stage of intellectual growth where the imagination yields to

inquiry, and romances are laid aside for speculative philosophy; where the mind, seeking vainly for the ultimate, drifts out upon that shoreless sea of doubt which means torment to the strong and indifference to the weak, that acquaintance with Fredrika Bremer will be most timely and beneficial. She will not, indeed, solve those dark problems of life and futurity with which sages of all centuries have vainly wrought. But where they only torment with their vague surmises and unwillingness to confess the limitations of human wisdom, she soothes by that very confession. She quiets the troubled spirit with the balm which lies in the sympathy of mutual wants. Her genius was no lofty loneliness inspiring loveless awe and forbidding closer communion. It was a lowly, world-embracing benevolence, soliciting love and happiness for all as for herself, and inspiring humanity with a sustaining faith in the eternal elements of good which will eventually right all things and bring the unfathomed from the deeps.

In this sustaining hope she lived and worked, and would have others live and work to cast away the barriers to life's fullest enjoyment. To bring into full play only the good, eternal elements of our being, thus concentrating the strength of those harmonies which work the happiness of mankind, was her life's object. She endeavored always to find the virtue before the vice, to encourage the good before she condemned the evil. If there was any good in mankind, that she would find and show the misanthropist. If there was any love, that she would bring forth and have the whole world sun themselves in its genial warmth. One never reads her descriptions of "The Homes of the New World" without being animated with a fresh confidence in the future of humanity. When she leads us to the fireside and the forum of the American people, we know ourselves amid the destined progenitors of universal liberty. She points to the beauties, the resources, and the rugged strength of the youthful world with glowing promise. And if dark objects would thrust themselves before her, she wrote of them with the hope which has since been realized. She never called attention to an evil without suggesting a remedy. She never depicted the misery of vice without a visible effort to alleviate it. The bright characters of her novels are embodiments of her own sentiments--full of faith in man, and enthusiasm for all things noble and progressive. They are persons whom one has but to see to love and trust forever. Her dark characters are only weak —a little lower on the stair of progress, a little slower climbing up; but not depraved—not damnable. She gives no black caricatures of life. Occasionally she allows herself a little humor at their expense; generally she gives the whispered word of hope and consolation and the hand leading upward. For these "children of the twilight," as she called them, her heart was full of hope and charity, as for the good it was full of love and reverence.

In the philosophy of life, Fredrika Bremer discards the method of tracing causes in order to apply remedies. Never mind vices, thought she: they may die of neglect. In diligently hoeing our cornfield we are satisfied to know that the weeds will be exterminated without inquiring into their nature or classifications. If it is impossible for the mind to refrain from inquiry, it is equally impossible by inquiry to reach the source of things, and life is too short to waste it in speculation, when, to foster the known good, is to drive evil and every negative to man's happiness from the field.

There is, perhaps, no author who has been so loved by her generation or exercised so beneficent an influence over all minds that came in contact with hers. It is one thing to admire, another to love, an author. Genius calls forth the former, motive the latter. Genius lives longer, motive draws nearer. The gaze of centuries may dwell in awe upon the dazzling light of genius, while the hearts of only one generation may be warmed by the glow of a noble motive. But who would

wish to gaze forever at the sun? and who would be without the fire on the hearth, which serves, as nothing else can, the need of the occasion! Fredrika Bremer was a writer of motive and impulse rather than of genius. She was no sooner known as the author than she was loved as the individual. One followed her narratives to gather hope and strength in the footsteps of her own struggling, triumphant, life. She was no overwhelming genius, as Madame de Stael; no revolutionizing power, as Harriet Martineau; no magnificent delver in darkness, as George Eliot. But she was what neither of these ever could have been—our household angel, our daily comforter. When we have read their voluminous wisdom, to find the brain perplexed with ponderous questions they could present, but never solve, and the heart heavy with that vast sense of loneliness which we invariably experience in contemplating their heights fortified with stoical strength, and our depth surrounded with innumerable up-hills of ordinary life, how infinitely precious is the extended hand! how dear the voice which says, I am like you: I suffer, I weep, I struggle, I am tempted to despair like you. But come, love with me. Love has rent the veil in the temple of worship; it will rend the mystery in the temple of truth whose innermost sanctuary is love, and you and I will see it before the watchers on yonder barren heights!

It is this all-embracing love; this solicitude for suffering humanity; this sympathy with restless, searching minds which distinguished Fredrika Bremer from other writers and drew her readers in a circle of sweet intimacy around her. She was parent, teacher, friend, lover. Herein lay the secret of her power—she was humble in her greatness, and wrote of all classes as she addressed all classes. What great geniuses have said in a great way to great minds, she has simplified to the common understanding. And the problems of life which greater minds have vainly endeavored to solve, she has taught humanity to lay, in hope and resignation, at the feet of the Sublime Revealer with none to prove her teaching false.

There is a period in our life when character receives its final shape. Education brings it forth, experience and knowledge chisel it into relief. But that which shapes it is the influence of some strong impression. Fredrika Bremer's writings are peculiarly adapted for the transition period from youth to maturity. She arrests the eager mind with her questionings; then—unlike extreme philosophers who search forever with the courage of rare superiority, and discourage and fatigue ordinary minds—reaches for the heart, and teaches it to feel what the understanding can not comprehend. She lets the inspiration of the soul finish what the intellect began, saving both by leading them into harmony with all the elements of being. The impression she makes upon our character is indelible and sustaining. We eagerly follow her footsteps on the path of inquiry, and when with her we almost faint with fatigue and discouragement, she rests by the fountain of contemplation. "Oh, there is happiness, devotion, bliss in this path which only he feels who has wandered along it!" is her joyous exclamation, and who that has walked with her does not repeat it with all the fervor of grateful sympathy! Reconciled with self, with the world, and creation, we, too, embrace the universe in ecstasy! The elements of immortality are at work within us, and we have a foretaste of the eternal, the perfect, the blissful in contemplation! We are only atoms among atoms, say philosophers. But self-conscious atoms, with the eternal and divine within to work its own perfection, says Fredrika Bremer. Light! more light! has been the cry of sages of every age, who had not light enough to see the source of light. Love! more love! has been the cry of Fredrika Bremer, who felt and found the primal light, the illuminator of the universe, in the soul's lamp of love. Its eternal spark has gleamed through dark space and kindled chaos. It still gleams through every atom of the universe and kindles every power into action. Love was her "open sesame!" with which she penetrated the

deepest cavern of life and brought forth treasures with which she opened the human heart and illumined it with magic rays. Through love to light, through light to peace and joy, she wandered, leading us by the hand with the tender solicitude of a mother; discoursing by the way with the affectionate confidence of a sister; encouraging, animating with the glowing enthusiasm of a friend. Others there may be with teachings dressed in loftier lore and steps directed to higher mountains, but they will not accomplish more than she who has taught us that life's sweetest lesson is the love with which she has worked so many healing miracles in our hearts. Where others spur, she animates; where others dictate and censure, she pleads and compassionates; where others exact homage, she embraces. From her own heart's love she fills ours, that we also may love mankind, and truly loving, the object of life is reached—we truly live!

BERTHA A. WINKLER.

THE MEDLEY OF LIFE.

THERE is in this world a strange mingling of measure,
A strange combination of sorrow and pleasure.
For a moment we lie in the lap of repose,
And then we are called on to battle with foes.
The one on whose friendship we wholly rely,
In our moments of need is the first one to fly;
And the hopes that we cherish, the plans that we lay,
By blasts of misfortune are driven away.

He who by his genius and courage would rise,
Must travel in gloom beneath storm-clouded skies;
The cold look of scorn chills the flow of ambition,
And fame seems a child of high birth and condition.

The cruel arm of power oppresses the weak,
And men suffer torture for the truth which they speak;
For one man's offenses a nation must bleed,
In the name of religion men wage war for greed.
The warrior for conquest, with his sabre all red
With innocent blood which in madness he shed,
Claims the blessings of God at the altar of prayer—
Soldier-saint with his spoils Eden-glories to share!

Kind Nature her lessons of wisdom discloses
Like aroma united by fresh blooming roses,
But creed, caste, and bias are firmly combined
To circumscribe thought and thus fetter the mind;
With faith in the mystic men stand on the brink
Of Truth's precious fountain refusing to drink.

But in hours of darkness when we fall by the way,
With no voice to pity and no hand to stay,
When energy fails us and hope's at an end,
Kind Providence sends unexpected a friend.
When winds rage in fury and billows are high,
And that fierce savage, Thunder, is rending the sky,
A soft voice within us causes terror to cease,
And a heavenly messenger whispers us, "Peace."

C. C. COLLINS.

AUNT ELLERY'S IDEAL.

MRS. ELLERY'S plump and dimpled hands were making quick work in disposing of a heap of clean clothes, piled upon the dining-room table. She sprinkled and folded and rolled and packed away in a clothes-basket one article after another with a speed, a grace, and a heartiness which at last moved her observant young companion to remark:

"Why, you do that exactly as if you liked to do it!"

"And I do like it," Mrs. Ellery replied with a bright glance. "Why not? There's nothing more delicious in their freshness and fragrance than clean clothes, soaked through and through as these are with pure air and sunshine. It's packing away just so much purity as well as utility,"

and she spread an immense Turkish towel over the folding-board. "See there, Kittie!" As she spoke she pointed to a long line of exquisite color flickering along the towel — the effect of a stray sunbeam striking the crimson finger-bowl which held the water.

"Mother wouldn't let me use such a thing as that half a minute for such work," and Kittie Hale regarded the bowl quite solemnly. "Isn't it lovely?"

"With proper care—and one would be ashamed not to take proper care of everything—there can be no more harm in using this bowl than the commonest, ugliest earthern one. I've been enjoying the bowl quite as much as the clothes as I went along. Now imagine these all ironed and layed away in piles in the drawer ready for use—clean, smooth, and sweet!"

"But mercy, Aunt Harriet, I shouldn't think you'd want to think about the ironing till the time came to do it. I think it's hateful work. Everything would go rough-dry if I had my way."

"Why, Kittie, there's nothing in all my house I enjoy so much, as the washing and ironing. There's nothing pays so well while you are doing it and after it's done."

"You *don't* mean *washing?*" Kittie Hale's tone matched the expression of her face.

Mrs. Ellery gave a little chuckling laugh. The dimples in her cheeks—and knuckles—were her niece's especial admiration.

"Don't I though? Why, I positively revel in soap and water. Of course dirty clothes are just—dirty clothes. Nobody likes them any more than they like—well, meanness or wickedness in the person who wears them. Sin and dirt always seem to belong together, somehow—the great negations of the physical and the spiritual world. I like to wash soiled clothes just as I'd like to cure a patient if I were a doctor, or reform a criminal if I were a minister. It's the same principle, you see — taking something that's soiled or diseased, and therefore useless or harmful, and making it clean and whole and strong and good for something." Mrs. Ellery's face flushed, and her eyes sparkled—as they always did when she talked in that strain. Her niece liked to watch her so.

"Then is there anything lovelier than soap-suds—the white, bubbling, flashing, evanescent thing—and such a purifier as it is! I enjoy it as I used to when I was a child, only now I haven't time to watch these prosaic bubbles catch all the colors of the rainbow. But I know the colors are there all the same."

"You are the queerest woman, Aunt Harriet!" Kittie Hale gave a very palpable sigh, as she closed the book which for a long time had lain unheeded on her lap. Propping her chin on her hands, she leaned her elbows on the table, and resumed:

"I wonder if my own mother would have been like you if she had lived. I suppose I could have somehow endured it better if she had been. But you've no idea how I hate all that drudgery at home! I haven't words to express it!"

Mrs. Ellery's heart yearned over the young girl whose daily companions were an indifferent father, a coarse, matter-of-fact step-mother; whose home was poor not so much from lack of money as from the want of taste and refinement; sympathy, tenderness, and appreciation of the graces of life—those things which can be had without money and without price, being too priceless for any money to buy.

Kittie Hale was half sick in body and wholly sick in soul. It was her step-mother's clumsy understanding of the fact that she was all wrong somehow, which induced her to allow a brief visit to the Ellerys. "Har'et's too high-falutin for my notion," she commented in her hard high voice whenever the lady was spoken of, "but she's good enough in her way." To go from her own home to that of her aunt's, was to Kittie, as she vehemently expressed it, "going from earth to heaven, for it don't seem as if you lived in the same world with mother!" She always found it hard to pronounce that word, yet this second wife was as kind to

her husband's daughter as it was in her nature to be. Kittie could not express what it was that tried and irritated her so. Her most lucid statement was that her step-mother was "so different from Aunt Harriet. When I see you do housework," she said, "it doesn't seem to be the hideous nightmare of a thing that it is at home."

"I grow tired of it sometimes," her aunt said quickly, noticing the deepening gloom on the young face. "I think it is the constant repetition of its duties that makes it tiresome to almost everybody. It's not like many kinds of work, though I try never to forget that it's just as necessary and just as useful as any. I wish clothes would keep clean a little longer, and rooms didn't get dusty quite so often, and I'd be perfectly reconciled to wash dishes once a day instead of three times," she said with a half laugh and a droll inflection in her tone. "There *are* things quite as enjoyable to me as a broom, a churn, or a flat-iron. You know how I like to draw, for instance; and fancy-work—embroidery—why, I feel quite wild sometimes when I realize that perhaps never, as long as I live, shall I have any more time for embroidery—with all the beautiful materials and patterns that have come into existence since I was a girl."

"Well, if that is the way you feel, Aunt Harriet, how do you manage to keep so comfortable and contented?"

"Manage is a very good word, Kittie," Mrs. Ellery replied. "I try to manage my tastes and desires, as I would a lot of unruly children, and sometimes I have my hands full. I've always felt that I would rather be an artist than anything else in the world; but that, evidently, wasn't the work designed for me to do. But if one has artistic tastes, she can use them and enjoy them, too, without painting pictures or embroidering cushions. I try to get every bit of comfort I can from everything I have to do. When I was taking these clothes off the grass, I enjoyed the clouds and the trees and the flowers over there in the garden—why, I was going to say, as much as the woman who paints them!"

As she finished speaking, she folded the last garment and laid it in the basket.

"I don't believe mother knows one tree from another," was Kittie's comment in a very bitter tone, "and this spring she planted lettuce and radishes, where I wanted pinks and geraniums. She cares a good deal more for what she has to eat, than for any flower that ever blossomed."

"But couldn't you see any beauty in the lettuce and the radishes?" Mrs. Ellery inquired. "I want to get some for tea. I'm glad you spoke of them. Take your hat and come with me. You've not been out of doors to-day."

The dispirited girl rose slowly, and as if she would much rather remain in her comfortable rocking-chair. It was still quite hot, and they worked faster than they talked, glad to get into the house again, where Mrs. Ellery proceeded to set the table for the early supper.

"Now see if that is not more satisfactory than one rough-dry, as you would have it, Kittie."

The snowy table-cloth had been ironed in creases which formed great diamonds.

"That's one way in which I indulge my fancy for geometrical designs," her aunt remarked, "and it doesn't take ten minutes extra time, either. The napkins are another," and she folded each into some fanciful shape and placed them in the goblets.

"Mother always keeps the goblets for company," Kittie remarked. "We use coarse, clumsy tumblers. Milk never tastes at home as it does here."

"Care, again, you see, as I said about the finger-bowl. Glass and china don't wear out. If you choose to be careful of them, why shouldn't you use the best you have for every meal you eat?—if you would really enjoy the meal more because of it. For my part I like to see a table look wholesome, appetizing—artistic, if possible. Eating isn't the gross animal thing—not wholly—that so many people make it. I enjoy these goblets and glass dishes in the same way as I do the vases and the card-receiver in the parlor, though one may hold apple-sauce and

the other apple-blossoms. The apple-blossoms might inspire me to paint them, but I couldn't paint very long or very well without apple-sauce or something more substantial, to sustain me physically."

Kittie Hale nodded her head appreciatively. She even smiled a little at her aunt's earnestness.

"I like bright silver, too; well enough to sit down and rub it when I'm too tired to stand up and do something else; and it's almost as much pleasure to polish a silver spoon as to decorate a wooden one. Cups and saucers—cream-pitcher and sugar-bowl—I hate to see them huddled on to the table hit or miss, and as if they needed the Riot Act read to them, when they might just as easily and quickly be placed so as to look at home and on good terms with each other."

"That cream and that maple syrup look real lovely in those pretty glass pitchers, Aunt Harriet."

"Yes, and fruits—how much more attractive, and really suitable also, they look in glass dishes. Common things are no less beautiful because they are common. That is one of our delusions. See the different shades of green in that lettuce. Look at the edge of the leaves. There's beauty in every growing thing. Why, I think potato-blossoms are pretty. So would everybody, if they were not just —po.atoes! And the amazing variety! No two things alike in all this great universe."

"You like to cook, don't you, Aunt Harriet?" Kittie asked in a tone which implied that her aunt generally liked disagreeable things.

"Yes, I've grown to like it. I knew I had to do it, all my life, perhaps, and I made up my mind that it should not always be drudgery if I could help it. When I found another name for cooking and called it creation—for that's just what it is—when I realized that in the ingredients and proper proportions of a good cake or a good pudding was the same principle of selection and arrangement which goes to the writing of a book, the painting of a picture, or the building of a house—why, it was one of the revelations of my life. I can't tell you what a help and encouragement it was, and I've held on to it ever since."

"But the house lasts, and the biscuit—these aren't gone yet, but they will be by the time Uncle Frank and the boys have finished supper."

"The biscuit lasts as long, I've no doubt, in proportion to the time and the thought given to it and the purpose for which it is made. At any rate, I like to think so. It will help make blood and nerve and muscle—it's almost as plain as bread, you see—and none of us can tell how much good your uncle and the boys can do on the strength of the food they eat."

"They're coming up from the barn now," Kittie said suddenly. "They'll notice that there's a clean cloth on the table, besides seeing what there is to eat. If father ever noticed anything, or cared anyway, it would make some things so much easier!"

It was nearly an hour later before Mrs. Ellery and her niece had a chance to renew their conversation, and it turned upon Kittie's especial detestation—dish-washing.

"Nearly all supper-time I was thinking over what you said about washing and ironing, Aunt Harriet. I suppose that's what you mean by finding the ideal in everything. But if there's a place on earth where I'm positively sure it can't exist, it's in a dish-pan!"

"The situation that has not its ideal was never yet occupied by man," Mrs. Ellery quoted softly. "One of our greatest philosophers said that. If it is true, it is no truer of the astronomer with his telescope in his observatory, than of the girl with her pan and hot water at the kitchen sink."

There was a significant pause for a minute while Kittie wiped a china cup and admired the order of her aunt's shelves.

"I suppose," she said at last, quite slowly and as if weighing the matter, "when I get rested, and feel a little stronger, and learn more of your way of

doing things, why, then perhaps—perhaps I can find the ideal in a dish-pan!"

"It is surely there, my dear. I have faith to believe that you will find it," and, with a smile, she touched the tender troubled lips with a kiss which was a blessing and a benediction.

CAROLINE B. LE ROW.

THE DUDE.—*Our Continent* thus describes this recent development of New York society: "A new species of young man has lately become sufficiently numerous in the streets of New York to demand classification as a type. The time-honored and now somewhat obsolete terms of 'dandy,' 'swell,' 'cad,' and so on, even when qualified and intensified by the adjective 'howling,' do not seem to meet his case; so the great slang-loving public invented a name for him, which quickly became current, and has now found its way into print. This young man seems first to have attracted notice by means of his banged hair, but the bang does not, or at least did not, constitute an individual of the species, though perhaps at the present time it may be regarded as typical. No satisfactory etymological derivation of the term 'Dude' has as yet been suggested by the philologists, but it appeals to a subtile sense of harmony when used in reference to the live specimens whose chief habitat is the west sidewalk of Fifth Avenue during the late afternoon hours. The dude possesses in his outward appearance and bearing all the attributes of a gentleman, excepting, perhaps, that of manliness. His dress is unostentatious in its perfection, its only loud notes being a pair of white gaiters, which are believed to be going out already in obedience to the unwritten code of dudeism. Why the dude feels any interest in life is not clear—he does not look as if he enjoyed it. There is a certain introspective earnestness in his bearing that reminds one of the theological student, and perhaps the prevailing high collar strengthens the resemblance. To say that the dude is offensively supercilious would do him injustice, for superciliousness implies a certain conspicuity out of tone with the eternal verities of his creed. That he is intensely supercilious is probably true; but his superiority to the multitude lies in the fact that he holds all distinguishing marks of his rank strictly in abeyance. The dude is young now, and his advancing years will be watched with curiosity by an anxious public. It is now held by high authority that he must be under twenty-five years of age. What he will be after passing that limit, time alone can show. Let us hope that he will be as harmless then as he apparently is now."

TAKE MORE EXERCISE.—*Scene:* Office of a pompous doctor who knows it all. Enter a tired man, who drops into a seat, and says that he wants treatment. The doctor puts on his eye-glasses, looks at the man's tongue, feels his pulse, sounds his chest, and then draws up to his full height and says: "Same old story, my friend. Men can't live without fresh air. No use trying it. I could make myself a corpse, like you are doing by degrees, if I sat down in my office and didn't stir. You must have fresh air; you must take long walks, and brace up by staying outdoors. Now, I could make a drug-store of you, and you would think I was a smart man, but my advice to you is to walk, walk, walk."

Patient. But, doctor——

Doctor. That's right. Argue the question. That's my reward. Of course you know all about my business. Now, will you take my advice? Take long walks every day, several times a day, and get your blood in circulation.

Patient. I do walk, doctor. I——

Doctor. Of course you walk. I know that; but walk more. Walk ten times as much as you do now. That will cure you.

Patient. But my business——

Doctor. Of course your business prevents it. Change your business, so that you will have to walk more. What is your business?

Patient. I am a letter-carrier.

Doctor (*paralyzed*). My friend, permit me to once more examine your tongue.—*Sun.*

CONTAGIOUS DISEASES IN PARIS.

[From our Special Correspondent].

THE number of Americans visiting Europe is likely yearly to increase, with the improvements made in the means of communication. Nevertheless, the journey is an arduous undertaking, and but few persons would care to travel so far unless they were able to devote several months to visiting places of interest on the other side of the Atlantic. Whatever, therefore, may be the sanitary advantages or disadvantages of European life, the American visitor generally remains absent from his home long enough to experience the effects of this change of influence.

European sanitation may consequently be considered not merely as a question of theoretical interest, but as having a practical bearing on the life and health of thousands of foreigners. The importance of this fact has unfortunately been brought home to many American families during the recent typhoid epidemic which in the course of the year 1882 wrought such havoc among strangers in Paris.

England, it is true, may compare favorably with the United States from a sanitary point of view, but it does not offer the same attractions as the European continent to the foreign visitor and pleasure-seeker. London — in spite of its vast commercial, historical, and political interest and importance—is but a sorry, murky, muddy, gloomy place when contrasted with the brilliancy, the gayety, the aspect of general contentment and enjoyment that bewilder the gaze of the stranger as he takes his first stroll along the Paris boulevards. It, therefore, only proves a keen and just sense of appreciation on the part of the American-European colony, when we note that the immense majority live in Paris in preference to London. Yet there is at least one weighty objection that must be raised against this preference—the risk to life and health is much greater in Paris than in London, while the difference between continental and English rural, seaside, and general health resorts is still more in favor of the latter.

In England the death-rate is almost invariably lower; and, what is more to the point, the presence of zymotic disease not so general.

The sanitary legislation of France is a good half century behind that of England; for instance, disinfection and isolation in cases of contagious fevers are not enforced and very rarely practiced. In the matter of drainage the state of affairs is still worse. But few French medical men have any knowledge as to the nature or danger of sewer gas. At most they recognize that a bad smell is

not wholesome; although many doctors, especially provincial practitioners, seem to think that bad smells are an inherent and inevitable concomitant of human existence.

In all this but little improvement will ever be achieved till the capital of France has set the example; and, so far as drainage is concerned, it is one of the principal sinners. As a natural result typhoid fever has become endemic in Paris, though it also occasionally bursts forth with epidemic violence. We find that the deaths from typhoid fever in Paris amounted to 903 in 1869, to 938 in 1872, to 953 in 1873, to 823 in 1874, to 1,048 in 1875, to 2,032 in 1876, to 1,201 in 1877, to 857 in 1878, to 1,001 in 1879, to 2,120 in 1880, to 2,133 in 1881; finally, last year the total deaths must have reached a little over 3,000—2,842 deaths from typhoid fever had already been registered by the 23d of November, 1882.

It will be noted from these figures, first, that the exceptional year of the war is omitted; that we may reckon on close to a thousand deaths from typhoid fever in Paris during ordinary times, while quickly returning epidemics raise this figure to two or three thousand. The tendency is not to diminish, but to increase; and this is even more noticeable with respect to the other leading zymotic diseases.

Dr. Brouardel, in the *Revue d'Hygiène*, of November, 1882, gives the following statistics:

MORTALITY PER 100,000 INHABITANTS OF PARIS:

	From 1869 *to* 1874.	*From* 1874 *to* 1879.	*From* 1879 *to* 1881.
Typhoid fever...	48.4	61.4	96.5
Diphtheria.....	53.6	88.8	101.3
Small-pox.....	11.4	17.2	74.8
Measles	30.3	37.5	43.3
Scarlet fever	7.2	4.6	18.1

Thus, in the period mentioned above, we have an annual death-rate from these five zymotic diseases rising from 1.51 per 1,000 of the population to 3.34 per 1,000. This is evidently due to no accidental circumstance, but the natural result of those sanitary evils against which it is our present purpose to protest.

What, in a few words, is the system of drainage extant in Paris? Formerly it was of a uniform description, and, as such, was perhaps preferable; for now we have the disadvantages of several systems and none of their advantages. Formerly each closet drained into a cess-pool situated under the back yard, and not unfrequently under the house itself. There was no water in the closets. Dire were the penalties that awaited the householder who threw slops down the pipe; and, in the rare instances where something approaching to cleanliness could be enjoyed, it was obtained by the active use of a brush and a little clean water brought in a jug. Of course there were no traps. What could have been the use of them without water? and the gas generated in the cess-pool and the pipes had no difficulty in gaining access into the dwellings. The law orders, however, that each cess-pool shall have a ventilating pipe from its summit to the roof of the house; but the sewer gas would naturally prefer the closet pipes, where the heat of the interior of the houses acts as an attractive power. However bad all this may be, it had at least one great advantage—the house only absorbed the emanations of its own cesspool; and, if this could be kept free from the introduction of specific germs, a certain amount of immunity from zymotic disease was enjoyed.

With regard to the slops, kitchen and vegetable water, these were thrown into special receptacles, which, joining the water-spouts, found their way to an open gutter in front of the house. This gutter, to save appearances, was protected by a perforated iron covering, led to the street gutter, and then to the sewer. Hence the connection between the house and the sewers was completely broken off, and the sewers themselves did not receive any human dejecta whatever; nor could the sewers help to carry from quarter to quarter the germs of disease. Finally—and this is a matter of some financial im-

portance—the contents of the cess-pools were of a very concentrated and therefore valuable description and the trade in human guano an important source of revenue.

As matters now stand, however, Paris is suffering from all the inconveniences of an experimental stage of transition. In some quarters, what is known as the *système diviseur* has been introduced. This consists of an iron barrel, which is supposed to retain all the solids and allows the liquids to escape to the sewers. Of course these liquids contain, in solution or suspension, all the dangerous properties and the specific germs of the sewage which formerly was carried solely to the cess-pools. As the number of these *tinnettes filtres*, as they are called, is estimated at several thousand, the sewers of Paris are now far more dangerous than they used to be. But as the danger of the sewers increased, the authorities, with singular lack of foresight, have been busily engaged in placing the waste water pipes in direct communication with them. It is a repetition of the old error, that external cleanliness means real cleanliness; a mere unscientific attempt to keep up appearances. Of course it was not very pleasant to see soap-suds sailing down the gutter, or to detect by the odor emanating from the water-spout the precise nature of the vegetables that had just been cooked within the house. Yet, these inconveniences were not very perceptible in the rush of people and of objects that crowd the thoroughfares of a great city. In any case, anything is preferable to placing the interior of the houses in direct communication with the interior of the sewers. But, for the sake of keeping up appearances, this is precisely what has been done, especially in fashionable quarters and in new and high-class houses. The pipe of the kitchen sink, the pipe that communicates with the receptacle for house-slops, the pipes from the lavatories, and even the pipe that brings the rain from the roof of the house, are all joined together at the basis of the house and conducted underground to the sewer. There is not a trap, not a siphon anywhere to arrest the ascension of sewer gas, which is naturally drawn up these pipes by their higher elevation and temperature. As for such admirable and ingenious inventions as the American contrivance, the Bower trap, they are utterly unknown in France. The most modern pipe which communicates from the sewer to the base of the house is made of cast-iron. Its mouth assumes the form of a spoon, which is supposed to retain a little water; but, inasmuch as there is no dip across the base of the spoon, there is always space for the air to pass between the water and the roof of the pipe.

The waste pipes must, it has been demonstrated, be considered as a constant source of danger. They convey to the houses the gas from the sewers, and this gas is daily becoming more foul as the number of *tinnettes filtres* is increased and the number and length of the sewers and of the population augments without any proportionate increase in the water supply.

We visited a handsome modern house in the Boulevard Malesherbes, where a great number of American families board. Here no less than four cases of typhoid fever had occurred in rapid succession. The closets, like all French closets, were not trapped; but, as they drained into a *tinnette filtre* situated in the cellar, they had a constant water supply. The pans, however, are so arranged that they do not retain more than an inch deep of water, so that any effluvia from the *tinnette* would have no difficulty in entering the closet. The kitchen range was close to the sink where the dishes are washed up, and the heat from the fire very considerable. On applying a burning match to the mouth of the sink-pipe we found a decided upward draught, and, at the same time, we could not help noticing a whipped cream standing close at hand. This appetizing dish, fully exposed to the inrush of foul air, was literally washed with sewer gas previous to being served at table. Doubtless its flavor was not

modified, but we all know how promptly milk absorbs the specific germ of typhoid fever, and how many epidemics have been traced to a contaminated milk supply. That some of the American visitors boarding in this house should have fallen victims to the prevailing epidemic is, therefore, in nowise surprising. First it should be noticed that it is not the practice in France to disinfect the dejections of fever patients. These, in spite of the germs they contain, are thrown directly into the cess-pool or sewer, where the morbific principle may retain its vitality, grow, and multiply for an indefinite period. The sewer and cess-pool gas, from which French houses are utterly unprotected, are, therefore, more than usually dangerous.

The wonder under such circumstances is, that typhoid fever should not be more prevalent and disastrous; but this can be explained in a manner which, though satisfactory in itself, is particularly alarming to the foreign visitor. The fact is that the Parisian has been inured to the poison. From his earliest youth he has absorbed the germs of typhoid fever often with fatal, but not well-marked consequences. Some gastric derangement in early infancy has brought him to an untimely end. More frequently he has recovered. Perhaps he has suffered several times in his infancy from some ill-defined indisposition due to absorption of typhoid germs, which have ultimately acted as a vaccine—giving him, if not complete, at least partial immunity from the disease. This theory is not only generally believed, but appears to be demonstrated by the fact that during the recent epidemic by far the larger proportion of cases occurred among persons who were not natives of Paris—visitors and tourists, or workmen coming from rural districts in the hope of obtaining employment in the capital. Indeed, it is obvious that an American or an Englishman, accustomed to live all his life in a town where the drain pipes are trapped, sometimes ventilated—where the sewers are always ventilated and generally well-kept and cleaned, should feel evil consequences from the enormous amount of sewer gas he is compelled to absorb in every French town house.

In ordinary times, fortunately, this did not manifest itself by so grave a result as an outbreak of typhoid fever; though, on the other hand, there are very few young persons who have not suffered from a sharp attack of diarrhœa during the first week or so of their sojourn in Paris. Generally this is attributed to the light French wine, on account of its somewhat acrid flavor. But this is a great mistake, firstly, because water-drinkers suffer at least quite as frequently; and secondly, because the wine contains iron and tannin, and has, if anything, a constipating effect. The diarrhœa is simply one of those beneficent efforts of nature to relieve the body of the unaccustomed presence of microbes, either more numerous or different in their character to what the system has been in the habit of supporting.

Visitors to Paris are generally in a prosperous position, at least they have not suffered from hunger or any specially depressing circumstance. The proportion of invalids and of children is small; consequently the results of bad sanitation, though well-marked and defined, are not so fatal as would be the case if a mixed foreign population of poor and rich, with their children and infants, were exposed to the same dangers.

As a further proof that persons not accustomed to the bad sanitation of Paris are its first victims, we may mention the students of the Paris University. Some years ago a great many youths came direct from rural districts to Paris, and a distressing number fell victims to typhoid fever. Now, however, the health of the students has greatly improved in this respect, but they no longer come up to the University direct from the country. They first spend a few years studying in some large provincial towns, where they experience the evil effects of drainage as bad as that of Paris, and are, therefore, inured to the same or similar specific poisons.

It therefore behooves foreigners to raise their voices against this state of affairs. They run the greatest risks, and, by their lavish expenditure while in Paris, contribute largely to that public wealth from which the means to reform these evils must be derived.

Bad drainage, although the principal, is not the only cause of the increase of disease. The common lodging-houses have been overcrowded to an alarming extent during later years by the great number of provincial workmen who have come up to Paris. Again, the water supply is anything but satisfactory. The waters of the Vanne and the Dhuys are as good as any ever supplied to a large town; but the amount is insufficient, so that in many houses they are not drank at all. Then, even where this water is received, it occasionally falls short and other water is sent in its stead, and this without warning. In drinking water in Paris we are never absolutely certain whether it is the pure water of the Vanne or the Dhuys, or whether it is the more or less contaminated water of the Seine or the Canal d'Ourcy.

These evils are naturally not ignored, and there is now an earnest desire manifested to redeem Paris from its present disgraceful condition. Innumerable discussions have been held at the Academy of Medicine, by the Société de Medécine Publique et d'Hygiène Professionelle, by the Société Française d'Hygiène, and many other learned bodies. The Paris Municipal Council have appointed a Technical Committee to visit and report on the drainage of the principal towns of Europe, and, after inspecting the sewers of Brussels, they are now on their way to London. It is no easy matter, however, to decide what shall be done to remedy the existing state of affairs, and the solution of the problem will be watched with intense interest throughout the whole of the civilized world.

In 1880 there were 80,000 cess-pools in Paris, 17,000 *tinnettes filtres*, and 15,500 portable tubs or pails. As only 60,704 cess-pools were emptied during the year, close upon 10,000 cess-pools must have been allowed to stagnate for more than a year without cleaning.

The Paris sewers must not be judged by those magnificent underground aqueducts which foreigners are allowed to visit. These main sewers, particularly when illuminated, are very imposing; and what with the rattle of trucks, the rush of boats against the currents of water, the glitter of signal lights red and green, the echo of numerous voices, they seem more like some Venetian railway station than the medium for the removal of a city's filth. But even here the fall is insufficient, while in the by-streets and smaller sewers there is often no water at all, and only solid deposits which have to be removed by manual labor. No less than eight hundred workmen have to be constantly employed to clear or rather to push the solid matter forward toward the outfall. So unsuitable are these sewers for the carrying away of solid matter, that in some of the outlying districts it may take six weeks for a heavy substance to reach the outfall. Yet three days is the maximum delay that should be allowed. Hence the Paris sewers generate in large volume carbonic acid gas, sulphuretted hydrogen, marsh gas, ammonia, and various compounds of ammonia, which invade the streets and the houses. If to these in themselves dangerous elements the dejections of some two million people were added, it is impossible to calculate the extent of the mischief that would arise. Before there can be any question of abolishing cess-pools and draining direct into the sewer, the sewers of Paris must be entirely rebuilt. Further, as there is insufficient fall, numerous pumping stations must be established to raise the sewage to a higher level, and thus artificially create the required fall. Again, the water supply must be increased to a very large extent. All this will require an immense outlay. But there is something more which money can not procure and which is equally indispensable, and that is the education of the people in matters relating to hy-

giene. They must be taught how to protect their houses by siphons, interceptors, and ventilation from the ingress of sewer gas. This can only be accomplished in the course of time, and when the condition of the country will enable Frenchmen to turn their thoughts from purely political to more practical questions. Yet to wait till it is possible to apply successfully the English system of drainage to Paris is to condemn many thousand persons, and notably foreign visitors, to premature death.

Under such circumstances the very appropriate suggestions made by a French engineer—M. Berlier—are particularly welcome. M. Berlier proposes to act by pneumatic suction. Utilizing the sewers that actually exist, he would place in them strong though small iron pipes leading up to four pumping stations situated outside Paris. At each of these stations powerful steam engines would produce by pumping a vacuum in these iron pipes which would therefore suck up whatever liquid material might be introduced into these pipes. The difficulty is to insure that nothing hard, nothing likely to create an obstruction shall enter into these pipes. For this purpose an ingenious contrivance has been invented. Under each house, probably where the cess-pool once existed, are placed two iron cylinders capable of holding about fifty to sixty litres of liquid. The first is called "the receiver." In it descends the pipe from the closets, and in its center is a strong wire-work basket. By means of a crank and a handle that can be affixed from the outside a violent rotary motion is imparted to this basket. Should any hard substance, such as a brush or a stone, have fallen inside, the noise will denote its presence; the receiver can at once be opened and the object withdrawn. It will thus be impossible to lose or to conceal any insoluble substance by allowing it to fall down the drain pipes. On the other hand, all soluble substances dashed round by the force of the rotation imparted to the basket will be able to pass through its wire side and travel on in a sufficiently liquid state to the second cylinder, called "the evacuator." This apparatus contains a very large hollow egg-shaped floater. The point, armed by a vulcanite ball, fits tightly into the opening at the bottom of the cylinder which communicates with the pipes that travel along the sewers. The suction keeps the floater in its place, and the cylinder is tightly corked up. It is only when almost filled with water that the upward pressure of the floater in its efforts to float is strong enough to disengage it from the downward suction of the vacuum in the pipe. The suction then acts upon the liquid, draws it off rapidly, and the floater once more falls into its place. Thus the action is quite automatic; the pipes only convey liquid, and as this is mixed with a certain quantity of air, there is an ebullition produced that scours the sides of the pipes and keeps them perfectly clean. Nevertheless, and in case of accident, the pipes are connected with a sort of barometer placed at various points, which indicates the degree of pressure, and starts an electric bell when the pressure is either too great or insufficient. As the pipes are all in the sewers, they can be promptly visited and repaired.

This system is not merely a theory, a proposal—it has been carried into execution. A pumping station has been established at Levallois Perret, and iron pipes laid down as far as the Place de la Concorde, a distance of three and a half miles. Several private houses in the Boulevard Malesherbes, the Rue de la Bienfaisance, the Rue du Rocher, and the Rue de la Madelaine are drained in this manner; but the most important experiment is at the barracks of the Pépinière, where the latrines and cess-pools have been suppressed and the pneumatic system introduced for the benefit of a thousand soldiers. This has been working most satisfactorily for many months; and it must above all be noted that the barracks of the Pépinière are the only soldiers quarters in Paris where there was no case of typhoid fever during the late epidemic.

The first great advantage of this system is that there is no danger of gases entering houses, of drains leaking, nor is it necessary to ventilate into the street. The entire canalization must be absolutely air-tight, and the system ceases to work the very moment a leakage occurs. Repairs must at once be made. For Paris it is specially suitable, as it does not require either the reconstruction of the sewers—the question of fall being of comparatively small importance, nor any additional water supply—the motive power being the vacuum produced by the steam engines, and not the force of gravitation and the volume and rapidity of the rush of water. Again, as the system works automatically, it does not matter how ignorant householders may be of sanitary laws, they will not be called upon to protect themselves against sewer gases, as their houses will no longer be exposed to this poison. Finally, the manure of Paris will not be lost. It can be precipitated and converted into *poudrette*, or it can be pumped forward to any distance and then used for irrigation purposes. This latter is a very important consideration, now that the supplies of phosphates are falling off and the future of agriculture is menaced.

Financially, it is proposed to carry out the scheme by imposing an annual tax of twelve dollars for each house, and this would be less than the actual cost of emptying cess-pools, etc. The receipts thus raised would suffice to pay working costs, interest on capital, and gradual amortization. Each receiver would be visited once a week and a rotary motion imparted to the basket; and, beyond this, no further trouble would be necessary, all might work by itself. The only precaution the public need take is that of pouring sufficient water down to insure the emptying of evacuator and receiver before they left their home for any length of time; otherwise the matter within might ferment during their absence. This is not so dangerous, however, as the ordinary traps, which, when not often used, admit sewer gas as soon as evaporation has lowered the level of the water and broken the seal it is supposed to establish.

Actually, there are 369,020 cubic metres of water supplied per day to the 2,239,928 inhabitants of Paris and its outskirts. This will be augmented to the extent of 140,000 cubic metres more when the works now agreed upon are completed, and is equal to 227 cubic metres per day per inhabitant; but barely a quarter of the amount is fit to drink. The sewers now in use measure more than 600,000 metres in length, and nearly 400,000 metres will have to be built to complete the communications throughout the city. The cost for these latter-mentioned sewers is estimated at $10,000,000. Then, when all is said and done, these sewers will not act properly, and the water that enters them does not suffice to maintain their cleanliness. The force of circumstances compels us, therefore, to look to some other solution of the difficulty, and M. Berlier's proposals are consequently likely to meet with general favor.

The reforming of the drainage system will not in itself, however, suffice to redeem the sanitary condition of Paris. The amount of pure drinking water must be augmented, and its use in all households rendered compulsory. The many unwholesome industries in the outskirts of Paris must be removed to a greater distance. The overcrowding of low lodging-houses requires immediate supervision. The notification of infectious diseases should be obligatory, and disinfection practiced immediately on recovery. Separate hospitals for infectious fevers have yet to be built, and the removal of patients who have not accommodation for isolation at home enforced by the police. These and many other measures at present entirely neglected have all to be introduced into France before that country can consider itself in harmony with modern sanitary science. Such reforms will not in any case be due to the initiative of Frenchmen. Other nations, especially America and England, will have led the way. It appertains to the

English press of both sides of the Atlantic to insist on their early realization. Paris is not merely the chief town of France—it is a cosmopolitan rendezvous, and must therefore be swayed to some extent by the force of foreign opinion. In this the French have not shown any national reluctance or prejudice. Their minds are open to progress, even when not of home growth.

In insisting on such measures as those briefly sketched above we are not giving unwelcome advice, but are only defending the cause of humanity and spreading abroad the truth of a science which the French themselves are the first to recognize as higher and nobler than all consideration of nationality, all prejudice of race, and destined to travel over the narrow limits of political frontiers.

ADOLPHE SMITH.

OFFENSIVE BREATH.

WHAT is more disagreeable than an offensive breath? Perhaps filthiness of person, which would produce an unpleasant odor and unpleasant appearances to the eye. But we are speaking more of persons of respectability who move in good society. It is not very uncommon for such people to have a breath so offensive as to make their near presence extremely disagreeable.

There may be several causes for this, but one of the more common is decayed teeth and the want of care respecting the cleansing of the mouth. And, singular as it may seem, one may have an offensive breath and not know it, and it is a subject on which friends are very reluctant to speak, so that one may have a bad breath for a year and all his friends be aware of it and he not know it.

Let us recommend to all persons the propriety of keeping the mouth clean. After each meal one should remove with a stick or quill-pick all loose particles of food from between the teeth, and rinse the mouth with water, using a soft brush at night and in the morning, and a little nice toilet soap on the brush is not objectionable. Nine out of ten who annoy their friends with bad breath might obviate it entirely by following these directions in regard to the mouth.

Sometimes persons have catarrh which gives unpleasant breath. Persons who eat pork and other greasy food in abundance and a great deal of sugar will be so charged with effete or waste material that, in Nature's effort to get rid of it, the breath will be charged with an offensive odor. When one eats onions or other offensive articles it is not from the stomach the odor comes when we smell the offensive breath, because the passage from the mouth to the stomach is always closed, but from the air passages of the lungs; the blood giving off the odor through the delicate structure of these parts. We need not wonder at this when we call to mind that the air cells of the lungs are estimated to contain a surface of *fifteen hundred square feet!* In fact, the lungs constitute one of the great outlets by which the system rids itself of unfriendly matters which find their way into the blood. When one eats the right kind of food in proper quantity, and the person exercises sufficiently, and, in all respects, lives according to hygienic law, his food will be digested and the effete matter eliminated in the normal way, but when it is the wrong kind of food, and the quantity is too great, every means of getting rid of it is employed by the system, the breath becomes loaded with the morbid matter, as also the skin, and the kidneys make efforts to dispose of it. If one pull up the wick of a lamp, three times as much oil is consumed as when it was properly adjusted, and the result is a long red blaze which gives but little light, and a fog of black smoke fills the air. This is unconsumed carbon; and, when one overeats, his system, in like manner, is overcharged with undi-

gested food; his lungs labor to dispose of anything taken into the system which is abnormal or unwholesome.

The execrable breath of the drunkard is unfortunately known to many who are obliged to come in contact with intemperate friends; a great quantity of alcohol loaded with effete matter is thrown off through the lungs. If one were to put his little finger into a vial of turpentine so that the finger would constitute a perfect stopper, his breath would indicate the presence of turpentine in less than five minutes. The finger would absorb it, it would get into the circulation, and be thrown off through the lungs.

What can we expect but a bad breath if we live improperly, if we eat bad food or drink spirituous liquors, or load our system with tobacco? It is said of the cannibals that they will not eat the flesh of a tobacco-chewer, it is so highly charged with the taste and odor of tobacco; and such medical students as do not chew or smoke are offended in the dissecting-room by the odor which emanates from the fresh subject on the dissecting-table who had been accustomed to the use of tobacco. Unfortunately, however, for morals and decency, three-quarters, if not nine-tenths, of the medical students use tobacco. We counted over fifty students smoking in the lecture-room of a New York medical college while waiting for the professor to come in and commence his lecture on "Toxicology, especially Narcotic Poisons," and in less than five minutes he dwelt upon the deleterious effects of the poison of tobacco.

With a clean mouth and healthy stomach, with proper food and drink, and a morning hand-bath, followed by a thorough rubbing with a coarse towel, there will be no necessity to complain of bad odors from the body or of bad breath.

TREATMENT OF THE HAIR.

PERFECT cleanliness is indispensable for the preservation of the health, beauty, and color of the hair, as well as its duration. This is attained by frequently washing it in tepid, soft water; using those soaps which have the smallest portion of alkali in their composition, as this substance renders the hair too dry, and, by depriving it of its moist coloring matter, impairs at once its strength and beauty.

After washing, the hair should be immediately and thoroughly dried; and, when the towel has ceased to imbibe moisture, brushed constantly in the sun or before a fire until its lightness and elasticity is fully restored; and, in dressing it, a little marrow pomatum, bear's grease, or fragrant oil may be used.

The belief that washing the head induces catarrh or headache or injures the hair is erroneous, as the application of water to the skin is the most natural and effective method of cleansing it and of keeping open the pores, through which the perspiration must pass in order to insure its healthy condition. Besides, scales naturally form around the roots of the hair of the most cleanly person, and these can only be completely detached by the use of soap. The constant and persevering use of the brush is a great means of beautifying the hair, rendering it glossy and elastic and encouraging a disposition to curl. The brush produces further advantages in propelling and calling into action the contents of the numerous vessels and pores which are interspersed over the whole surface of the head, and furnish vigor and nourishment to the hair. Five minutes at least every morning and evening should be devoted to this purpose; and, if these rules be abided by, there will be no scurf in the hair.

Hair, the universal vanity, has been seized upon universally by the quacks; it has proved to them the true Golden

Fleece. Science, as though such a subject were beneath its attention, has left the care of the most beautiful ornament of the body in the hands of charlatans. Only two or three scientific persons have ever treated at any length of the hair, or have shown by the light of physiology what art is capable of doing and what it is powerless to do in cases of diseases of the skin.

Prof. A. R. Robinson has given us the best information regarding the diseases of the hair, in his paper read before the Alumni Association at Bellevue Hospital Medical College on Sycosis (Barbers' Itch), treating the hair from its infancy. Those who understand how the hair is nourished can but smile at the monstrous gullibility of the public in putting such faith in the puffs and extracts of the hair-restorers. Really, the old joke of the power of a certain preparation to restore the bald places in hair trunks and in worn-out furs has become a popular belief.

There is one fact that everybody should know, and which would be sufficient to rout at once all the trash with which people load their heads. The blood is the only regenerator of the hair; oils and pomades may for a time moisten and clog the hair, but over its growth or nourishment they are absolutely powerless. The fine network of vessels on which the bulbs of the hair rest is alone capable of maintaining its healthy existence. To a sluggishness in the capillary circulation baldness is mainly due. When this sluggishness is the result of a general failure of the system consequent upon age, no art will avail—the inevitable Delilah proceeds unchallenged with her noiseless shears. When, on the contrary, baldness proceeds from any temporary cause—when the bulb still remains intact—slight friction with a rough towel or a brush, aided by some irritating pomade, is the only course to be pursued.

WM. JOHNSON, M.D.

NOTES IN SCIENCE AND AGRICULTURE.

The Southern Exposition at LOUISVILLE, KY.—We heartily desire success for this large undertaking, and have little doubt that it will prove of widespread benefit in the North as well as in the South. Its projectors were impelled by the leading idea of bringing the attention of the world to the vast natural products of the South, and furnishing the Southern people a convenient opportunity for examining all the modern improvements in machinery that might help to enhance the value of the products which nature had so bountifully bestowed upon them; but the Northern and Eastern people of the United States lost no time in taking hold of the project, and even before the necessary arrangements were completed for receiving applications for space, began applying for the privilege of exhibiting in such numbers that the success of the undertaking as an exhibition was immediately assured. The Southern people, not so well prepared for prompt action in such matters, and not so well schooled in the benefits of occasions of this kind, were slower in responding; but the last few weeks have brought about a marked change in the relations of the Southern States to the Southern Exposition, and there is every assurance now that the South will present herself in a manner never before attempted.

Commissioners appointed by the Governors of the Southern States are actively engaged in arranging exhibits that will justify the pretensions of their respective States to be classed among the most inviting fields of America. The Governor of Arkansas has declared in his proclamation that "the importance to the State of being properly represented at the exposition can not be overestimated," and that "every Southern State will be represented and will make a display of its products, and visitors will attend from every section of the Union." The commissioners appointed under authority of the Arkansas Legislature have followed the proclamation of the Governor with an address, declaring that the Southern Exposition "is to be the grandest advertisement of the resources of the several States of our Union that has been witnessed upon this continent, except, perhaps, the Centennial at Philadelphia," and that "all the States of the Union will avail themselves of the opportunity, and never in our history has there been such an opportunity."

The development of this spirit of emulation among the Southern people gives welcome assurance of the consummation of the entire project of the Southern Exposition. The North has already responded, and the only question in that connection affecting the managers of the exhibition is the already serious problem of finding room for all the valuable and interesting exhibits that are

asking space in the machinery department. All anxiety that might have existed a few weeks ago, as to the ability of the South to fill out her part in this great array, has been relieved by the recent activity and earnestness of the Southern States.

What to do in a Tornado.—The recent terrible cyclone which ravaged parts of Wisconsin, Missouri, and Illinois, furnishes excuse for publishing some advice given by Sergt. Finley, Signal officer at Kansas City, Mo., with regard to precautions against tornadoes. At the same time he intimates the tremendous power of such a visitation:

"The inhabitants of a tornado-frequented district must be watchful in the season of visitations, for he can never know when the destruction will come upon him. On the first sign of the approaching vortex, he must run —always to the north, unless by going in that direction he will have to cross the entire path of the storm. If he is nearer to the southern edge than to the center of the probable path, he may go south, bearing slightly east; but in no event should he ever run directly to the east or north-east. It is impossible to save any building that may lie in the path of the tornado, or any property that can not be got out of its way. No material, no method of construction can be competent to resist the raging destruction. Nothing rising above the ground can escape it. The most practical measure of precaution is to construct a 'dug-out' at some suitable point, within easy distance from the house, to serve as a place of refuge or shelter. The retreat should be entirely underground, with a roof at least three feet thick, not rising above the surface of the earth, and entered from the northern or eastern side. A 'cellar-cave' may be constructed from the cellar, if the house has one, to serve as a substitute for the 'dug-out.' It should be excavated from the west wall of the cellar, toward the west, and should be made as complete and secure as the 'dug-out.' If, however, the storm can not be escaped, if no refuge is at hand, or there is not time to get to it, the safest thing to do is to place one's self against the west wall of the cellar, face forward, or against the south wall, as near the south-west corner as possible. The north-east quarter is in any case a fatal position, and should always be avoided. If one is actually overtaken by the tornado, his only resource is to cast himself face downward upon the ground, with his head to the east and his arms thrown over his head to protect it. If a stump or large stone, or anything heavy that the wind will not blow over, is near, he may get a trifle of protection by throwing himself to the eastward of it. If in a house with no cellar, he should get into the west room, on the ground-floor if possible, and away from all stoves and heavy furniture."

The Cable Railway on the Brooklyn Bridge.—Under the Brooklyn approach to the great East River Bridge are two horizontal engines, of 300 horse-power each, with 26-inch cylinder and 48-inch stroke. They are connected directly with a small drum, four feet in diameter. To the driving drums a wire rope is attached, which is turned two or three times about the drum, and passed through a small square well-hole to the railway on the bridge, which at this point is elevated. Here two large wheels, supported by standards, receive it. The rope then runs to a point on the bridge at the New York side, and passes about another receiving wheel, and so back to the first drum. A boiler house, on the Brooklyn side, and its tall chimney, is a conspicuous object. Here are four boilers to supply steam for the engines. The cars for the railway are attached to the continuous rope by means of a clutch or grip, the invention of Colonel Paine. This clutch is used to catch the running rope gradually, and regulate the speed of the cars, which would otherwise start off at too rapid a rate. A brake on the car controls the clutch, on the same principle as an ordinary brake controls a railway car.

Genesis of a New World.—"On a beautiful summer's night, August 22, 1794, Jerome and Lefrançais de Lalande noticed a star in Aquarius, which they estimated of the 7½ magnitude. Six years later they thought it of the 8 magnitude. In appearance it resembles a star which is not exactly in the focus of the telescope. Herschel had observed it in September, 1782, and recorded it as an admirable planetary nebula, very brilliant, small and elliptical. Lord Rosse and Lassell perceived that it was surrounded by a ring, which gives it somewhat the appearance of Saturn. The spectroscopic observations of Huggins indicate that it is a gaseous mass, in which nitrogen and hydrogen predominate. Most of the other planetary and annular nebulæ give similar results. In 1871 and 1872 Brunnow, the Irish Astronomer-Royal, measured its parallax and concluded that its distance is more than 404,000 times as great as that of the sun, and its diameter is probably greater than that of the entire solar system. This would make its volume more than 338,896,800,000,000,000 times as great as that of the earth. We have thus before our eyes a new system, which is probably undergoing the process of condensation through which our sun and its attendant planets passed hundreds of millions of years ago."—*L'Astronomie.*

Decay of Building Stone.—Dr. A. A. Julien, in a paper read before the New York Academy of Science, gave some results of observations on this important subject:

"The principle that stones are more lasting when laid on bed is clearly demonstrated in the case of all the building stones. After a structure has been erected a few years, there is no difficulty in dividing the stones laid on bed from those laid on edge, as the laminations in the latter become distinctly marked; and in some kinds this can be discovered

immediately after completion, as the more porous layers dry first, thereby giving the stone a striped appearance. In brownstone a deep decomposition was noted even when laid on bed; when exposed to the heat of the sun, the change is more rapid. The attack of the destroying agents is favored by imperfect jointing, which opens a back entrance. The discoloration in Nova Scotia sandstone might be prevented if the surfaces were vertical and placed out of reach of dripping. It is too soft for lower portions of buildings, and receives and retains the street dust. Ohio sandstone resists our climate well, and when used in Western cities is discolored, but not disintegrated. There are but few limestones in the city, and the decay of Westminster Abbey, London, should warn us of the danger of using fine-grained limestone until we are satisfied of its durability in this climate. The decay of marble is first shown by its becoming pitted; those set on edge show the more rapid decay. Granite shows pitting, the hornblende being first attacked. The south and west sides of the Tombs show decay, while the other sides are intact. The sides affected are exposed to the sun's rays."

Dr. Julien had concluded in regard to the life of stones, defining life as the period during which the stone presented a smooth appearance. Coarse brownstone, best used out of the sun, from five to fifteen years. Laminated fine brownstone, from twenty-five to fifty years. Compact fine brownstone, from one to two centuries. Nova Scotia stone will probably last from fifty to one hundred years. Ohio sandstone, the best of the sandstones, one hundred years. Caen stone, from thirty-five to forty years. Coarse dolomite marble, forty years; fine marble, sixty years; pure calcareous marble, from fifty to one hundred years. Granite, from seventy-five to two hundred years, according to variety.

Bluestone is as yet untried, but will prove a good building material. Some of the best building stones in this country have not yet been brought to this city.

Some of the causes that produce decay in stones are, first, solutions and hydrations of the stone and the heat of the sun.

A Prehistoric Cemetery.—According to the *Pioneer*, a Far-West newspaper, there is an old cemetery two miles from Mandan, on the bluffs near the junction of the Hart and Missouri Rivers, which is fully 100 acres in extent, and filled with bones of a giant race. The ground has the appearance of having been filled with trenches piled full of dead bodies, both man and beast, and covered with several feet of earth. In many places mounds from eight to ten feet high, and some of them one hundred feet or more in length, have been thrown up, and are filled with bones, broken pottery, vases of various bright-colored flint and agates. The pottery is of a dark material, beautifully decorated, delicate in finish, and as light as wood, showing the work of a people skilled in the arts, and possessed of a high state of civilization. This has evidently been a grand battle-field, where thousands of men and horses have fallen. Nothing like a systematic or intelligent exploration has been made, as only little holes two or three feet in depth have been dug in some of the mounds, but many parts of the anatomy of man and beast, and beautiful specimens of broken pottery and other curiosities, have been found in these feeble efforts at excavation. Five miles above Mandan, on the opposite side of the Missouri, is another vast cemetery, as yet unexplored. We asked an aged Indian what his people knew of these ancient graveyards. He answered: "Me know nothing about them They were here before the red man."

Treatment of Stammering.—Mr. J. E. Suitterlin has for eight years conducted an institute in New York, for the cure of stuttering and stammering, with most satisfactory success. His system is philosophical and simple, and is based on the plainest common-sense principles. Excluding reliance on medical aids, it comprises chiefly careful drill of the vocal organs, and such mental discipline as will contribute to the object. In the first stage of treatment, the subject is not permitted to talk, except to practice his exercises, and to make such movements in speech as can be guided and observed by the teacher. During this time he is taught to consider himself, not a patient, but a student of speech. In the second stage, which is begun when enough has been done in the first, the pupil is encouraged to talk, for practice, at every opportunity, with a "legato" movement (as in music) and a strong accent. In the third stage he is allowed to talk more naturally, but in a studied manner; and in the fourth stage he is permitted to employ his normal way of speaking, but is by this time relieved from the impediment under which he formerly suffered. The psychic part of the treatment, which aims to divert the pupil's mind from himself and his troubles, is the most difficult, and, at the same time, the most essential part. The time required for success depends very largely, and, in fact, chiefly, on the mental constitution of the subject.

From this brief description of an effective method of treatment, the parent may gather the useful hint that, to remedy any incipient tendency in his child to stammer, he should exercise a mild and kind but firm ruling, suppress all irritability of temper, observe for the child all the laws of health, and be careful as to his own manner of talking and the patterns he may set for the child. The statistics collected and preserved by Mr. Suitterlin show that the stammering habit is contracted, with only very rare exceptions, between infancy and ten years of age."—*The Popular Science Monthly.*

CHARLOTTE FOWLER WELLS, *Proprietor.*
H. S. DRAYTON, A.M., M.D., *Editor.*
NELSON SIZER, *Associate Editor.*

NEW YORK,
JULY, 1883.

GREATNESS AND SMALL HEADS—ANOTHER *EX-PARTE* ASSERTION.

WE are indebted to some one for a copy of an Oregon weekly, in which is an extract alleged to be quoted from some *Journal of Science*, in which the writer makes a remarkably weak attempt to discredit the well-known principle, that "size is the measure of power." It is altogether likely that the said *Journal of Science* copied the extract or article of which it forms a part, from some other publication, as we have seen it in two or three of our miscellaneous exchanges, with mention of a foreign derivation.

We are informed by the writer of the article, that "the theory that men of great intellectual powers have large and massive heads, is not borne out by facts." And he goes on to say, "A receding forehead is mostly condemned," although "found in Alexander the Great, Frederick the Great, and one of the portraits of Carlyle." He tells us that "other great men have had (*sic*) positively small heads. Lord Byron's was 'remarkably small,' as were those of Lord Bacon and Cosmo di Medici. Men of genius of ancient times have only what may be called an ordinary or every-day forehead," etc. He goes on to mention persons of whom there are probably no data extant worth consideration in respect to the proportions of their heads, but in an arrogant, fribbling manner, which no true scientific inquirer ever assumes, pronounces judgment upon them. His inference of small size appears to be derived mainly from an appearance of low or receding forehead which is given to their alleged portraits, as found on canvas, medallions, intaglios, coins, busts, etc.

Now, it seems to us scarcely worth the time it takes to notice such an off-hand, irresponsible statement, but as our attention has been called to other paragraphs embodying similar views which have somehow obtained admission to the columns of a few respectable papers, we venture a comment or two. We say, first, that the statements generally, are not to be credited, because they do not furnish the measurements essential to a correct judgment of the size of a head, viz.: they do not give the circumference, length, breadth, and height, but for the most part speak of it as "small" or "remarkably small," or "of inferior size." The only way to obtain a realizing sense of the proportions of a head is to measure it with calipers and tape-line. A head viewed in front may appear small, owing to the configuration of the face or the disposition of the hair; yet, when examined by rule, be found of very respectable dimensions. Voltaire's head appeared small; William Pitt's appeared small; Ruskin's appears small, because the features of the face are feminine, and the brow is prominent over the eyes; yet the actual circumference of the heads ranges from twenty two to twenty-three inches.

In the second place, it should be noted that while the circumference is generally taken as a standard for comparison, it does, by no means, indicate volume. A head may be very fully developed at the line of such measurement, but very low in the crown; or it may be very narrow or depressed at the sides, and rise to a great height in the crown; or it may be very broad and comparatively short, or the reverse. In the third place, to judge of the character of a person, observation must be taken of several features of organization that are of higher importance than the head's circumference, among them those of form, special development, and temperament. One hundred heads may be twenty-three inches in circumference, yet differ much, one from another, in contour, no two being similar. There may be variations of from a quarter to one and a half inches in length and breadth and height; besides variations in the projection of the forehead, occiput, crown, lower side-head, upper side-head, temporal region, etc.

Twenty-three inches is a large measurement, yet the head having such circumference may be poorly developed in the frontal lobes or the intellectual region, and the person exhibit a low order of mind. One having a head measuring twenty-two inches, like Ruskin's, for instance, may possess a long, narrow, and high cranium, the intellectual region monopolizing a large proportion of the measure, while the parts neighboring the ear and the occiput, which relate to feeling, force, and passion, are comparatively small; and having a very active temperament, he may exhibit powers of intellectual apprehension much above the average.

But the writer we have quoted from the *Journal of Science* has impeached one of the canons of Phrenology and physiology in saying that facts do not support the theory that men of great intellectual powers have large and massive heads. On the shelves of the Phrenological Institute stands a multitude of casts in plaster of paris, taken from the heads of eminent statesmen, writers, scientists, etc., all of which, when tested by measurement, are above average size. For instance, John Quincy Adams measures twenty-three and a half inches in circumference, and is high in the crown; Sir Walter Scott is twenty-three inches, and of extraordinary height. The three or four casts of the great Scottish novelist, representing him as he appeared at different ages, and which are preserved in the Phrenological Museum in Edinburgh, are all marked by this peculiarity of great elevation. William Pitt, twenty-three inches; yet the fine womanly features give the head an appearance of smallness when but casually observed. La Place, the eminent mathematician, twenty-two and three-quarters inches. Dr. Chalmers had an immense head, broad, long, and full in the crown, which must have been, in life, about twenty-four inches. Napoleon's head was remarkably large; though a writer, having a small head, recently stated that Napoleon's head was small. O'Connell, the Irish "liberator," had over twenty-three inches. The casts of Webster, Calhoun, and Lincoln, taken carefully by Mr. Clark Mills, measure respectively twenty-four and a half, twenty-three and one-quarter, and twenty-three inches. Thomas H. Benton is twenty-three inches; Bismarck has an immense head; Mr. Gladstone's is by no means small, nor is John Bright's, and so on to the end of the chapter.

We are informed that the head of By-

ron was "very small," and in the way of proof it is said that his hat was found to be too small for the heads of a number of gentlemen in whose company he happened to be. Judging from what has been disclosed of the character of Byron from childhood up, he possessed a head whose development was strong in the base and lower occipital region. He was passionate, willful, imperious, and irritable; at the same time the perceptive faculties were dominant in his intellect—a fact which, taken with his very acute nervous sensibility, rendered him quickly apprehensive of anything occurring within the range of his observation. The major development of his brain and head was probably below the line where Byron wore his hat, so that the size of his hat did not fairly represent the circumference of the head. Men do not wear their hats alike; some like them high up, others low down, almost to the ears. Perhaps the majority wear their hats set at a line about two inches above the opening of the ear, and those who are conversant with the structure of the cranium will at once agree that in these two inches one-half of the brain mass is included; and in those persons who have prominent brows and large temporal and occipital lobes, the circumference below the hat, or at a line passing just above the ears and over the supra-orbitar ridges, may exceed the circumference at the line where the hat is worn by an inch or more. The portraits of Byron extant show a head of the conical type, prominent at the brows, high at the crown, broad between the ears, full in the temples, and his known character indicates that it was depressed in the mid-lateral space, or the region of Caution and Secretiveness.

The head of Washington is mentioned by the writer of the quoted paragraphs in the *Journal of Science* as "small." In answer to this we would merely remark that the cast of the head of Washington taken by Houdon is in the city of New York, and can be studied by every lover of truth, and this cast shows that his head was of more than full size, or about twenty-two and a half inches. In anticipation of the assertion of some *smart*, small-brained writer that the late Governor Alexander H. Stephens had a "very small head," we publish the following correspondence:

"NEW YORK, June 7, 1871.

"HON. ALEXANDER H. STEPHENS:

"DEAR SIR:—Some men in Europe and America seem to take pleasure in asserting and trying to prove that Napoleon, Sir Walter Scott, Lord Byron, and other men of acknowledged ability, had small heads. Fortunately, in some instances where casts of the heads are extant, a solid contradiction to their statements can be interposed.

"We have frequently been asked to explain why Hon. Alexander H. Stephens has *such a small head*, when he is known to stand well among men of mental vigor. Having seen you often on the floor of Congress, we think your head is not small.

"We have no doubt that when Mr. Stephens shall have passed away, the class of persons referred to (who doubtless have small heads, and are anxious to show that they are in good company) will quote your head as small, after all chance for positive contradiction shall be beyond reach.

"Therefore, will you please obtain careful measurements of your head and body, and authenticate them with your own signature, so that we, or our successors, may be able to do the subject justice at the proper time.

"To wit: Height and weight of person, size of head, chest, waist, thigh, arm.

"Yours very truly,

"FOWLER & WELLS.

"Per N. SIZER."

As Mr. Stephens died on the 4th of March last, we feel at liberty to copy the following from his reply, and we shall preserve his autograph letter as a voucher and a souvenir:

REPLY.

"LIBERTY HALL, CRAWFORDSVILLE, Ga.,

"June 12, 1871.

"MESSRS. FOWLER & WELLS, New York:

"Your letter of the 7th inst., addressed to me at Augusta, Georgia, has just been received; it was

forwarded from Augusta to this, the place of my residence. I comply with your request. The facts, if you choose, you may use as you please, and you may rely upon them as correct. In height I am five feet ten inches; my head-measure on the line indicated by you is twenty-two and a quarter inches around; my waist measures twenty-four and a half inches; the measurement around the muscular part of the leg between the knee and ankle is nine and a half inches; the like measure of the muscular part of the thigh is eleven inches. The like measure of the muscular part of the arm is five and a half inches. My usual weight, without dress of any sort, before my recent affliction was eighty-nine pounds; it is now seventy-five pounds.

"Yours very respectfully,

"ALEXANDER H. STEPHENS."

It will be seen by the measurements given, that Mr. Stephens' physique was very slight, and therefore the skull and integuments must have been quite thin, so that 22¼ inches indicated a rather large brain, sufficient indeed for a man whose ordinary weight is 150 pounds, nearly twice as much as Mr. Stephens weighed. His quality of organization was very fine and also tenacious and enduring, as evinced by the amount of work he had done since he was fifty years old, and in spite of the fact that all that time, and more, he had been an invalid and frequently on the border of the grave, on the line between life and death.

THE EAST RIVER BRIDGE.

IT was most fitting that the opening of the great suspension bridge between New York and Brooklyn to the public, on the 24th of May, should be accompanied with special ceremonies. A stupendous monument to the genius and industry of man had been completed. A monument, not only to be viewed with admiration and awe by every beholder, but a monument for purposes of utility, a long-needed means of communication between two great cities. How much it was needed has been demonstrated already by the tens of thousands of pedestrians and the thousand vehicles of every description that cross it daily. On the day after the opening it is estimated that one hundred thousand people crossed on foot, and the stream of wagons and carriages was constant from earliest daylight till long after sunset. The cost of the bridge, over fifteen millions of dollars, seems colossal; but when a practical eye surveys the extent of the structure, its total length of nearly 6,000 feet, its massive towers of 274 feet, its span of 1,596 feet, its immense cables of the best steel wire, with the infinite complexity of the suspended structure, the long approaches of massive and beautiful masonry, with the numerous arches spanning a dozen streets, and the ample roadways, footways, with their entrances, and the commodious offices, waiting-rooms, etc., the cost seems, after all, not so much. Compare this tremendous work with a single building like the new State House at Albany, which is said to have cost upward of $15,000,000, or the Court House in New York City, which, under "ring" rule, absorbed $20,000,000, and it will appear a very moderate draught upon the people's money, especially when thirteen years have passed since the commencement of the work, and its progress in the earlier years was beset with many difficulties. A few years will demonstrate the wisdom of this investment by the two cities, the advantages flowing from its use will be found to be many times more valuable than the sum expressed by fifteen millions of dollars, and the success of one bridge will probably lead to the construction of others—over the Hudson, as well as over the East River.

It is pitiful that the bridge should have been the scene of such a horrible occur-

rence as that of the 30th of May, so soon after the opening. We may speak of what should have been done or what might have been done to prevent such a calamity; but when it is realized that a panic-stricken crowd is an ungovernable, reason-lost multitude—men who are transformed by terror into reckless, struggling animals—scarcely any precautions will be found preservative of the weak and helpless.

WHO WILL GET IT?—We notice, among recent bequests of money to educational institutions is a liberal one by the late Mr. Henry Seybert, of Philadelphia, for the endowment of a chair of mental and moral philosophy. We trust that the gentleman designated the kind of "mental and moral philosophy" he wished taught at his expense, and that it is not according to the old and impractical patterns which have been followed with passive routine the past hundred years. Young men and young women at college greatly need instruction in a living, vital, mental and moral philosophy applicable to their personal development and every-day practice. The dry, elaborate sophistry of the schools may give them a little practice in forensic hair-splitting, and start a vein of platitudinous speculation, but it evidently does not advance much the standard of morality in the educated strata of society.

We could suggest a name or two which we think would suitably apply to a professorship of mental science, and whose owner's teaching would be influential in opening the eyes of his students to the realities of life, and the intimate relation of material and mental things.

Our Mentorial Bureau.

To Our Correspondents.

QUESTIONS OF "GENERAL INTEREST" ONLY *will be answered in this department. But one question at a time, and that clearly stated, must be propounded, if a correspondent shall expect us to give him the benefit of an early consideration.*

IF AN INQUIRY FAIL TO RECEIVE ATTENTION *within two months, the correspondent should repeat it; if not then published, the inquirer may conclude that an answer is withheld, for good reasons, by the editor.*

TO OUR CONTRIBUTORS.—It will greatly *aid the editor, and facilitate the work of the printer, if our contributors generally should observe the following rules when writing articles or communications intended for publication:*

1. *Write on one side of the sheet only. It is often necessary to cut the page into "takes" for compositors, and this can not be done when both sides are written upon.*
2. *Write clearly and distinctly, being particularly careful in the matter of proper names and quotations.*
3. *Don't write in a small hand, or in pencil, as the compositor has to read it across his case, a distance of nearly two feet, and the editor often wants to make changes and additions.*
4. *Never roll your manuscript or paste the sheets together. Sheets about "Commercial note" size are the most satisfactory to editor and compositor.*
5. *Be brief. People don't like to read long stories. A two-column article is read by four times as many people as one of double that length.*
6. *Always write your full name and address plainly at the end of your letter. If you use a pseudonym or initials, write your full name and address below it.*

WE CAN NOT UNDERTAKE TO RETURN UN*available contributions unless the necessary postage is provided by the writers.* IN ALL CASES, *persons who communicate with us through the post-office should, if they expect a reply, inclose the return postage, or what is better, a prepaid envelope, with their full address. Personal matters will be considered by the editor if this is done. Anonymous letters will not be considered.*

ITCH.—C. W. T.—If you are troubled with this annoying malady, it is part of your treatment to be exceedingly careful in regard to your diet, eating little or nothing of that which heats or excites the blood or supplies the parasite with its normal food—broken-down tissue or effete matter which clogs the excretory ducts. You should bathe frequently, using tepid water, because it will soften the outer layer of the skin and uncover the hiding-places of the *acari*. Use soap somewhat freely over the affected places; there is no need of any drugs. A good diet and thorough cleanliness will be the best method of ridding the skin of the abomination. It is strange that your doctor should say that he could not do anything for it. We trust that your habits are not incorrigible.

QUESTION: Why do so many doctors disbelieve in Phrenology? I know that some of the ablest, such as Dr. Allen, believe in and advocate it, but others bitterly oppose it.

Answer: Dr. Allen studied Phrenology early in life, and became master of its facts and principles. In fact, he was the first editor of the AMERICAN PHRENOLOGICAL JOURNAL forty-five years ago. Doctors oppose Phrenology because they were not taught its principles in college, and some were taught by college professors their own prejudices. Every day we meet men of education who suppose we judge of development by *bumps*, when in point of fact there is not, and never has been, but one true method, that of the radial distance from the medulla oblongata, or brain center, to the location of the organs on the surface. Length of brain fiber from the top of the spinal cord tells the size of the organs. Whenever we show a doctor how we judge, he is astonished; yet we have been teaching it for nearly half a century, as Gall and Spurzheim taught it before; and notwithstanding this, doctors, ministers, and others who are intelligent on other subjects, insist on talking of bumps and the little irregularities of the surface of the skull as being phrenology. One man's head is smooth and two inches wider or higher than another's, just as the hind wheel of a wagon is larger than the forward wheel; yet it is not made larger by bumps, but by longer spokes or radial lines from the hub or center.

CURLY HAIR. — *Question:* Will you please to state through the JOURNAL what is the indication of character of one who has uncommonly curly and wiry hair, light brown, with sallow complexion and blue eyes? L. J. S.

Answer: Such hair indicates an impulsive, sprightly disposition, with a good deal of emphasis in the manner of expression. The person unites qualities of physique probably derived from both parents — a sanguine nature from his mother, and a good deal of endurance and personal assertion from his father. He is versatile in his tasks, fond of variety, and disinclined to undertake long jobs or enterprises which require patient watching and are developed into form and result by degrees.

MAGNETISM OR MESMERISM.—C. H. D. —It is claimed by those who have looked into the subject carefully, that the influence of magnetism is not injurious upon the subject, but rather imparts vigor to the nervous system. This we believe to be the case, when the magnetic power is exercised by an intelligent person, for a proper purpose. Of course harm could be done, but this only by the maliciously disposed. In its exercise the effect upon the operator need not be other than helpful in a nervous sense, although its excessive practice is exhaustive. We know persons of very active nervous temperament who possess unusual power in this respect, and who appear to derive personal benefit from its exercise.

JEALOUS DISPOSITION. — *Question:* I am jealous of all my acquaintances, and have no particular love for them. It is one of the greatest troubles of my life, for I can conquer other bad habits, but can not conquer this. Can you advise me what to do? C.

Answer: Try to think less of yourself, of your own wants and doings, and give attention more to the needs and life of other people from the side, not of curiosity or idle interest, but from motives of kindness, sympathy, and generosity. Study the lives of men and women distinguished for self-sacrifice and unselfishness. It would be well, too, did you take active part in some work of a benevolent sort. If you are connected with any church society, you can find something to do in that line, and thus have your mind occupied by matters exterior, so that you will have less time to consider "dear" self. If not related to any church, take up some branch of science or literature and pursue it resolutely in the hours of leisure. This will give you topics for thought and discussion, and help to develop your mind in useful directions.

J. H. T.—If you will obtain a good common-school education you might make a mark in the study of human nature and in reading character.

What They Say.

Communications are invited on any topic of interest: the writer's personal views, and facts from his experience bearing on our subjects, being preferred.

HOW A MAN WAS BENEFITED BY AN EXAMINATION.—*Ed.* PHRENOLOGICAL JOURNAL: I recently met a middle-aged gentleman who is strong, large, and robust, with a good temperament and a large head, and in speaking of the great benefit which he had derived from a phrenological examination by Mr. Sizer, in the office of Fowler & Wells, he made the following statement:

"A few years since I came to Prof. Sizer for an examination and full written description of character, and before he finished the dictation to his shorthand writer, I felt impelled to interrupt him by saying that, while many things he said of me were quite true, some points he had stated were quite untrue. Mr. Sizer made no reply at the time, but went on with the examination as if nothing had been said by me. After he closed the dictation I repeated what I had stated, and he asked wherein I supposed he had

been mistaken. I replied he had given me large Language, whereas my friends would all say *this* was a great mistake; that I was no talker, and was the most reticent of men, and I *knew* I generally preferred to be silent. The examiner remarked: 'You may not have amounted to much as yet on account of a combination of developments acted upon by peculiar circumstances. In the first place, you have very large Approbativeness, making you exceedingly sensitive, and very large Cautiousness, inducing excessive fear. You shrink from criticism and censure, and you hesitate to take the place in life your talents qualify you to fill; then your large Secretiveness leads you to keep your thoughts and feelings secluded. When these three conditions unite they check your progress; and then your Self-esteem is too small to give you confidence, and your Combativeness is not large enough to give you force and courage. Thus you have failed to assert your rights, and have kept in the background, when with that large brain and strong body you ought to have been a man of influence and power.'

"This exposition of my peculiarities convinced me that he was right, and when he told me how to test the faculties and how to overcome the obstacles and weak points, I resolved to try.

"First, I tried to use the faculty of Language by talking with every one I could, and especially in reading aloud to others and alone, and found in a few weeks that I had gained such power of expression and facility of utterance, that people, seeing the change, began to regard me as insane. Then I tested the other points with satisfactory results, until I found myself a transformed man, and I am now so different my friends hardly know me, and are greatly surprised at the change. That phrenological description and chart, which I have tried to follow, have proved at once an inspiration and a guide, and I am now, and expect to be, *somebody* worth living and having a good place in the world."

MRS. H. W. BENTLEY.

PERSONAL.

GENERAL PORFIRIO DIAZ, ex-President of Mexico, who lately visited this country, is one of the most sagacious statesmen of the day. His administration of affairs during his Presidency was marked by many excellent reforms. The purpose of his late visit was to effect closer commercial relations between the United States and Mexico.

LYDIA PINKHAM, of patent-medicine fame, died of paralysis in May, at Lynn, Mass. She was born in Lynn sixty-four years ago. She has had several children, four of whom are dead. Not a remarkable example of the potency of her much-advertised mixtures.

MISS ABBIE PULSIFER, of Auburn, Maine, has been a reporter in the courts there for ten years. Other capable female shorthand writers are Miss Alice C. Nute, of Chicago; Miss Ingersoll, of Washington, D. C.; and Mrs. S. J. Barrows, of Boston, who reported in English a speech delivered in German. Shorthand is a fine employment for persevering young women.

THE MARQUIS OF LANSDOWNE, a man of reputation in State affairs, is to succeed Lord Lorne as Governor-General of Canada. He is expected to arrive at headquarters some time next October.

WISDOM.

"Think truly, and thy thought
Shall be a fruitful seed."

ACT well at the moment, and you have performed a good to eternity.—LAVATER.

EMOTIONS are stars that guide only when the heavens are clear; but Reason is the magnetic needle that directs when stars are hidden and shine no more.—RICHTER.

WHEN our thoughts are born,
Though they be good and humble, one should mind
How they are reared, or some will go astray.
—JEAN INGELOW.

SAY nothing respecting yourself, either good, bad, or indifferent; nothing good, for that is vanity; nothing bad, for that is affectation; nothing indifferent, for that is silly.

THE refinements and elegancies of life are not to be despised; they are to be received with gratitude to Him who has provided them for our enjoyment, but their possession does not insure happiness.

"ANALYSIS," says Russell, "is the grand instrument in all the operations of the perceptive faculties; and of all the implements of science, it is the keenest in its edge, the truest in its action, and the surest in the results which it attains. It is the key to knowledge in all departments of intelligence."

THERE'S many a sorrow
Would vanish to-morrow,
Were we but willing to furnish the wings;
So sadly intruding,
And quietly brooding,
It hatches out all sorts of horrible things.

MAN and woman were made for, and not like, one another. One only "Right" we have to assert in common with mankind, and that is as much in our hands as theirs—the right of having something to do.—MRS. MULOCH-CRAIK.

In this department we give short reviews of such NEW BOOKS *as publishers see fit to send us. In these reviews we seek to treat author and publisher satisfactorily and justly, and also to furnish our readers with such information as shall enable them to form an opinion of the desirability of any particular volume for personal use. It is our wish to notice the better class of books issuing from the press, and we invite publishers to favor us with their recent publications, especially those related in any way to mental and physiological science. We can usually supply any of those noticed.*

ALCOHOLIC INEBRIETY, from a Medical Stand-point; with Cases from Clinical Records. By Joseph Parrish, M.D. 12mo, 185 pp., cloth. Price $1.25. Philadelphia: P. Blakiston, Son & Co.

This is a well-written and comprehensive book on the subject stated in the title. In the section entitled "The Crime View," the author aims to show how few of the crimes that fill our prisons and decorate our gibbets can be attributed to strong drink, except as it is used to nerve the arm, and harden the felonious intent already entertained. The drinking-habit is discussed by the author as a nervous disease, although at times the line between drinking as a disease and "a variation of natural functions having its source in the system itself," is slightly indistinct, as it well may be.

We would call particular attention to the two sections, "Hereditary Inebriates" and "Inebriety and Insanity," in which the treatment of the subject is clear and cogent, and the advice for the most part excellent. If any doubt is to be entertained on that score, it is with reference to the expediency of recommending the use of strong drink as a guard against insanity, although the author furnishes several cases in practice. Under the head of "How to Deal with Inebriates" are many suggestions of value regarding the care of inebriates that should be more widely known, not only by those in actual charge of such unfortunates, but also by the people at large. Whether in the hands of medical men or those who read for information generally, it is a book of peculiar merit, and will improve the general understanding of that so common, but nevertheless little understood vice —intemperance.

LADIES' GUIDE IN HEALTH AND DISEASE: Girlhood, Maidenhood, Wifehood, and Motherhood. By J. H. Kellogg, M.D., Member of the American Association of Science, American Public Health Association, etc. Illustrated. 8vo, 638 pp. Health Publishing Company: Battle Creek, Mich.

The success which has attended the publication of his "Handbook of Domestic Hygiene" has led Dr. Kellogg to compile a work expressly for women, in which systematic information is given concerning the special anatomy and physiology of the female body and its development from infancy to maturity. In the treatment of the ailments and infirmities of women, he not only draws upon the published experience of specialists and others, but from his own, which in its way is somewhat exceptional, being physician-in-charge of a large sanitarium, which is a constant resort for invalids suffering from every variety of disease. The basic principles of the treatment are hygienic, and, as in the case of other standard manuals of a similar nature, it is not intended that the advice supplied shall be "a substitute for the physician, except so far as the physician fails to do his duty in instructing his patient in relation to the nature, causes, and rationale of cure of her maladies, information to which every intelligent woman is entitled," and which the growing intelligence of the time demands shall be furnished in some way. The doctor who is prompt to commend a book of this kind to a patient, that she may the more intelligently follow his counsel, is more worthy of confidence than the practitioner who jealously keeps those with whom he has to deal in ignorance of the laws of their being, on the plea that it would do them more harm than good.

NATURAL CURE OF CONSUMPTION, Constipation, Bright's Disease, Neuralgia, Rheumatism, Colds (Fevers), etc.—The Origin, Prevention, and Removal of Disease. A Manual of Hygiene for Well and Sick. By C. E. PAGE, M.D., etc., author of "How to Feed the Baby," etc. 278 pp. 12mo, extra cloth. Price $1.00. New York: Fowler & Wells, Publishers, 753 Broadway.

"Is consumption curable?" is a question which—outside of nostrum-venders and charlatans, who have no scruples against lying for gain—has for the most part been answered in the negative; and a conviction to this effect lies in the minds of people. The local doctor, of whatever school or skill, is no more expected to cure consumption than to extend the average age of man to a round century. Indeed, if the patient recovers, it is declared throughout the community that the disease was not consumption after all, for, "if it had been, he would never have recovered!" While accepting this position, as regards invalids who shut themselves closely indoors and submit to medication, Dr. Page shows, by reference to the records of the dissecting-room, that partially-consumed lungs do often heal, and that many persons who never, perhaps, suspected the presence of the disease, have lived for many years with less than an entire pair of lungs. Even after one half of a lung has been destroyed, a perfect cicatrization of the tuberculous ulcers has taken place, and there has continued to be performed all the essential functions of the sound organ. "But," says our author, quoting Dr. Oswald, "in ninety-nine out of a hundred cases it will be found that the first improvement followed

[not upon a change of 'doctors,' nor the swallowing of an *irregular* nostrum, but] upon a change from a sedentary to an outdoor and active mode of life." He affirms the position that, given anything like *natural conditions*, such as it is the aim of this book to prescribe, "*pulmonary consumption*, in its earliest stages, is, perhaps, the most curable of all chronic diseases." A most remarkable case of self-cure, that of a young but determined girl, whose disease had passed to the "last stage," is given, and vouched for as a fact. The work is designed to illustrate specially the "*food and fresh-air cure*" for "*dyspeptic starvation*," which is Dr. Page's definition of the disease under consideration. In agreement with the most eminent physicians of all schools, the author holds that Bright's disease results from excessive or ill-conditioned diet; but stands quite alone in claiming that this, too, is a disorder which is readily amenable to "natural treatment." The consideration of the other diseases named is somewhat unique in character, the author maintaining that a strictly natural regimen is not only preventive, but curative of all disorders, so long as a restoration to health is possible; and this, too, at stages subsequent to what are, in general practice, held to be incurable. The book, therefore, is the work of a "radical"; and if, as we are led to hope, we have here a form of treatment that is *radically right*, a grand advance will have been made. The work, as a whole, will well repay a careful perusal, even by those who feel obliged to dissent from some of its conclusions.

PUBLICATIONS RECEIVED.

THE TENTH ANNUAL REPORT of the Managers of the State Lunatic Asylum at Utica, 1882. A very complete account of the management of the Asylum for the term specified. In this Institution there appears to be a systematic endeavor to trace to their sources in the physiology or pathology of patients the nature of their mental disturbances. The field which has been covered, and the results which have been obtained, are set forth in the Pathologist's report. By this it appears that *ante* and *post mortem* examinations, together with microscopic and chemical analyses, and micro-photographic illustrations and hand-drawings, have been executed in accordance with the plan devised years ago by the superintendent, Dr. Grey. Special care has been taken to work up in a scientific manner those cases which have terminated fatally.

Insanity is rarely an unmixed phenomenon; being either primarily or secondarily associated with symptoms which indicate disturbances of health, and generally an evidence of permanent disease in the brain, which is specially organized to exert a controlling power over the whole system.

MORAL AND LEGAL FORCE. By George Lansing Taylor, D.D. A strong argument for moral suasion as a means for the promotion of temperance, and also in behalf of employing legal means for the suppression of intemperance. Price, 10 cents. Published by the National Temperance Society, New York.

POPULAR SCIENCE MONTHLY, for June, 1883, contains a practical article on medical quacks and quackeries, in which these common incidents of modern civilization are distinctly set forth. Other articles worthy of attention are: The remedies of nature in relation to Consumption, Science-teaching in the Public Schools, Chemistry of Cookery, The Boundaries of Astronomy, Our Marriage and Divorce laws.

THE BIOGRAPHER is a new candidate for the attention of the reading public. Its publishers, of course, think that they supply a need, and it is certain that much interest is shown for the personal history of men of the time, and it is not likely that this new magazine, which will have for its special province the production of short sketches of notable persons, will lack a constituency. The character of the engravings could be improved in some respects.

THE RELATION OF EDUCATION TO WEALTH AND MORALITY, and to Pauperism and Crime, is the title of an address delivered by Mr. Dexter A. Hawkins, of New York City, before the Phi Beta Kappa Association of New York. It is an able presentation of the subject which now interests a large circle of educators. The author vigorously supports the view that universal education is the grand object to be sought in order to secure universal morality. The address is published by the author at 111 Broadway, New York.

MASTERY is a new weekly magazine, intended for young people. Possibly there is room for it, but we have long been impressed that the domain of juvenile literature is crammed. In fact, we would that there were fewer periodicals gotten up for children, as we think they exercise something of a disturbing influence upon young minds, more light, exciting, and superficial reading being supplied than they have time for. Between the numerous monthlies and weeklies, the big Sunday-school library books, and the ten-cent editions of all kinds of stories, boys and girls have scarcely any time to give to their more serious studies of the school and home, and to the more healthful recreations of the outdoor play-ground.

THE QUARTERLY ELOCUTIONIST, edited by Mrs. Anna Randall Diehl, contains readings, recitations, declamations, and dialogues, adapted to various occasions in school, parlor, and family. Its selections are generally good. Published by the Author, New York.

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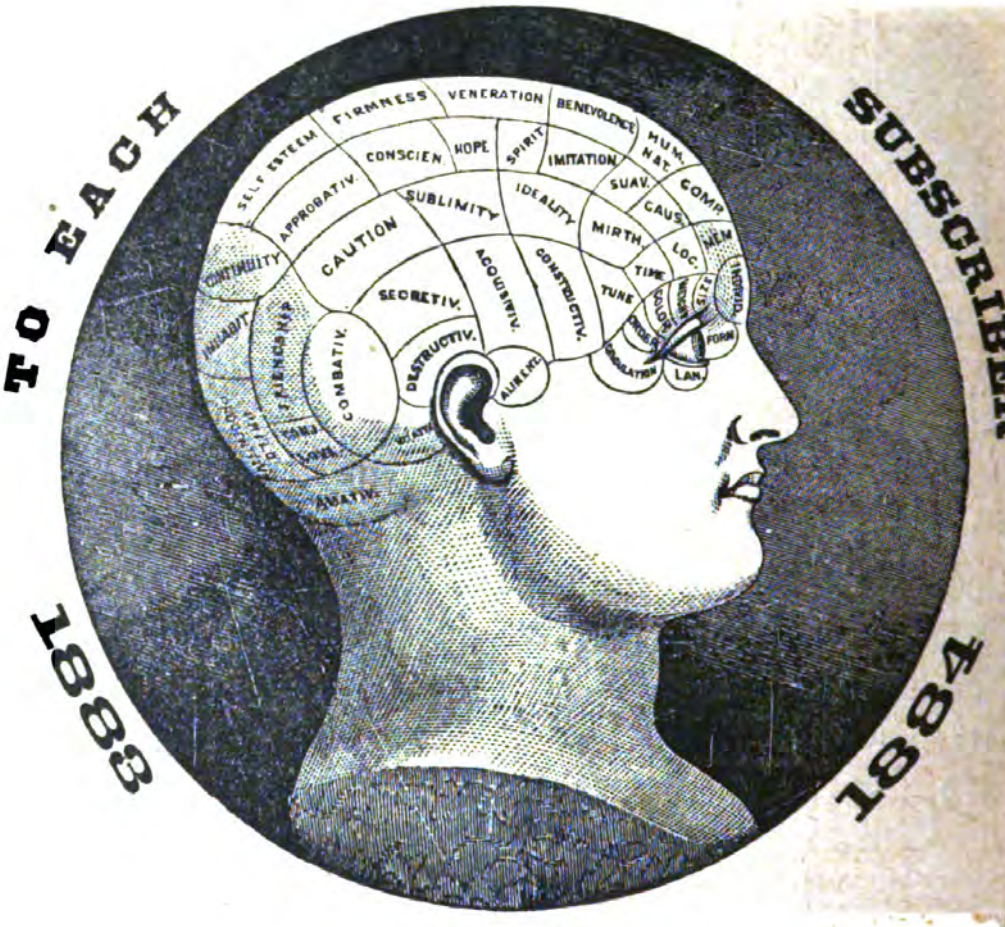

TO THE

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THE PHRENOLOGICAL JOURNAL AND LIFE ILLUSTRATED.

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JOHN GUTENBERG, THE INVENTOR OF PRINTING.

LANGUAGE.—No. 4.

THE INVENTION OF PRINTING.

A RUDE king of the olden time who smeared his hand with red ochre or the soot of a burning lamp, and made the impression of his palm and digits underneath a grant of land made to some feudal chieftain, was a printer in his way, and perhaps the first of his race. This was the sign-manual in its original and most literal sense, and it was the only means he had of putting his signature to any document, for it is most unlikely that he was able to write, even his own name—all

the learning at that time, what little there was, being in the hands of the priests, to whom all were indebted for the drawing up of legal documents or any instrument of writing whatever.

Then seals came into use. An impression was made in plastic clay and afterward baked. These are as old as the days of the Pharaohs, and some such, displaying their pronomens, have been dug up in modern times in the Valley of the Nile. These exhibit the kindred arts of plastic moulding and engraving, the engraving done sometimes in relief and sometimes in intaglio. At a later period came seals and stamps made of bronze, having reversed raised letters. Some of these ancient stamps may now be seen in the British Museum.

The first mention of printing is to be found in the annals of the Chinese. This was 1,120 years before the Christian Era. The art evidently originated with that people, but for reasons to be given presently, they have never advanced beyond a certain primitive stage of it, leaving them far in the rear of the printers of the Western nations. Roman Catholic missionaries have found in China evidences of the existence of what is called printing as early as 950 years before Christ. The plan adopted was to take a block of pear tree wood, squared to the dimensions of two pages of the book to be made. The writing was then executed on paper, or on whatever was used for that, with a pen, or small brush rather, somewhat like a camel's-hair pencil, dipped in a thick glutinous ink, and the sheet inverted upon the smooth surface of the block, to which the ink adhered. The paper was then rubbed off, leaving the ink upon the block. The block was then given into the hands of the engraver, who cut away all the parts not covered with ink. No press was used, but the surface being inked with one brush, the paper was laid upon it and dabbed down with a dry brush. The sheet was printed only on one side, and when taken from the block, was folded so as to bring the printed pages on the outside, and the blank ones within. The sheets were then put together and bound, making a book. The folded edges were on the outside, so that a Chinese or a Japanese book—for the same methods prevail also in Japan—looks like one with the leaves uncut.

In the middle of the eleventh century quite an advance in the art of printing was made in China. This was the invention of movable types which have each a word engraved on its face in relief. These types were about one-eighth of an inch in thickness, and were arranged in order on a backing plate, to which they were attached by means of gum mastic. As the Chinese had not advanced, and have not even yet advanced beyond *ideography*, or thought-writing—in which the written words are merely arbitrary symbols, representing things, qualities, and actions themselves, and directly without reference to the sounds of speech—the stage of the art of printing as above described, was as far as they could bring it. This was the best they could do; and under the circumstances, it was all that could be reasonably expected of them. And they have made no advance from that time to the present, either in their writing or in their printing; nor can they, until they adopt into their written language the phonetic principle.

Let us now pass over into Europe and see what is being done there in the way of printing. Time—the thirteenth century. We find here, at this time, block printing, the same as in China, but employed for a different purpose: namely, for the printing of playing cards; also for the ornamenting of fabrics, somewhat similar to the calico printing of modern times. One hundred and fifty years later and we find books made by the same process, that of block printing; among the first of which was the *Biblia Pauperum*, or "Bible of the Poor," of Koster, printed at Haarlem, in 1400. A little later and in the same style came the *Speculum Humanæ Salvationis*, or *Speculum Salutis*, "The Mirror of Salvation." There seem to have been no less than four correlated editions of this work, two in Latin and

two in Dutch, hence the confusion of titles; but all came from the same press, the press of Koster, for whom some have claimed the honor of the invention of printing. Although printing had been done in China centuries before, we must not conclude from this that the Europeans derived the art thence: indeed the facts all go to prove the contrary. But we have seen nothing as yet of printing as we understand the term. This made its advent at a later period, and was the invention of John Gutenberg, of the city of Mentz, in Germany. His claim to the honor of the invention is now generally conceded, though it has been hotly contested by the partisans of Koster of Haarlem, and many volumes have been written and much ink spilled otherwise in support of the claims of each. We propose, therefore, in the first place to make an examination into the claims of the latter, in order to discover if we can upon what they are founded.

Laurentius Janszoon, surnamed Koster, and generally known as Laurence Koster, was a native of the city of Haarlem, in North Holland, where he was born A.D. 1370. He seems to have been a resident of his native city during the whole period of his life, was at one time an alderman, and died there in 1440. Walking one day in a neighboring wood, he amused himself by cutting the initial letters of his name from the bark of the beech-tree. These he carried home with him, and

JOHN FUST EXAMINING THE FIRST PROOF-SHEETS OF THE BIBLE.

dipping them in ink, took their impression on paper for the amusement of his grandchildren. From this simple circumstance was born the idea of making types from which books could be printed, and Koster resolved to make further experiments. He next cut letters from the more solid wood. Finding the ordinary ink used in writing to be too thin for his purpose on account of its spreading on the paper, he made some that was thicker and more glutinous. He subsequently made types of lead, which proved to be too soft; lastly, he made some types of pewter. He then erected a press in his house, and began the printing of books, when the secret of the art was stolen from him—so the story runs—by one of his workmen, John Faust by name; who packed up of his master's types, and of the moulds and other tools used in making them, all that he was able to carry, and with these made his way to Mentz, in Germany, where he established himself in the printing business on his own account, and where, from the novelty of the thing, he acquired the title of doctor or conjuror, much as every ballad singer, rope dancer, or other charlatan at the present day acquires the title of "professor."

The above relation is strictly true so far as concerns the printing by Koster from wooden types, or rather from blocks of wood on which letters had been cut in relief, for block books came from his press in the beginning of the fifteenth century, of which mention has already been made; but that he ever used metallic types, or at least movable types of metal, with success, though he doubtless attempted it, is now very generally discredited. As to the theft of his secret by one of his workmen, that part of the story may be regarded as a myth. But that was the only way in which Koster could be connected with the early appearance of the art of printing at Mentz, this latter fact being indisputable. Nevertheless, the burghers of Haarlem still hold out for their townsman. They have erected in their market-place a bronze statue of Koster, and always hold a festival on the anniversary of the day upon which he is supposed to have brought forth his great invention.

In Mentz, or Mayence, as it is called indifferently, a little city on the banks of the Rhine, in Germany, was born in the year 1397 to 1399, John, son of Frielo Gansfleisch and Elsie Gutenberg his wife, the boy taking the name of his mother, a practice at that time not uncommon in Germany. Hence he is called John Gutenberg; though there is no record of his birth, no authentic autograph of his is known to exist, and the name was written in his day by other persons in several different ways. Nothing is known of his education, and the first thirty years of his life are virtually a blank to posterity. Although he is represented as having come of a patrician family, it does not appear that he was a man of wealth, for he seems to have labored all his life under pressure of pecuniary difficulties, and to have had frequent suits at law. He lived for a while in Strasburg, his residence there being fixed by suits at law in which he figured. Having failed as it is thought in business there, he returned about 1444 or 1445 to Mentz. He was still struggling with the mighty idea which his brain had conceived, but he was without the pecuniary resources necessary to develop it. At length in 1450 he found in one John Fust, a wealthy goldsmith of Mentz, a man who was willing to furnish the capital necessary for the enterprise for the sake of a share in its profits. A contract was made, in pursuance of which Fust lent to Gutenberg 800 guilders in gold at six per cent. interest. This was for the purchase of materials. Fust was also to make a further payment of 300 guilders annually for a working capital. The profits were to be equally divided between the two. It was further stipulated that in case of the dissolution of the partnership, the 800 guilders should be repaid to Fust with the interest which had accrued, the materials furnished being held as security for such repayment.

Gutenberg's first movable types were made of wood, the wood of the pear-tree. Each one had a hole bored through it, by means of which, when composing, they could be strung together on a wire. They were afterward transferred to an iron frame or chase, where they were made fast for printing, as is done at the present day. The first printing done by Gutenberg is supposed to have been that of alphabet cards, extracts from the Latin grammar, and perhaps some other school-books. Some of these too were perhaps printed from wooden blocks. No important work had as yet been undertaken, but the fact that Fust in 1452 advanced to Gutenberg an additional sum of 800 guilders, would seem to indicate that the enterprise had now reached a point where success was no longer doubtful. With two years of practice and experience, and a doubled capital, a more important undertaking was now resolved upon. This was no less than the printing of the Bible in the Latin Vulgate. After three years of persistent and unremitting labor and care, the work was completed in 1455. It consisted of 641 leaves bound in two volumes folio. It was in double columns of forty-two lines each, with the exception of the first nine pages, which have but forty lines each, and the tenth, which has forty-one lines to the column. Most of the edition was printed on paper, but toward the last a few copies were struck off on parchment or vellum. They were all brilliantly illuminated.

PETER SCHOEFFER.

These Bibles were at one time totally forgotten and thought to be obsolete, until the discovery of one of them about the middle of the seventeenth century, in the library of the celebrated Cardinal Mazarin. As this was at that time thought to be the only one of these first printed

Bibles in existence, it was called the "Mazarin Bible." The cardinal's librarian, Gabriel Naudé, himself a man of letters, a bibliomaniac, and an expert in matters of this kind, published an account of the discovery he had made, together with a description of the book; this drew attention to the subject, and led to the discovery elsewhere of "Mazarin Bibles"; for by this title are the few copies of this first edition of Gutenberg's that still remain to us, now known. Of this first edition of the Bible ever printed, nine copies on paper and six on vellum, fifteen in all, are still extant. Of the former, the edition on paper, the cities of Frankfort, Leipsic, Munich, Vienna, and Paris, each has one. One was disposed of at the sale of the Stevens collection in London, in 1873, where it brought £2,690, and is now in the library of the British Museum. The three remaining copies are in this country. One of these, belonging to the collection of the late George Brinley, Esq., was exhibited at the meeting of the Connecticut Historical Society at Hartford, in 1875. One was bought at a cost of £500 at an auction sale of books in London more than thirty years ago, for the late Mr. James Lenox, of New York City. Mr. Lenox had the two volumes rebound in London at an expense of $100, and they are now among the treasures of the Lenox library. And one is the property of Mr. David Wolfe Bruce, the retired type-founder of New York, which that gentleman bought at the sale of the Perkins library, in 1873, for $21,000, the highest price ever paid for a book, either written or printed; and that too for one in a fragmentary condition, for this is an imperfect copy: perfect as far as it goes, but some of its leaves have been lost or destroyed. Of those printed on vellum, one is in Leipsic, Germany; one is in the Royal Library in Berlin, and one was sold at the Stevens sale in London already alluded to, bringing £3,400. It also is in the library of the British Museum. This leaves three of the copies on vellum to be accounted for; but it is as far as our information extends at present.

It will be noticed that in these sales, the copies on paper have in most cases brought the higher price. This is contrary to the usual custom; books printed on vellum have generally been sold at from three to four times as much as copies of the same work printed on paper; but as priority of execution was the principal factor in estimating the value of these volumes, the copies on paper brought the higher price because they were the ones first printed. Moreover it is claimed by some that although all were struck from the same types, those on paper only were printed by the firm of Gutenberg and Fust, while those on vellum were printed subsequently by Fust alone after the dissolution of their partnership, which occurred about this time. And there is some ground for this conclusion in the difference of execution observable in the two styles. In the copies printed on paper the "register" is perfect; not only as to the pages, but also as to the lines of type, while the copies on vellum are often out of "register," showing a less skillful printer. On the other hand, this defect in the copies on vellum might be due to the difference of material, it being much more difficult to print on such a treacherous substance as moist and flabby parchment than on paper. But these copies are—both those on paper and those on vellum—marvels of the printer's art. The ink, though more than 400 years old, is still as bright and distinct as ink could be; the paper is still white and clear, and the page, with its illuminated border, is not surpassed in appearance by the best modern books. A *fac-simile* of one of these pages, slightly reduced in size, can be seen in the American Encyclopædia of Printing. Such a result could have been achieved only by the rare combination of the special talents of each of the three men engaged in the work; namely, the inventive genius of Gutenberg, the knowledge of metallurgy possessed by the goldsmith Fust, and the fine artistic sense of Schoeffer, of whom more anon.

What before had been an experiment, was now become a success, and one more

added to the number of the liberal arts, the art preservative of all arts, the art of printing. But just about this time Fust brought suit against Gutenberg for the repayment of the 1,600 guilders he had lent him, with compound interest from the date of the loan. Gutenberg could not pay him, and Fust demanded the delivery of the materials and the stock on hand, the assets of the business, which had been pledged for the debt. Gutenberg had nothing to do but to comply, and he saw his great invention, upon which he had labored so long without requital, now pass out of his hands, just at the moment when it was about to bring him a rich reward. This was a stunning blow to Gutenberg. He was now hard upon sixty years of age; and had he not been a man of great energy, and more than ordinary force of character, he must have at this juncture given up all further hopes of pushing his invention and perfecting it, and must have succumbed to circumstances. But he was not without friends. He worked on, though under great trials and difficulties, until he at length found both a friend and a patron in Dr. Conrad Hummery, who agreed to advance the capital necessary to set up another press and to start a new printing office. Moreover he had still some printing materials which were not covered by Fust's mortgage, and among these were the large types, double pica, used upon another edition of the Scriptures, printed immediately after the one already described. This was the Bible of thirty-six lines, commonly known as the Bamberg Bible, and a copy of which also is in the library of the Mr. Bruce aforesaid. With these and the money furnished by Dr. Hummery he was now enabled to stock another printing office, and to start again under favorable auspices. Though as before, the new printing office with its contents was pledged as security for the debt contracted in furnishing it, Gutenberg was allowed to remain in possession as long as he lived.

In 1465 Adolph II., Elector of Nassau, made Gutenberg one of the gentlemen of his court, in appreciation, it is thought, of his services as the inventor of an art that has preserved all arts. But the printer was himself of noble descent as we have seen, and that may possibly have influenced the Elector in making the appointment. He now removed with his printing office to Eltville, a village near Mentz; but his duties at the court of the Elector, though not onerous, required his presence there; and as he was now growing old, he leased the printing office to Henry and Nicholas Bechtermünntz, relatives of his by marriage, and so retired from active business. He received from the Elector a sort of pension, in the form of a new suit of clothes, twenty bushels of grain, and two tuns of wine annually. He died in the beginning of the year 1468, and was buried in the church of the Holy Franciscus, which was destroyed in 1472; after which there remained nothing to mark his exact resting-place until in 1837 his statue in bronze by Thorwaldsen was erected on the site formerly occupied by the church. The statue was unveiled on the 14th of August of that year amid salvos of artillery in the presence of a vast concourse of people; deputations from all the chief cities of Europe joining the citizens of Mentz to do honor to the occasion. The festival continued for three days. Strasburg and Frankfort also have statues of Gutenberg. But he needs no monument, for every printed book is a memorial of his genius.

Fust now came into possession of the press, types, and stock on hand, and thus found himself the sole owner and proprietor of the first, and just at that moment the only, printing office in the world. And this was a result which he doubtless contemplated from the beginning. Fust, besides being a goldsmith, was a professional money-lender also, avaricious and crafty. When he was applied to by Gutenberg for pecuniary assistance to enable him to develop his grand idea, he no doubt saw here a fine opportunity for a speculation. He saw how,

by the judicious investment of some money, under such conditions as he should impose, he could, by foreclosure at the proper moment, take advantage of the guileless old man,—for Gutenberg was ingenuous as well as ingenious,—and so get everything into his own hands; leaving the latter so far destitute as to be unable to become his competitor; and having thus become sole owner of the property, he could conduct the business for his own sole profit, and thus add a considerable sum to his already fast accumulating hoard. He drove a hard bargain with the printer, insisting upon terms yielding him all the advantages without any of the liabilities of a partnership.

Some time previously there had come to Mentz, fresh from the University of Paris, a young man, Peter Schoeffer by name, a native of Gernsheim, where he was born about the year 1430 or earlier. While still in Paris he had been employed by the Scribes, who were at that time numerous there, as an illuminator of manuscripts, in which capacity he had become more than ordinarily expert. He was a young man of rare intelligence and of good education, besides being possessed of great mechanical skill and inventive genius, and superadded to these substantial qualities, he had one more brilliant, that is, a fine artistic taste. He was engaged by Gutenberg and Fust to illuminate their Bibles, and was employed in the printing office, where he rendered other services. With such a rare combination of talents, he must have been a very valuable acquisition to the printers. Schoeffer made the type letters more symmetrical and otherwise beautified their forms. He also improved the quality of the ink used in printing.

When at length the partnership between Gutenberg and Fust was dissolved, and the former was forced to retire, Schoeffer, on account of his great services, past and prospective, was taken as partner by Fust in his stead. It might be thought strange that Schoeffer should cling to the sordid Fust, instead of to the more liberal minded and large-hearted Gutenberg; but here, as has often happened before, there was a woman in the case. Fust had a pretty daughter, named Christina; she was likely to be an heiress, and Schoeffer fell in love with her. Her father encouraged the match, and without hesitation consented to their marriage, which soon followed. He perhaps thought by this means to cement the union which already existed between himself and the young printer, and thus attach him more closely still to his interests.

Although in printing from movable types a great and important discovery had been made, there were still exasperating difficulties to be overcome to make it work well in practice. The delineation of the letters, somewhat defective in the first instance, became worse when their sharpness of form had been lost by use, which event very soon occurred on account of the want of sufficient hardness in the metal of which they were made. This was the principal difficulty. It was overcome, however, by Schoeffer, who discovered a better composition for the type. He also now introduced the use of a harder metal for making the matrices. But best of all he cut stamps or punches in steel, by which he was enabled to punch the matrices instead of casting them. This was the most important improvement made since the beginning, and type-founding, which before had existed only in name, now became a reality. This was the consummation of the art, and the era of printing may be said to date from this event.

Several works issued from the press of Fust and Schoeffer between the years 1455 and 1462, when the siege of Mentz occurred, and business there of every kind was suspended. The little band of printers was now dissolved and scattered. Fust had still on hand most of the Bibles in the Latin Vulgate printed by Gutenberg and himself, and taking advantage of the suspension of business in Mentz on account of the siege, he took these to Paris in order to make sale of them. He sold a number among the courtiers of Louis XI., for 600 crowns each, the

same price asked by the Scribes. But the uniformity of the printed pages, and the great beauty of their embellishments made them in all cases to be preferred to the manuscript Bibles. After supplying as many of his wealthy patrons as would buy of him at this price, and having many Bibles still on hand, he now lowered his price to sixty crowns, to place them within the reach of those who were unable to pay more. This created universal astonishment; but when at last he reduced the price to thirty crowns, and moreover produced his Bibles according to the demand, all Paris was agitated. Information was now laid against him as a sorcerer. His lodgings were searched, a great number of Bibles were found and seized, the red ink with which they were embellished was said to be his blood, and from their cheapness and the exact correspondence of their pages, the doctors of Paris judged him to be in league with the Evil One. This, together with some confusion of his name with that of a noted necromancer living in Paris a little while before, gave rise to the legend of "The Devil and Doctor Faustus." Fust was thrown into prison, and would probably have been put to death had not the king interfered in his behalf, and released him on condition that he would divulge his secret. He remained in Paris until 1466, when he is said to have died there of the plague. After the death of Fust the printing business at Mentz was carried on by Schoeffer alone until the year 1490, when he retired from all further active participation in it and was succeeded by his son. He died in 1492.

The early history of the art of printing is involved in much obscurity, and amidst conflicting statements it is not easy to arrive always at just conclusions. The account of the invention now offered is as trustworthy a one as we have been able to give after a searching examination and careful comparison of all the best authorities on the subject extant. About the early history of no other mechanical or fine-art have so many books been written. The difficulty of coming to a satisfactory conclusion is much increased by the fact that all the early chronicles of printing were written in a dead language, the Latin; and being written for the information of scholars and men of letters, rather than for that of printers, they very inadequately describe the construction and appearance of early types and the habits of early printers. The alleged inventors of printing are thirteen, a baker's dozen; and the residence of its inventor is claimed by no less than fifteen different places. After a careful investigation of the assumptions of each and all of the persons alluded to in this connection, we discover that only four of them have now living defenders, namely, Gutenberg, Koster, Schoeffer, and Castaldi, the Italian. The claims of Castaldi are supported by nobody outside of Italy. To Schoeffer we have endeavored to give that credit which seemed to be his due. His services to the art were indeed great, especially his invention of type-founding: without which the invention of Gutenberg could hardly have been a success. The contest is now narrowed down to Gutenberg and Koster, and the account here given is the only one which presents a way in which the conflicting claims of the two can be reconciled. German authors, of course, maintain the claims of Gutenberg, and reject all traditions favoring Koster; while Netherland writers insist on the priority of Koster, and accuse Gutenberg of stealing his invention. English and French authors too, while without national prejudices on the subject, have, by playing the partisan, added to the heat and bitterness of the controversy.

The invention of printing is the most important one that has been made in the history of the world since the discovery of letters; and one without which that sublime discovery would have been shorn of the greater part of its powers. It is an invention which has contributed more to the civilization and enlightenment of the world, and the diffusion of knowledge and general intelligence among men than all else combined.

JAMES COULTER LAYARD.

THE ENGINEERS OF THE BROOKLYN BRIDGE, AND THEIR WORK.

ON the 24th of May, the cities of New York and Brooklyn celebrated the accomplishment of one of the grandest works of mechanical skill the new world has known. Like all great consummations, the suspension bridge over the East River is the outcome of a long-talked-of project. Twenty-five or more years ago the idea of joining the two cities by means of a bridge was much discussed; but it was not until about 1865 that it began to take practical hold upon public opinion, and to engage the attention of engineers and constructors. Many difficulties presented themselves to such an undertaking; it was urged among other things that the strong current which prevails especially at certain hours of the tide in the East River would prove a very serious obstacle; then there were the great depth of the river at certain places, and the absolute necessity of elevating the bridge so much as not to interfere with the passage of vessels, otherwise the great and constantly increasing marine trade of New York would be seriously embarrassed.

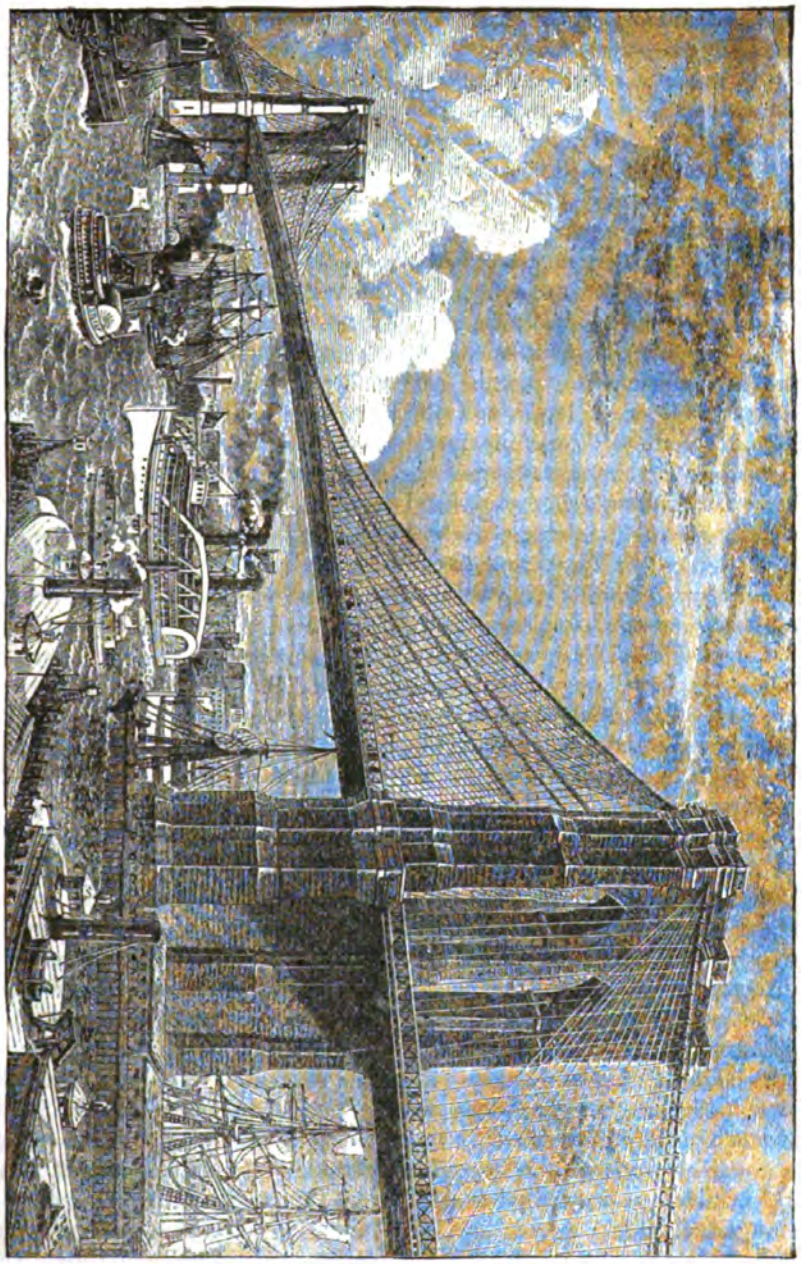
JOHN A. ROEBLING.

Mr. W. C. Kingsley, whose name should ever be remembered in connection with the enterprise, was so earnestly in favor of it that in 1865 he engaged an eminent engineer to draw plans and make estimates for a suspension bridge; the result of his investigations and of the further examination into the matter which followed, was the granting of a charter by the Legislature of the State of New York for the purpose of carrying into effect the construction of such a bridge. This charter made the work in great part a private undertaking. In 1875, however, it was declared a public work, and the money which had been subscribed by private parties was repaid from the bridge fund of the two cities.

In 1867 Mr. John A. Roebling, of New Jersey, was engaged as chief engineer, and he prepared and submitted a series of plans and estimates covering the whole

WASHINGTON A. ROEBLING.

work. These with a few modifications were approved by a board of consulting engineers, and a Government commission of three United States engineers, and the work of preparing the site of the foundation of the Brooklyn tower was begun on January 3, 1870. The foundations of this and also of the other tower were laid by means of caissons, the caissons being substantially a huge wooden diving-bell; that on the Brooklyn side being sunk to a stratum of hard conglomerate, about 45 feet beneath the bottom of the river. On the New York side, however, the laying of the foundation was a work of much greater difficulty; because of the



VIEW OF THE EAST RIVER BRIDGE—THE GRAND SPAN.

nature of the sandy bottom, it became necessary to sink the caisson to the bed-rock, 78 feet below high-water mark.

Un ortunately, Mr. Roebling met with an accident in the summer of 1869, while engaged in superintending the surveys for locating the Brooklyn tower; he was standing on some timbers of the rack belonging to the ferry slip, when a boat entered, and thrust the timbers so as to catch and crush his foot; lockjaw ensued and he died sixteen days later. He was about 63 years of age; a man with a well-proportioned brain, a very active temperament, energetic and thorough-going. His perceptive faculties as indicated by the portrait were large; Constructiveness, Firmness, the organs of the upper side of the head generally were large, and the upper part of the forehead was fully developed, giving him the characteristics of reflection, breadth of view, deliberation, and executive purpose. The head was well elevated at the crown, conferring excellent poise of character, with steadfastness and emphasis. Language was large enough to make him clear in the expression of his ideas, and Benevolence strong enough to give him kindness and sympathy. He was not noted for loquacity, but rather for quiet unobtrusiveness, yet he could speak to the purpose when expedient.

The bridging of the East River had been a favorite idea with him for several years before he entered upon the work, and his previous experience as an engineer especially adapted him for it. In 1848 he contracted to erect four suspension aqueducts on the line of the Delaware and Hudson Canal. In 1851 the suspension bridge at Niagara was commenced, and completed in March, 1855; this was under his supervision—the span of 1,224 feet being at that time deemed very remarkable. Later works of Mr. Roebling's were the elegant suspension bridge over the Alleghany River at Pittsburg, and the Ohio bridge at Cincinnati; the latter was completed in 1867.

Mr. Washington A. Roebling, who had been associated with his father in some of his principal works, was regarded as the fit successor to the position of chief engineer in the bridge construction, and accordingly received the appointment. Like his father, he possesses large mechanical organs, and in general a strong and practical brain. He devoted himself earnestly to the prosecution of the work, and, like his father, became a victim, although not to the fatal extent, of an accident. In December, 1871, a fire occurred in the Brooklyn caisson. Mr. Roebling being there at the time, contracted the disease known as the "caisson disease," which made him a permanent invalid, restricting him to his sick-room. Although unable to go out, his oversight of the work never flagged. It is said that his wife has proved of very important assistance in the discharge of his engineering duties. When he became disabled she prepared herself by special studies in engineering to compensate as far as possible for his inability to be personally present at the bridge works and some valuable details are due to her. The changes which were made in the original plans of the bridge were chiefly for the purpose of adapting the structure to a future demand upon it, induced by the constant growth of the cities of New York and Brooklyn. These changes involved a larger and stronger bridge, and made a very considerable addition to its first estimated cost. The original estimate, exclusive of the land appropriated, was seven millions; the time of building five years. The actual cost when completed will be about $15,500,000, inclusive of the land; but the height of the bridge was increased five feet, the width five feet, and the cost of the foundations, owing to these and other changes, was materially increased. Steel was substituted for iron as the material to be used in the construction of both the cables and the suspended structure. Then there are station buildings and elevated railway buildings, matters not originally contemplated, and which have swelled the cost.

The length of the span between the towers is 1,595½ feet; the length between

the anchorages of the main cables 3,460 feet; between the termini 5,989 feet. At the towers the bridge is 118 feet above high-water mark, and at the center 135; the towers are 276 feet and 8 inches high. The four cables which sustain the bridge are composed of steel wires laid parallel, and bound together by an unbroken wrapping of wire; each of the wires is one-eighth of an inch thick and there are 5,000 in each cable, making a bundle 15¾ inches in diameter. The strength of the anchorages in which the cables are set may be inferred from the fact that they are vast masses of masonry 119 feet by 132 at the base, standing 90 feet above high-water mark, and weighing 60,000 tons each. The huge iron plates, one for each cable, which are held in place by this masonry, are 16½ by 17½ feet, 2½ feet thick, and weighing 46,000 pounds each. The wire in a single cable weighs 1,732,086 pounds and its strength is estimated at 170,000 pounds per square inch; the weight of each cable is 800 tons; while the weight of the whole suspended structure or central span is 6,740 tons; and the maximum weight with which the bridge can be crowded by freely moving passengers, vehicles, and cars, is estimated at 1,380 tons; this added to the weight of the suspended structure makes a total of 8,120 tons; the stress or lengthwise pull on the cables due to such a load becomes about 11,700 tons; while their ultimate strength is placed at 49,200 tons.

The platform for foot passengers is in the center and considerably elevated above the car tracks and the carriage roadways, so that the pedestrian obtains a magnificent view of the two great cities, the bay and neighboring country from the center. To the stranger who approaches New York by steamer from the Atlantic or the Sound the bridge offers a beautiful spectacle. In the distance the vast network of steel and iron slung between the needle-like towers has an airy lightness and grace, and seems to float high over the water, as some strange bird with great white wings, or a cloud of peculiar form.

A FEW REFLECTIONS ON NOSES.

WHILE the human countenance as a whole, alike upright and expressive, stamps its possessor at once with the divinity of his origin and the dignity of his design, each feature thereof, and none more prominently and pointedly than the nose, nobly comes forward to substantiate the statement, backed up and bulwarked by the whole inner man. The expressive indications of each are ever in harmony with the whole. As the face of a clock indicates time, so the face of a man tells the tale of his inner being. When the inner man is calm and tranquil each feature of the countenance harmoniously betokens the placidity within. It is no less true that when violent emotions or tumultuous passions, whether of joy, or grief, or love, or wrath, disturb or destroy that tranquillity, the countenance at once indicates the measure and the character of the tumult within. The eye ever signals the grief or the gladness, while the eyebrow substantiates these signals with its favor or frown. The mouth in its measure and form, with the lips, thick or thin, open or compressed, tells its own tale. The chin prominent or retiring shows persistence or the reverse; while the forehead that surmounts all, high or low, wide or narrow, indicates with a certainty that can not be gainsaid either the possession or the lack of power. But no feature more prominently than the nose betokens at once the cast and the character of the man. It is also the first mentioned feature in human history (Gen. ii. 7).

The nose is ever most prominent in every important enterprise in which its possessor may engage, cutting the way for him through difficulties, and ever tak-

ing the lead. Men of every class and clime, of every age and occupation, have ever followed their nose through life. Since, then, every man follows his nose, and since its characteristic is ever "go-ahead," it should never in any case receive the "go-by," nor be belittled. That man should receive no encouragement who would attempt to describe the human countenance without recognizing the nose.

While the nose may be looked upon in many lights, let us look upon it first as a marvel of measurement, and in this way adopted as

THE STANDARD OF STATURE.

In the formation of our bodies, so "fearfully and wonderfully made," the All-wise Creator has established the most exact proportions even in the minutest parts. Man's height and his breadth, when his arms are outstretched, are equal, and his nose is constituted the standard of measure for the whole. It is also noteworthy that all the single members of the body are in the middle, while all the double ones are on the sides. The nose is in the exact center of the face, as much space being above as below it, while on either side of it the parts are equal. The thumb too is of equal length with the nose, but the man who would apply his thumb to his nose is apt either to point an insult or provoke a smile. In ordinary cases from the top of the head to the beginning of the face, is one nose length, from thence to the nose is another, and from the under part of the nose to the chin is another; so the face is three times the length of the nose (Fig. 1). From the chin to the hollow of the clavicles just above the breast, is two nose lengths and from thence nine more complete the length of the body proper, and half the stature of the man. When the stature is either longer or shorter the difference is uniformly found in the length of the loins. The thigh is six times the length of the nose, and the knee proper is one and a half of its lengths. From below the knee to the instep is six nose lengths, and is thus the same as the thigh. From the instep to the sole of the foot is a nose length and a half. All this shows that in ordinary cases a man is thirty times the length of his nose.

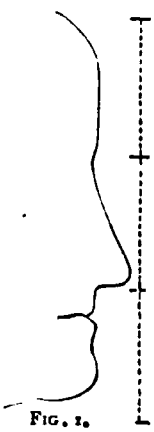


FIG. 1.

When the arms are extended at right angles to the body the distance between the extremities is equal to the stature of the body. From the hollow between the collar bones to the joint that unites the shoulder bone to the arm is three times the length of the nose. Between the shoulder and the extremity of the elbow is six times the length of the nose, and from thence to the tip of the little finger is the same. The hand is about equal to the length of the face, and three times the length of the nose; while the sole of the foot is about the sixth part of the length of the body, and five times as long as the nose. Thus the structure of the human frame, whether greater or lesser in stature, whether considered as a whole, or in its parts separately, presents to our view an admirable and wisely adapted proportion. Every part is uniform in shape and size with its counterpart, while their regular and harmonious arrangement gives the greatest symmetry and strength. No other form or arrangement could be imagined more suitable to each part, or more advantageous to the whole. No other could so well give to man that lofty bearing, and that lordly demeanor, which constitute and characterize him as "lord of creation," at once his God-given patrimony and perpetual prerogative.

The nose may be looked at no less as

THE STANDARD OF CHARACTER.

As already said, the nose is the standard of stature, and is in general one-third the length of the face. This is uniformly the case in the Caucasian race. In the Mongolian the average is more nearly one-fourth, while in the Ethiopian it is

somewhat less, and in just about the same proportion are these races developed. Thus the Ethiopian nose is that of babyhood, and the race is yet in its infancy, while the Mongolian has attained to youth, and the Caucasian only has risen to matured manhood; all indicating that the nose is no less a standard of character than of stature. True, a man with a large nose may not always rise superior to his fellows; circumstances may prevent him, yet effort will be made, and he will very seldom, if ever, sink beneath them; whereas, it is a supposed impossibility that a man with a petty, pitiful, paltry nose can ever attain to any prominence in legislature or literature, in arts or in arms. His nose, or rather his lack of it, can never lift him up.

The nose differs in shape as well as in size, and has become not only a personal but a national peculiarity. Thus, we have the earlier, or Jewish type, which is not only characteristic of that race, but also of the Syro-Phœnician and Bedouin Arab. This type of nose, while full and aquiline, yet terminates in a somewhat sharp and drooping point, indicating a keen, selfish, wary, and suspicious disposition, and leading to the prying study of men, and the persistent scheming for worldly aggrandizement (Fig. 2).

FIG. 2.

The Grecian nose is also full, but in form straight, and in every way well-favored (Fig. 3). As far as comeliness and grace are concerned, it has been regarded as the model nose of mankind. It is not only attractive but ornamental, and sets off to the best advantage the whole countenance. It is especially becoming and beautiful in woman. Such a form of nose implies much refinement of nature, combined with high artistic taste, and indicates, as in the Greek, a strong and instinctive love of the beautiful, alike in nature and in art, qualities which in that race reached their highest development. The Grecian nose, wherever it is seen, is not so much the type of rugged power and persistent determination, as of amiability, culture, and gracefulness. It is a prominent characteristic of poets and artists, manifesting itself in the most refined taste and exquisite skill.

FIG. 3.

The Roman nose differs somewhat from these, and is markedly large, aquiline, and expressive (Fig. 4). It has been regarded as the highest type of power, and indicates the energetic, the aggressive, the subordinating. Power was the great ideal with the Romans, and the likenesses of all military leaders have presented more or less strikingly the characteristics of this nose. This was very marked both in Wellington and Napoleon. The Romans had the aggressive faculty very largely developed, as seen in their nose, and shown in their character. It is beyond dispute that the British partake largely of both, and show themselves an aggressive people. While such is the case, it is no less clear that such a type of nose very generally belongs to persons of superior intellect, high moral sentiment, and is most frequently found as indicative of great strength of mind and marked decision of character.

FIG. 4.

The negro nose, as is obvious, differs very materially from all the others, not only in being so much shorter, flatter, and wider, but in failing to present that relative prominence indicative of power. Although it occupies the higher place, yet it much lacks pre-eminent prominence. The out-pressed lips and protruding jaws assume and assert, and uniformly indicate the prominence of the animal propensities. Such a negro nose, however, does not show so much the lack of power, as the possession of a power of the beast kind and in a tendency more or less strong to garrulous jollity, self-gratification, and low cunning; and when very marked, to tawdry display, deception, and double-dealing. It exhibits a universal

lack of those lordly traits which tend to determined resolve and lofty enterprises. In short, the mouth, when the most prominent part of the face, ever betokens the predominance of the animal, and the lack of prominence alike in nose and chin constitutes their possessors the lowest of our race.

While attention has thus been directed to the nose national, yet there is still another class of noses which present their prominent peculiarities, although they have never yet risen to the prominence of being national. Such may be regarded as the nose personal, or it may rather be called the Family nose. Among these may be seen the snub nose, somewhat short and dumpy, and lacking development (Fig. 5). Although it may never have raised its possessor to the first rank of our race, yet it has made its own peculiar mark on the history of the world. Such a nose is not incompatible with a good deal of insight and humor. There is such a marked manifestation of drollery in its very make-up as to warrant the conclusion that its possessor belongs to the class of "men of infinite jest and most excellent fancy." Although not the most prepossessing in appearance, and in general indicating rather a lack of persistent power, yet it can not be denied that men with such a nose have frequently risen to great prominence in different professions. In the race of life they often outrun many whose noses were more pretentious, and give the go-by to the more regal Roman.

FIG. 5.

Another type of nose may, for want of a better term, be called the Turn-up nose. It is the reverse of the Jewish, and presents a gentle curve from the top to the tip, and has its own peculiar attractions. It indicates in its possessor a rather busy, bustling, inquisitive disposition, accompanied by no little self-conceit, and its consequent self-assurance. Its possessors are somewhat loquacious, like to speak in public meetings, and are great in after-dinner orations. They aspire to offices where they can exercise "a little brief authority." They are ever ready to propose, second, or support toasts or motions, as the case may be (Fig. 6). Such a type, however, is not once to be confounded with what may be called the hook-nose. It belongs to a class that are no better than they should be, a class who by sly and insinuating cunning and craft, contrive, oft too successfully, to cajole and circumvent the more simple and unsuspecting. Let no man with such a nose be trusted.

FIG. 6.

While we have thus looked at the nose national, and the nose personal, yet both of these have oft peculiarities more or less marked in themselves, and manifested in the dispositions of their possessors. The perpendicular length of the nose, for instance, indicates an acute apprehensiveness in anticipating the future, alike in the turn of events as well as the intentions of men. An undue extension of the tip downwards tends somewhat to melancholy. On the other hand, the horizontal length of the nose from the lip outwards indicates an inquiring cast of mind, and a desire to see and be satisfied by their own eyes rather than by the eyes of others. When the lower part of the nose becomes unduly fleshy and flabby, and withal somewhat fiery besides, this shows free, if not fast living.

While prominence indicates power, yet as all prominent noses are not similar in form, so they do not indicate similarity in power. When, for instance, the front part of the nose is full immediately above the tip, this implies a strong tendency to self-defence. When the marked prominence is a little higher up, it tends in a similar way to the defence of others. Further, when the peculiar prominence is on and above the ridge, the power assumes more of the aggressive form, not simply defence, but defiance, a delight in seeing and stirring up strife, a tendency to pick quarrels, and is alike combative and contentious. This is often a prominent feature of the Roman nose. When that

which is called the septum, and which separates the nostrils, extends in the front part of the nose below the outer sides of the nostrils, this betokens a tendency toward discovery and invention. When the prominence is a little further from the tip inward, this manifests the power and desire for arranging and combining, whether objects, words, or ideas. When the prominence is still nearer to the tip, this exhibits a power of penetrating into and analyzing the mysteries of mental or physical science. The extension of the septum or center thus below the wings or sides of the nose, indicates proportionate power in the threefold aspect thus presented.

While the prominence of the nose always indicates power, its width no less does the same. The peculiarities of this power varies with the positions on which this width is more marked. This feature of the nose forms a no less interesting and instructive object of study than does its prominences, and is no less tempting. But I do not wish to be wearisome, and as some may readily admit all, while others may regard the indications as more fanciful than real, enough has been said to lead the former to pursue the subject further, as well as to lead the latter to inquire and see whence their doubts spring. I would, therefore, now sum up the matter by simply saying, that as surely as a well-formed face should be two-thirds as broad as it is long, so a well-formed nose should bear the same proportions, and when these proportions do not hold good there is the corresponding lack of the balance of power. Where the nose is thus fitly proportioned we have men who rise high above their fellows, in every department of commendable pursuit. As an illustration of this we have a Bright, a Gladstone, and others, men who wield a world-wide influence. It need scarcely be added that in judging of character from the nose, it must ever be borne in mind that there are two mighty influences universally present and powerfully prevalent, like winds on the earth or tides in the ocean; these are surrounding circumstances on the one hand, and natural temperament, together with the amount of brain power, on the other. These do much, very much, alike in moulding the character and regulating the conduct.

REV. JOHN DUNBAR.

Dunbarton, Ontario.

SOME STATUARY.

ONCE in the night-time I heard a voice say, "Come with me." The words were uttered in tones of such irresistible power and sweetness that I could but obey and follow where it led. Whether angel or mortal I knew not, I cared not. Together we entered a great hall, so large that I could not see from one end of it to the other. This vast hall was filled with laborers, men, women, and children, and I saw that each was superintending a little band of fairy workmen, who with hammers and chisels were pounding and cutting and carving upon some kind of statuary.

Each person was intently occupied with the work of a statue that seemed to be peculiarly his own. Exceedingly fine and delicate workmanship was here being done; so deftly and swiftly were these fairy artists executing their work that much of this statuary was becoming a marvel of exquisite beauty.

I soon observed a marked resemblance between each person and his own statue. One very pleasing little child was having made such a marvelously beautiful statue that I stopped before it in admiring wonder.

"What are the chief workmen employed to-day, little one?" inquired the voice.

"Cheerfulness, Love, and Duty," pleasantly answered the child.

"Always the same head workmen," said the voice; "and very fine chiseling

you are having done; that is right, little one."

Another was a gray-haired old man beside a statue of great loveliness.

"Ah, my good man," spoke the voice "your work is being finely completed; the whole outline is one of nobleness and grace. Integrity and kindness have traced very symmetrical outlines; intelligence and goodness have impressed a fine expression over all."

Then we came to a covered statue, a handsome mantle hid it from view. The voice was angry as it gave a command to "remove this flimsy cloak of reputation." No one would hesitate to obey the voice, and the covering was quickly pulled away; when I shrank back, for a hideous deformity met my sight.

"Reputation and character do not always correspond, and sometimes the true work is made manifest. Malice, avarice, deception, and their companions have been allowed to make sad havoc here, and it is now too late to remedy the evil."

Next we came to where two women were working side by side; but very different were the two forms they were modeling out.

"What different work has been done here!" again said the voice; "yet these women have had similar tools and the same number of workmen, but how differently were they employed. Upon one sorrow was permitted to crush and damage, while on the other the good little workmen, faith and trust, took sorrow and with it carved only softened lines of beauty. Both statues are of better material than finest gold. Once they were alike badly mixed with dross, and were placed in the furnace of suffering; one came out as the finest gold purified seven times, while in the other the dross remained, only more hardened and set than before. The difference in them is owing to the different workmen employed and the manner in which they performed their work."

"For what purpose is all this statuary being made?" I inquired.

"All that are rightly worked upon are being made to adorn the great temple of the Eternal City. Do you not understand? At the beginning of every person's life there is a lump of material quarried out of eternity awaiting the chisels of time to hew and shape it into some beautiful form or into a thing of ugliness. A person's character is the material, the varied circumstances of life are the many tools ready to be used, and to each individual is given the same number of fairy workmen called mental faculties. Some of these are ever ready to seize hold of a circumstance by the handle and cut or pound away at the character after a fashion of its own.

"But these active little workers need to be controlled, for if left to themselves the strongest bear sway and ofttimes some irremediable mischief is done. So people are in great part what circumstances make them, just as any material image is what the tools make it. And whether at first the character resembles granite, bronze, marble, clay, or wood, and whether the tools are seemingly good or ill, more than all else depends upon the kind of workmen employed.

"In infancy 'tis often the will of the parent that exerts a controlling influence over the child's faculties. Even a mother's smile or frown or tone of voice, often excites to action fairy-like laborers in the little brain that begin to carve traces on the new material of the little character for good or harm, beauty or ugliness."

"I understand now," I only answered.

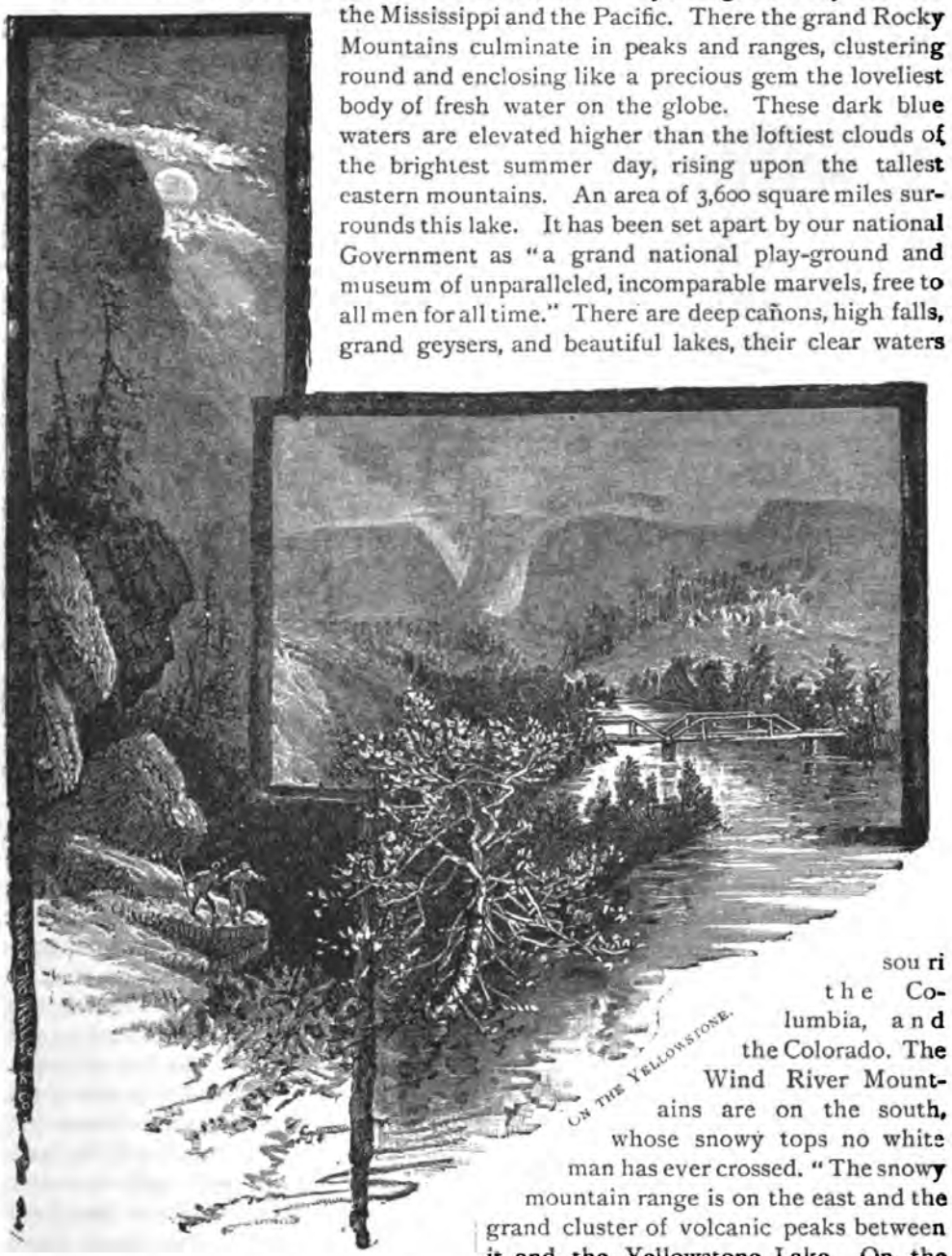
SARAH M. BIDDLE.

REQUIREMENT.

We live by Faith; but Faith is not the slave
Of text and legend. Reason's voice and God's,
Nature's and Duty's, never are at odds.
What asks our Father of His children save
Justice and mercy and humility,
A reasonable service of good deeds,
Pure living, tenderness to human needs,
Reverence and trust, and prayer for light to see
The Master's footprints in our daily ways?—
No knotted scourge, nor sacrificial knife,
But the calm beauty of an ordered life,
Whose very breathing is unworded praise—
A life that stands, as all true lives have stood,
Fast rooted in the faith that God is good!

THE AMERICAN SWITZERLAND.

THE most wonderful part of our continent — the most remarkable lake basin of the world, is found in the north-west corner of Wyoming, half-way between the Mississippi and the Pacific. There the grand Rocky Mountains culminate in peaks and ranges, clustering round and enclosing like a precious gem the loveliest body of fresh water on the globe. These dark blue waters are elevated higher than the loftiest clouds of the brightest summer day, rising upon the tallest eastern mountains. An area of 3,600 square miles surrounds this lake. It has been set apart by our national Government as "a grand national play-ground and museum of unparalleled, incomparable marvels, free to all men for all time." There are deep cañons, high falls, grand geysers, and beautiful lakes, their clear waters



ON THE YELLOWSTONE.

teeming with trout, and primeval forests crowded with game. There from the great central mountain ranges flow forth the far-reaching waters of three of the longest rivers of our continent—the Missouri the Columbia, and the Colorado. The Wind River Mountains are on the south, whose snowy tops no white man has ever crossed. "The snowy mountain range is on the east and the grand cluster of volcanic peaks between it and the Yellowstone Lake. On the west is the main divide of the Rocky Mountains. On the north are the bold peaks of the Gallatin range and the parallel ridges, which give a northward direction to all the great tributaries of the

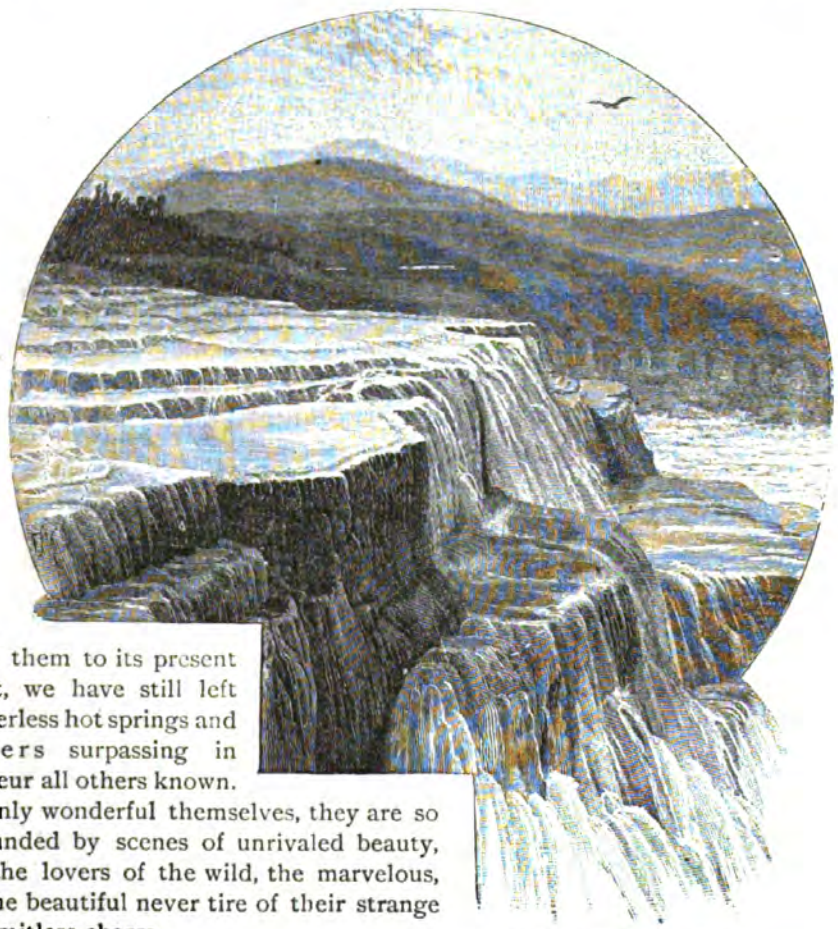
Missouri from this region." No adjectives can describe the beautiful spot—all have been exhausted upon it; picturesque, curious, wonderful, stupendous, grand, magnificent — all these and a hundred more could not define a portion of its charms.

YELLOWSTONE LAKE.

Secluded among the loftiest peaks of the Rocky Mountains the Yellowstone Lake presents some of the loveliest shore lines in the world. Its southern border, with its long narrow inlets, bears testimony to the tremendous upheavals which occurred in geologic times and gave it its special character. Pine-crowned promontories stretch into it, "islands of emerald dot its surface, and a margin of sparkling sand forms its jeweled setting." The winds passing through the mountain gorges lash it into foam, but leave it again to rest calm and unruffled, with only the gentle wavelets murmuring along its shore. "Its shores are paved with unhewn rocks — sometimes in masses, sometimes broken and worn into pebbles of trachyte, obsidian, chalcedony, carnelians, agates, and bits of agatized wood, and again ground in obsidian sand, and sprinkled with crystals of California diamonds." In these beautiful waters are an abundance of trout, but never any other kind of fish. The lake is twenty miles long and fifteen broad, and shaped like an outspread hand. Some liken it to the head and shoulders of a grotesque animal. Its superficial area is about 300 square miles, its greatest depth 300 feet, its elevation above the sea 7,427 feet. In the early morning, in the clear bright sunshine its bright green color shades to a delicate ultramarine. Over this lovely lake sail fleets of pelican, "with the majestic swan; at nightfall the low, flat islands of the lake are white with them." Around the lake hover eagles, hawks, ravens, mocking-birds, and woodpeckers. Near the lake are no snakes, but in the forest and mountain meadows are deer, elk, and sheep, and the smaller lakes are alive with otter, beaver, and mink. There is one strange bird called the guide-bird, with "innumerable sounds and gestures," hopping and flying from rock to rock before you, waiting perched upon a rock while you rest, and then leading you clear to the summit of the Grand Cañon.

There are such conclusive proofs of the ancient volcanic action thoroughout this lake basin, that it is believed to have been the focus of a multitude of craters. An eminent geologist tells us that it has been the scene of volcanic activity as great as that of any portion of the globe. "It might be called one vast crater made up of a thousand volcanic rents and fissures, out of which the fluid interior of the earth, fragments of rock and volcanic

dust were poured in unlimited quantities. Hundreds of the nuclei or cones of these volcanic rents are now remaining, some of them rising to a great height above their rocky base. From many another point on the bare sides of the basin more than a hundred peaks may be seen, each one forming a volcanic center. Of this mighty force that once threw up these lofty mountains and raised the region round them to its present height, we have still left numberless hot springs and geysers surpassing in grandeur all others known. Not only wonderful themselves, they are so surrounded by scenes of unrivaled beauty, that the lovers of the wild, the marvelous, and the beautiful never tire of their strange and limitless charm.



MAMMOTH HOT SPRINGS.

Seventy-eight years ago Captains Lewis and Clarke explored the head-waters of the Missouri, crossing the rocky ridges, followed the Yellowstone to its junction, and found its source, a large lake, but they learned not the wonders and beauties of the "upper reaches" of the beautiful river and the lovely lake from which it flows. When afterward the Montana gold mines had drawn thitherward so many fearless gold-hunters, from the mysterious unknown Upper Yellowstone came down a story of wonders unending, with a glowing account of a lost party of adventurers fleeing from swift-pursuing Indians, and finding their way at night "by the brilliant light of a huge diamond" gleaming on the mountain-side. Trappers filled their pockets with gold nuggets, and told of a "valley where everything was instantly petrified that entered it!" "Rabbits and hens and Indians were standing like statuary among thickets of petrified sage-bush, whose stony branches bore diamonds, rubies, sapphires, and emeralds as large as walnuts." "I have gathered them myself," said one adventurer to Colonel Raynolds, who, twenty-five years ago, passed en-

tirely around the Yellowstone basin without entering it. Ten years after, the first real knowledge of this region was given us by a company led by General Washburn. They explored the Yellowstone cañons and the Yellowstone Lake shores and visited the geysers. Traveling through a terrible wilderness to reach the grandest scenes one of the party lost his way and wandered thirty-seven days alone. His story is a thrilling account of peril and suffering.

Other explorers have since followed these, surveying the lake, sketching the shore lines, and giving us charts locating the springs of the geyser basin, and unfolding to us many new pages in the book of Nature. To some parts of this wonderful region the old mountaineers had given the names of Tire Hole Basin, the Devil's Den, Hell-Roaring River, as "suggested to them some resemblance to a region their pious grandmothers had warned them to avoid." The names given them by Captains Lewis and Clarke are quite unlike those very impressive infernal ones: Wisdom River, Philosophy River, Philanthropy Creek were some of their milder titles. Sometimes, as the water flows along the valley, it "lays down in its course a pavement more beautiful and elaborate than art has ever conceived. The sulphur and the iron, with the green microscopic vegetation, tint the whole with an illumination such as no decorative painter has ever dreamed." Even the least little ornament on the sides of the basin is seen mirrored in the clear water, and the color of the sky and clouds are so vividly reflected, they seem even heightened and brightened by the constant "gentle vibration." In the little channels of the spring are the most brilliant colors, changing from the deepest scarlet to the palest cream-color. Here and there you see a delicate fibrous mass, "in the still waters incrusted with lime, looking like delicate snow-white coral."

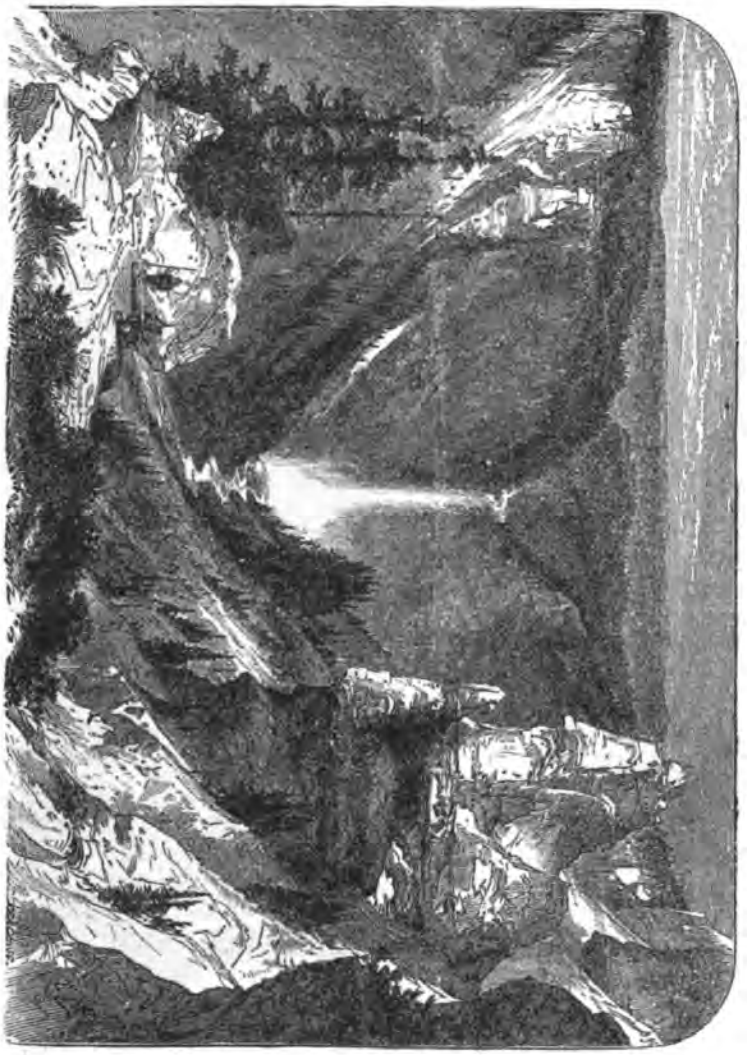
In one place the river bursts through a plateau of thirty miles, "dotted with pine and aspen groves, varied by lakes and springs, and breaks in a winding cañon 2,000 feet in depth—now rolling over volcanic boulders, now forming fathomless pools, now lashing into furious foam, now resting in a calm crystal mirror."

At the East Fork of the Yellowstone there is a very curious mound about forty feet high, one of the ruins of an ancient spring. It is commonly known as the Extinct Geyser, East Fork of the Yellowstone. This cone is in ruins. No water issues from it now. The top of the cone is somewhat broken. It is now eighteen feet in diameter. Near the center is a hole two inches in diameter, plainly a steam vent. The inner portions of this small chimney are lined with white enamel, thickly coated with sulphur. On the east side huge masses are broken off, exposing a vertical wall twenty feet high, built up of thin horizontal laminæ of limestone. The wall on the west is about ten feet high. This was at first an overflowing spring until it built up a broad base from ten to twenty feet in height, becoming gradually a spouting spring, building up with overlapping layers like the thatch on a house until it closed itself at the top and ceased. Still more wonderful than this extinct geyser is the grand cañon of the Yellowstone.

In the grand cañon of the Yellowstone wonder is crowned with wonder. Words can not describe its grandeur and beauty. "The beau-ideals," says M. Langford, "as we gaze into the profound and solemn altitude, down, down we see the river attenuated to a thread, tossing its miniature waves and dashing with fiery strength against the massive walls which imprison it. A grander scene than this lower cataract was never beheld by mortal eyes."

"The volume is adapted to all the harmonies of the surrounding scenery. Had it been greater or smaller, it would have been less impressive. The river, from a width of two hundred feet above the fall, is compressed by converging rocks to one hundred and fifty feet, where it takes the plunge. The shelf over which it falls is as level and even as a work of art. Its

height is a few inches more than three hundred and fifty feet. It is a sheer, compact, solid, perpendicular sheet, faultless in all the elements of grandeur and picturesque beauties. The cañon, which commences at the upper fall, is here a thousand feet in depth. Its vertical sides rise gray and dark above the falls in shelving summits, from which one can look down into the boiling spray-filled chasm colored with rainbows, glittering like a shower of diamonds. The life and sound of the cataract with its sparkling spray and fleecy foam contrast strangely with the somber stillness of the cañon, a mile below. There all was 'darkness, gloom, and shadow—here all was novelty, gayety, and delight.' Seen through the cañon, below the falls, the river for a mile or more is broken by rapids and cascades of great variety and beauty."



GRAND CAÑON AND LOWER FALL OF THE YELLOWSTONE.

Near the banks of the Yellowstone is a remarkable group of sulphur and mud springs. On the brow of a hillock, amid the green pines, vapor rises from the scorching jets of several craters and fissures. Passing over this hill we come to a remarkable cavern whence flows a transparent stream. The roof of the

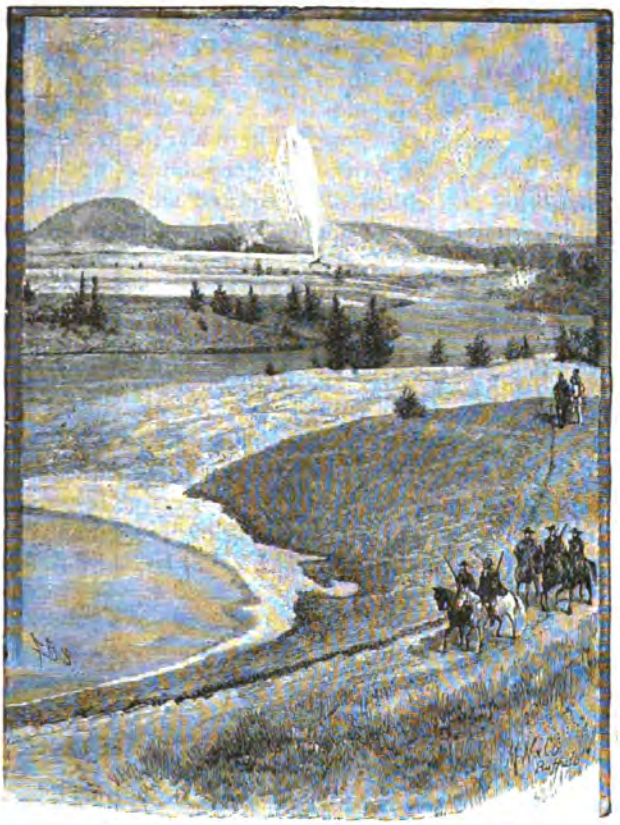
cavern tapers back to the water, which is boiling furiously twenty feet from the mouth of a cavern, ejected through it in uniform jets of great force. The sides and entrance are covered with soft green sediment. Two hundred yards from this cave is what is called the Muddy Geyser, geyser is in repose, presenting a surface six or seven feet in breadth. The flow of this geyser occurs every six hours; the water rises gradually and commences to boil when about half-way to the surface, and occasionally breaks forth in great violence. When the crater is filled it is ex-

THE MUD VOLCANO.

or the Mud Volcano. It is a funnel-shaped orifice, in the midst of a basin one hundred and fifty feet in diameter, with sloping sides of clay and sand. The crater or orifice at the surface is thirty by fifty feet in diameter. It tapers quite uniformly to the depth of thirty feet, where the water may be seen when the pelled from it in a splashing, scattered mass, ten or fifteen feet in thickness, to the height of forty feet. The water is of a dark red color, depositing the substance it holds in solution in the form of miniature stalagmites upon the sides and top of the crater. Half a mile distant dull, thundering sounds are heard from the

mud volcano as often as every five minutes. Each report shakes the ground for two hundred yards or more, and the massive jets of vapor accompanying them burst forth like the smoke of burning gunpowder.

Another wonder meets the eye on the other side of the river, where in the middle of the Upper Geyser Basin is the grandest geyser of the world. Around it are other craters of boiling springs, throwing water to the height of three and four feet, but this Grand Geyser on the summit of a bank of rock is a well in the strata twenty by twenty-five feet in diameter measurement; when quiet it has a depth of one hundred feet. The edge of this basin is bounded by a heavy fringe of rock, and stalagmites in solid layers are deposited by the overflowing waters. When an eruption is about to occur the basins gradually fill with boiling water to within a few feet of the surface; then suddenly with heavy concussions, shaking the ground in every direction, immense clouds of steam rise to the height of five hundred feet, and the whole great body of water, twenty by twenty-five feet, ascends in one gigantic column to the height of ninety feet, while the steam ascends one thousand feet or more. From the apex of this column five great jets shoot up, radiating slightly from each other, to the unparalleled altitude of two hundred and fifty feet from the ground, and seem to be held at that great height for the space of twenty minutes. The earth trembles under the descending deluge; a thousand hissing sounds are heard in the air, and rainbows encircle the summits of the jets with a halo of celestial glory. The falling water flows up and bears away the shelly strata, and a seething flood pours down the slope and into the river. Three times in one afternoon has this grand geyser played for twenty minutes, then lowering its waters into the crater out of sight, the steam gradually ceasing to escape till all is quiet. The sunlight glowing on this tall, waving fountain, with its sparkling jets of deep blue waters rising high in the air, is a spectacle no pen can describe. It is the "grandest, most majestic, most terrible fountain in the world."



THE SENTINEL GEYSER, OR "OLD FAITHFUL."

Another geyser, not quite so remarkable, but more curious, perhaps, is called "The Fan." From a double orifice discharge five radiating jets to the height of sixty feet. The spray and the falling drops look like a feather fan. Its eruptions sometimes last thirty minutes. "First the steam rushes from the upper crater, roaring violently; then, suddenly ceasing, a fan-like jet of water rises from the lower crater to the height of over forty feet, playing for two minutes;

then, suddenly stopping, the stream rushes forth again; occasionally the small crater sends forth a transverse stream, thus playing into the others for hours, then subsiding into a gentle bubbling." While this geyser is in action you hear loud, sharp reports. Along the river banks craters in every shape are seen, and all around are small geysers playing at intervals. Two hundred yards from the Fan are two geysers called the Sentinel, one always playing, its waters revolving horizontally without violence. In a few years this region of the Yellowstone will probably form a grand resort for people from all lands. It is well designed for such a purpose, for here Nature is to be seen and enjoyed in her sublimest forms and robed and crowned with beauty. LYDIA M. MILLARD.

FLORENCE NIGHTINGALE.—Some one who has seen Miss Nightingale lately writes thus of her: "Her features are regular and of English cast, and her complexion fresh, with the ruddiness peculiar to English people. Her hair is brown, with no perceptible intermingling of gray. It was worn plain, with only a small lace trimming on the top of the head. She had good teeth and bright, brown eyes, which looked you full in the face while talking. Her body was well nourished, and, I am confident, would weigh at least one hundred and sixty pounds, so that she is not now, I am glad to say, the delicate, fragile creature represented by the picture referred to. She has a soft, pleasant voice, and is well informed on every subject; is a good listener and talker, and is quite eloquent on the subject of nursing and the art of caring for the sick at their homes and of hospital management, to which she has devoted so much time and thought. Although she is an invalid and rarely ever leaves her house, she has lost none of her interest in these subjects.

"She received me in her reception-room while reclining on a lounge, near which stood a table with books and writing materials and a glass of milk. She sat up several times to open letters and books, but did not move her lower extremities which were covered with a shawl. What is the character of her invalidism I do not know, but certain it is it has not in the least degree marred her intellect or lessened her sympathies for suffering humanity, nor left a trace of pain upon her frank and benevolent countenance."

THE SONG OF SUMMER.

OLD Winter is gone, with his icy throne—and well he's gone!
Young Spring, in caprice, from her cares has flown,
And Autumn—oh, how could ye hail her birth,
If I never aided the suffering earth?
I reign, and the heart I move!
I'm queen, I am loved, and love!

My smiles I dispense over rich and poor, o'er rich and poor!
My roses I throw round the cottage door;
I shower alike of my fragrant bloom,
On couch for a bride, or the dismal tomb!
I reign, and the heart I move!
I'm queen, I am loved, and love!

I'm welcomed with joy by the old and young—the buoyant young!
By rustic refrain, and by poet's song:—
The ocean is throbbing with love for me—
All nature is laughing in tuneful glee!
I reign, and the heart I move!
I'm queen, I am loved, and love!

The fullness of life, which is everywhere—is everywhere!
The dew-spangled flowers which crown my hair,
The song of the birds, and the trailing vine,
All say unto me, Oh, the earth is thine!
I reign, and the heart I move!
I'm queen, I am loved, and love!

G. H. HOBB.

WOMEN IN THE INDUSTRIAL ARTS.

THE present age is everywhere a practical one. In our own country it has been inevitably such. The struggle for national independence was followed by a much longer and more prosaic struggle for bread and a home. The energies of the people, turned thus to practical affairs, gave an undreamed-of impetus to the mechanic and agricultural arts, and during the last half century the wealth of the country has multiplied with a rapidity marvelous to foreign nations. With leisure and plenty has come the recognition of other than purely physical wants, and people now demand that what was before useful be made beautiful. A curtain must not merely temper the light—it must have beauty and fitness as well. A cup must afford you pleasure while it yields refreshment. The smallest thing must be, if not really beautiful, at least quaint and curious. Hence the industrial arts, occupying the border land between the fine-arts and the arts whose only end is utility, have suddenly gained an unwonted importance. They present a constantly expanding field. As a consequence there is a call for designers and skilled artificers. In all this work what share have women, and what share are they to have?

There is no lack of occupations for women. The work of the world is forever doing—never done; and the time has come when women may have their part for the taking. There is only needful the skill which will enable them to hold their positions against all comers. There are no new employments to which women may prefer the sole claim. Why should they wish it? Competition is wholesome. Numerous occupations, in the industrial arts alone, are awaiting the patient, persevering, fully prepared women who will *dare* to take them up. In most cases the work of the pioneer has been done by women who have toiled hard and said little.

In Design the census-taker of twelve years ago found thirteen women already at work. How many additions have since been made to their number is not known (the recent census being still unavailable), but the supply is far from equaling the demand. The work is agreeable, lucrative, in every way suited to women. Designs for carpets bring from $10 to $100, according to the kind of carpet and the artistic merit of the pattern, while from the domain of Christmas cards and labels to that of wall-papers, furniture, and draperies, there is a steady call for designs at fair prices. A lady-designer of prints for a prominent Massachusetts manufactory earns twice as much as she did when a teacher.

In 1870 there was one woman architect in the United States; now there are several in the one State of New York. The time has not yet come when a fair estimate of their success can be made, but while a Cleveland lady has achieved such marvels of beauty, originality, and convenience for herself, as to be overrun with petitions for plans and hints, there is no reason to suppose that women who have been educated for the profession can not do as well. The architect of a building is not necessarily its superintendent during construction, and aside from overseeing the erection of the structure, there is no difficulty which women can not overcome if they will. "Women can unquestionably make excellent drawings," writes the Professor at Cornell University, "and I know of no reason why they can not, within certain limitations, design as well as men. In the specialty of interior work and decoration, I should suppose they might excel. But whether they would master thoroughly masonry, carpentry, and all the details of construction, a knowledge of which is essential to *good* designing of the main structure (though sadly lacking in many of our best known architects), is doubtful." To these as to other doubts of the kind, "the shortest answer of all

is—*Doing*." Women do not often lack conscience, and realizing that not only the property but the lives of their patrons are at stake, woman architects will not fail to acquaint themselves with even the driest details of their profession. Women spend a far greater part of their lives within the home than do men, and of the home women should be the planners.

Tradition ascribes the first wood engraving known in Europe to Isabella Cunio and her twin brother. Whatever the truth of this tale, it is probable that between her generation and our own the number of women who have studied and practiced engraving has reached the hundreds. More than fifty are noticed in history. The year 1870 found among the engravers of the United States but twenty-nine women. Surely there is room here.

In photography, although large numbers are at work, women have not yet emerged from the crowded ranks of mediocrity. As in other callings, too many have taken it up in a hasty way to earn bread for the passing hour. The capital of from $200 to $10,000 needed to fit out a studio is probably a barrier to some, while those who have taken this first step lack the talent or the ambition to go on.

Among the wood-carvings at the Centennial, some of the best specimens were sent by women of Cincinnati, and the work which they have exhibited at the recent Exposition in that city is highly spoken of by the local press. "Those who are capable have more orders than they can execute, and there are calls for more teachers of the art than can be supplied" (Benj. Pitman). In pottery, too, the women of that city are doing work not before attempted in this country, and Miss McLaughlin may yet follow the example of Madame Héléne de Heugist-Genlis and give to the world some of its choicest ceramic treasures. The facilities for production, however, are few; the demand for work of a high character is limited, and the women who engage in the art must be content to attain excellence, or it may be fame, but not fortune.

China painting, the painting and engraving on glass, the weaving of patterns, cabinet work, gold and silver smithing, landscape gardening—all of these arts, except, perhaps, the last—give occupation to some few women, the greater part of whom are among the unskilled and therefore poorly-paid workers. Concerning landscape gardening as a profession for women, the opinion of Fred. Law Olmstead is too important to be omitted. "There is no physical difficulty in the way of a woman's becoming a landscape gardener—none that would not stand equally in the way of her practice of medicine, or of lawn tennis. The chief difficulty, I should apprehend, would be an excess of interest in details working against comprehensive design, composition, and enjoyment of broad, simple scenery."

Embroidery has long been considered the feminine pastime. Recovering from the low state in which it has long lain, it may again be made the medium of productions which will rival the specimens preserved among the art collections of Europe. In lace woman's work has equaled the best. Little is made as yet in this country, and neither lace-making nor embroidery is a lucrative calling.

The more nearly a woman approaches the position of an independent producer, the more likely is she to attain pecuniary success. Her handiwork she can sell upon its own merits; her labor she is too often forced to sell as a woman's. The status of woman in the industrial arts is still secondary to that of man. Why is this? What are the obstacles in the way of woman's future success, and whence can help be sought?

Women's wages are lower than men's: (1st) because they lack suffrage; (2d) because they are innovators; (3d) as a whole, they are poorer workmen; and (4th) the woman who enters the labor market is, presumably, obliged to work at something.

The first assertion can not be noticed

here, further than to quote a single sentence from a letter just received from Governor John W. Hoyt. "So far as I know," he writes, "the women of Wyoming receive the same wages as men for equal service."

The opposition of employers to women, as such, is rapidly yielding to the influence of time and custom. Whatever may have been the prejudices of the past, certain it is that he who stands in need of help now more and more seldom stops to ask whether the quick brain and cunning hand belong to man or to woman. The feeling is now spending itself in the theoretical disquisitions flooding newspapers and magazines. A Minneapolis lady affirms, as the result of her own observations and the verdict of the business women of her section, that "Men are usually very kind and willing to help women on." From New York comes the assurance that "The head designers of many firms in carpets, prints, wall-papers, the precious and other metals, china, porcelain, etc.—*all*, without a dissenting voice, speak in favor of women in these industries, *if they will only become thoroughly skilled in technique*." The refusal of employers to take women who are not qualified, or if hired to give them high wages, ought not to be considered opposition. The employer must have the worth of his money. The world's business is conducted on the principle of self-interest and not of philanthropy. Unless starving, no woman of true self-respect can desire the wages of pity. Mr. Charles Rastner, Director of the Lowell School of Practical Design, says: "Young ladies can command the same salary as men if the work and originality be the same." And here appears the most serious of the obstacles to be overcome—the general want in women of the requisite qualifications.

The unskilled, uneducated woman, like the ignorant, unqualified man, is at a disadvantage among workers, and must always be so. The writer last quoted adds: "Generally speaking, the young ladies have not the energy and perseverance that young men have. Young women depend too much on the support of their relatives. As originators they lack boldness and effect in design." An overseer in the shops of the Waltham Watch Co. believes that the reason, in part, why "men earn double what women do," is, that they do more difficult work, are more thoughtful and contriving, more self-reliant and stronger." There is no woman who does not grieve to repeat such assertions, but it is best to get at the truth. The mass of women—Mr. Rastner says that there are exceptions—are charged with want of originality. Whether this effect be natural or due to long-continued lack of development, time must decide. Again the shortest answer of all is—"doing." For the other defects there are remedies. Nor is there a bright side wanting now. Mr. William B. Kendall, President of the Carpet Trade Association of the United States, and representative of the Bigelow Carpet Co., says: "I am so fully assured that women can succeed as carpet designers, that I shall use all my influence with the manufacturers to have them admitted to the design rooms. They have tact, dexterity, and facility, and I have no doubt but what they will ultimately succeed." Walter Smith, Art Director successively at South Kensington, London, and at the State Normal Art School, Boston, and now Principal of the Conservatory School of Fine-Arts at Boston, adds his testimony: "I have always been convinced that the field of industrial art is specially adapted to the capacities of women—my experience with adult women in the department of art being, perhaps, greater than that of any other man."

The physical incapacity of women is an imaginary hindrance rather than a reality. Had they been created unequal to the task, nature would not have brought nine-tenths of womankind into the world under circumstances absolutely forcing them to work. Moreover, no branch of the industrial arts calls for as much physical strength and endurance as does the position of a housekeeper having an ordinary family and but one servant.

If the obstacles in the way of woman's future success are serious, let the efforts to overcome them be the more determined. As the means of help lie almost wholly in her own hands, there is no cause for discouragement.

The first requisite is self-discipline. The concessions and courtesies of the parlor must be foregone. Social pleasures must be curtailed so far as they unfit one for the real business of life. The very memories of those pleasures must be banished during working hours. Energy, perseverance, all the qualities which help on the boy, must be cultivated by the girl. Present sacrifice must be cheerfully endured for the sake of future good, and, above all, nothing must be expected for nothing. The girl must give both time and money to thoroughly prepare herself for her work, earning the money, if need be, at some lower calling to train herself for a higher. No boy expects to earn at once the wages of an experienced man, and there is no royal road for girls.

The institutions in which an industrial art education can be had must be established and, to some extent, sustained by men and women of experience, culture, and means. Were the age less practical and more imaginative, art schools might be unnecessary. As it is, the need of them is recognized even in those European countries where art has flourished for centuries. England, France, Belgium, Prussia, Austria, Italy, all have either an extended system of art education directed and supported by Government, or numerous schools fostered by Government and conducted by individuals or associations. The good results are everywhere acknowledged in the increased value and quantity of exports, and so, of course, in an increase of work for the producers. In the United States the facilities for an education in the industrial arts are entirely inadequate to the demand. Last year more than seven hundred applicants were turned away from the Woman's Art School of the Cooper Union for want of room. Among the prominent art schools there are, besides the Woman's Institute of Technical Design in New York, the Schools of Design in Cincinnati and in Philadelphia, and the Lowell School of Practical Design in Boston. But are these schools all that they should be—all that they might be with greater means and encouragement? "Partial training," says Miss McLaren, of Edinburgh, "has been the ruin of many attempts to gain new employments for women." Here is work for another class of women, the philanthropists, who have at heart the advancement of their sex. And who so fit to inaugurate the work as an association for the advancement of women? Let a meeting be called of all women interested in art, in industrial art education, and in the success of women's work. These might effect an independent national organization, which may secure the co-operation of women of wealth, of merchants, and of manufacturers; examine critically the merits of existing schools; foster their strong points and strengthen their weak ones; encourage practical, scientific methods; where necessary, furnish the best teachers to be found in this country or in Europe; establish an annual exposition to which the schools shall send their best work, and where prizes in the shape of a more or less extended course of study abroad shall be awarded the best student. It is said that the most thorough instruction in carpet designing is to be found at the Woman's Institute of Technical Design in New York; in the designing of prints, at the Lowell Institute; in wood-carving, at Cincinnati. Whether it were better to encourage a specialty in each school, or, as far as practicable, to make all equally good in all branches, such an association could best determine. Modeling their organization to some extent after that of the Union Centrale of France (see "Art Education applied to Industry," by Geo. Ward Nichols), they could give to women's work in the industrial arts an impetus which else it will long lack.

In some of the arts it would seem that the work of the schools must be supplemented, in others superseded by apprenticeships. A recent graduate from Cornell University, the only girl that has

ever taken the course in architecture, declares that "neither the course at Cornell, nor that at the Institute of Technology in Boston, actually prepares a person for the undertaking of practical work in offices of the first class"; that women, in common with men, require an additional experience of at least a year before they are fitted to command a salary, and that "many of the best Boston and New York architects refuse to take women into their offices for the very just reason that they have no accommodations for them." The firm of Cabot & Chandler, Boston, is a prominent exception. In regard to gold and silver smithing, the words of Tiffany & Co. explain themselves: "We do not employ women as designers, as to design jewelry successfully requires some knowledge of its manufacture, and we are not aware of any shop where such information can be gained by women. The workmen learn the trade as apprentices, beginning at not over sixteen years of age. Women are employed as polishers of jewelry, but they belong to a class from which a designer is rarely developed." Here again is a difficulty calling for energetic, influential women.

The assertion of Col. Higginson that "in the new avocations, that of housekeeping and maternity, the previous special training goes for nothing," is open to a question. The special training is a perpetual bulwark between the mother and her children on one hand and possible destitution on the other. It develops the mind and character, cultivating in the woman habits and qualities which her ordinary life is not calculated to unfold, of which good effects can not fail to appear in both children and home.

A great change must be wrought in public opinion before women, as a body, can approach the highest possibilities of an industrial career. Among the so-called aristocracy, the men, notwithstanding their wealth, are generally working men. But upon the women of this class, old customs—the drifting *débris* of an older civilization—still enforce idleness. In 1870 there were in the United States 1,550,000 women over sixteen years who were not attending school, not housekeepers, and not engaged in any gainful occupation. The influence of such lives sifts down through all classes of society, and is prolific of untold evil in the lowest ranks. The woman of no definite occupation must be classed with the aimless man, and the woman having an income of hundreds or thousands must yet be made to look upon a business or professional life as essential to the development of true nobility. There is little to expect from the unyielding habits of maturity and age, but the girls, the young, hopeful, and energetic, what can they not do? Let women of competency and of wealth take up industrial pursuits and they silence at once the cry of unpopularity, raise the status of women in the working world, and afford protection and employment to the lower classes. The industrial arts offer to such women fascinations manifold and satisfactory, while the arts need them no less. With leisure, ample means, and all the inspiration which beautiful surroundings can lend, added to the vivid imagination universally conceded to the sex, what hinders these women from making valuable researches and discoveries in the delicate processes where science holds the torch to guide the hand of industry? Even precedent is not wanting; the names of Plantilla Brizio, of Anna Maria Schurmann, of Angelica Kauffman, of Mary Moser, of Felicie de Tauveau stand high alike in society and in art. These are isolated examples, but each in her age was a prophet of what woman's hands and brain should do in after-time.

"What are we set on earth for, say? To toil;
Nor seek to leave thy tending of the vines
For all th' heat o' the day, till it declines,
And Death's mild curfew shall from work assoil.
God did anoint thee with His odorous oil
To wrestle, not to reign; and He assigns
All thy tears over like pure crystallines,
For younger fellow-workers of the soil
To wear for amulets. So others shall
Take patience, labor, to their heart and hand
From thy hand, and thy heart, and thy brave cheer
And God's grace fructify through thee to all.
The least flower with a brimming cup, may stand
And share its dewdrop with another near."

Buffalo, N. Y. ELLA C. LAPHAM.

THE SOUTHERN EXPOSITION.

THE exhibition of American products at Louisville, Ky., will mark an era in Southern commercial interests. The projectors of the undertaking had in view chiefly the awakening of the world's attention to the great resources of the South in everything related to agriculture, manufactures, mining, and commerce, and hoped to stimulate the Southern people to much greater activity in these departments. The interest which has been shown by the Southern and Northern people in the exposition has relieved them of anxiety with regard to its success, and the projectors have little doubt that its opening on the 1st of August will be in the presence of a large assembly of visitors. The place selected is most favorable, Louisville being a city of considerable extent and commercial importance itself, connected with a system of railway and steamboat communication, rendering it accessible from all parts of the Union, and having suitable accommodations for a large number of visitors. The exposition grounds are in Central Park, a pleasure-ground of eighteen acres, lying in the midst of the most fashionable resident part of the city, and flanked on one side by the principal retail business streets of the city.

The illustration shows the general plan of the buildings—the main structure being 900 by 600 feet, and covering thirteen acres. This will be furnished with every convenience and facility that experience has shown to be desirable for an exposition of this magnitude. Four lines of shafting will be placed in the southern half of this building, and ample steam-power will be furnished without cost to the exhibitors of machinery. Three thousand lineal feet of gallery, forty feet wide and twenty feet above the ground floor, will traverse the four sides of the main building, thus affording points of view for the whole interior display. There will be four courts—ornamented with flowers, fountains, and other attractions. Arrangements have been made to have two concerts each day from an orchestra of superior excellence, and in connection with the exhibits, scientific and experimental lectures will be delivered each day in a capacious hall devoted for that purpose. The buildings and grounds will be illuminated by five hundred large electric lights, and lesser lights will be introduced into all the nooks and corners of the building. The exhibition hours will be from 10 A.M. to 10 or 11 P.M. Annexes have been put up for special displays, such as horticultural, artistic, and mechanical, which have increased the area as originally contemplated many thousands of square feet.

VIEW OF SOUTHERN EXPOSITION BUILDINGS.

HER "LUCK" IN GETTING GOOD SERVANT-GIRLS.

"PLEASE, ma'am, Ellen wants to see you a minute before she goes."

"I'll be down shortly. You see, Lucy, that I am engaged now."

And Mrs. Stewart turned to her afternoon visitor with an expression of mingled vexation and distress upon her face. In reply to the look of inquiry, she said:

"Oh, these girls, these girls! how much trouble they cause us! Since my brother John went away it seems as if I have had a cook or a chambermaid every two or three months."

"Yes," rejoined Mrs. Lamson, "our domestic service needs reformation in some respects."

"Who supplies you with domestics?"

"Delany, on 14th Street."

"It is said to be a good office."

"Yes, I suppose that it is as good as any, but since John left us I have had a very unfortunate series of experiences."

"Pray excuse the question, Mrs. Stewart, but what did he have to do with your servants?" asked the visitor with a slight accent of curiosity in her tone.

"He was in the habit of selecting them for me; liked to do it, and I was glad enough to permit him. The last cook he procured was a splendid woman—well-informed in her particular line, but especially good in helping me about the children, and suggesting what should be done when any of us were ill. But good girls, you know, easily find husbands, and that was the way with Maria. She was engaged when she came, and after staying a year left us to be married."

"It seems to me, my friend, that you ought not to have more than average difficulty with domestics. Your house is a very convenient one; your family is not large, and you pay enough to command excellent help. It may be that you do not—excuse me if the suggestion seem any way impertinent, but we have known each other long enough to be frank as well as sympathetical—take enough interest in them to study their character, and to adapt yourself to them so as to elicit their interest in your home and family."

"Well, really," said Mrs. Stewart in much surprise, "am I expected to interest myself in servant-girls? You know what they are as a class. My friends generally tell me that it is simply a matter of wages with them all, and that they do not care for you beyond an expectation that you will give them the money equivalent for their labor promptly when it becomes due."

"And those friends have a similarity of experience with yourself, I suppose?"

"Yes, although most of them seem better able to bear the annoyances and crosses of domestic life than I. Oh, when one gets a real prize of a girl, I mean one who is genteel, and kind, and nice, then it is natural that we should feel interested in her."

"You intimated that your brother was successful in obtaining good domestics."

"Yes, generally, when I needed one he went to the office and selected her. But he used to say that it was very difficult to find a thoroughly competent servant at such places because good girls were in such demand that it was rarely necessary for them to apply at an intelligence office for a place. He would bring home the girl and tell me about her, what he understood of her character, and what I ought to do to render her contented and willing."

"Oh," exclaimed Mrs. Lamson, "your brother was something of a physiognomist, or a phrenologist."

"Yes, and always ready to experiment in that line, and urging me and Mr. Stewart to learn the principles of the art."

"A very easy solution of his success, and I can assure you, Mrs. Stewart, that if you will do as he advised, you will find that your domestic affairs will resume the state which in the retrospect appears so much more to your liking than the present. I can speak from personal experience."

"I know," said Mrs. Stewart, "that you have the luck or good fortune of securing good help, and scarcely ever make a change, and have often wondered at it; but then your case is different from mine."

Mrs. Lamson smiled as she rejoined, "I do not know that my chances in the labor market are better than yours or anybody's. I simply use my best judgment, aided by what I know of phrenological science. It was shortly after our marriage that Mr. Lamson and I were discussing household affairs, and to a pathetic remark of mine on expected trouble with servants as a matter of course, my husband replied, laughing, 'Why not try Phrenology and see what it can do for you?' I immediately replied, 'I will,' and that afternoon when out purchased Combe's System, and set to work to study it carefully. I remember well the pleasure it gave me when I happened on the place where he speaks of the help a knowledge of the science may be in selecting servants, and I never enjoyed anything more in my life than making experiments and observations on the heads of people who permitted me to examine them. The first time, however, I put the science to use in obtaining a domestic was a considerable trial; it seemed as if I never should find a person who could meet all my tests, and the woman whom I finally took home appeared so unfavorably in the eyes of my husband that I was almost persuaded to send her away at once; but full of faith in Combe, I said, 'Give the poor thing a chance,' and had the satisfaction of finding that she was a prize indeed."

"The testimony of two witnesses is true," said Mrs. Stewart, looking at her visitor admiringly. "I think that I shall have to try your method. Will you have the kindness to advise me in the choice of books, and give me a suggestion now and then?"

"With pleasure. I am myself but a student in the realm of human nature, to which Phrenology is one of the grand gateways, and a fellow-student would be to me most acceptable. You must know that in studying the character of others we are led to study ourselves more and more, and the result of earnest work of this kind is such practical knowledge that we can adapt ourselves to those we meet, and so promote the usefulness of social intercourse. In our homes such knowledge leads us to be kind and considerate, especially of those who perform the drudgery of household service. We can make allowances for their ignorance and coarseness, and give them that timely instruction and encouragement which nearly every one will gratefully accept when she sees that you are sincere in your expression of interest."

"I am reminded, dear Mrs. Lamson, of a case Miss Phelps told me about. She said that you had a girl for a long time whom her mother tried and found utterly good for nothing, incorrigibly obstinate, and very irritable. You, on the contrary, pronounced her energetic and capable. I mean Lydia—Lydia Castleton, I think was her name. I remember it because of the astonishment your opinion caused the Phelpses, and when Julia and I have been comparing notes in household affairs, she has several times alluded to it."

"Yes, I happened to be without a girl. You know I keep but one, and Lydia came to me after her discharge by Mrs. Phelps. I was not altogether pleased by her appearance, but she was in much distress, and after a little talk I obtained her confidence. She told me that on account of her bad temper she could not please people. I said, 'You can stay with me for a while at any rate, and we shall see what can be done with that bad temper.' She was somewhat trying at times, but I managed to get along with her very well after a month or two. She was the best laundress I ever had, and very kind to my Alice, who was then only ten months old. In fact, I never saw greater delight and devotion in a hired-girl than Lydia showed when she was permitted to have the care of Alice. Her mother instincts were very strong. She is married now and doing nicely. She even

accepted my advice with regard to the man she married."

"How remarkable!" exclaimed Mrs. Stewart, clasping her hands in wonder. "You don't mean to say that you went so far as to care about what sort of a husband your servant-girl fished up?"

"Why not? The philosophy I learned from reading Combe, Spurzheim, Browne, and other writers on Phrenology taught me the duty of helping others as I had opportunity. Ah, my friend, we must look upon our kitchen and house helps as something more than machines out of which is to be ground a certain amount of service for a certain amount of pay. Kindness, courtesy, good counsel, sympathy, are not lost on them. I believe that it is the great lack of such treatment which makes so large a proportion of them careless of their employers' interests, and in too many cases gives a bias to vice and evil ways."

Mrs. Lamson rose to go, and as the ladies parted at the door, Mrs. Stewart remarked, "I'm in earnest about studying Phrenology with you, and will begin whenever it suits your convenience."

"Very well," replied Mrs. Lamson, "expect me day after to-morrow, at 3 o'clock for the first lesson."

MIRA EATON.

HOW SOME CHILDREN GET MORAL TRAINING.

THE *Christian Weekly* published the following sketch not long since of what is unfortunately too frequent in the home-life of the better class of people. Unconsciously, or indifferently, well-educated fathers and mothers sow the seeds of evil or quicken the propensities in their little children, and afterward lament and chide their own work.

Scene in a library—gentleman busy writing—child enters.

"Father, give me a penny?"

"Haven't got any—don't bother me."

"But, father, I want it. Something particular."

"I tell you I haven't got one about me."

"I must have it—you promised me one."

"I did no such thing. I won't give you any more pennies—you spend too many. It's all wrong. I won't give it to you, so go away."

Child begins to whimper.

"I think you might give me one; it's real mean!"

"No—go away! I won't do it, so there's an end of it!"

Child cries, teases, and coaxes. Father gets out of patience, puts his hand in his pocket, takes out a penny and throws it at the child.

"There, take it, and don't come back again to day!"

Child smiles, looks shy, and goes out conqueror; determined to renew the struggle in the afternoon, with the certainty of like results.

. . . . . .

Scene in the street—two boys playing—mother opens the door and calls to one of them, her own son.

"Joe, come into the house right away."

Joe pays no attention.

"Joe, do you hear me? If you don't come in right away I'll give you a licking."

Joe smiles, and continues his play—companion is alarmed for him, and advises him to obey.

"You'll catch it if you don't go, Joe."

"Oh, no, I won't; she always says so, but never does. I ain't afraid."

Mother goes back into the house greatly put out, and thinking herself a martyr to bad children.

. . . . . .

The writer thus comments upon the above:

"That's the way, parents; show your children by example that you are weak, undecided, untruthful, and they learn aptly enough to despise your authority and regard your word as nothing. They graduate liars and mockers, and the reaping of your sowing will not fail."

WHAT IS INSANITY?

FOR the past twenty-five years the literature of insanity has expanded its territorial limits to such a degree as to take precedence of all other departments of medicine, except chemistry. This has been chiefly due to the progress made by physiology in its alliance with organic chemistry as an expounder of the physical basis of many of the phenomena observable in living things. Affording, as it were, a clue to the why and the wherefore of so many intermediate stages of action, always more or less obscure in their connection and mutual dependence, physiology, when possessed of this thread of Ariadne, has not been slow in its march through the various labyrinths of mental action, whose passages, whether straight or tortuous, presented themselves before the individual explorer. When sight has reached its limits, and neither instruments of precision nor analyses, whether quantitative or qualitative, nor correspondences, nor analogies have been able to reach a satisfactory final resultant, some bold, adventurous spirit has not hesitated to swing himself over a yawning chasm of speculation, and with feet resting on air, and hands clutching a single strand of untried strength, has proceeded, in the midst of primeval darkness, to unfold the Eleusinian mysteries of the depths below. But since no plummet reaches bottom there, no echo comes back to the inquiring call; the last inquirer, like the first, leaves the riddle still unsolved.

From out all these stores of accumulated inquiries and recondite researches into the philosophy of mental action, considered either as a power or a function, and which stand among the hoarded treasures of modern science, the wisest men have only been able to draw an outline map of human intelligence, with here a mountain and there a river, with here an emotional volcano and there an arid plain. But no one has yet marked the precise spot at which these streams are bridged, these mountains tunneled; nor told us, again, how the great caravans of thought are formed or fed, or transported amid the obstacles which beset their way, nor how they protect themselves against the inimical hosts of passion which hang perpetually upon their flank and rear. And still less has any philosopher explained the originating point within us of that

> "Light that never was on sea or land,
> The consecration and the poet's dream"

If this hazy and filmy atmosphere has ever surrounded the constitution of the human mind, so as to render it a realm of speculation to all men in all ages; if even in health it is indescribable, indefinable, and as elusive under pursuit as the verge of the horizon, how much more so is it when disorder has usurped the throne of reason, and is playing its own wild strains upon the key-board of the faculties and the passions! No wonder, then, that in the early times, when

such a thing as the nervous system, with its ramifying network of telegraphic threads, was unknown, and its mysterious function of disseminating sensation and motion was undreamed of, insanity was regarded as a possession by evil spirits. This was the doctrine not only believed in by the masses, but taught by physicians and priests, and accepted by the educated mind of the day. Montaigne, in the diary of his journey into Italy, speaks of witnessing in a chapel at Rome the treatment addressed to a poor lunatic or demoniac by the officiating priest, "who attacked the poor patient with his fists and spat on his face by way of assailing the demon. The man did nothing but grind his teeth and make faces when they presented the Host to him, and every now and then muttered *si fata volent*, for he was a notary and knew a little Latin." Such was "high art" in the medical practice of the 16th century, although to speak more truly, insanity at that time was considered less a disease than a possession, and the bodily ill-health accompanying it was looked upon as the effect rather than the cause of the mental disturbance. The priest accordingly took precedence of the physician, and metaphysics became the guide of medicine.

The earliest opinion thus formed of the nature of insanity is shown to have been one regarding it solely as a spiritual disorder, but of unlocalized origin, and imported into the system. Something had absorbed, entered into, and possessed itself of the individual. Relief must come from exorcism, which meant ejectment; and as the flesh shared, through spiritual saturation, the contamination which stained the mind, and man was corporeally as well as incorporeally full of the devil, so the treatment required a combination of poundings with prayers. First came a blow, then an invocation; next a second blow, followed by a command to depart; and this repeated until the "possessed" one was mauled into some sort of quiescence. Expostulations were alternately addressed to the individual patient and to the evil spirit within him, and there was no stint of anathemas, as may be easily imagined, nor failure of blows to emphasize the rhetoric of the speaker. This bi-personification of a lunatic was the suggestion of priests—it was reaffirmed by physicians and adopted by the jurisprudence of every succeeding age down to the present; for, under the common law of England as imported by the colonists into America, any one might confine a lunatic and might *beat him or use such other means as are necessary for his cure.*

Meanwhile the progress made by physiology and chemistry in searching out and unfolding the laws of our animal economy, soon overshadowed the metaphysical dogmas which had formerly controlled the educated mind on the subject of insanity. A halt was called, and men began to mistrust the foundations upon which their predecessors had formulated their ideas of insanity and its treatment. They found that the blue-devil of melancholy and depression, or the red-devil of exaltation and violence would tremble and yield to remedies unaccompanied by blows or incantations of any sort. These physical remedies were such as physicians used in their ordinary practice; while to give them a better opportunity of acting, a certain degree of seclusion of the patient was found necessary, and different moral surroundings than he had been exposed to. In other words, treatment was to be compounded of medicine and environment. These conclusions, when arrived at, led the way very naturally to an antipodal theory of insanity, and placed its origin chiefly upon a physical basis, in opposition to a purely spiritual one. This was progress, but not an entire solution yet of the problem of mental disorder. There are intellectual as well as moral perversions of thought and conduct, not demonstrably accompanied by physical, meaning bodily disorder. To a certain extent, then, the spiritual theory of insanity is correct, but beyond that, and when we enter the department of therapeutics, it is distanced and over-

reached by the materialistic school. Absolute truth, therefore, lies with neither. Hence it must lie between both. And so, in fact, it does.

Man being everywhere recognized as a creature of sentiment as well as intellect, and the connection between mind and organization remaining as inscrutable as ever, it seems the part of wisdom to accept the limitations which the Creator has put to explorations into the essence of life or mind, and to address ourselves to such inquiries as experience shows to be within the range of demonstration. The functions of organization are plainly within the reach of the philosopher. They have been pretty thoroughly explained by physiologists, and become more transparent still in the laboratory of the chemist. But here the thread ends. Here mind, whether in health or disease, remains "a vast illimitable ocean, without height, depth, or bound"—a final fact which no analysis can penetrate.

The most satisfactory stage of this perplexing inquiry has at last been reached by taking whatever is good and defensible from both foregoing systems, and accepting them as reliable factors upon which to build, either in explanation of the origin and causation of insanity, or to ascertain the true direction which successful treatment should follow. Resting upon these conclusions, modern scientists are in general agreement, therefore, that insanity is not a disease exclusively of body or of mind, and not localized in any special way, but a disease rather of relation between the functions of the body and the faculties of the mind, each representing within its sphere an aggregation of actions dissimilar in kind, yet correlated for ulterior purposes relating to the interior and exterior life of the individual.

It is upon this principle that the treatment of insanity is based at the present day. The moral sentiments are appealed to, through appropriate surroundings, just as much as the physical disturbances are sought to be rectified by suitable medicines; and as surroundings always cost more than do the actual necessaries of life, so the great increase in the cost of maintenance of the insane is the result of discovering that environment takes precedence of specific drugs, and is the leading factor in the restoration of mental health. That which would be justifiable economy in another class of hospitals becomes parsimony here, for the wants of the human mind are so much multiplied under the expanding influences of civilization, that new accessories must be created to satisfy its hunger for the beautiful and the encouraging, whenever it has ceased to be able, through embarrassing weakness, to control its faculties in action, or to free itself from the folds of a harrowing delusion against which it has vainly fought on some disadvantageous battlefield of private life.

JOHN ORDRONAUX.

STUDY IN THE MEDICAL PROFESSION.—A paragraph in the *Medical News* of Louisville is very pertinent to this subject at this day, viz.: "'Art is long, time is short, opportunity fleeting, experience deceptive and judgment difficult'—such were the serious reflections of the Father of Medicine after he had labored with the problems many years and accomplished more than perhaps any man who has practiced the healing art. In these days when so many doctors may be found who are little better than professional loafers, so many who discourage the reading of medical works, who express their contempt for original research and scoff at medical journals; regarding the accumulation of money as the only test of professional shrewdness and gullibility of the people at large, to excuse the title under which they thrive the following relative to the life of Dr. Geo. B. Winston, from the *St. Louis Courier of Medicine*, is refreshing: 'A friend once remarked to him, "Doctor, what necessity is there for ceaseless labor and study at your time of life?" With a look of astonishment, never to be forgotten, he replied,

"My dear sir, I am under bonds to do it. When I offered my services to this community there was an implied covenant on my part that, so far as God gave me strength and ability, I would use them for gathering up and digesting all that has been said or written in regard to the diseases to which the human flesh is heir; and if I should lose a patient because of my ignorance of the latest and best experience of others in the treatment of a given case, a just God would hold me responsible for the loss, through inexcusable ignorance, of a precious human life, and punish me accordingly; and whenever I get my consent to be content with present professional attainments, and trust my own personal experience for success, I will withdraw from practice and step from under a weight of honorable obligations, which, with my best endeavors to meet them honestly and conscientiously, are still sometimes almost heavier than I can bear." ' "

HISTORY AND PHILOSOPHY OF HYDROTHERAPEUTICS.*

GENTLEMEN: Applied from the earliest antiquity to the treatment of certain affections, cold water did not take its proper place among the resources of our profession till almost the very epoch in which we live. It was as a result of the efforts of a simple peasant, a kind of country quack, and not till after his empirical employment of the remedy, that scientific labors were undertaken to explain the effects, and to determine the indications of cold water applications.†

At Graefenburg, a village of Austrian Silesia, lived, at the commencement of this century, a certain Priessnitz, a very observing and intelligent man, who had noted the beneficial effects of cold water treatment on sick animals confided to his care. Imagining that diseases impregnate a man as liquids do when they penetrate a sponge, he maintained that in order to cure them it sufficed to remove morbid impurities from the cutaneous surface by repeated bathings and the promotion of the excretory function of the skin. He therefore applied cold water to the treatment of the greater part of the diseases, and modified successfully the divers procedures of hydrotherapy which he put in practice. At first he employed sweatings followed by cold affusions, then advised wrapping the patient in a wet sheet, and, finally, cold baths. He obtained by this mode of treatment marvelous cures, which spread his fame far and wide.

Soon were seen flocking from all parts of Europe sick people seeking remedial aid from the healer of Graefenburg, and the village hovels disappeared to make way for numerous hotels, which soon became insufficient, so great was the num-

* A lecture to his students by Professor Dujardin-Beaumetz. Translanted from advance sheets by E. P. Hurd, M.D., for the Boston *Medical and Surgical Journal.*

† Hippocrates, in his treatise on "Air, Waters," etc., insists on the uses of cold water in the treatment of diseases. The Romans made great account of hydrotherapy, and a certain Charmis maintained that all diseases were curable by cold water alone. Celsus, Aretæus, Cœlius, Aurelianus, all pronounced in favor of cold water medication, and recommended treating fevers by this means. Then it fell into desuetude till the seventeenth century.

In 1638 Louis Septala recommended cold douches; then a Belgian, Hermann Van der Heyden, employed them in all diseases, and Foyes, an Englishman, advocated hydrotherapy with great enthusiasm.

In 1712 appeared a dissertation by Frederic Hoffman, having for title, *De aqua medicina universali* and showing the marvelous success which attends the therapeutic use of cold water; the system of treatment advocated spread rapidly in Germany.

In Great Britain, Wright, Gregory (of Edinburgh), and especially Currie, all of whom attempted a physiological explanation of the action of cold water, gave a powerful impulse toward the employment of this method.

In Italy, Giannini Vallisnieri Cocchi became partizans of hydrotherapy. [This was about the middle of the last century.] Pomme, who wrote in 1765, was about the only French exponent of the new method. Then comes the era of Priessnitz, who early in this century gave so great an impetus to the water treatment, and stimulated scientific inquiry, the results of which are seen in the numerous and able physiological treatises whose authors are mentioned in the text.

ber of patients, which kept increasing every day. Moved by this success, the Austrian Government shortly appointed a commission which gave officially to Priessnitz the direction of the "hydropathic" establishment which he had founded, and a few years after the institutor of systematic hydrotherapeutics died crowned with fortune and with glory.

Such is the curious beginning of modern hydrotherapy, which, it will be seen, owed its popularity to the most gross empiricism. More recently the labors of Scoutteten, of Schedel, of Fleury, of Beni Barde, in France; of Chiapponi in Italy; of Johnson, and of Manby Gully, in England; of Bell and Nicanor Rojas, in America; of Roser, of Lersch, of Pleniger, in Germany, have given a strictly scientific and medical character to the study of hydrotherapeutics, and it is from their contributions that I shall draw material for the several considerations into which I now enter.

Physiological Action of Cold.—Numerous investigations have been made the last few years into the physiological action of cold, and of cold water in particular. I shall refer more especially to the valuable study of Winternitz.*

Whenever you apply a cold substance, such as ice or cold water, to any part of the body, you determine perturbations in the nervous system affecting the cerebro-spinal axis, and especially the great sympathetic. These phenomena are variable as the application of the refrigerant is of greater or less duration; if the chilling be of short duration, the tactile sensibility is at first augmented; if it be prolonged, all the modes of cutaneous sensibility disappear; a fact which has been utilized in the production of local anæsthesia for minor surgical operations. If, finally, you cease the refrigeration, the sensibility appears anew with a certain degree of hyperæsthesia.†

But the most profound modification, and that which effects the most happy results, from the stand-point of therapeutics, is the perturbation occasioned in the vasomotors. Under the influence of reflex action,* following cold water applications, the capillaries are seen to become constricted, the peripheral heat to diminish, the cutaneous secretion to cease, the skin to become pale, the muscular elements to contract, giving rise to the phenomenon known as goose skin; at the same time the heart's pulsations diminish, the arterial tension augments, as Delmas, of Bordeaux, has shown, and the patient experiences a general chill.*

All these symptoms disappear with a

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* Winternitz, Die Hydrotherapie auf Physiologischer und klinische Grundlage, Vienna, 1877.

† Cold raises, lowers, or abolishes the excitability of the sensory nerves, and Richardson has shown the modifications, varying according to the duration of the refrigeration. When the temperature of the skin is a little below 35° C., vascularization becomes more active, and sensibility more exquisite. When the integument is cooled still more, sensibility undergoes diminution, and at eight degrees below zero it is abolished altogether, to reappear as the temperature returns to the normal.

These modifications of temperature have been noted by Winternitz, and with the æsthesiometer of Sieveking by Helmholtz, by the determination of the quickness of our sensory impressions. From 36° C. to 38° C., (96° to 102° Fah.,) this velocity is seventy-two metres a second; with lowering of the temperature it becomes ten times less.

These same modifications of sensibility are produced when the cooling body is applied to the trunk of a nerve of sensation, and these applications produce first hyperæsthesia, then a period of complete anæsthesia.

The experiments of Waller, of Rosenthal, of Eulenburg, of Weir Mitchell, etc., are very instructive and convincing. Richardson, "Action of extreme Cold on the Nervous System," Medical Times, vol. ii., 1825. Winternitz, op. cit. Waller, On the Symptoms produced by the Application of Cold to the Sciatic Nerve. (Arch. Gén. de Méd., 5th series, vol. xx, p. 346, 1862.)

Eulenburg, Lehrbuch der Functionellen Nervenkrankheiten, Berlin, 1871.

Weir Mitchell, Injuries of Nerves and their Consequences, Philadelphia, 1872.

* Edwards, Brown-Séquard and Tholozan, and Vulpian have shown that when the hand is plunged into cold water the temperature of the other hand is lowered or elevated. Brown-Sequard has, moreover, remarked that the reflex phenomena determined by local applications of cold to the skin are produced in a point symmetrical to that where the local application was made. Dumontpallier has quite recently insisted upon the study of the localization of the æsthesiogenous parts of the skin. Edwards, De l'Influence des Agents Physiques sur la Vie, Paris, 1824. Brown-Séquard and Tholozan, Recherches Experimentales sur quelques uns des Effets du Froid. (Arch. Gén. de Méd., 5th series, vol. xii., p. 683, 1838.) Dumontpallier, Leçons sur les Actions Reflexes. (Un. Med., 1880.)

rapidity proportioned to the duration of the exposure to the action of the cold. To this period succeeds another assemblage of symptoms to which has been given the name of reaction, a reaction which is characterized by manifestations of an opposite kind. The skin becomes red, animal heat is raised, the secretions augment, the muscular functions acquire a new energy, and a quite special sensation of *bien être* is experienced. It is in this double action on the nervous system that we must seek an explanation of the effects of hydrotherapy, whether considered as an antipyretic, a nerve tonic, or simply as a means of hygiene.

I will leave at one side for the present the antipyretic effects of cold water, to which I shall return when I shall speak of the treatment of fever by cold baths, and I shall at the present time limit myself to the effort to set clearly before you the results which may be obtained in nervous diseases from the double physiological action above mentioned.

Action on the Nervous System.—In order that the functions of the nervous system may be accomplished in a regular manner, there must be not only complete integrity of all the constituent parts of that system, but it must receive a uniform and sufficient supply of normal arterial blood. When one of these conditions is at fault, immediately modifications, more or less profound, in the nervous system result. This first fact being posited, we may immediately deduce consequences of the most positive kind from the stand-point of hydrotherapy, which acts on the nervous system, on the circulation, and on the nutrition.

On the nervous system by the sudden perturbation which it causes in the functioning of the sensory and motor nerve apparatus, hydrotherapy re-establishes the regular operation of the cerebro-spinal axis; it, moreover, brings into exercise the vaso-motor centers, and thus produces an equilibrium between the functions of the brain and spine on the one hand, and the great sympathetic on the other. Moreover, it attenuates the exclusive action of certain local affections, which by reason of reflex influences become the point of departure of important secondary perturbations of the brain and spine.

By its action on the circulation, which it regulates and renders active, hydrotherapy still further modifies in a happy manner the functions of the brain and spine. Finally, by its general effects on nutrition,* by its direct or indirect action on the vaso-constrictors and vaso-dilators, on the secretory nerves, and lastly on the trophic nerves, cold water stimulates nutrition, promotes the regular play of the different organs, and becomes one of the most active agents of tonic and reconstituent medication. Under its influence the globules become richer in hæmoglobin, the oxygenation of the blood more active; and we ought to make a capital point of this fact in the treatment of diseases of the nervous system.

Such is the veritable effect of hydrotherapeutics in nervous affections. I know that there has been much discussion as to whether the action of cold water were sedative, excitant, or perturbing. Some, with Trousseau, have pretended that cold water is the best of sedatives; others, as Fleury, have affirmed its excitant action; others, with Bloch, its perturbing action. These are, I opine, trivial questions, for according as you consider the effects of cold water during its application, or after its application, you observe opposite symptoms, and that it may be at one time perturbing, at another excitant or sedative.

Modes of Application.—It is not enough to know the physiological or therapeutical effects of cold water, you must understand the conditions to be fulfilled in order to obtain the most favorable effects.

* Kund has experimented on the influence of cold in cases of poisoning by strychnia. Frogs poisoned by this medicament, he placed, some in water at 34° C., others in very cold water. The muscles of the former very speedily returned to their state of physiological relaxation, those of the latter, exposed to a low temperature, kept their tetanoid state a long time. The same experiments have been repeated in cats with like results. (Kund, Gaz. Med., 1857.)

I am, then, going to enter somewhat into details which I believe are of importance, for we have seen physicians prescribe hydrotherapy without insisting either on the mode of application, or on the duration of the douche, or on the temperature of the water. It is necessary, on the contrary, that you should carefully determine all these points in your directions, and that you should not leave, as is often done, to persons who are strangers to the healing art, the management of the hydrotherapeutic treatment.

The means of application of cold water are numerous; these may be arranged in three distinct groups: In the one the water is delivered under high pressure; in the second, there is no pressure; in the third, the applications are made to the naked body by means of cloths or sponges. I shall then speak of three modes of application—douches, baths, and lotions.

Douches.—Douches are by far the most employed. They are divided into a number of varieties, which depend on the apparatus by which they are administered. We have, then, the *douche en pluie*, or shower bath; the *douche à colonne*, in which a column of water is let fall upon the body; the *douche à lame concentrique*, in which three or more concentric streams are directed on some portion of the body surface; the *douche en nappe*, in which the water comes in sheets; the *douche en cercle*, in which a circle of jets plays upon the patient; the *douche en jet mobile*, in which a varying direction is given to the jets. I need not occupy much of your time with a consideration of these douches; you are familiar with them all. In the shower bath the douche is applied by means of a large globe sprinkler (*pomme d'arrosoir*); in the *douche à colonne* the water descends with some force by a circular opening; in the third variety the globe sprinkler, instead of being pierced with a multitude of holes, has several circular chinks through which the water pours; in the *douche en nappe* the watering globe has the form of a bell; in the *jet mobile* a tube of leather or caoutchouc enables one to give a varying direction to the stream. The most used of these douches are the *douche en pluie* and the *mobile jet* douche.

In general, the stronger the pressure of the water, the less painful the sensation of cold. At the same time care is needed in the management of the pressure, which, when too violent, produces painful traumatisms. In the shower bath the douche strikes more especially the upper part of the body, and you ought to avoid, save in exceptional cases, douching the head. As for the *douches en jet* (the jet sprays), you can make use of different attachments which modify the form of the jet, and give the full jet or the broken jet, which may be directed, according to circumstances, on different parts of the body.

It remains for me to say what should be the temperature of the water, what ought to be the duration of the douche, what preparation the patient should make before, what he should do after the douche.

As far as the temperature is concerned, the douche may be cold, it may be tempered, or it may be alternately cold and warm. The colder the douche the more intense the reaction, the more painful, too, the application of the douche. So in very susceptible subjects and those who experience under the influence of cold a painful sensation of cardiac constriction and of suffocation, it is better to have recourse to tempered douches. In administering these douches a jet of cold water and a jet of hot water are turned by means of stop-cocks into the douche apparatus, and you can at your pleasure vary the temperature of the douche. Ordinarily at the commencement of the douche the water is tempered to 25° C. (77° F.), and is lowered during the douche so that finally it is not more than 10° C., or 15° C., (50° F. to 59° F.).

In the douches alternately hot and cold a much more active physiological reaction is obtained. In the so-called "Scotch douche" you begin with a

douche of the temperature of 30° C. (86° F.), and gradually raise the temperature to 50° C. (122° F., which is about as hot as can be borne), then you give immediately a douche about as cold as ice. There is another kind of alternating douche in which a succession of warm and cold douches is given to the patient.

Duration of the Douche.—The douche ought always to be exceedingly short. You have just been told that the favorable results of hydrotherapeutics are due to a double action on the nervous system; to obtain this double action the impression of cold must be of short duration. As a general rule its duration should not exceed thirty seconds, and the first application of cold douches ought not to exceed ten or fifteen seconds.

Preparation for the Douche.—There are certain rules which should govern the patient before, during, and after the douche. The greater the difference between the temperature of the body before the douche and that of the water, the more active the reaction will be. It has therefore been advised to cause the patient to take vigorous muscular exercise before the douche, in order to induce some degree of sweating. In our great gymnastic establishments, where the happy idea of douche compartments for the public benefit finds realization, it is at the moment of greatest muscular activity that the douche is taken.

This important condition, to have the skin in a state of perspiration, in order to derive from cold douches all their desirable effects, is little known, not only to the public, but also to physicians. Does not everybody, in fact, maintain that a cold bath taken when one is sweating is a bad thing, and that it is to this cause are due the evil effects which sometimes follow the free external use of cold water? I believe this to be a complete mistake; and if we occasionally see congestions of the lungs follow a cold plunge, it is more probable that the individual was chilled before the bath was taken, than that the pulmonary congestion resulted from the bath.

Elsewhere we see, as a medicinal measure, a disposition manifested to favor as much as possible this state of sudation by exercise and artificial means. As artificial means, in Germany they make great use of the dry blanket, the patient being enveloped in several blankets thoroughly tucked around him, and kept in the hot, dry, sweating room, or subjected to a powerful vapor bath till a state of free perspiration is induced; then the wrappings are removed and a cold douche is administered, or he is immersed in a bath of cold water. The Russian bath, so much in use among a great many nations, and of which we possess in Paris a very complete establishment, the Hamman, is based entirely on this double action of heat and of cold water.

During the douche the patient ought, as Beni Barde recommends, to suppress, as much as possible, strong contractions of the muscles, and keep a firm hold of the bar for support. The respiratory distress is mitigated by freedom in outcries. In the event of congestive tendencies to the head or to the uterus, it is well to take a warm foot-bath, or douche the lower extremities with warm water after the cold douche.

Immersions.—When remedial effects are sought from immersions, the patient either takes a single plunge into cold water, which should be of sufficient depth that the whole body may be immersed, then immediately rubs himself dry till the skin glows, or he remains several minutes in the bath; the latter course is recommended when an antipyretic effect is desired.

Partial baths are often beneficial, such as foot-baths, sitz-baths; those with running water, furnished with implements for local douching, are preferable.

Affusions and Packing in the Wet Sheet.—Affusions consist in pouring cold water on the naked body of the patient, or in what is called the wet pack. Wrapping the patient in wet blankets is a very active hydrotherapeutic method. It has this advantage, that it may be employed in all places, and without having recourse

to the quite complex apparatuses just described. It is, however, a painful application, and is by no means free from danger. The mode of procedure is simple enough: You wrap the patient in a sheet that has been wrung out of icy-cold water —you may apply the wet sheet with the patient standing or lying, and keep him thus enveloped ten to fifteen seconds—then with brisk rubbing with dry cloths you try to promote vigorous reaction. This envelopment may be partial; in this case it has been advised to leave the wrappings on during the entire period of reaction.

Such are in general the methods of application of cold water. There are other modes of using cold from a therapeutic point of view, and I shall speak of applications of ice and pulverizations of ether. It has been advised to treat certain neuroses by the application of ice the whole length of the vertebral column, and in England chorea is much treated by this method, and so in hysteria. Charcot has even attempted this method at the Salpêtrière, the ice being placed for the space of a half hour, then an hour, over the ovarian region in hysterical patients. By this means he has observed a diminution in the number and intensity of the attacks. A physician of Varsovie, Lublesky, has advised another means of producing refrigeration—the application of ether spray the whole length of the spinal column. He has thus treated chorea.

HOUSE DRAINAGE.—Dr. W. J. Naismith, of Ayre, Scotland, summarizes certain leading points bearing on this subject in the following:

"The main drain of a house should be disconnected from the sewer, and should in addition be provided with a well-ventilated trap outside the house. The trap should be ventilated by a pipe at least three inches in diameter, and carried up the outer wall with as few angles in its course as possible, opening at a point well above the eaves of the house. A trap alone in this connection is not to be depended upon, for it has been found over and over again that without the employment of a disconnecting chamber there exists no safeguard against the entrance of sewer gas through the main drain. Again, all taps (of which the siphon or S form seems to be the most effective—and the more rapid its bend the better) should be provided with ventilating pipes, which should not be led into rain-water pipes, but carried up independently, with, as already stated, a diameter of not less than three inches, to the roof of the house; for it must be remembered there are few traps whose power of resistance exceeds that of a column of water an inch and a half in depth; so that if the extra pressure of sewer gas be not relieved by a ventilating pipe, it will force the trap and gain admission in spite of it. Further, there must be no connection whatever between what may be called the minor pipes of a house, such as those from baths, lavatories, sinks, sculleries, etc., with any drain or soil pipe. They should, being siphon-trapped in order to exclude cold air, be carried to the outside of the house and made to discharge in the open, about two feet from the ground, on to trapped gratings communicating with the house drains. Lastly, a drain should not, if the plan can be possibly avoided, traverse the basement of a house, but in any case should be so constructed with 'glazed earthenware socket-pipes, efficiently laid and jointed,' as to insure as far as possible immunity from any escape of its contents. For the sake of any one who may be curious to know what sewer gas is composed of, it may be well to state that it contains carbonic acid, nitrogen, sulphuretted hydrogen, light carburetted hydrogen, and ammonium sulphide. Cess-pools should, as a rule, never be employed when access can be got to a main sewer; but in respect to detached or country houses they are an unavoidable necessity. In their construction it is necessary for safety to remember four things:

"1. They should be built as far away from the house as possible.

"2. They should never be placed near a well, which might thus become impregnated with the products of decomposition.

"3. They should be constructed with brick laid in cement, so as to insure their being water-tight; and

"4. They should be well ventilated, to prevent the collection of foul gases emanating from their contents.

"Let the great fundamental fact never be lost sight of, that the air we breathe, the water we drink, and, it must be added, the milk with which our dairies supply us, are three great channels whereby septic or poisonous infection is conveyed to the human system; and it needs not to dilate on the grave issue involved upon these highways being jealously guarded and maintained absolutely above suspicion."

SERIOUS WOUNDS THAT FAIL TO KILL. —A short time ago a shoemaker of Astoria, N. Y., shot himself twice with a heavy pistol, once in the ear and once in the mouth. He was brought to the Roosevelt Hospital, in this city, where it was discovered that the first ball glanced from the skull. The other is thought to be somewhere in the head, perhaps in the brain. Speedy death was expected; but the next day the patient walked away from the hospital, saying that he was sorry for the attempt on his life, but appeared to be in no immediate danger of dying.

With this case as a text, a writer in a morning paper reviews a large number of more or less marvelous cases of recovery from grievous hurts, showing that serious injuries to the main organs of the body are not always followed by death. Men persist in living, not only with bullets in their brain, holes in their stomach, dislocated vertebræ, and wounds in the heart, but even with open wounds clear through the body. During the civil war, General H. A. Barnum, of Brooklyn, received in battle a wound which still remains an open passage through the body. For years the treatment of this wound has been simply to wear in it a roll of prepared lint, which is renewed daily. The suppuration of the wound is constant though variable.

General Shields, of Missouri, had a similar wound extending through his body, and open in front and behind. His wound, it is said, was received in the Mexican war, and he wore, not lint, but a silk handkerchief in it. This he could draw directly through his body.—*Scientific American.*

[After reading this the reader will no longer wonder at the audacity of some surgeons who think that President Garfield's death was as much due to the treatment he received as to his wound.]

ROMANCE OF THE WINE-PRESS. — A correspondent of the London *Argosy* has had his romantic ideal of the wine-press rudely shocked by some continental scenes of wine-making. He says:

"I had had dim ideas of snowy garments dyed purple with the juice of grapes, and the delicate feet of girls treading the luscious fruit under the shade of vine-clad trellises in the open air. In my imagination there were fountains of pure water washing away all stains and impurities, and long processions of men and maidens bearing the fruit on their heads, all decked with flowers, and singing and dancing to the sound of harps and flutes. Had I not seen pictures to that effect, read poetical descriptions of it, and had I not always been encouraged by my childhood's instructors in this delusion? And now, behold, there were not any snowy garments at all; the Hungarians had on coarse shirts and loose drawers tucked above the knee, and I came to the conclusion that they had never seen any fountains of pure water, and wouldn't have known the use of them if they had. For there was a kind of grimness about them, burned in by the sun, which seemed to indicate that they never washed either themselves or their clothes. In fact, they had a fine contempt for the ordinary rules of cleanliness. One black-

eyed, purple-legged fellow, with the grape-juice just drying on his bare feet, seized a basket, and ran off down the steps and into the vineyard, and presently returning with a load of the fruit, shot it into the press, and, with all the dust and dirt of the road still clinging to his feet, mounted, and began to tread the grapes, and soon stood almost knee-deep in the liquor, which, having served him as a sort of foot-bath, was to be the drink, perhaps, of future generations of refined, fastidious palates. Having seen this I became melancholy, and preferred to leave the rest of the manipulations of earth's choicest nectar in obscurity."

NOTES IN SCIENCE AND AGRICULTURE.

The Fate of Dazzling Inventions. — The following shrewd comments are furnished by our contemporary *The Manufacturer and Builder:* "It is curious to note the decadence of inventions and discoveries which at first dazzled the world by their startling novelty and apparent wealth of power. Shortly after the successful experiment of the Montgolfier brothers, the dream of the world centered on aerial navigation, and up to fifty years ago nothing mechanical so attracted public attention as a new balloon. To-day the balloon is ranked as an important side-show to a country circus, and in times of war as a possible observatory for men whose lives no sensible corporation would insure. It is also useful in the nursery and lecture-room, and occasionally, when fools are unusually plenty, furnishes an excellent item for the press. Beyond this it is of no practical or scientific value. It has possibilities, but they seem to develop with most excessive deliberation.

"Chloral hydrate was another meteor-like discovery. At first regarded only as a curious product of alcoholic agitation with chlorine, it was for some time shelved. But when Liebreich brought it forward in April, 1869, as a perfectly safe hypnotic and anodyne, its use sprang up like wild-fire, and its consumption increased with such rapidity that in 1871 an actual choral panic occurred, the laboratories not being equal to the demand. Then a startling number of sudden deaths were found to have occurred while patients were sweetly sleeping under the influence of the 'safe' hypnotic, and investigation showed that the effect of chloral was the anæsthesia of chloroform, and very far from being safe. Thence its popularity waned, but not, however, until it had enslaved tens of thousands hopelessly to its constant use, and done an incalculable quantity of mischief.

"Nitrite of amyl caused another furor in the medical world. It was claimed to be an absolute specific in hydrophobia and strychnia poisoning, and an antidote for the bite of the cobra. For all three of these it is now considered useless, although acknowledged to be of considerable value in angina pectoris, asthma, and other maladies of a paroxysmal nature.

"Still later on the list comes the phonograph, which for a few months probably drew more attention than any one combined discovery and invention in the world, and for which the most brilliant promises of usefulness were made by the inventor and his admirers. It is now relegated to the dime museum and the cabinet of scientific curiosities — more useless to man than one of Crooke's radiometers lazily whirling in an optician's window.

"In fine, it seems almost inevitable, that those discoveries which attain wide celebrity in a short time are doomed to return to obscurity, while those which have proved to be of the greatest benefit to man — the press, steam engine, telegraph, photograph, and loom—have been of slow growth, have been hampered in their infancy by cavil, skepticism, and even persecution, and have been almost reluctantly accepted even after their value was proved. There has been but one exception to this rule—the telephone."

Dust, Mist, and Clouds.—Mr. Aitken draws the following conclusions from an extensive series of experiments: "Whenever vapor condenses in the atmosphere, the condensation is always made on a solid nucleus, which is furnished by particles of dust. Without dust there would be neither mists nor clouds, and the super-saturated air would transform every object upon the earth's surface into a condenser upon which it would deposit its excess of water. Whenever the breath becomes visible in a cold atmosphere it demonstrates the impure and dusty condition of the air. The foam of the sea, meteoric matter, and fires are fertile sources of the dust and impurity."—*Les Mondes.*

Early Peas.—A writer thus advises on this subject in the *American Agriculturist:* "There are two distinct classes of peas: those with small round seeds, the others with much larger, irregularly-shaped peas, the surface of which is wrinkled. The wrinkled, seeded, or marrow peas are as much better than the other as sweet corn is superior to field corn. The round peas, while not so good, are much hardier and earlier than the others. Unless the soil is warm, and they germinate quickly, wrinkled peas will decay before they can come up. The round peas are vastly better than no peas, however, and are acceptable to most of us. To have early peas,

they must be sown early—the earlier the better. After the soil has thawed for the first four inches, even if it is solid below, sow peas. If the ground was manured and plowed last autumn, all the better; if not, select the richest available spot, and open a drill four inches deep. Peas should be covered deeper than most other seeds. For varieties, the Early Kent is one of the best; it has almost as many names as there are dealers. Daniel O'Rourke is one of the names of a good strain of this pea. Carter's First Crop is another good variety, and every spring new extra early sorts are sent from England, which usually turn out to be the old Early Kent with a new name. The peas should be sown in the bottom of the drill rather thickly, at least one every inch, and at first covered with about an inch of soil. It is well to put about four inches of coarse stable manure over the rows; this is to be left on in cold days, but when it is sunny and warm, pull it off with the rake, and let the sun strike the soil over the peas, replacing it at night. When the peas sprout, gradually cover them with fine warm soil, placing the coarse manure over them as needed, until the covering of soil reaches the level of the surface. If a ridge of soil a few inches higher than the peas be drawn up on each side of the row, it will greatly protect them from the cold winds. When the plants are a few inches high, draw some fine soil up to them, and stick in the brush. When the soil becomes dry and warm, the main crop of wrinkled peas may be sown."

The Frost that Killed the Peaches.—"There will be no peaches this year, by the way. Frost killed them all. Every last solitary peach," the man on the wood-box remarked, with a pathetic inflection in his voice. "Which frost?" savagely demanded the fat passenger. "Same old frost," replied the man on the wood-box, sadly. "Same frost that killed 'em last year, I suppose?" said the cross passenger. "The same!" the man on the wood-box asserted. "And the one before that again?" the brakeman echoed. And the man on the wood-box bowed his head in assent. "The same old frost," he said, "that kills all the apples in Michigan every year, and destroys the ice crop on the Hudson. I've been a farmer myself, before I reformed, and I've known a snow-storm in Colorado to blight all the sugar maples in Vermont!"—*Burlington Hawkeye.*

Calming Effect of Oil upon Water.—M. Virlet d'Aoust, in a recent communication made to the Academy of Sciences of Paris, confirms, as a result of his own researches, the opinion entertained by various ancient authors as to the efficiency of oil in calming the surface of agitated waters. This effect was clearly noticed along the tempestuous coast of Samothrace, where the calming device is still practiced by some of the Greek sailors. At a distance of about a mile from the shore-line, the oil is spread before the vessel, which now almost immediately enters upon smooth water. With the gradual spread of the oil, there is an equally gradual planing down of the water's surface, until over a very considerable extent it assumes the singularly smooth configuration of the colloquially termed "sea of oil." Similar experiments repeated on the open sea are stated to have been invariably followed by the same results, the waves flattening out over a circular area proportional to the quantity of oil distributed. The stability observed in the waters of the Bay of Coatzacoalu, even during the prevalence of the violent "*norte*," and while the sea outside is greatly agitated, is ascribed to the quantity of petroleum that is carried down and thrown into the bay by the river of the same name. It would be interesting as stated by M. Virlet d'Aoust, to determine whether a similar effect is produced upon the waters of the Dead, Azov, and Black Seas by a certain quantity of mineral oil.

Use of Coal Ashes.—We have before alluded to the good effect of coal ashes on some soils—but the matter is worthy of being kept before the public. A writer in the *Country Gentleman* thus advises:

"It is the common opinion that coal ashes are of little or no value. This is an error. I have heretofore stated some of the benefits derived from their use. They have likewise been employed for years by my neighbors, who hold them in high estimation. Their benefit is of a two-fold nature—they favor moisture, and improve the texture of the soil. They serve admirably as a mulch, either on the surface or mixed with the surface soil, the latter being the best. As the supply is not sufficient for general farm purposes, they are used in gardens, around shrubs and trees, and particularly for potatoes, which largely require moisture. Mixed with the surface soil, and occasionally stirred, they have an excellent effect upon trees and shrubs, keeping up an uninterrupted growth during a drouth, if the application is liberal and well worked in.

"Where used in a garden, the earlier they are applied the better. The ground having been previously worked, spread evenly about an inch thick, and mix thoroughly with a few inches of soil. Where the soil is quite heavy more ashes should be used and worked in proportionally deeper, answering both as mulch and as soil to grow the plant; in the other case, where the soil is good, principally as a mulch. The effect will not be visible before the season is somewhat advanced. After that it will show, its best work being done in hot, dry weather. The effect will last several years, depending upon how much is used. Yearly applications may be made with benefit; and the experience here is that if liberal applications are made annually, and thoroughly mixed with the soil, no manure is required. This, I know, has a doubtful look, but observation has constrained me to accept it.

CHARLOTTE FOWLER WELLS, *Proprietor.*
H. S. DRAYTON, A.M., M.D., *Editor.*
NELSON SIZER, *Associate Editor.*

NEW YORK,
AUGUST, 1883.

PANICS—THEIR PREVENTION.

IN a school not long ago an alarm of fire threw the children into a panic which resulted in the death of a considerable number before order could be restored. On the Brooklyn Bridge the mere incident of a woman's stumbling while descending a stair-way produced a rush of men and women in frenzied excitement, many of whom were knocked down and crushed to death. In both cases the same cause operated: it was the sudden awakening of the instinct of fear in the minds of the weak and immature children and in the minds of those grown-up Bridge passengers. Fear predominated in their emotions and governed their actions to the exclusion of every other faculty. We may excuse the children for their headlong behavior, but when we consider that struggling, heaving, maddened crowd of well-dressed adults on the narrow foot-way between New York and Brooklyn, what are we to say in palliation of their conduct? A promiscuous multitude is fitful, changeable, and panicky. Especially is this the case where the situation has its suggestions of danger, as on a steamboat, in a theater or hall, or a railway car. A cry of fire will at such times be likely to produce a thrill of terror, and a sudden rush of the throng in the direction of supposed safety. There may be persons of courage and self-poise in such a multitude—there usually are—but they are borne away in the press and struggle and overpowered for a time at least.

Emerson says "fear always proceeds from ignorance," and he is in great part right, for let a man be well acquainted with the construction of a theater, for instance, knowing its several means of exit in front and rear, and the means at the command of the management to provide for the safety of an audience, if he happen to be present when a panic seizes the gathering for any cause, he will be likely to control himself and get safely out of the building. The engineers and firemen of an ocean steamer rarely lose their balance in a time of peril; so too the trained firemen of a city are cool and vigilant in the midst of scenes which would appal nineteen out of twenty men unused to them.

Temperament has much to do with being affected by fear to the extent of panic, but lack of self-culture and of the poise and consistency of faculty which result from thorough self-culture, have more to do with it. Nature is generally liberal in her endowment of the child with the organ of Cautiousness, and it is one of the most active influences of his mind; but as the intellect develops, and under proper training the sentiments of kindness, courtesy, respect, confidence, friendship, and affection become important factors in mental operations, the impressions of Cautiousness are modified, and if the balance of organization be quite complete, its influence becomes that

of prudence and circumspection, which will be calmly exercised even in a sudden emergency. The calm, discreet man will not rush with the crowd, but rather keep apart from it, and endeavor deliberately to obtain a true sense of the condition of things. Such a man was he who remained in his place in the burning theater while nearly all the rest of the large assembly were pushing and crowding toward the doors, and yet was one of the first to make his escape from the building. When asked how he could be so cool at such a time he replied: "I did not look at the fire or the frightened crowd, but shut my eyes for a moment and thought upon what I should do, and having made up my mind I opened my eyes and did it."

They who are subject to impressions of fear should avoid crowds and cultivate those elements of manliness and womanliness which contribute to steadfastness and calmness. Let the intellect be brought into such active operation that its rational influence will be promptly exerted at all times. Let the higher sentiments of faith, veneration, and integrity be strengthened by a consistent, upright life. Nervous trepidation in the hour of danger, with its accompaniments of confusion and dismay, is exhibited by people whose life is superficial, vain and perverting. There is nothing which will keep a man calm and even-toned in the midst of darger more surely than the consciousness of a true, unselfish life. To one whose spiritual sense is enlarged by a life of earnest trust in the King immortal and invisible, the assurance of the psalmist, "He shall never be moved whose mind is stayed on Thee," has a certain, decisive meaning, and he can be calm and patient when others are confounded.

TRUE OR NOT?

OUR attention has been called to a paragraph in a New York weekly, in which a weak effort is made to be sarcastic over a brief phrenological opinion which had been published in connection with an obituary notice of one of New York's best men. A simple statement was made of what the organization clearly indicated to any experienced phrenological observer. The fact that the life and character of the man, as known in the community, corresponded with the scientific inference was fairly the property of the phrenologist, and the candid reader, we think, would not except to its use by him.

If what was said had been shown to be untrue, then our critic would have done the readers of his paper some service, and his application of the spur of witticism would stimulate to more care in future predications.

A mineralogist describes a stone as a bit of crystallized carbon, with such and such properties of refraction and hardness. Another man who deals in gems is shown the stone and exclaims, "Pshaw, it's a diamond!" Would a sneering ejaculation of this sort in any way depreciate the merit of the scientific description, or affect the reputation of the mineralogist?

The New York *Tribune* of April 28th published the following:

"A trifle more than twenty years ago a lecturer on Phrenology, speaking of the bumps of prominent Federal and Confederate generals, gave the following estimate of the present Widow-Governor of Massachusetts: 'Butler has a large brain, but not of the largest size. His head is long and wide rather than high. Judgment, tact, energy, and social attach-

ment are his leading characteristics. He is bold almost to recklessness. His safety and success are due to his skill, tact, and knowledge, instead of moral prudence. He is for his cause or party at all hazards. Moral claims do not control, although they influence him considerably. He can be trusted when committed to the right, but needs more elevation of brain to gravitate uniformly to the side of justice and morals, and soar above selfish and partisan considerations. He needs more height of head as the leader of a moral cause, or for judge, governor, statesman, or President.'"

Perhaps this is more to the liking of our weekly contemporary! The phrenological opinion having been uttered so long ago, he can digest at his leisure its application to the political, professional, and home life of the distinguished subject.

A REMNANT OF THE "INQUISITION" IN THE ENGLISH ARMY.—The *Pall Mall Gazette* is responsible for the following statement, which, if true, suggests that our cousins over the sea haven't yet quite emerged from mediæval barbarism. "The War Office has published its substitute for flogging, and the persons who were attached to that penalty when inflicted on others will probably find much satisfaction in studying the component parts of its successor. It consists of field imprisonment No. 1 and field imprisonment No. 2. It may suffice to describe field imprisonment No. 1. Under this form of punishment, the offending soldier may be kept three months tied up in straps, ropes, handcuffs, fetters, or both handcuffs and fetters. During that period, he may for twenty-one days, with a day's interval every three days, be fastened, in addition to his other fastenings, to a "fixed object," so that he can not move, for two hours a day. While this is going on, he may further be dealt with as if he had been an ordinary criminal under sentence of three months' imprisonment with hard labor. The ingenious Torquemada of the War Office who has devoted his leisure and his gifts to this subject may be congratulated on the skill with which he has accumulated horrors on horror's head.

PHRENOLOGY AS A STUDY.

IN this age of scientific inquiry, there is a demand for information in regard to mind and its laws of action; anything which promises to reveal character and give men a knowledge of their fellowmen, seems to most people very desirable. The world is full of singular sayings with reference to disposition; if a tenth part of them were written out, the list would be astonishing. Among them are these: Long fingers indicate the desire for gain; a little finger much too short, indicates submission, but if the third finger be as long as the middle finger, or nearly so, the woman having it will try to rule. In the days of our childhood, white spots on the nails were considered evidences of lying. People ask what is the meaning of straight eyebrows, arched eyebrows, a straight nose, Roman nose, or a "celestial" nose; and most people fix some meaning to each of these. One asks, what is the meaning of a short upper lip, or a long upper lip; of a large mouth, or a small mouth; the dimple on the chin, the turning-out of the toes, or the turning-in of the toes. All of these things show that people desire to know what others are in character, and they look for signs of faculty and

disposition in the physical make-up. The way these signs get currency may be, that a person sees one with a peculiarity of hand or foot, of walk or expression of face, and because he has a special or peculiar trait of character, the peculiarity of form or motion becomes associated with the trait of character; and it comes to be regarded as a sign that everybody who walks with the toes turned in, or has a straight or crooked mouth, will have the same trait of character.

Within the last hundred years, and especially within the last fifty years, the brain has come to be regarded as the center and source of all power in men; and those who study mind through organization, are devoted to the consideration of the brain, and of its developments in different parts, as the cause and basis of the different types of mental action. By a long series of observations from the beginning of Dr. Gall's studies in this direction, it is found that a broad, heavy base of brain, as we see it in carnivorous and cruel animals, is a sign of force and executiveness in men and women; that an ample development of brain across the lower region of the forehead belongs to those who are quick and clear in observation and practical in talent; while massiveness of the upper part of the forehead is found with those who are profound in thought and broad in their ideas; that those who are amply developed in the top-head are moral; those who have a high crown of head are proud, ambitious, dignified, determined, and self-reliant; those who are full in the back-head are social; those whose back-head is flat and straight and short, are not social, as a rule.

Character can be studied in this way by the bare skull alone, the face being entirely absent. The phrenologist has little doubt regarding the outline of the character of the person who once carried the skull. This being the true basis of character-reading, its importance can not be over-estimated. Those who wish to be teachers, preachers, lawyers, merchants, or who have to negotiate business with different people, as well as those who desire to become practical phrenologists, may become instructed in all that is known of Phrenology, by attending a course of lectures in the American Institute of Phrenology, which holds its annual sessions in New York, beginning the first Tuesday in October; full explanations of the course of study and the topics taught will be sent by mail, on application, from the office of THE PHRENOLOGICAL JOURNAL.

Our Mentorial Bureau.

To Our Correspondents.

QUESTIONS OF "GENERAL INTEREST" ONLY *will be answered in this department. But one question at a time, and that clearly stated, must be propounded, if a correspondent shall expect us to give him the benefit of an early consideration.*

IF AN INQUIRY FAIL TO RECEIVE ATTENTION *within two months, the correspondent should repeat it; if not then published, the inquirer may conclude that an answer is withheld, for good reasons, by the editor.*

TO OUR CONTRIBUTORS.—It will greatly *aid the editor, and facilitate the work of the printer, if our contributors generally should observe the following rules when writing articles or communications intended for publication:*

1. *Write on one side of the sheet only. It is often necessary to cut the page into "takes" for compositors, and this can not be done when both sides are written upon.*

2. *Write clearly and distinctly, being particularly careful in the matter of proper names and quotations.*

3. *Don't write in a small hand, or in pencil, as the*

compositor has to read it across his case, a distance of nearly two feet, and the editor often wants to make changes and additions.

4. Never roll your manuscript or paste the sheets together. Sheets about "Commercial note" size are the most satisfactory to editor and compositor.

5. Be brief. People don't like to read long stories. A two-column article is read by four times as many people as one of double that length.

6. Always write your full name and address plainly at the end of your letter. If you use a pseudonym or initials, write your full name and address below it.

WE CAN NOT UNDERTAKE TO RETURN UN*available contributions unless the necessary postage is provided by the writers.* IN ALL CASES, *persons who communicate with us through the post-office should, if they expect a reply, inclose the return postage, or what is better, a prepaid envelope, with their full address. Personal matters will be considered by the editor if this is done. Anonymous letters will not be considered.*

MINERAL WATERS.—*Question:* Is water highly charged with carbonic acid gas, and holding in solution oxide of iron or other mineral matter, but free from organic impurities, wholesome for household uses?

Answer: The combination of carbonic acid with oxide of iron produces carbonate of iron, which is a common mineral in water, and unless the quantity is unusually large, the water is not seriously affected as a beverage. In iron districts, the springs are more or less charged with sulphate or carbonate of iron; the sulphate is frequently found in them and in the streams flowing from them; yet the water, unless the sulphurous element be so strong as to affect the taste, is not regarded unhealthful. All natural waters contain mineral matter in solution, lime and soda being usually present; and it is only when the quantity becomes excessive that such earthy substances are injurious. It is not so much the mineral matter in water which produces trouble in the system, as it is improprieties of eating. To be sure, one can overdrink, surcharge the system with fluid, overwork the emunctories, especially the kidneys, whose function it is to dispose of the excess; but it is the improper solids taken into the stomach which mainly disturb digestion and the alimentive function. It is easier for people to form unhealthful habits in drink. The tendency to overdrink in warm weather is specially manifest, and then it is that highly charged carbonic water, especially that sold in the cities from fountains, in combination with flavorings more or less poisonous, are productive of decided harm.

SOUTH-WESTERN CATCH-WORDS.—*Question:* Can you give me the meaning of words like these which are in use on the south-western frontiers, viz.: "Rustlers," "Cow-boys," "Dinglers," "Notchers"? H.

Answer: According to an exchange, "Rustlers" are thieves who run off cattle from the ranches across the line into Mexico, and sell them there; then plunder the Mexicans with a sort of impartiality, and return to the United States. "Cow-boys" are those who earn their living by taking care of the herds; they are said to be orderly and quiet when engaged in their regular employment, but when off duty in the towns are disorderly, commit all sorts of cranks, and even outrages, as a matter of fun. "Dinglers" are stage robbers. "Notchers" are a desperate set of men, who wantonly take life for no other purpose, seemingly, than to obtain notoriety.

PREPARATIONS OF SKULLS OF ANIMALS.—R. H. L.—After removing the integuments from the skull, if you would place it where it would be accessible to ants, those little animals would soon deprive the bone of every vestige of fleshy matter. The quicker process is to expose the skull to the heat of a slow oven; but in this case it would be necessary to watch against carrying the roasting too far, as this would dry out the bone so much as to make it very brittle.

CONSCIENTIOUSNESS IN THE FACE.—H. L. F. G.—Physiognomists find two or three places in the facial features which bear a relation to conscientious perception, it being particularly indicated by perpendicular wrinkles between the eyebrows, its breadth and sensitiveness having a relation to the number of wrinkles there. A single wrinkle is thought to be a sign of scrupulosity in small matters; wrinkles on each side of that mentioned, show a disposition to require justice in others; holding one's self to a strict accountability has its sign in the appearance of wrinkles running outward from those last mentioned.

DOUBLE CROWN.—H. M. C.—You may refer to the double center of hair-growth which is sometimes seen—a curious occurrence, but having no significance. Or perhaps you refer to two cranial prominences on the head. The development of Conscientiousness may be so marked as to produce prominences on each side of the median line of the head; so, too, Approbativeness may be very largely developed, and have a similar effect. We have frequently seen this condition. We have known Hope to be remarkably expressed in this way, and Spirituality also. An illustration of the last case can be seen on the shelves of the Institute of Phrenology, in a cast taken from the head of a man who came into this office for the purpose of having his head examined.

WANTS THE AUTHOR.—M. C. B. wishes the author of the well-known motto, "He whom the gods would destroy, they first make mad." The motto is an old one, and the Latin reads, "*Quem Jupiter vult perdere, prius dementat.*" We think that the source of these

lines is in obscurity. It probably belongs to English literature of a century or more ago. Possibly a reader can supply its true origin.

What They Say.

Communications are invited on any topic of interest; the writer's personal views, and facts from his experience bearing on our subjects, being preferred.

A BAD COMBINATION.—After the closing exercises of the class at the Institute of Phrenology, about the middle of December, 1874, I went forth with the best wishes of Professors Wells, Sizer, etc., and determined to speak a good word for the science of Phrenology on all suitable occasions, and to set its grand and beautiful truths upon as high a plane as I could, trusting that, in time, I should acquire the practice and experience necessary to teach the most beneficial of all knowledge in its best light. Ten days later found me in the town of S——, in the State of M——, and in company with several persons, all of them strangers to me, I introduced myself, and the conversation naturally turned upon the merits of Phrenology. An intelligent-looking young man removed his hat, and asked for an examination. I found J—— D—— to be the possessor of several good qualities and a man of some ability, but what arrested my attention most was, his combination of small Acquisitiveness, Conscientiousness, moderate Self-esteem, and Caution; and in despite of his good qualities, I ejaculated, mentally, "Sneak thief!" By describing a good and then a bad trait in his character, in appropriate language, I managed to unfold and describe his weak points without giving offence, and gave him instructions how to cultivate and develop his weak faculties. The peculiar combination of these four faculties impressed me strongly. I could not dismiss him from my mind altogether, but kept trying to outline the possible results of these developments in combination with his large Ideality and other faculties; and upon my return home in the evening, my first remark was that I had examined one very peculiar head, and although I found Acquisitiveness small, etc., in it, I believed the man capable of almost any low, mean theft that other faculties might dictate or his wants require. This called forth the remark from a friend: "Could a person with small Acquisitiveness be positive enough in his love of property of any kind to be a thief?"

My reply was, the tendency arises from a negative rather than a positive quality of the faculty, which does not appreciate the true worth of property. He looks upon whatever he needs for his present wants as common stock; he does not have that sense of ownership that a better endowment of this faculty gives. He believes in having things in common; like the hungry chicken, he appropriates food wherever he finds it, to appease the gnawings of hunger. It may be grain out of his owner's or a neighbor's bin, which he eats until his wants are satisfied, and thinks not of future wants until again hungry. Should this man be in a country-store and be hungry, he will put apples, crackers, or any other eatables he can obtain unobserved, into his pocket. If the weather is cool and he needs them, he appropriates a pair of gloves or mittens for his comfort; and should his weak conscience remonstrate, it is smothered with the thought, "The world owes me a living!" Cautiousness being moderate, he will not be overguarded against detection; and Self-esteem being moderate, allows him to do things beneath the dignity of a man.

A week passed; and the weekly paper printed at S—— came to hand, and in the "Local Items" I read this paragraph:

"J—— D—— was arrested by a sheriff from Boston, for stealing a suit of clothes and ten dollars from a sick man with whom he was watching."

I afterward learned that he had the suit of clothes on at the time of my examination, which was but a few days after the theft, clearly showing his want of caution. That he had neither conscience or dignity, is evident from the fact of his taking the advantage of a helpless sick man.

I have often observed that a person with a fair amount of Acquisitiveness (other mental endowments being the same), will do better work and is more industrious, than one in whom it is small. The one will work for moderate wages rather than be idle, and will do better and more work—will do a more thorough job of any kind for the same amount of money. The other will not work unless he gets the very best of pay for what often proves to be shiftless, inefficient service. As mechanics the one is prudent and economical in the use of material, and a benefit to his employer; the other wastes and destroys more than his services are worth. One has both work and money; the other but little of either. The one wants every cent that is due him, and is generally ready to pay every cent he owes; the other, in the settlement of an account in which there is a discrepancy, says, "A few cents, or even a 'quarter,' either way, don't amount to much, anyhow—let's call it square." And, generally, it will be found that the same loose, careless want of appreciation of the worth or value of material, property, money, etc., characterizes their work and conduct through life.

J. S. HOLM.

"STOMACH FITS"—A MOTHER HARD TO CONVINCE.—[Extract from a letter written by a gentleman in Iowa, upon receipt of a copy

of Dr. Page's work, "How to Feed the Baby."]

"In 1860 our fifth child, a girl, had a disease that was raging about here, but which none of our doctors could name. As about every patient treated by our physicians died, I, myself, ventured to do what I could by way of treatment. The first and second stages, as they might be termed, having passed, there came what can only be described as the 'blue stage.' The whole skin was so contracted that it seemed drawn with a great power over the frame. The entire body and limbs were pinched, and she looked like a bleached shirt soaked in water with too much bluing in it. The entire surface had a glassy, shining look. This was at the age of four months. She recovered; but when she was eight months old she began to have spasms, or what I am now convinced might be called 'stomach fits.' She would have as many as seven spasms a day. Having myself adopted the hygienic diet, and taking but two meals a day, I determined to try the two-meal system with this child. In a few days her spasms ceased, and for eight weeks she had not one. Being called away from home, my wife resumed the old habit, viz.: of feeding the baby at all times, or 'whenever she wanted,' and when I returned home (at the end of two weeks) the baby was having her regular spasms again. I again put her on two regular meals, and within a week all signs of spasms disappeared. Even then her mother was not convinced, but when I again had occasion to be absent, she fed the baby in the old way, and I let her have her own way. The child 'made a live of it,' but has never been well since. My oldest child at the age of twelve, of her own free will, adopted her father's regimen—a simple vegetarian diet—eschewing all spices (including salt), tea, coffee, pastry, etc., and for eighteen years has not known a day of sickness. It may be well to mention the fact, that we take as much care to have pure air as pure food, never having a 'closed house' during any portion of the year or of the twenty-four hours. Now, at thirty years of age, she (like myself at sixty) glories in perfect health and a simple diet. From thus much of my experience you will doubtless see that a book like the one I have just received was sure of a faithful and sympathetic reading. You have struck the right chord, and I believe that a general knowledge of the principles set forth in your 'How to Feed the Baby' would lessen the sicknesses of infants immeasurably, and probably reduce the mortality among them by one-half. One of our oldest physicians here, who first read my copy, and then sent for a copy for his own library, says: 'It contains more of value upon the subject of the proper care and treatment of infants and young children—indeed, I may say, as to home hygiene for the family—than can be learned in any or all of the medical colleges in the land! Its author is a benefactor of his race.'"

PERSONAL.

CARLOTTA, the ex-Empress of Mexico, is said to have recovered from her insanity. Her hair is entirely white. She spends much of her time in the study of music.

NATHAN ALLEN, M.D., of Lowell, Mass., has recently sent us a fine steel engraving of himself, executed by the Metropolitan Company, of Boston.

JOHN W. COLENSO, Bishop of Natal, died on the 20th of June last. He was born Jan. 24, 1814, and educated for the ministry, becoming Bishop of Natal, South Africa, in 1854. He obtained a world-wide reputation through the publication of a work in 1862, on "The Pentateuch and Book of Joshua." This work was condemned by the Convocation of Canterbury, and he declared to be deposed by the Metropolitan, the Bishop of Cape Town. The validity of his deposition, however, was denied in 1865 on an appeal to the Privy Council. Bishop Colenso published several works on algebra and arithmetic, some volumes of sermons, and "Ten Weeks in Natal" (1855), and "A Translation of the Epistle to the Romans" (1861).

LIEUT. SCHWATKA has undertaken an expedition for the exploration of the Chilcat and Yukon rivers in Alaska, more particularly of the latter. Except near the coast this great territory is quite unknown, but the geographical knowledge to be gained is apparently not so much the object of the trip as the discovery of the rich mineral deposits which have long been reported as existing in the interior. This is better than stumbling along among the ice-fields of the barren pole.

HENRY WARD BEECHER'S seventieth birthday was celebrated on Monday evening, June 25th, in a public manner at the Brooklyn Academy of Music. The call had been signed by clergymen and citizens, irrespective of denomination or agreement with the Plymouth pastor's theological views. The building was early crowded, and the street outside was thronged with those unable to gain admission. To those Mr. Beecher made a short speech from the stage entrance door.

WISDOM.

"Think truly, and thy thought
Shall be a fruitful seed."

AFFLICTION, like the iron-smith, shapes as it smites.

THERE is no crime so great as one perpetrated against the freedom of peoples.—MIRABEAU.

A MAN'S purposes, not what he has accomplished, are the true standard of his character. —D.

SOME people live without purpose, and they pass through the world like straws on a river—mere puppets in the tide.—D.

IT is needful that a man be true; not that he live. Are men dogs, that they must be happy? Luther dared to be undone.—PARKER.

Do right and fear no one; thou mayst be sure that, with all thy consideration for the world, thou wilt never satisfy the world.

"IMPROVE your opportunities," said Bonaparte to a school of young men; "every hour lost now is a chance of future misfortune."

GREAT souls are filled with love,
Great brows are calm;
Serene within their might, they soar above
The whirlwind and the storm.

THE highest education is that which not only provides food for the pupil's memory, but training for his judgment, discipline for his affections, guidance for his conduct, and objects for his faith.

ALL the great reforms of society have been based on faith. Often a single man begins and is derided, laughed at and almost overborne, yet, feeling right, he dares to go forward, and by and by triumph crowns the struggle.

MIRTH.

"A little nonsense now and then
Is relished by the wisest men."

A QUARRYMAN said he couldn't see any danger in smoking while he was handling powder. He can't see anything now.

"MA," he asked at dinner, "who was Charlotte Russe?" "Oh," said ma, "she was one of them old queens who made trouble during the Restoration."

TRAVELER: "Hi! conductor! Have you seen a man walking about with one eye, of the name of Walker?" Conductor (musingly)—"N-no, sir, I dunno as I have. What was the name of the other eye, sir?"

WITH a boil on the nose and a corn on the toe, a man has his afflictions carried to extremes. He has trouble at the head scenter and a bad movement on foot. He had better smell out the cause and toe the mark of propriety.

"I'M GOING to a masquerade ball this evening, and I want an appropriate dress," he said to the costumer. "What is your business?" "I'm a milkman." "Ah! then you'd better put on a pair of pumps and go disguised as a waterfall."

AN old colored man saw a sign in a drug store which read "Tasteless Medicines," and looking in he said: "Dat am de bes' advice I eber got—taste less medicines," and then hurried away just in time to escape a box of "anti-bilious."

A CRUSHED DEACON: "I hate to see a woman with rings in her ears," exclaimed the good deacon; "they hain't natural. If it was intended for woman to wear them she would have been born with holes in her ears. The first woman didn't wear earrings, I'll be bound!" "No," remarked the quaint little man in the corner, "nor nothing else." The discussion was brought to an abrupt termination.

In this department we give short reviews of such NEW BOOKS *as publishers see fit to send us. In these reviews we seek to treat author and publisher satisfactorily and justly, and also to furnish our readers with such information as shall enable them to form an opinion of the desirability of any particular volume for personal use. It is our wish to notice the better class of books issuing from the press, and we invite publishers to favor us with their recent publications, especially those related in any way to mental and physiological science. We can usually supply any of those noticed.*

FOR FAMILY WORSHIP. Part 1.—Scripture Readings. Part 2.—Family Prayers. Edited by Lyman Abbott, D.D. 12mo, 455 pp. Price $1.50. New York: Dodd, Mead & Company.

This is a well-arranged manual for use in family devotion. It embodies several features which commend themselves at first glance to those who are looking for a convenient book of the kind. For instance, the editor has aimed to make the service interesting to a general household, and so has selected for the Readings passages relating to the lives of Moses, David, Daniel, Christ, and Paul, and numerous utterances of practical counsel and spiritual experience from the Psalms and Epistles. Special occasions also have their appropriate Readings and Prayers. Much care and good taste are shown in the compilation of Part II., the editor having drawn from the best sources, and supplied an abundant variety, as in the case of the Readings, anticipating special wants both of the individual and the family.

AN UNEXPECTED RESULT, AND OTHER STORIES. By E. P. Roe. 12mo, cloth. Price 75 cts. Dodd, Mead & Co., New York.

This is a comparatively new phase of writing for the well-known horticulturist and author. He gives us a love-story, of which the title appears to us to be a misnomer, for we surely would have called it "An Expected Result," after the first four pages. A jilted lover, desperate, goes off to Brazil to try his best to catch the fever and die; a friend left behind promises to seek out the jilter, and, by winning her love, and then jilting her, to avenge the absent. The friend wins her love, but, instead of jilting, marries her, and the first desperate lover finds a girl in Brazil who soothes his wounded heart, and does not jilt him. Of much greater merit is the "Christmas Eve in War Times," being probably a true incident of the dark days of the late civil war, when want looked in at the door of many a home left behind by the men who were fighting the nation's battles. We commend it as a sample of good delineation, especially as regards the conduct of the house-agent.

DEEP BREATHING as a Means of promoting the Art of Song, and of Curing Weaknesses and Affections of the Throat and Lungs, especially Consumption. By Sophia Marquise A. Ciccolina. Illustrated. Translated from the German, by Edgar S. Werner. 12mo, pp. 48. New York: M. L. Holbrook & Co.

This is a little book which one can read in an hour or so, but it is filled with good counsel on the use of the lungs. The fact that upon the development and power of the lungs depends the strength of the individual in every branch of his mental and physical life needs no special argument here; every intelligent reader will at once affirm it, and also the logical conclusion it forces that one must breathe well, deeply, thoroughly, to have well-developed lungs, and a correspondingly energetic life. For speakers and singers the book can be commended warmly, as well as to those who are weak, or think they are, in the respiratory organs.

EXTEMPORE SPEECH: How to Acquire and Practice it. By William Pittenger, author of "Oratory," and "Capturing a Locomotive." 12mo, pp. 275. Price $1.50. Philadelphia: National School of Elocution and Oratory.

There are many who can use the faculty of language with much freedom; that is, they are seemingly prepared to say something on every occasion, but what they say is usually found on analysis to be wanting in that appositeness and point which are essential to practical impression and utility. The author of the book before us is a gentleman experienced as a writer and a teacher in the line of elocution, and his opinion that good speech is the result of study and special preparation, is in accord with sound judgment. We believe in extempore speech as "the most natural, logical, impassioned, and effective mode of discourse," but no such characteristic will be found in the talk of the untrained, unlearned man. From Demosthenes to Gladstone, the great speakers of history obtained their fame as orators only by study and practice.

Mr. Pittenger is very encouraging in his suggestions with regard to the attainment of a graceful and effective style of address through following a method of preparation, and in this book he formulates what he regards as such a method. This involves education, the training of the faculties, the development of the vocal organs, as preliminary and associated with the special object. Models of preparation for a particular speech are supplied, with abundant suggestions for gathering material and working it up into forms convenient for use.

EFFIE RAYMOND'S LIFE-WORK, GOING WITH THE STREAM, and other Stories. By Jeannie Bell. 16mo, pp. 270. Price $1. Address J. N. Stearns, Publishing Agent, 58 Reade Street, New York.

This is a new book for Sunday-school libraries, just published by the National Temperance Society. There are several stories, all teaching important temperance lessons, and also others equally important in a right life.

A REPLY to "The Academy's Review" of "The Wine Question in the Light of the New Dispensation." By John Ellis, M.D., author of "The Avoidable Causes of Disease, Insanity, and Deformity," etc. 12mo, 270 pp. Published by the author. New York.

This is an attractively bound book of 270 pages, and, as a defense of Swedenborg and his teachings regarding the use of wine, will probably have some value to those interested in his views of the subject. The main issue between "The Academy" and the learned physician appears to be a quibble as to the sense in which Swedenborg used the word "wine," the "Academy" understanding the term as it is more commonly understood at the present day; while Dr. Ellis as constantly maintains that the word was only used by Swedenborg as representing *unfermented* grape-juice, or juice in which there is no alcohol.

In the endeavor to defend his position, the doctor urges the fact that the ancients used *unfermented* grape-juice and preserved it for a length of time, calling it "wine"; but as Emanuel Swedenborg died only eighty-nine years ago, it can hardly be claimed that his understanding of the term "wine" and the understanding of the term by those who wrote two thousand or more years ago should be identical.

This in the main, with some scientific pages

on the effect of whisky or alcohol on the human system, observations of a general character upon wine in different parts of the world, and a free use of personalities of a not very complimentary nature, which we should judge were more than provoked by "the Academy," makes up the balance of the book.

To those interested in the derivation of words, together with the changes that words undergo in the course of time, and the tracing of them through these changes, the book offers some quite instructive reading; the chapter especially on the wine of the early Christian Church, the Passover Wine, etc., is well written, and possesses merit.

WORDS OF COMFORT. From the prayers of Joseph Parker, Minister of the City Temple, London. Selected by Amelia M. Fowler; published by L. N. Fowler, Imperial Buildings, London.

The arrangement of this very tastefully-prepared volume is in accordance with the plan of a birth-day book, but in some respects we think it superior to the average compilation of this popular type. The selections have a practical application in our every-day, commonplace life, and are suggestive of hope, patience, and encouragement. Three short quotations from the prayers are selected for each day, and a motto for each month is also selected from the same rich source. We can very sincerely recommend this little book to the notice of our readers.

PUBLICATIONS RECEIVED.

MORAL AND LEGAL FORCE. By George Lansing Taylor, D.D. This is an argument for the purpose of showing the uses and success of moral suasion in temperance work. It also urges the necessity of employing legal methods for the suppression of intemperance. Price 10 cents. J. N. Stearns, Publishing Agent, New York.

BLACKBOARD TEMPERANCE LESSONS. By Mrs. W. F. Crafts. Includes twelve choice and instructive lessons, with illustrations designed for the blackboard. Adapted to delivery before temperance associations of all kinds. Price 10 cts.

ETHICS AND POLICY OF PROHIBITION. By C. J. Chubbuck. A strong paper on the right of coercive prohibition. Price 5 cents. Both sold by above Agent.

AN OPEN LETTER, written in answer to certain inquiries touching religious belief. Read to the congregation of the Church of the Unity, Cleveland, Ohio. By the Rev. L. S. Hosmer.

THE SIXTY-THIRD ANNUAL REPORT of the Board of Directors of the Mercantile Library Association of the City of New York.

SUMMER HOMES AND RAMBLES ALONG THE ERIE RAILWAY, issued by the general passenger department of the road, supplies information to those who are looking for temporary residences during the summer in pleasant neighborhoods, beyond the smoke and dust and din of the city.

POPULAR SCIENCE MONTHLY, for July, discusses the Railroad Problem of the United States, Remedies of Nature for Dyspepsia, The Great Bridge and its Lessons, Chemistry of Cookery, The Industrial Position of Women, and other things of current value.

RESUSCITATED: A Dream or Vision of the existence after death. Discourse of Lucifer on national, social, religious, and scientific topics, principally about the United States of America. This pamphlet comes from Sacramento, Cal., and exhibits some invention on the part of the writer. It is an imaginary conference with the chief of the regions infernal, in the course of which, the writer delivers himself of opinions upon matters and things in general, points out the seeming tendencies of the age toward monopoly, aristocratical assumption, demagogism, etc. He has something to say with regard to drugs and the adulteration of food, and frauds everywhere. We think Lucifer overreaches himself in this conference, by disparaging so many of the means which are usually regarded as directly in his interest.

THE CENTURY, for July, is a prime number, more than usually freighted with articles on vital topics: for instance, we have a finely illustrated article on Striking Oil; Old and New Races, is most artistically treated; Flood and Plague in New Orleans is very interesting, and so also is the John Brown Raid.

THE NORTH AMERICAN REVIEW, for July, contains, among its leading papers: The Last Days of the Rebellion, by Gen. Sheridan; The Increase of Public Expenditures; Needed Reforms in Prison Management; Sanitary Drainage; and Church Attendance, by a syndicate of writers.

TEA. The drink of pleasure and of health. By W. Gordon Staples, C.M., M.D., R.N., etc. Published by Field & Tuer, of The Leaden Halle Press, London. This is an account of the history and cultivation of tea, and its use as a beverage, and its assumed use hygienically. From the point of view of the physiologist, we must take issue with the writer, on the sanitary question of tea-drinking. We think that he has had more in view the preparation of a book for mercantile or literary purposes, than one designed to instruct and benefit its reader.

THE CINCINNATI MEDICAL NEWS. This is one of our medical exchanges which we examine with interest. It is well edited and quite comprehensive in its survey of current topics belonging to its sphere.

THE HOMILETIC MONTHLY is worthy of particular notice. Each month half a dozen or more sermons from the pulpits of distinguished ministers are given in full or in great part, and it contains much other matter of special value to those related to pulpit work.

PRACTICAL CARPENTRY. Being a guide to the correct working and laying out of all kinds of carpenters' and joiners' work, to which is prefixed a thorough treatise on carpenters' geometry. 12mo, pp. 143, price $1.00. A convenient book for the workman, especially the average journeyman, and all carpenters who have not had time or opportunity to become instructed in the scientific principles of their trade. It contains a large amount of practical instruction, within a small compass. The illustrations are numerous, being upward of three hundred, six of them being full-page plates, showing the methods for making joints of large and small timber. A practical man would at once appreciate the book, should it come into his hands. Published by the Industrial Publishing Co., John Phin, agent, New York.

THE AMERICAN INSTITUTE OF CHRISTIAN PHILOSOPHY has been in existence but a short time, but being composed of men warmly interested in their work, considerable progress has been made. This year, two schools will be held instead of one as heretofore, one at Atlantic Highlands, New Jersey, the delightful sea-shore resort, easily accessible by steamer from New York; the other will open at Richfield Springs, near Utica. The series of lectures delivered at Atlantic Highlands will cover a week, commencing August 2d, and ending August 7th; that at Richfield Springs will extend from August 21st to August 31st.

GOLDEN THREADS, by Ernest Gilmore, is a new volume from the press of the National Temperance Society, descriptive of life very much as it should be in a well-ordered Christian family, and contrasted with that which is usually incident to the family of worldly, selfish, sensual relations. The book has many good features, adapting it to the reading of children. Price $1.00. J. N. Stearns, Agent, New York.

HARPER'S NEW MONTHLY MAGAZINE, for July, is rich in descriptive matter, foreign and domestic. The entertaining sketches from Russian History are continued, this time the instalment having a special interest because of the late coronation of the Czar; glimpses of the life of the reigning family are given with pen and pencil. A sketch, finely illustrated, of Cincinnati, is included among the attractions of the Number.

THE NATIONAL RAILWAY AND STEAM NAVIGATION GUIDE, published by D. Appleton & Co., continues, as it has ever been, the convenient railway handbook of the American traveler. Published monthly. G. F. Thomas, Editor.

RESPIRATORY CONTROL, for vocal purposes; Inspiration and Expiration. By John Howard. Published by Edgar S. Werner, of Albany, N. Y. Price, 60 cents. A well-written pamphlet of especial use to those who exercise their vocal organs in pulpit or on platform; written in a style clear and familiar, and furnishing advice of great value. Too many of our speakers and singers use their voices improperly, or rather the organs which produce the voice, and as a consequence break down in mid-career; the organs having become weakened, exhausted, paralyzed. Mr. Howard shows the right way to exercise them, which secures their free and normal play, and consequent development to a stronger and more efficient condition.

AUTOBIOGRAPHY OF A BOTTLE, in the "Fife and Drum" series, published by the National Temperance Society, New York, is a well-told story, of incidents in tippling life. It is suitable for young men to read, being interesting as well as powerfully impressive. Should be well circulated. Price, 10 cts.

THE ECLECTIC MAGAZINE (New York) for May is rich in selections from foreign literature—entertaining and didactic. Common-sense in Dress and Fashion, and Jonathan Swift are among its best articles.

THE ST. CLAIR MINERAL SPRINGS and the "Oakland." An illustrated circular, setting forth the attractions of the country in and about the springs.

THE NEW YORK MEDICAL COLLEGE AND HOSPITAL FOR WOMEN, in its twenty-first annual announcement, sets forth the curriculum of study and requisites for the course of 1883-4. Having a commodious building, with greatly improved facilities for imparting a thorough medical training to its students, the directors and faculty are to be congratulated for their successful establishment of a medical institute for women which is a credit to New York City. Dr. Clemence S. Lozier, Dean, may be addressed for information respecting the college. Her residence is 103 W. 48th Street.

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W. H. DAVIDSON.

AN ILLINOIS PIONEER AND HIS ASSOCIATES.

VIRGINIA has been called "the mother of States and statesmen"; and Illinois affords an apt illustration of this title. Virginia is the mother not only of the State, but of many of the ablest and most influential of its statesmen, the Old Dominion having crowned her territorial gift with the dower of intellect and character.

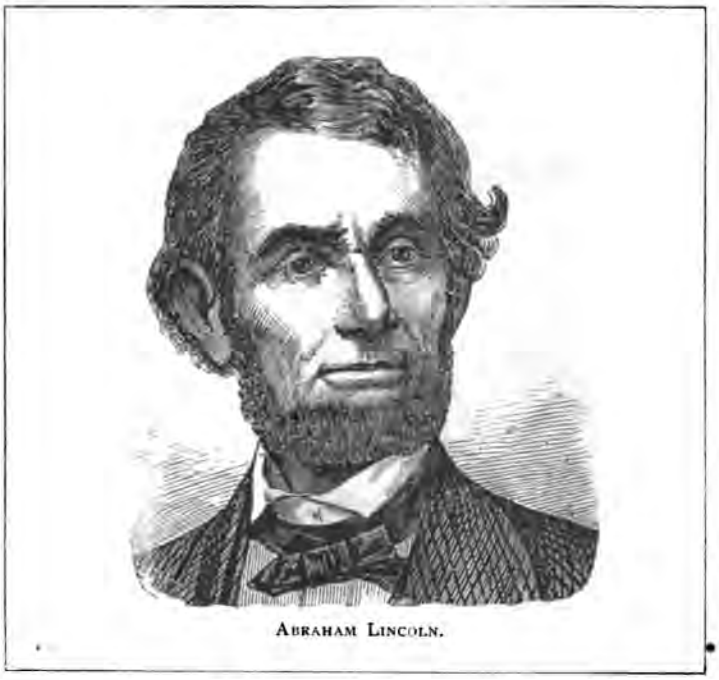
Among the foremost of those who make up this endowment stands Colonel William Henry Davidson. He was born near the banks of the Antietam, September 8, 1805, and was of Scotch-German ancestry, having descended in the paternal line from the clan Davidson of Scotland, and in the maternal line from the German—a compound lineage of which his

character exhibited marked traces in its steadfastness, blended with courage, sagacity, and energy. Bereft of his parents at a tender age, he was reared by a half-brother, Daniel Burkhart, late President of the Berkeley Bank at Martinsburg, West Virginia. This brother, Col. Davidson often said, was father, brother, and all to him, a cherishing care which he repaid by deep and abiding affection. The lessons of conduct taught him by this brother were never forgotten, and had no unimportant part in shaping his life. One of these, which he was fond of recalling, is worth mentioning here. While yet a child, his brother one day gave him a small coin, saying: "William, remember this stands for labor, and what others have worked for, you ought not to spend without thinking. Now, when you go by a shop-window, and see cakes and candy that you can buy with your money, stop and think whether you can do without them, and, if you think you can, do not buy them." The caution would have meant little to the ordinary small boy, who would have rushed to a foregone conclusion with the slightest possible amount of thinking; but with this child the lesson, instead of going in at one ear and out at the other, lodged permanently between the two, insomuch that, armed with its talismanic power, he carried his coin intact for months, in the midst of thronging temptations to spend it. The self-control thus early and successfully exerted never forsook him. The child was father of the man.

Col. Davidson was educated at Dickinson College, Carlisle, Pa., and subsequently studied law under Chancellor Tucker, at Winchester, Va., having as his fellow-students there Charles James Faulkner, Henry A. Wise, and others who have been prominent in the politics of the country. On the 9th of May, 1828, he was married in Washington city to Letitia Hamilton King, at the home of her cousin, Col. Cross, afterward killed in the Mexican war. Mrs. Davidson was a descendant of Thomas Green, a nephew of Lord Baltimore's, and one of the Colonial Governors of Maryland. She was a woman of singular purity of character and unusual force of intellect. Descended from the Roman Catholic founders of Maryland, she adhered through life to the faith in which she was nurtured. Her maternal ancestors, the Hamiltons, were members of the army, while her paternal ancestors, the Kings, belonged to the navy, and both families were conspicuous for their services and position; yet, notwithstanding these rather pride-breeding antecedents, she was herself the flower of humility and gentleness. An elder sister, Isabella, it may be stated, was one of the founders of the Academy of the Visitation, at Kaskaskia, Ill., the first planted in the West, and of which, when transplanted to St. Louis, Mo., she became Mother Superior, serving in that office, so eminent was her fitness, as continuously as the rules of the Order permitted, until her death. At this institution in St. Louis, one of the first repute in our country, the only daughter of Col. Davidson was educated.

Soon after their marriage Col. Davidson and his bride started for Mobile, Alabama, it being his intention to enter upon the practice of law in that city, and make it his future home. Diverging from his route to visit his sister, wife of William Wilson, at Carmi, Illinois, he was persuaded to abandon the idea of settling in the South, and cast his lot with that of his kinsfolk in the West—a decision to which no doubt he was brought the more readily as his brother-in-law, just mentioned, afterward Chief-Justice of Illinois, was already in the full tide of successful practice at the bar. He accordingly pitched his tent at Carmi, situated on the banks of the Little Wabash, and then, as now, the capital of White County, but not then, as now, a large and flourishing town, connected by railway with the rest of the globe. At that time Carmi was a simple hamlet in the wilderness. Between the past and the present the contrast is sharp and distinct in the West as elsewhere. A journey from Washington city to Illinois was then attended with

more hazard and adventure than a trip abroad now. Canal-boats, broad-horns, and stages were the means of travel, and log-cabin inns, scattered far apart over vast tracts of desolate country, served the adventurous traveler with food and shelter. The red man did not stalk abroad with tomahawk and scalping-knife, it is true, yet in the virgin forests wild-cats and panthers still kept their predatory state, and not unfrequently a bear was killed within sound of habitations, and, what is more, his flesh was eaten, and relished as a delicacy. Deer and grouse were the game with which the settler might fill his larder, and the indigenous papaw and pecan trees presented their fruit and nuts fresh from nature's hands for the table. But there was one ubiquitous, hydra-headed enemy, which lurked unseen around the home of each hardy pioneer, playing sadder havoc with his interests than panther or bear. This was malaria, which, in some form, was ever the unbidden guest in the family. In the autumn and spring, it appeared as "chills and fever," in winter as "winter fever," and under Leo's blazing sun was known by a variety of other names, all significant of one head or another of the fell hydra which no Hercules has yet been found to destroy. Sallow faces and hollow eyes were the heritages of the brave men and women who left their homes of refinement and culture in the East for the perils and privations of the new West. But, thanks to their fortitude and enterprise, how changed is the scene now! The blank and cheerless prairies of those days are now golden fields, which stately cities variegate, like clouds "flecking the sunny air," pre-eminent among these being the Phœnix city, Chicago, founded little more than a generation ago, yet within that period shooting up twice into magnificence, first



ABRAHAM LINCOLN.

from the marshes of Lake Michigan, and then from its own ashes. To Illinois to-day her sons may "point with pride," in the best sense of that much-abused phrase. She contains upward of eight thousand miles of railroad, is rich in educational facilities and charitable institutions, abounds in wealth of all kinds, and does not owe a dollar. It was the men of whom mention has been made who not only designed her political fabric, and laid its corner-stones, but carried the superstructure far up toward its present completeness. Their fortunate successors had simply to work on their lines, and round out the embodiment of their conception.

JAMES SHIELDS.

Col. Davidson began the practice of law at Carmi, exhibiting from the first a remarkable vigor of intellect and determination of character. His sterling qualities and attractive manners soon brought him into the arena of politics, wherein he appeared as a Whig, becoming at once a leader, and retaining to the last the trust and admiration of his political associates, which, indeed, was shared in no small measure by his political adversaries. Before he had attained the constitutional age, he was elected to the State Senate, in which he served continuously for twelve years. At the session of 1836–7, in the second term of his service, he was chosen Speaker, although a majority of the members were Democrats, and a vacancy in the Lieutenant-Governorship imposed the duties of that office on the Speaker of the Senate. He thus became Acting Lieutenant-Governor, and filled the Gubernatorial chair for the unexpired term. His early ascendency in the councils of the State was the more noteworthy from the character of the men who then participated in them, all of whom were his superiors in age and experience, and most of whom were of the noblest type of manhood. Among them were Abraham Lincoln, Stephen A. Douglas, Orville H. Browning, Cyrus Edwards, James Shields, J. Gillespie, John T. Stewart, Wm. B. Ogden, E. B. Webb, and E. D. Taylor. To have been officially chief among such equals spoke eloquently for his own manhood as well as for his political abilities. In a recent letter to the daughter of Col. Davidson, Judge Gillespie, a notable member of this galaxy, says: "I knew your father well. When I first knew him he was in the Senate of Illinois. We were both Whigs, and his course commended itself to my highest consideration. Everybody regarded him as one of the most honorable and promising men in the State. I recollect his presiding over the Senate with distinguished ability. He was chosen by a Democratic body from among such men as Cyrus Edwards and Orville H. Browning. The Senate of Illinois was at that day composed of the very highest type of men." "Your father," Judge Gillespie adds, "was conspicuous for his fine personal appearance. He was a good

talker without the least display. In public he was sedate, but at his room he was

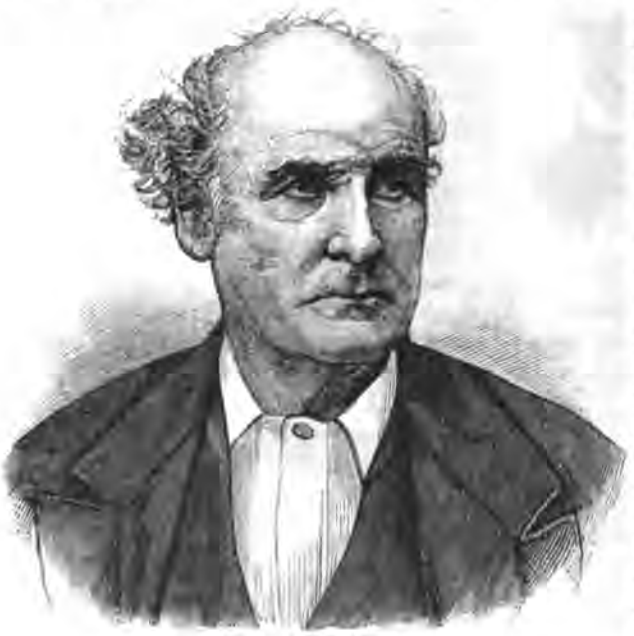
STEPHEN A. DOUGLAS.

remarkably sociable and entertaining. Mr. Lincoln admired him very much. He preserved better order when he presided over the deliberations of the Senate than any other Speaker I ever knew. He was a skilled parliamentarian, and his rectitude was above suspicion, and he was a man who could not be trifled with, and so his decisions inspired absolute respect and confidence. His name was very often used in connection with the office of Governor of the State, but Illinois being hopelessly against the Whig party, and your father indisposed to engage extensively in political life, I think he never ran for the place, although he was regarded as about the best timber we had. You may rest assured of one thing, and that is that there was not the slightest blemish upon the public or private character of Wm. H. Davidson. After he left Illinois, I kept track of him through my friend, the lamented Joshua F. Speed, who was a great admirer of your father. Mr. Speed, I will here say, was on more intimate terms with Mr. Lincoln than any other living man. They were almost like the Siamese twins." After having served twelve years in Illinois, Col. Davidson, influenced by the aversion which Judge Gillespie mentions, withdrew from political life, and devoted himself to commercial pursuits, for which he was admirably fitted, and in which, as in politics before, he achieved success. In 1851 he removed to Louisville, Ky., having bought out the well-known wholesale house of Fellows & Co., in which, however, he remained but a short time. Disposing of his interest in that establishment, he formed a copartnership with the late William B. Clifton in private banking, which he prosecuted for some years with his usual success. In 1858, on the organization of the Louisville branch of the Commercial Bank of Kentucky, he accepted, at the urgent solicitation of the stockholders, the cashiership of that institution, and with characteristic ability discharged the duties of that office until

JOSHUA F. SPEED.

his death. To Louisville, the second home of his adoption, he was greatly attached, interesting himself in whatever

concerned her welfare, and contributing liberally to everything that promised to advance it. He was one of the originators of the old Louisville Club, the first organized in the city, and noted for the manly spirit and social distinction of its members. Few men of honorable repute visited the Falls City, from abroad or near, without becoming the guest of this Club, which at that time was composed, among others, of such citizens as Judge Nicholas, A. D. Hunt, Gen. Wm. Preston, Dr. James Johnston, James Speed, Joshua F. Speed, Judge Bland Ballard, and Grandison Spratt, the genial autocrat of the fraternity.



JUDGE J. GILLESPIE.

In social life, as in public, Col. Davidson was a leader, and his home, whether in Illinois or Kentucky, was the seat of a refined and generous hospitality. The last entertainment he gave in Louisville was a dinner to Senator Douglas, on the occasion of his visit to that city as a candidate for the Presidency in 1860. Among the guests were Gov. Crittenden, and his son, Gen. Thomas L. Crittenden, and a number of representative citizens of Louisville. Twenty odd years have passed, and of the noble men who sat around that board, all, host and guests have been gathered to their fathers, save Gen. Crittenden, and Mr. A. D. Hunt, for the latter of whom Col. Davidson cherished an especial affection. On the occasion of the visit referred to these two were appointed by a committee of citizens to receive Senator Douglas, and were the last to speed him on his way, not, as it proved, alas! to the White House, but to his tomb, in which he was laid a few months later.

Col. Davidson loved work, and his mind went straight to its conclusions. He was equally thorough and direct in his methods. No man better appreciated the maxim, that what is worth doing is worth doing well, or more faithfully carried it into practice. True to his Gaelic descent, he was a man of strong prejudices, but, true likewise to his German blood, he took large views, and patiently heard the other side. He sympathized with the best sentiments and inclined to close with the best thought of his time. Owning slaves in his youth, he yielded to scruples in the matter and emancipated them, although throughout life his associations, personal and political, were with the natural adversaries of the anti-slavery party. The doctrine of Secession he utterly rejected, believing it to be in conflict with the letter as well as the spirit of the Constitution, and, when the attempt was made to execute it, declared his adherence to the Union, in the face of very serious pecuniary losses. The salient features of his character were: a lofty sense of honor, unswerving fealty to duty, and a just appreciation of the rights and worth of others. Possessed of high and varied talents, he was successful in every field he entered—law, politics, mercantile life, and banking. Combining insight with foresight, his sagacity was un-

failing. In Rome in 1871, the Archbishop of Baltimore, then in attendance at the Ecumenical Council, said to Mr. Shipman, pointing to his wife (Col. D.'s only daughter): "That girl's father had one of the clearest, finest business heads I ever knew." And such was the general judgment. When the country was convulsed by the panic of 1857, he carried his bank safely through the commotion, and, while other institutions were falling or suspending around him, he stood a pillar of strength among the ruins, and helping his financial brethren. In his family his word was law, and, although he required the strictest obedience to rule, his children, domestics, and those of his household idolized him. His coachman, a colored man, became one of his nurses during his last illness, and, when all was over, it was pitiful to hear the man's lamentations, moaning between his sobs that his best friend was gone. To his children he emphasized the necessity of keeping their word, and exemplified the precept in his own conduct. A promise made by him was sacred, and his "Yes" or "No" carried its full meaning, and was never said hastily. His word was his bond. His judgment of men, as well as of affairs, was unusually fine, insomuch that his advice was habitually sought by his associates and friends. In matters of public moment he was often "the power behind the throne." He solved political enigmas, and cut Gordian knots, whereof the honor was appropriated by men of lesser caliber.

CHIEFTAIN OF THE CLAN DAVIDSON.

Col. Davidson's life was full and strong, and he enjoyed it highly, yet rationally.

His devotion to his friends was absolute, and among them, where he was best known —known by the crucial test of the dreary intercourse of daily life—was he most respected. To strangers, at the first blush, there appeared in him a certain *hauteur*, but it was in appearance only. A man of tenderer feelings, or of more delicate consideration for the feelings of others, never lived.

Around Carmi his sympathies lingered to the last. He had been reluctant to leave Carmi—the place to which he had taken his young bride, where he had received so much kindness and encouraging appreciation and had formed so many enduring friendships, which had crowned him with his first laurels, where all his children had been born, and where four of the seven had found their last resting-place. He frequently said that twenty of the happiest years of his life had been spent in Carmi. His home there was the center of some of the choicest spirits of the time. General Robinson, United States Senator; Chief-Justice Wilson, one of the ablest and most accomplished jurists of this country; the gallant and brilliant Baker, who fell at Ball's Bluff; Gov. Webb, a typical gentleman of the old school; his brother George, saturated with Attic salt; Dr. Shannon, Dr. Stewart, and others, representatives of the best blood of Virginia and Kentucky, and, far better, of the best qualities of human naturé, were his neighbors and intimates. Lincoln and Douglas visited him often, occasionally staying for weeks at a time, while noted guests from afar tarried long under his rooftree. "Porte Crayon" (David H. Strother, at present Consul-General to Mexico) spent a winter there, diversifying his stay by placing on canvas the counterfeit presentments of his host, hostess, and their boy. Indeed Carmi was a bit of Attica planted in the Western wilds, and though never called, by itself or others, "The Athens of the West," it may be doubted if any of the various towns which arrogated to themselves this proud appellation had a better claim to it than the little Whig hamlet of "Egypt," as the wits of Whigism nicknamed the Democratic stronghold of Southern Illinois. Col. Davidson, after removing to Kentucky, was pressed by his friends, repeatedly, to re-enter public life, but he invariably declined. His political career in Illinois, on the whole, had been successful, and fraught with happy reminiscences. It was a pleasant venture (probably he thought it one of the follies) of his youth. He was now in mature manhood, with no ambition for political honors, with a strong distaste for political strife, and immersed in business at once congenial and prosperous. It cost him no effort, therefore, to turn his back upon the political arena forever, as he did. In the memorable Presidential contest of 1860, Col. Davidson supported Douglas. Nevertheless, Mr. Lincoln, after his inauguration, wrote to Col. D. offering him any office that he might think fit to name, proposing, himself, the Secretaryship of the Treasury. This generous offer he gratefully yet firmly declined. The offer itself illustrates the nobility of Lincoln. He, in fact, never forgot or forsook a friend. His whole life was a bright example of loyalty to friendship. Judge Gillespie, in the extract from his letter quoted above, mentions the intimate relations between Lincoln and Joshua F. Speed. The origin of the intimacy affords another illustration of this fine trait in Mr. Lincoln's character, and, as it is characteristic in other respects as well, may be given here. Mr. Speed began his business life as a merchant in Springfield, Illinois, where he was settled when Mr. Lincoln came there to open a law office. One day as he was sitting in his store in an interval of leisure, Mr. Lincoln, whose ingrained awkwardness was then aggravated by youth, came up to the counter, and accosted him with visible embarrassment. "I want to know, Speed," he said, "the cost of a bedstead and bed," adding a rough description, which indicated the cheapest kind of both. "What you want," answered Mr. Speed, "will cost you about seventeen dollars." At this Lincoln's jaw

dropped, and a painful expression of sadness and perplexity spread over his countenance. Mr. Speed, noticing the look, and rightly interpreting it to signify that the price exceeded Lincoln's means, quickly added: "Mr. Lincoln, I have a proposition to make you. My partner has just got married, and his bed in my room up-stairs is vacant. If you are willing to occupy it, and share my room with me, you are more than welcome." The painful expression instantly vanished from Lincoln's face, as, with a few simple words of thanks, he accepted the offer, and disappeared. In a short time he reappeared, with a pair of old-fashioned saddle-bags on his arm, and, directed by his new friend, shambled up-stairs to the designated room. A minute had scarcely passed, before he shambled down again, and as he reached the shop-room, cried out, his face beaming with jocund content, "Well, Speed, *I've moved.*" Henceforward unto death Lincoln and Speed were bosom friends.

Mr. Speed, and his brother-in-law and business partner, Mr. Henning, it should be said, became the executors of Col. Davidson, who directed in his will, as a special mark of esteem and confidence, that no bonds should be taken for the faithful execution of the trust.

In person Col. Davidson was strikingly handsome, with polished and distinguished manners. Dignified and at the same time cordial, he won the heart of every one with whom he associated. His mind was richly stored, and, when interested in a subject, his conversation grew eloquent. He was just six feet in height, weighing between 160 and 170 pounds, and with what is termed an iron constitution, although he died comparatively young. An oil portrait of him (by the celebrated artist Healy) represents a head of a fine pyriform type, with dark brown eyes, lofty brow, a chin firm yet delicate, and a mouth chiseled into the fairest bow shape. This last feature was one of peculiar beauty in outline and coloring, and his teeth, regular and white, were in perfect preservation at his death. But the chief charm of his countenance lay in its unusually sweet and captivating expression. Col. Davidson was nurtured in the religion of his Scottish ancestors, but, after reaching man's estate, belonged to no church. Faithful to his convictions of right and wrong, he sought through life no other guide. A little over two years before his death, he wrote from New York to his daughter: "Seventh of February, 1859, the anniversary of the birth of my only and darling daughter. Thanks be to God that this recurrence of it finds you not only alive, but in the possession of health, and surrounded by friends who love and cherish you. These are indeed blessings that we can not sufficiently appreciate. For them to our good God let your gratitude be manifested by an observance of His commands—His will. May each anniversary as it occurs find you drawing nearer and nearer to Him by practicing such a course of life and obedience as will finally, *when that one comes and you are not here*, commend you to His infinite mercy and blessing." Withal his respect for the beliefs of others was profound, and he steadily impressed upon his children the importance of attending the church of their mother, into the bosom of which, on his death-bed, he was himself received. The solemn rite was performed by his wife's cousin, Archbishop Spaulding, of Baltimore, who at that time was Bishop of Louisville. He died October 24, 1861. Death found him ready, and he met it with that holy peace which divests it of its terrors. His remains lie in the Catholic cemetery in Louisville, beside those of his devoted life-companion, and of his first-born son, Major Henry G. Davidson, who served with distinction in the Union army, and died at the close of the war, on the threshold of a civil career that promised to be brilliant. But two children survive, a daughter, who in 1868 was married to Paul R. Shipman, the associate of George D. Prentice in the editorship of the old Louisville *Journal*, and Charles Edgar Davidson, of Texas.

ALICE D. SHIPMAN.

THE TRAINING AND CHARACTER OF HORSES.

OF our domestic animals none occupy more attention than the horse, and although there is no subject with which general society is supposed to be more

Fig. 1.—Highest Type of Intelligence.

familiar, yet when it is a question of positive knowledge for a given purpose very few are able to meet the case—even among farmers and stock raisers we would scarcely find two who would agree entirely on the training or education of a horse having a certain trait or disposition. On the farm the treatment of this most useful companion of man is for the most part irregular, injudicious, and very often absolutely cruel; and the wonder is that the colt develops into a condition of docility, patience, and usefulness, which is rather typical than otherwise of the horse generally. With his highly organized brain, sensitive temperament, great strength, capabilities of resistance, the horse by appropriate training could be rendered much more efficient than he averages. This is shown by occasionally meeting with a noble specimen of the equine family which has fallen into considerate hands, and the capabilities of intelligence in such a case are astonishing, and the sarcastic remark which is often heard, "That horse knows more than his master," seems warranted. The deficiencies in horse training generally arise from a lack of understanding of the nature of the animal, and without such an understanding it is impossible to set on foot a system which shall be definite and efficient. Mr. Dennis Magner, whose reputation as a horse trainer is very extensive in this country, states that "There are three natural difficulties which present themselves in the outset of a horse's education. First, the horse is much stronger than man, and this fact the animal is intelligent enough to perceive very promptly; and if he can impose it to improper treatment he is likely to do it and thus resist the control of his master, and whatever gain there is on his part in such resistance, encourages him to further impatience of control, and finally he may become unmanageable and vicious.

"The second difficulty arises from his methods of reasoning, which must be intelligently exercised so as to prevent his becoming excited or frightened at boys and sounds with which he is brought in contact. Through his active senses of sight, hearing, and feeling he must be instructed with regard to their innocent character.

"Third, it must be appreciated that a horse can not understand the meaning of language or words of command, except so far as he is taught to associate them with actions; consequently, it is not to be expected that he will know what he is required to do unless taught and shown in a way that he can clearly

Fig. 2.—Vicious and Treacherous.

comprehend. We see, for example," says Mr. Magner, "that if a horse learn to pull away, break his halter, resist the blacksmith in shoeing, or run away, he

will be encouraged to do so afterward, and the habit may become fixed. On the other hand, when a colt is first haltered, no matter how hard he may resist, if compelled at length to submit, he will be likely not only to follow without restraint, but will continue to do so afterward; also when the feet are taken up and handled until an operation is quietly submitted to, or such restraint is brought upon the mouth as will overcome the power of resistance, he will not only submit for the time, but if the teaching be applied properly, inclination to resist afterward will be quite overcome."

The principle of this reasoning applies as well to other habits of the horse. Like all other animals of the herbivorous kind, he is naturally subject to the domination of man, and so susceptible to training; this subjection is illustrated in every type of horse, it does not matter how wild or vicious he may be, if his treatment be such as properly considers organization; in other words, is founded upon a thorough understanding of the horse nature. Having become once impressed by the superior power of his master through the element of fear, his fear overcome and supplemented by kind treatment he will not only exhibit submission without the use of force or restraint, but he will remain so if not abused or excited. The horse is ever subject to disturbance by the occurrence of unusual sounds, especially those

Fig. 3.—Willful and Spirited.

which arise from something in contact with his body and in this case a noise, especially if suddenly made, is likely to excite intense fear or resistance, and he will be likely to be afraid of it ever afterward. A new object should be brought

Fig. 4.—Docile, Kind, and Intelligent.

slowly and gently to a horse's notice; he should be permitted to smell and feel of it, then it can soon be placed on or around him without causing the least fear. It does not matter whether while in harness the cross-piece falls across the quarters, or an umbrella is raised behind or the whistle of a steam engine is heard, if the horse have been shown or introduced carefully to these things, he will not be seriously disturbed by them; whereas their sudden occurrence may be productive of most dangerous and persistent effects.

Third, in relation to teaching the meaning of the sounds or words of command, using the language of Mr. Magner, "it is evident that if a man were to sit on a block and simply read the word 'whoa'; to a horse, he might do it indefinitely without teaching him its meaning; but if a horse were moved, set in moderate action, and immediately after the command the reins were pulled sufficiently hard to make him stop, he would after a few repetitions of the command learn to stop and that without the reins being pulled. Or in teaching to 'back,' if after the command were given the reins were pulled upon sufficiently to force him backward, he would after a few repetitions learn to back freely of his own accord at

the word, to avoid the unpleasant effect of the pulling."

In further illustration of this principle,

Fig. 5.—Excitable and Obstinate.

Mr. Magner goes on to say how a horse may be taught a few tricks. If it is desired to teach a horse to make a bow, for instance, first prick him lightly on the back with a pin, and repeat this until in his efforts to avoid the annoyance he drops his head, then instantly stop the pricking and caress him; repeat the pricking until he has again dropped his head, then caress him and give him something of which he is fond; continue this method until at the instant the motion is made toward the back he will drop his head. To teach him to kick up, simply prick him on the rump until there is an inclination to kick up, when, as before, stop and caress him; so repeat until the least motion toward the rump leads to the effect desired. Teaching any kind of trick the principle is the same, the difference being only that instead of a pin other means suitable to the case must be used. To teach tricks by the word would be necessary to repeat the command and associate the act with it. Care should always be taken against confusing or exciting the animal, and but one trick at a time should be impressed upon him, the process being carefully and slowly repeated until no mistake is made. Of course, as horses differ much in intelligence, some will acquire their lessons more promptly than others, and more can be expected in the way of performance from some, to have prompt obedience at the word of command. Such an animal as the one in the illustrations (Fig. 1 or Fig. 4) can be readily taught to do unusual things. For the execution of any trick or movement the exact signal or word which it is customary to give in teaching it should always be repeated; the tone or pitch of the voice should be carefully regarded, otherwise the horse may mistake on the instant what is wanted of him, and consequently be unable to obey. Such an animal as that in Fig. 3 or Fig. 7 would test the patience of any trainer; bad habits, cunning, and vicious action are to be expected from such a physiognomy. But the defects of organization in such animals are usually increased by bad treatment.

The principle of kindness in training is potent in relation to a horse just as it is in relation to our influence upon our human brothers. If a man, for instance, were strong enough to take a bully by the shoulders and shake him so thoroughly as to show him that he had power to control him as he pleased, and then afterward treat him with kindness, the effect would be far better in establishing a relation of friendship and subservience on the part of the bully, than if the latter were merely impressed that he was kept under, or subjected by dint of the superior force of

Fig. 6.—Slow, Dull, Obtuse.

the other; in truth, it is not likely that the rough fellow would maintain a very pleasant feeling for his superior, if the contest

were carried on in the presence of others, so that his self-respect were affected, his low jealousy aroused. If a man could control a horse by putting his arms around his body, and thus prevent his struggling and becoming excited, and until the muscles were entirely relaxed, and then further win his confidence by kindness, caressing and so on, the subjugation obtained would be of the most efficient kind; but as there is not strength enough in human nature to do this, recourse must be had to such means as will approach as near in principle to it as possible. If the horse be given such freedom as to encourage his confidence in resisting, or if his willful, vicious nature be stimulated by ignorant, abusive treatment, and he should in his excitement and fury resist earnestly, despite of the most severe punishment, it is no more than should be expected and at the same time we would have a manifestation of the real cause to be overcome by our treatment. The manifestation proceeds from a condition of the brain just as mental phenomena in man arise, and this condition has been produced by erroneous treatment; and to secure the desired result of submission a method must be put in operation for the production of a different mental state; the fear of the animal must be checked and modified, and his confidence and good-nature gained. In the meantime strong physical means of control are legitimate as a temporary expedient, so as to secure that mental state which will lead to success. If he has been unduly stimulated by fear, then the horse should be shown that there is no cause for fear; if through certain qualities of viciousness, then those qualities should be modified through measures which shall calm and soothe the brain excitement which produces them. Kindness will accomplish much even with a stubborn, willful character like Fig. 3. We should always give a horse some credit for reason and allow him a little latitude as it were for reflection. Treating him much as a child whose disposition we understand, will have a similar effect.

The reader who is familiar with horses will recognize in the illustrations traits of horse physiognomy frequently met with. Fig. 1 shows the type of intelligence, high blood and docility; while Fig. 2 (from life) indicates the vicious and treacherous type, the animal against whom it is well to be wary. Fig. 3 is an animal that will tax the strength of his owner to keep in training. He is spirited, excitable, and "off the handle" often. Fig. 4 is a good fellow, docile, yet possessing spirit and intelligence—the horse for the family that will be kind to and appreciative of him. Fig. 5 requires a gentle, but strong hand. A "high-strung," nervous fellow is he—needing no whip or spur, but will "go" while he can stand. Fig. 5 is a very sensitive animal; flies and mosquitos annoy him greatly; his skin is thin and his blood

Fig. 7.—Very Excitable and Incorrigible.

hot. In Fig. 6 we have a specimen of the heavy, dull, stupid horse; the one that "any one can drive," but is rarely driven off a walk, or a very sluggish infrequent "lope." He's the horse to try the patience of a saint, when a little behind time for the train. Fig. 7 requires an exceptionally good driver to manage him; he must be watched or some dangerous trick of his may suddenly astonish his owner. He'll nab the unwary bystander on the shoulder, or perhaps seem disposed to make a brief luncheon of his hat. He has a wild-looking eye, and the head-lock falls in an unsteady corkscrew way down over his forehead, in itself suggestive of untrustworthiness. Compare Figs. 1 or 4 with Figs. 2, 5, 6, and 7, and see how wide the differences of character shown even by engravings. EDITOR.

THE TRUE BASIS FOR THE SCIENCE OF MIND AND STUDY OF CHARACTER.

(*Continued.*)

SOME OF THE IMPORTANT TRUTHS OF PHRENOLOGY.

BEFORE proceeding to show the value of Phrenology as a means of analyzing types of character, it may be well to take a brief survey of some of the important truths which Phrenology has added to the science of mind. Especially do I think this necessary because, even here in this school of learning (Harvard College), we are wont to speak of many of the truths of the science of mind as if they were but lately discovered by modern scientists. It is always a disagreeable task to dispel pleasant illusions, but it is sometimes very necessary, when men become over-confident of the value of their own individual investigations. I will have something further to say upon the subject of appropriation of phrenological discoveries without acknowledgment, toward the conclusion of this essay.

The first principle which Gall and Spurzheim maintained, and which was bitterly opposed on all sides, was that the mind is dependent for its manifestation upon material organs, and that the brain was the principal seat of the mind. It is surprising to read, when we reflect how universally this fact is admitted at the present time, that Gall had to avail himself of every resource to prove his position, and brought to bear against his antagonists accumulations of facts both psychological, anatomical, and physiological, which completely established the phrenological view and annihilated those of his opponents. It does not fall within my province to give the proofs for the mind's connection with the brain, and it is hardly necessary, as nearly all scientists acknowledge this truth. They differ only in the method of the brain's manifestation of mind, whether the brain is composed of cells, and each cell is responsive to a particular shade of emotion or thought, and manifests that emotion or thought when excited by the proper stimuli; or that the brain, as a mass, moves its bulky weight every time to give rise to thought or emotion. Phrenology claims that there are two grand divisions of the brain mass, and that each hemisphere may act independently of the other or consentaneously together. This is only following the general analogy of the bodily constitution, for we have two eyes which may see objects independently or at the same time; so also with the organs of hearing. This truth is now admitted. The phrenologists affirm that there are distinct mental faculties, each having a cerebral organ in each of the hemispherical lobes. This truth has been debated with great rancor, but according to phrenological proof it is as truly demonstrated as is the truth of the mind's dependence upon the brain. It is further maintained that power of manifestation depends (*caeteris paribus*) upon the size of the hemispheres, and upon the size of each individual organ. Upon these principles a science of mind and character was built up which may be divided into divisions as follows: (1) A system of Psychology, having for its basis primitive or fundamental faculties, with a description of their nature, function, sphere of operation, and their relations to each other. (2) A system of Physiognomy, founded (*a*) upon the form of the skull, as determined by the size and form of the cerebral mass, or particular portions of it measured in radial distances from the medulla oblongata; (*b*) upon the natural language of the feelings and faculties as displayed in the actions, expressions, and attitudes of men. (3) A practical sociology, or the application of the system of psychology and physiognomy in connection with principles of cerebral physiology to the welfare of society and the ordinary business of life. The psychological part of Phrenology might be di-

vorced from the physiognomical and physiological and studied as a separate system, and it appears to have superior advantage over all other psychological systems. Let us see what it offers to science to-day.

(1) It has been determined by observation and reflection that there are distinct faculties, and that the brain is the organ of the mind, and has a seat for each individual faculty. I will not attempt to give the numerous phrenological proofs for this statement, but will content myself by showing, analogically, that it is quite possible that mind is manifested, not as a unit, but by a plurality of organs. In our investigation of animal life we have found a dependence of mind upon cerebral structure. Every year new facts are added to prove a plurality of cerebral organs. All animal life is a progress on the plane of

SPECIALIZATION OF FUNCTION

from the lowest to the highest, and has its culminating point in man; the more distinct and separate the organs through which the functions are performed, the higher and more intelligent is the animal. If we trace animals back to their lowest forms, we discover but little appearance of separate organs for special functions. The next grade probably reveals a stomach, or something resembling digestive organs. Then the next grade has special parts of the body devoted to special functions; for example, the breathing organs become distinct from the digestive, the eye from the ear, and the organs of voice from the organs of smell. In the highest animal, man, there is the greatest specialization of function. There is a distinct organ for everything—the eye, the ear, the sense of smell, are all distinct. The functions of the liver, the stomach, the heart, have all separate organs. Nay, it has been discovered that the nerves which ramify through the body and lie in bunches beside each other and are almost undistinguishable in form, have apparently the same texture and composition, yet perform different functions. In the same sheath, side by side with each other, are the nerves of motion and feeling. It is extremely absurd to conceive the brain, which is a collection of fibers, cells, and nervous ganglia in convolutions, acting as a unit, and moving its entire bulky mass every time a thought or emotion agitates it. This is a direct contradiction to all we know of the body in general. It would seem as if nature began on a line of harmonious differentiation of structure, which she carried through the whole body as far as the medulla oblongata and ended there, giving up the idea of differentiation after having tried it through all animals, from the oyster to man, as a bad business. Is it not more in accordance with her general plan to suppose that differentiation of structure is also characteristic of the encephalon? that feelings so distinct as anger, love, sense of causation, sense of mathematical relation, of colors, of space, of self-esteem, of construction, can all be performed by the brain mass acting as a unit?

In the light of modern science, then, Phrenology still can maintain her doctrine of plurality of organs, and every new fact added seems to support that conclusion. In the days of Gall and Spurzheim this analogical proof could not be so successfully used as at present, for there has been much information gathered from the investigation of the animal life which did not then exist; but, nevertheless, the early fathers accumulated a mass of evidence which proves conclusively the doctrine of the plurality of organs. It is my endeavor not to repeat old arguments in favor of Phrenology, but to view that science in the light of modern research, and to show that Phrenology has still strong claims upon us as a means of investigating the science of character; and, indeed, it holds a place in this department of knowledge which can not be filled by any other method of investigation. Since, therefore, it is not my aim merely to quote and apply arguments from phrenological works, but rather to give a series of original reflections upon the truths of Phrenology, I beg to

refer the reader to the works of Gall, Spurzheim, Combe, and the later phrenologists, for the solid array of facts which they have accumulated to prove their principles. The question has been agitated whether the phrenological terminology founded upon the classification of the mind is of value to-day. It would appear needless to discuss this question had not Bain and others attacked it, and endeavored to show that it was erroneous and faulty in many respects. Whatever defects there may be in the definition of the functions which the terminology conveys, nevertheless modern science has not given us a better terminology. When a modern philosopher shall arise and gain for his terminology such almost universal acceptance in current literature and popular language as the phrenologists have gained, he will be in a position to dispense with the phrenological terminology. As the case now stands, after years of carping criticism and systematic attack by the learned, men can find no better means of describing the various types of character than by the use of phrenological language.

Again: if we view Phrenology in the light of modern science, we find it has many other strong claims upon us. The exposition of the primitive powers of mankind which Phrenology has given, has made it a science of the utmost practical importance. Education which is not conducted upon its principles with reference to the various degrees of development of the primitive powers, can not be complete and satisfactory. Phrenology maintains that a harmonious development of all the powers should be the true aim of education. If, for instance, a person is found with any particular organ excessively developed, as, for example, a person in whom Destructiveness — the excessive manifestation of which is the desire to kill—is out of proportion to his other faculties, all the circumstances which are liable to excite that organ must be removed, and those organs which restrain the promptings of Destructiveness must be educated. So with all the faculties, the weak must be cultivated and the strong restrained, unless it is desired to make the person a specialist in the direction of the strong faculty. It is evident that any science which is able to point out the connate tendencies of men, will have a vast influence upon the education and legislation of men. If the various capabilities or innate capacities of men are thus unfolded, a sure foundation for the study of character is laid. This science of character will not culminate merely in a theoretical science, but like all other sciences which are founded upon physical facts, will lead to an art—namely, the art of reading the characters of men. This has actually been accomplished; yea, while the metaphysicians are still discussing the genetic powers of mind, or rather their boasted power, consciousness itself, through which they claim to have given a correct analysis of the mind, Phrenology, undaunted by the long discussions of alarmed opponents, has been slowly and surely perfecting the science of mind and character.

READING CHARACTER AS AN OBJECTION.

An objection has been made to Phrenology, even by the present professor of psychology in this university (Harvard), that Phrenology is not a science of the mind, but merely an art of reading character; but of all objections made against Phrenology this is the weakest. Is the science of medicine less of a science because it has given rise to the art and practice of medicine? Is geology less a science because from its principles practical geologists can survey tracts of country and draw geological maps and write reports? If that objection holds good against Phrenology, it applies with equal force against every science which has its principles so well defined that they can be put into practice, for an art is only applied science. This objection, instead of being an argument against Phrenology, is the crowning proof that its principles are derived from nature itself.* No vain

* It is only just to mention that the professor of psychology before whom this essay was read, since the

theory of the imagination has given birth to her mental delineations. In the crowded hall, in the street, on the platform, in schools and seminaries, in insane asylums, in prisons, on convict ships, in churches or in the theater, and among the most barbarous and civilized people of the world, its principles have been tried and failed not. Can any of her sister sciences—metaphysics and experimental philosophy—show an equal record? No, they have not yet accomplished a precise and complete analysis capable of unfolding a science of art and character. That Phrenology is an art is no objection, but her chief triumph, proving her principles to be as sure in their operation as the laws of nature. How, in the name of common sense, could the principles of classification and cerebral development be erroneous, if men can by their means pick out all the types of character, and analyze them so successfully that thousands will admit the correctness of their delineations? Phrenologists are not afraid of their science; they have always sought, nay, entreated, begged, and demanded investigation. The conduct of Gall, Spurzheim, Combe, Vimont, Caldwell, Elliottson, and the Fowlers proves this. They have selected prominent men, men whose characters were known to the public, and have appealed to them to witness the truth of their science; they have shown upon every occasion that the cerebral development corresponded to the mental manifestations. The heads of persons unknown to them have been given, whose characters they have successfully read. Any person is at liberty to decide for himself the truth of their propositions. It would be an easy matter to put Phrenology into the crucible and try it. Take any one of the many persons whose characters phrenologists have claimed to have analyzed, and show that the analysis is incorrect; this would do more to convince the public of the falsity of phrenological principles than all the long-winded discussions of the metaphysical, and the rash assertions of the experimental schools. But this has never been done, and I am convinced it never will be accomplished. For many years the science of mind and character, as revealed by Phrenology, has been before the public, and the learned have either ignored its claims by appeals to the mirthful tendencies of human nature, or have misquoted its teachings and principles.

THE INJUSTICE OF PREJUDICE.

The demand made by phrenologists that their science should be investigated according to the principles they have laid down, has never been complied with by the opponents of Phrenology. If they were complied with the opponents would become fewer and fewer, and finally disappear altogether, or begin to waste their strength and delay the progress of truth in some other department. I speak this as no mere rhetorical flourish, but from historical facts. It is a circumstance strongly in favor of Phrenology, that all those who have made a thorough investigation of its principles according to the natural rules laid down by phrenologists, have ended in belief in the science. To give names would only encumber unnecessarily this essay. If any one wishes to prove the truth or falsity of Phrenology, let him pursue the following method of investigation: (1) Clear your mind fully of all preconceived theoretical opinions originated by the self-introspective method as to the impossibility of founding a science after the manner of Phrenology. (2) Keep your mind freely open to receive truth, even if it is new and not recognized by the members of the conservative schools of thought who wear their professorship cowls within the walls of many of our universities because they have given, in their college career, good proof of their orthodoxy. (3) Remember

reading of the essay has explained that by his assertion that Phrenology was not a science, but merely an art of reading character, he did not mean an art in the real and true sense—as an art of medicine, etc.—but simply an art in its degraded sense, as applied to fortune-telling, astrology, etc. It would have been well if he had given this definition of art to his students in class assembled, as his words then conveyed a condemnation of Phrenology as an art in the true sense of the word.

that schools and colleges have not generally received new truth, but have oftentimes been the first to oppose it. (4) Remember, also, that principles which have long been taught may be false, even if professors of ability maintain them; in other words, authority is no criterion, truth must be decided in the crucible of mental conflict and experiment. (5) Do not hastily conclude that a whole science is false because one or more of its principles seem founded upon a wrong basis; this is often exemplified by the opponents of Phrenology; some are ready to consign the whole science to the region of forgetfulness, because they think they have found one or more errors in the system—as, for instance, you know the frontal sinuses, even if they are only an inch and a half or so wide, have the expansive power of rubber, and may cover the entire brain, so that it is utterly impossible to measure any organ when you can not measure one or two. That is, you know, Edinboro' and Boston are so intimately connected with each other, that the covering of a few houses in the first city by a drift of sand or snow would completely cover all Boston, and nobody could find their own house. (6) Never surrender truth, or your convictions of truth, through fear of not being on the side of your professor, and thus lose that delightful criterion of human scholarship, that adjustable gauge by which professors assure themselves of the brilliant lights of the school if not of the world—you know what I mean, those ominous things which make a man's heart tremble about examination time—Marks! Marks! It would be well, also, to bear in mind, in all your investigations, the following definition of a faculty: (1) A faculty is admitted as primitive (*a*) which exists in one animal and not in another; (*b*) which varies in the two sexes in the same species; (*c*) which is not proportionate to the other faculties of the same individual; (*d*) which does not manifest itself simultaneously with the other faculties; (*e*) which may act or rest singly; (*f*) which may be propagated distinctly to offspring; (*g*) which may singly preserve its proper state in health and disease. To the classes of this definition of a primitive faculty no objection can be made, says Professor Bain, and yet he will not follow such a method because too laborious. I will have occasion to discuss Professor Bain presently.

A BASIS LAID DOWN FOR THE STUDY OF CHARACTER.

In order to establish a science of character, we ought to study man as he presents himself to us. Observation, which is the foundation of all that is permanent in every science, is even of more importance in the science of character. Men differ so widely from each other in character and mental qualities, that it is impossible to build up a science of character from self-introspection unaided by observation. Yet self-introspection can do much more for the science of character than she has done in the past. If the philosophers of this school had made themselves the subject of the closest observation and introspection; if they had noted down their various actions, modes, feelings, and the conflicting passions which at times stirred their bosoms; if they had extended these observations and reflections into a period of years, not for a few moments only, not solely when in tranquil and thoughtful states of mind, but at all times, in calms and in passionate moods alike, a more satisfactory analysis of their own character would have been accomplished. Nevertheless, this would only be half of the science of mind and character, and would lack wide and definite proof; and, besides, since men differ in dispositions and mental qualities, in order to get a complete science of character men in every condition and of individual traits of character must be observed. After the facts were collected deductions could be made from them, and a correct analysis of mind and character obtained. This might be called the *psychological* part of the science of character, but still this process alone would not lead to a complete analysis of

human character. If mind is connected with the brain and body, the seat of the fundamental powers which lead to the differences of character ought to be discovered. The size and quality of these organs (if any material organs are discovered) and the conditions of their activity should then be investigated. This would lead to organology, or the physiological side of man's character. This is by far the most important part of the subject. Physical facts, when once established, are not easily disproved. If the seat of a function has been ascertained, many opportunities are opened for watching its manifestations, for these can readily be noted from time to time, and their degrees of power and activity measured. The proof of an organ or of a fundamental power is then capable of thorough demonstration, for a certain function being always connected with a particular organ, the function infers the organ and the organ infers the function. It is because the metaphysical analysis of the human mind has no physical side that it is so unsatisfactory. Built upon mere speculation and connected with no particular part of our organization, the mind has been discussed and analyzed by metaphysicians as if it had already broken loose from its physical environment. The consequence has been, and will ever be, endless discussions concerning the very existence of primitive powers. Could the metaphysical thinker point to the seat of any one of the faculties he has analyzed, its existence could no longer be disputed. The question of innate and acquired powers could then be solved. But not having done this, they have resorted to such laws as the law of association, habit, attention, etc., to account for all the various dispositions of men.

What I have just said applies both to the old and new school of metaphysics. The modern only differs from the old school in the principle by which they evolve their conclusions. The old school sought to arrive at an analysis of the mind by desperate efforts to evolve fundamental powers from their own minds, and ignored entirely physical data; the new school simply differs in that they make physical data correspond to their own internal cogitations. Professor Bain belongs to the new school of psychologists, and his discourses on the human mind consist mainly of muscular association spread out as thin as molasses, by which he attempts to create such primitive powers as the perception of space, locality, size, etc. But laws can not create faculties—they are merely the explanation of how the faculties act. The laws themselves depend upon the faculties behind them. They depend for their very existence upon the very powers they attempt to create. The laws of association, habit, etc., give much information respecting the method by which the fundamental powers act, but although they may discipline such powers they can not create them.

The physical side of investigating the mind and character offers still other advantages. When we know the seat of an organ and its manifestations, we can predicate each in the absence of the other. Thus, for instance, when the lungs are largely developed we can predicate, all other things being equal, great breathing power, and so when the stomach is present we may confidently assert that the powers of digestion will be manifested. Should both these organs be absent, we can declare that breathing and digestion, according to animal processes, will not be manifested. So the phrenologist, having ascertained the physical seat of the various fundamental powers of the human mind, is enabled to predicate the functions of each. Thus, for instance, if it has been ascertained that the disposition to fight or defend oneself is connected with a physical organ for its manifestation, then when that organ is present we can confidently assert that the instinct of defense will form an element in the character of those possessing that organ. Thus Phrenology shows that in those animals which are pugnacious in the assertion of their rights, as, for instance, the cock, the organ of Combativeness is

largely developed; and in those animals which have no disposition to defend themselves by resistance, as, for instance, sheep, the organ of Combativeness is deficient. When a science is thus founded upon a physical basis, it always advances out of the misty regions of speculation into the clear light of demonstrated facts.

THE PHYSIOGNOMICAL RELATION.

In the study of character there is still another side to be considered, which may be called the physiognomical side. Men and animals express their feelings, passions, and thoughts in their faces and by bodily attitudes. These expressions become so fixed that the lines on the face announce what has been the ruling passions of an individual's life, as surely as the hands of a clock indicate the hours on the dial-plate. Behold the graceful curling lines on the cheeks above the mouth indicating the mirthful and happy character! On the other hand, behold the graceful lines are flattened and the cheeks drawn down in the morose and gloomy dyspeptic. No one would fail to tell by the look of a man, when he was angry, sad, or kind. All the various emotions, instincts, and passions have their language, which a practical observer can read as easily as the alphabet. The tones of the voice, the scowl, the sneer, the gestures of the head and body, reveal much of man's inner nature. A systematic study of this language of the passions should be made if a science of character is to be established. Where is the science of mind or character which has thus surveyed man from all these points of view? Not metaphysics, not psychology, not the experimental school, but Phrenology, contemptuously sneered at because she has so studied man. Her investigations have always been conducted on the broad principles of psychology, physiology, and physiognomy, and the result has been wonderful. It has led to a science of mind having a physical basis, and which, although not complete, has given an analysis of the genetic powers which no other science of the mind has accomplished.

I have not space to give in detail the phrenological analysis of mind and character, yet it seems necessary, before proceeding further in our inquiry respecting the bearing of Phrenology upon the analysis of types of character, to give a general outline of its classification.

Gall and Spurzheim arranged the faculties of the mind in two orders, corresponding to the feelings and intellectual powers of the metaphysician, named respectively the affective and intellectual faculties. The feelings were divided into two genera, the propensities and sentiments. A propensity is an internal impulse—in common language an instinct, which impels only to certain actions. A sentiment is an internal impulse, with an emotion superadded—in common language, an emotional instinct. The propensities and sentiments have various degrees of activity, from a simple elementary impulse to the most excited outburst of feeling, which is called passion.

The phrenologists also recognize the truth which the present psychological school asserts, that even the intellectual faculties are of the nature of instincts. Thus, to seek the causes of phenomena, or to compare and classify things, are the instinctive promptings of the intellectual faculties of Causality and Comparison. It seems to us that the phrenologists have here anticipated a great truth, which will in the end break down the hitherto rather sharp distinction made by psychologists between the intellectual and the other faculties of our nature. It has been their principle all along to ignore the testimony of the feelings and emotions as merely instincts, and, therefore, untrustworthy; but if the intellect is proven to be also instinctive, surely, then, the feelings and emotions are as trustworthy in their own sphere of action as the intellect.

The intellectual faculties are subdivided into perceptive and conceptive or reflective faculties. These are the grand divisions of the phrenological exposition of

the human mind, but each of these divisions has many individual faculties under them. I will now proceed to show, in a general way, the application of the phrenological analysis of mind to the study of character. I have said before that the metaphysical analysis of mind was inadequate to establish a science of character because of its one-sidedness. I will not, therefore, give arguments to prove this statement, as I have sufficiently discussed it in the first part of my essay. The phrenologists, by systematically studying man according to the principles which I have laid down in this essay, escaped the vague generalities of the metaphysical school. The phrenologists avoided the difficulty of separating clearly the genetic from adaptive powers, or fundamental powers from their combinations, by observing men of extreme development. Men of one idea, specialists in various departments, were observed, and the elements which made them such clearly ascertained. When the elementary faculties are once discovered the way is clear. Any intelligent person can combine the fundamental powers together, and estimate accurately their effects in combination. This analytic system can not lead to abuse if followed according to the method laid down by the founders of Phrenology. The unnecessary or too minute analysis which has crept into some works of late date on phrenological classification, seems to have arisen, not from methods of close observation, but rather from the imagination and the introspective method.

ANALYSIS THE BASIS OF PROGRESSIVE SCIENCE.

Analysis is characteristic of all sciences whose principles are subject to observation and experiment. In the childhood of all sciences men are satisfied with mere generalities, but as science progresses these generalities become more specific. Things formerly included under a certain class are shown to differ among themselves, so that two species may be formed from that which before was held to be but one. Analysis is the spirit of our age; not content with the classification of natural objects which the naked eye has given, men have surveyed the field of objects with the microscope, and microscopic analysis now forms an important part of every science. The chemist, by proceeding upon this principle, has analyzed into simpler elements many things before regarded as elementary. Everything general has now its subdivisions. The chemists can tell how various elements, when compounded, may either neutralize each other or increase their own qualities, or produce a third thing different from the elements. So the phrenologists, having pierced the veil of human action, having got beyond the compounds which make up human motives, and having discovered the elements upon which the compounds depend, have laid the basis for the science of character.

All the types of character are nothing more than the effect of the combination of the genetic powers. For example, a mean, grasping, sordid character like the miser, may be shown to have as its principal element an excessive and powerful activity of the organ of Acquisitiveness unrestrained by the moral and intellectual faculties. A science of character thus built upon the fundamental or genetic powers, is able to state the elements in every type of character, and to arrange all types under their respective classes. This is evident from the phrenological classification, which resolves man's constitution into three well-defined regions —animal, moral, and intellectual, with various subdivisions. It is my object to show that the true basis for the study of character has not been solved by the psychological or experimental schools of philosophy, but by the phrenological, because that school has endeavored, however imperfectly, to study man according to the plan which we have pointed out as the one capable of reaching satisfactory conclusions.

APPLICATIONS AND ILLUSTRATIONS.

First, then, the phrenologists divide the region of propensities into the *social* and *selfish* groups. The social group includes those propensities which prompt us to love home, friends, and country. All the types of character whose characteristics are those of sociability, may be shown to depend upon one or more of the propensities of the group. Thus those who love their home, wife, and all the pleasures of the family circle, are not only included in this class, but the very power which shapes the direction of their sociability can be pointed out. For example, large Philoprogenitiveness will lead a mother or father to manifest their sociability in the love and care of children. Or Conjugal Love will make the husband and wife to desire the companionship of each other more than that of others.

The second division of the propensities is the selfish group, whose normal function is self-preservation. Thus Alimentiveness in the normal state gives simply a desire and relish for food, and regulates its quantity, whereas in an abnormal condition it leads to gluttony and drinking; hence under this class may be included the glutton and drunkard, prominent types of character which prevail in civilized communities. As this division comprises such organs as Destructiveness, Combativeness, etc., we can class the pugilistic type under this head, also murderers, soldiers, and all those types of character which have traits of aggressiveness. Acquisitiveness and Secretiveness, although in their normal action are necessary to economy and prudence; in abnormal activity, when unrestrained by the higher faculties, they may produce a disposition to steal. Hence under this division are arranged all those persons whose leading traits of character are cunning, secrecy, and theft. In general the criminal class are those who have the propensities excessively developed, and the moral and intellectual faculties comparatively weak. They can be divided into types according to the fundamental powers or combinations of powers which shape their character.

Second. *The moral sentiments* are divided into two groups, the selfish and religious group. The selfish group comprises such faculties as Cautiousness, Love of Approbation, Self-esteem, and Firmness. Under this division there are many well-marked types of character. The coward or poltroon, the timid and irresolute, belong here. Here also belongs the egotist, a prominent character. Everybody has come across the man who esteems himself highly; who thinks everybody is wrong but himself; who lays down his commands with authority; whose fiat must be obeyed. Much of the manifestation of egotism depends upon the unbalanced activity of the organ of Self-esteem. The well-known type, whose chief trait is vanity, has its place here—those who glory in talking about themselves, who are ever striving for the praise of others. Women who are fond of dress and show, and who love flattery, come under this division. A normal development of love of approbation gives ambition and due respect for the opinions of others, but in abnormal activity leads to vanity. Under the influence of the organ of Firmness, which is one of this group, we have the well-defined types of character whose leading traits are stubbornness. Men of strong convictions and iron will; men who are not easily turned aside from the path they are treading; men who can be relied upon to stick to whatever cause they espouse, belong to this class. Firmness in its normal activity is an essential element in all truly magnanimous characters, but when unduly developed and not restrained by the higher faculties, leads to that unloving type of character which we call the mulish or ass type. All those men who are dogmatic, who adhere to opinions or measures in spite of reason or persuasion, belong to this class. When to large Firmness is added an abnormal development of the organ of Self-esteem, we have that most unlovely type of character, the dogmatic egotist. This type is

rather prevalent among the Anglo-Saxon race. Who has not had to suffer from some domineering, tyrannical, egotistical specimen of humanity!

It ought to be remembered, however, that all the fundamental powers have their appropriate sphere of action, and none of them are essentially bad, but good when in normal development and activity; it is only when abnormal that they give risé to these marked types.

The second division of the sentiments, viz., the *religious* group, which comprises such faculties as Conscientiousness, Hope, Marvelousness, Veneration, explain all the religious types of mankind. The devout Christian, the adoring worshiper, the religious enthusiast, the troublesome ritualist and spiritualist, have their place under this division. Moralists, divines, philanthropists, and all sympathetic and adoring types, depend upon one or more of the organs found in this group.

The *semi-intellectual* group now demands attention. This group consists of such faculties as Constructiveness, Ideality, Sublimity, Imitation, Mirthfulness, etc. This class embraces the mechanician, the artist, the orator, the poet, the sculptor, etc. But it must be recollected that more than one organ is necessary to form these types. Thus, for instance, while the orator requires sublimity, ideality, imitation, and wit, which are organs belonging to this division, he also requires faculties which belong to the other division I have described. In speaking of types of character, it would be necessary to give, first, the classification of mind, and then to take up each type in detail, and show just exactly what are the elements which form that type of character, but this would require more space than is permitted me. I must, therefore, be brief, at the expense of being misunderstood. I think that a better classification, derived from the phrenological system, could be made bearing especially upon types of character, as a separate and a very important subject. I hope to see this point more fully developed by the phrenologists. It is not that the elements of the human mind, as set forth by the phrenological system, are erroneous, or that their meanings shade into one another and thus produce cross-division, as Bain and others have asserted, but that while one classification or arrangement is philosophically necessary in the exposition of the human mind, another arrangement of the elementary powers is necessary when we come to apply the phrenological classification to explain types of character.

The *intellectual* faculties also lead to marked types of character. This group of faculties consists of Individuality, Form, Size, Weight, Color, Order, Calculation, Tune, Time, Eventuality, Language, etc. It may be shown that according to the development and activity of one or more of these faculties men have a tendency toward certain professions. Thus, for instance, calculation was the ruling passion of Bidder, the wonderful calculator; a passion for colors was a leading trait in the character of Benjamin West, the celebrated painter. Explorers, navigators, and geographers have good development of the perceptive faculties, especially Locality. So Tune and Time will explain the genius for music which some possess. The literary class must have good endowments of the intellectual faculties, especially Language. We may explain such types of character as the loquacious talker, the prattler, the eternal gabbler, who seems to have an inexhaustible supply of words, by showing that a large development of the organ of Language, pure and simple, is its basis.

The philosophic type has its basis in the reflective organs, with such as Comparison and Causality largely developed.

It would be a long story to show in detail how admirably the phrenological analysis of mind can be applied to the exposition of character; but in all that has been said, it ought to be remembered that when we speak of one faculty as forming a type of character, we do not mean that all the other faculties are absent in that type, but we mean that the faculty spoken of so predominates

over all the others, that it shapes the character and forms a special type. There are also types of character which are the result, not of one elementary power, but of a combination of powers.

In the treatment of types of character, I have attempted to condense a very large subject into a small compass, and the result is not as satisfactory as one might wish, but it is hoped that sufficient has been here stated to show that the phrenological system can be employed to advantage in analyzing types of character.

THOMAS A. HYDE.

Cambridge, Mass.

THE PARLIAMENT OF THE FACULTIES.

IN a lecture delivered before the National Arbitration League of Washington, D. C., by M. Cora Bland, M.D., the following pertinent illustrations were introduced:

"I take it for granted that no one will dispute the primary propositions of that branch of physiological science known as phrenology. That the brain is the organ of the mind; and that it is a compound organ; and that size, other things being equal, is a measure of power in a brain as well as in a muscle; and that the shape of the brain is an indication of the character of a brute or of a man.

"These propositions admitted, we have a scientific key by which to explain the causes of war, and why some brutes and some men are more savage than others. We have also a scientific basis upon which to act in our efforts to lift our race above the brutal and savage plain into the realm where reason, not passion, rules.

"The brain is sovereign; the body subject to its control. The brain conceives plans; the body executes them. We are told, and we believe, that man is created in the image of God; that is, he possesses all the attributes of his Creator in embryo. In the same connection we are informed that God consulted with Himself in regard to the making of man.

"Some theologians have concluded that this sentence is explainable only on the hypothesis that Deity consists of two or more persons. Be that as it may, the mental philosopher knows that no wise man ever engages in any enterprise or undertakes any work without first discussing the subject with himself. If it be a matter of great importance the discussion is continued for days, weeks, or perhaps years, before a decision is reached. This debate is carried on in the cranium, and the parties to it are the forty or more distinct mental faculties of the man.

"Did it never occur to you that the body politic is in the image of the body corporeal; that any number of men, organized into a political body, a government, think precisely and act precisely as one man would think and act under the same circumstances if that one man was a true representative of the political body of which he was a part?

"To illustrate: Suppose, instead of electing five hundred men to Congress to make laws for this nation, we elected but one, giving him the power now held by the Senate and House, and holding him responsible for his acts precisely as we do the members of Congress; that is, let him understand that his re-election and continuance in office depended upon his formulating into laws the will of the majority of the people of the nation—would not this man organize the faculties of his mind into a deliberative body much after the fashion of a congress or a parliament?

"Let us suppose a case.

"There are two political parties dividing the people almost equally. These parties put forward each a candidate, an election is held, and one receives a few more votes than the other and is declared elected. This law-maker goes to the capital and enters upon his work. If he is a wise and honest statesman he asks: What kind of laws do the people need? What

will make them prosperous and happy as a whole?

"Conscientiousness rises in his place and anwers the question: Just laws, laws that shall put the people upon a perfect equality with each other; laws that will promote peace, suggests caution; and prosperity, says acquisitiveness; and intelligence, says causality; and art, says ideality; and invention, says constructiveness; and religion, says veneration, etc., etc.

"'Mr. Speaker,' says secretiveness, 'I beg leave to suggest that we be very discreet, both in our expressions of opinions and in the laws which we shall ordain, and especially in regard to our foreign relations.'

"'I differ from my colleague secretiveness,' says combativeness; 'I believe in a bold and aggressive policy toward our neighbors.' Approbativeness applauds this speech, and destructiveness says, 'I agree with my colleagues, combativeness and approbativeness, the nation should be at once put upon a solid war footing by increasing the army and navy, and by making liberal appropriations to sustain those important departments of the government. It is a burning shame, sir, that this proud nation should exhibit to the world the spectacle of a little army of only 20,000 men, rank and file, and a navy that scarce deserves the name.'

"Cautiousness, rising, says: 'I beg leave to ask my pugnacious friend if he apprehends immediate danger of war, domestic or foreign?'

"'That has nothing to do with it; my policy is based on the motto of all prudent nations: in time of peace prepare for war,' responds destructiveness.

"'Would it not be wiser to provide for the perpetuation of the reign of peace by disbanding our army, converting our men-of-war into merchant ships, and promoting literature, science, industry, commerce, and morality?'

"'Mere sentimental twaddle. War is the natural condition of society; the profession of arms the noblest and most useful, hence the most honorable of all professions.'

"'I rise to suggest,' says causality, 'that it is unworthy of a legislative body to indulge in panegyrics or *ad captandum* rhetoric; nor can we afford to be governed by our fears or our vanity. The suggestion of cautiousness is a good suggestion; I therefore move that the house go into committee of the whole on the state of the Union, for the discussion of the general subject of maintaining peaceful relations with all other nations, and promoting prosperity, education, and honesty among our own people.'

"Motion carried; the intellectual and moral faculties voting for, and the selfish and most of the executive faculties against it.

"If the man thus clothed with supreme legislative power is a mere politician, he asks himself the question: 'What sort of a policy would prove popular with a majority of the people, and secure my re-election?'

"In *that* case his faculties *would* organize for debate and action under the dominating influence of the narrow policy of selfish ambition. Cautiousness would be made speaker, and secretiveness, combativeness, acquisitiveness, and other selfish faculties would preside over the various committees, while the intellectual powers would be subordinated, and the moral sentiments thrown into the position of a protesting third party, whose protests would be treated with contempt or ridicule, as were the protests of the old anti-slavery third party forty years ago."

TO A ROSE.

FROM THE GERMAN.

SILENT Nature, life inspiring,
Me and thee, sweet flowery queen,
In her womb eternal hiding,
Ever guardeth us unseen.

Little Rose, our beauty fadeth;
Storms shall wither thee and me:
But when the Eternal germ unfoldeth
We a brighter bloom will see.

LYDIA M. MILLARD.

POLITICAL ECONOMY.

A CRITICISM.

THE article by Mrs. Leonard under the above caption in the June Number of the PHRENOLOGICAL JOURNAL is one to awaken much thought. It is not my purpose to make a thorough review of it, but it seems to me to contain some errors as grave as those which Mrs. Leonard deplores.

The ease with which banks relieve the money market is by her spoken of as "of great benefit to the community"; but we should not forget that this power of expansion is accompanied by the dangerous one of contraction, and that the two enable the banks to manipulate the business of the country pretty much to their liking, which one who watches can see is done for their benefit far oftener than for the people's.

Again she says, "Many persons . . . . have supposed, because they saw that most of the things which have value were produced by labor, that labor was the cause of value."

Why does she say "*the* cause of value"?—as if value could have but one cause.

If to cause is to produce, labor does cause value. If I take a tree and by my labor make it into chairs, what has caused the value of the chairs above the tree if not my labor? It is true that some "value precedes labor," but it is equally true that labor supplements and increases value.

To my seeming it is not a very "erroneous notion that the land was the source of all wealth." If to the land we add the water and air, we certainly have the source of *all* material wealth, inasmuch as the food we eat, the clothes we wear, the houses we live in, and everything we use are derived from these sources; so it is often, and I think correctly, urged that there should be no monopoly of these.

Mrs. Leonard says, "There is no such thing as intrinsic value. There is nothing on earth of which the value does not change with time, place, or other circumstances." Strictly speaking, this is true, but as we commonly use the term intrinsic—thereby meaning real—it is not true. Evidently she has made the mistake of assuming that commercial value is all the value there is, while in fact there are real, legal and commercial values.

An apple or an orange and a glass of water have real value to which a commercial and greatly fluctuating value is often added. Money is *solely* a legal value, and, strictly speaking, can have neither commercial nor intrinsic value.

But the greatest error of all seems to me to be the reason assigned for the cheapening of our greenbacks during the civil war. "Owing to the large increase in quantity, and the fact that the area for its employment was narrowed by the withdrawal of the Southern States, the value of the money was cheapened, and more of it had to be given to obtain a given quantity of any material."

It should be borne in mind that the Southern States had withdrawn before the national currency was issued, so that fact had nothing to do with cheapening the money. In the other statement cause is put for effect. It was the cheapening that increased the money, not the increase that cheapened it. That was the work of shrewd men who had gold to sell, and were wicked and unpatriotic enough to take advantage of their country's needs and perils to sell it. But how did they accomplish this? Look on the back of the greenback and see: "This note is a legal tender for all dues *except* duties on imports and interest on the public debt." It was that exception that cheapened the money, and compelled a great increase of it to enable the Government to meet its dues. That this would be the effect of shutting one kind of money out of two great avenues where another kind might enter, seems to me

quite apparent; and is proven beyond controversy by the fact that the sixty millions in treasury notes, the first issue of Government money, a *legal tender* for *all dues*, never fell below gold, but were always at par with it, when not at a premium on account of their superior convenience.

I must express my satisfaction with the opinion that "no one can afford to be ignorant of the principles of Economic Science," and trust the time will come when all branches of political economy will be taught to our children in schools, as far as they can understand them. Leave out the study of geography, which is almost always learned at so early an age as to be forgotten before it can be of any practical value, and put in its place something with principles, and even if the facts connected therewith be forgotten, the principle once mastered will always belong to the one mastering it.

CELIA B. WHITEHEAD.

THE KEPPLES HEAD.

"THEY were all born captains," said Uncle Hal Webster, "and when you come to think of it that is a great misfortune. There is not a lieutenant in the whole nine of them, and, naturally, their father being dead, poor Mrs. Kepples has a time of it keeping harmony in the house. Why, don't you see? you'd know by the shape of their heads that they would be selfish, disobedient, and tyrannical. Self-esteem looms up on the head of every Kepples, so that if you know anything about phrenology you can't help being struck by it."

Very few of the people in the little country village did know anything of the "youngest of the sciences," but they believed in Uncle Hal, the village blacksmith and oracle, who was one of those men to be found in nearly every New England country town, having a smattering at least of nearly everything in their range of thought, reading, and contact.

The phrenological development of the Kepples head would doubtless have been forgotten had not Uncle Hal's quaint assertion kept it in mind. And "They were all born captains" became a part of the neighborhood tradition of the Kepples, this being a perpetuity that no family can hope to escape in the vicinity of their birth.

As the nine children grew up they had very few friends, and wherever they went they were, with one exception, generally disliked, but their neighbors used to say: "They can't help making themselves disagreeable, poor things,—they were made so."

They all started in the world for themselves, as school teachers, before they were fitted to teach, depending upon their unlimited self-esteem to fill all deficiencies in the "three R's." They were more properly disciplinarians than teachers. Much to their surprise their efforts were not appreciated, and two of the boys found their proper spheres as hotel clerks, the third finding congenial employment in attending refractory patients in a State institution for the insane. The girls were married one by one, and as news of their domestic infelicities floated back to the pretty hamlet near the sea, the old neighbors used to say:

"They were all born captains, and if they have not been promoted they have held their own at least." They used to speak, too, of the Kepples head, and note that the organ of Self-esteem, so conspicuous in youth, retained its prominence in maturity.

One of the girls when quite young went to the far West with relatives, married there, and did not return East until a sturdy boy and a dainty rosebud of a daughter accompanied her. What was the surprise of everybody to find this young woman sweet, lady-like, cordial, and gracious to all.

"I can't believe that it is Kate Kepples," said Uncle Hal Webster. "She used

to be the very worst of the lot. Don't you remember how she used to 'scratch,' and pull hair at school? It's a mystery and I intend to fathom it." So the next time the agreeable woman, with her two children, stood at the door of the smithy looking in at the glowing forge, the old man said in his cheery, outspoken way:

"You carried a Kepples head away with you, but you have not brought it back, I see. How does it happen? I should be glad to know."

"The self-esteem is there," replied the young woman, with a kindly smile, "but I very soon found in my Western home that if I was born 'captain,' as the school children here used to say I was, it was not necessary for me to remain so for life. I therefore resigned my position and set about cultivating other and more agreeable traits and tastes. I was so happy as to have for my first teacher in the West a lady who proved herself a real friend; she talked to me gently and kindly of my faults; and being, as I think every teacher should be, a believer in phrenology as well as a *student* of the science, she examined my head and conscientiously explained to me the defects in my character. I was converted soon after, and my endeavor to conform my will to that of Christian duty, made it easier for me to profit by the instructions of my aunt, my teachers, and afterward my husband. I was married early to a physician in a large and growing city. There has been always a great deal for me to do, and to occupy my mind. I have learned that one part of our mission in this world is to help others, and that, in so doing, we can overcome self and improve mentally, morally, and physically. My dear old teacher and my husband, who is also a phrenologist, tell me that some other organs have so developed that my head now hardly seems the same as the one that first fell beneath their truth-seeking fingers."

"Well, well!" said Uncle Hal, "so there is some good in phrenology for *folks*. I never 'sposed it was good for nothing but amusement, only for hosses. I can tell whether a hoss is going to kick my brains out or not the fust minute I put my eye on him, jest by the shape of its head."

"A great many people labor under the same misapprehension," replied the lady, "but if phrenological rules could be observed in the teaching, discipline, and guidance of children, there would be more fully developed characters; sin would be crushed, virtue would triumph, the love of the beautiful would be cultivated, and we should have the best instead of the worst of people. But that will not be until every physician is a phrenologist, and there is at least one teacher versed in the science in every public school. That time will come sooner or later, and when the good of which such a system is capable is set forth, people will advocate it who now, through ignorance, sneer at the idea."

MRS. ANNIE A. PRESTON.

WHIMS OF CELEBRATED MEN.

SOME amusing features from the lives of celebrated men have been brought together by a German writer. Auber wrote on horseback; it was not possible for him to write in any other place than in Paris, however beautiful another residence might be, and however many attractions it might offer. Adam composed best when he lay, with his clothes on, in bed, and showed as great antipathy to all landscapial beauty as love to his cats. The same antipathy to all natural beauty is charged to Donizetti, who always slept when he went upon a journey, when he should have given his attention to the romantic scenery of Switzerland and Italy. Eimarosa could not write without having a lot of friends around him, with whom he kept up an active conversation about art matters. Sacchini's train of thought was interrupted when his cats did not play their antics

upon his writing-desk. Sarti could only become inspired in a room without furniture, and which was dimly lighted. Spontini could only compose in the dark; and Meyerbeer composed best during violent thunder-storms, under the roof of his house. Salieri gained his inspiration while he walked quickly through the streets filled with a human throng, meantime eating a great quantity of confections. Haydn, in order to compose, sat in a soft arm-chair, with his gaze directed to heaven. Glück composed, in the open air, best in the glaring sunshine. He liked champagne by his work, and gesticulated very violently, as if he were an actor on the boards. Händel wandered in the churchyard, and when he wished to become inspired, he sat himself down in one corner of it which was shaded by weeping willows. Paesiello composed in bed, and did not leave it until he had finished a whole operatic scene or act. Mehul was a great worshiper of flowers, and often fell into silent reverie in observing them. He felt happiest in a quiet garden. Mozart gained his inspiration from reading Homer, Dante, Petrarch; Verdi must read passages from Shakespeare, Goethe, Schiller, Ossian, and Victor Hugo. Schiller inspired his muse by the smell of rotten apples, which he kept constantly in his desk; besides this, he liked to live amid surroundings corresponding to the subject upon which he worked. When he wrote the last act to "Mary Stuart" he had his servants clothed in black; and so long as he worked on "Wallenstein," he neglected no review or other military spectacle, and at home his wife must sing battle-pieces to him. Goethe loved to have plastic works of art before him as he wrote. It is known that in the creation of his Iphigenia, he had the image of an antique female before him, in order to see if that which he made his heroine say would suit the features before him. Jean Paul replenished his ideas while taking a walk, and drank a glass of beer now and then on the way. In writing he loved the strong smell of flowers. Herr von Kleist worked with great difficulty, and when he made poetry, it was as if he had a conflict with an invisible fiend. Just the opposite was the case with Father Wieland. In making his poems he trilled a lively song, and sometimes would spring away from his work and cut a caper in the air. Kotzebue, in the composing of his dramas, was also actor. He himself acted single scenes in his study. It is related that when Sand murdered him, his little son, as he saw him reel and then writhe upon the ground, cried to his mother, "See, mamma, father plays comedy again!" Bürger, the immortal poet of Leonore, is said to have whistled street songs as he wrote his verses on paper. His conversation in such moments is said to have been obscene. Hölderlin was often found crying when he composed poems. Similar things are said of the French romance writer Lafontaine. His wife once found him before his writing-desk swimming in tears. "Oh, it is too sad," he sighed. "It don't go at all," he sobbed; "I am still in the first volume." Matthison wrote his poems by moonlight, while standing at the window. Lamartine wrote his best things in the morning, before breakfast, while sitting before the fire. A contemporary of Dumas wrote thus: "The writing-desk of Alexander Dumas presents a picture of classical disorder. The study floor is covered with books and papers, behind which he is seated, formally barricaded. Also a quantity of dogs, cats, poultry, pigeons, singing birds are to be seen around, and these he feeds, strokes, and keeps out of mischief while writing. In the background stand a number of printer's devils waiting for copy, and booksellers and such people, who have business with him. He writes very rapidly, and carries on, very often, a conversation at the same time. He is very negligent in his dress."

SHOW me the man you honor. I know by that symptom better than any other, what kind of a man you yourself are. For you show me there what your ideal of manhood is, what kind of man you long inexpressibly to be.—*Carlyle.*

WOMEN'S RIGHTS.

THE Rev. Mr. W. McK. Darwood recently preached before a large congregation in the Bedford Street Methodist Episcopal church, New York, on women's rights. He emphasized the word "them" in his text: "Male and female created he them; and God blessed them and said unto them, subdue the earth and have dominion over every living thing." He said that the claim for the equality of the sexes was warranted, because God made them equal and gave them equal authority, conjointly, to have dominion. It is argued that the present relations of the sexes are natural. So Aristotle argued when he declared that the Greeks were of a free nature, while the barbarians of Thrace were of a slave nature. The same argument was used by the slave-owners of the South, when they called Heaven and earth to witness that the dominion of the white man over the black was natural. When the Almighty placed Adam and Eve in the Garden he put them both under the same restrictions. Each was made equally accountable for moral action; each punished because of transgression. They had no separate and independent rights and privileges.

In speaking of the education of women, Mr. Darwood said, that as God has endowed women with intellectual powers, it is their God-given right to acquire all the knowledge they can. Yet this is, in many directions, denied them, and he alluded to the petition that was presented in England not long ago, praying that women might not be taught the arts because it would interfere with men's pursuits in that line. A lady had applied to fourteen medical colleges in England for an opportunity to fit herself to earn her bread, and was refused admission by all; and the Pennsylvania Medical Society has directed its members not to recognize women graduates. He alluded also to the recent action of Columbia and Harvard Colleges. But, he continued, the sign "No admission to ladies" has been knocked off from many a college door, and almost the whole world is alive with the question of fair play to women in the matter of education. Our own country is making rapid strides in this direction. Already some of our leading universities have opened their doors to women, and Presidents White of Cornell, Leconte of California, and Warren of Boston, have declared that the presence of women students has improved the manners and morals of their institutions.

Another right claimed for women is that they shall receive as much pay for the same work as men get. Women clerks in Washington get $900 for doing the same work for which men are paid $1,800. Woman has the right, he continued, to say whether laws shall be enacted by which unprincipled men are authorized to change her loving father and husband into madmen and demons. She should have the right to say whether her property shall be taxed to keep up poor-houses and orphan asylums made necessary by the licensing of men to sell that which dethrones the reason and makes paupers and criminals. Governments derived their first powers from the consent of the governed, and taxation without representation has ever been considered tyranny. Sex is not a crime, and it is, therefore, degrading to deprive women of the right to vote and thus class them practically with robbers, murderers, and the worst criminals of the male sex.

THOUGHTS OF MOTHER.

EACH day brings its pleasures, each season new joys.
Transient all but a mother's warm love,
Who affection outpoured and on us implored
Benediction that comes from above.

The hours of our childhood made sacred by time,
And the dead now embalmed in our hearts;
I turn from its shades, from its hills and its glades,
As a pilgrim from Mecca departs.

We need not a Wordsworth to pen the sad truth
That a glory hath passed from the earth:—
Forever has passed, yet its memories last,
Ever sweet'ning life's turmoil and dearth.

SELECTED.

COMUS:

A MASK. — BY JOHN MILTON.

Presented at Ludlow Castle, 1634, before the Earl of Bridgewater, then President of Wales.

INTRODUCTORY.

This poem, although one of the earliest efforts of Milton's genius, possesses much of the dignity, sublimity, and characteristic learning evinced in his "Paradise Lost," which was the great effort of his riper years.

"Never," it is said by a distinguished critic in reviewing Comus, "were the loveliest graces of natural description more felicitously employed, or the union of what is beautiful in the moral and imaginative of poetry more complete."

In presenting it to the readers of the JOURNAL, we assume, not that so unique a piece is unknown, but that among the numerous productions of modern poetry, literature, and science which are, as it were, "to the manner born," it might not be either forgotten or neglected—or, at least, might still be kept in place before the attention of the new generation of readers, both on account of its literary merit and the excellent moral contained in its argument. Moreover, we deem it fitting, as showing how closely allied are the writings of these great masters to those underlying principles of human constitution and development which have ever maintained a large space in the thought which promotes the world's moral advancement.

Phrenology, being fundamentally related to human affairs, may be said to have always existed, although it has only within the past century taken position as a science. Its major principles are clearly deducible from great writers of former days who have made human character the subject of their contemplation, and who have shown deep knowledge of the human mind and its relation to moral and physical conduct. In this beautiful poem, by one of the greatest of poets, we can see how well it is illustrated by the spontaneous utterances and presentations of a mind dwelling almost in a supernal sphere, like the messenger who is introduced in the opening lines, and afterward fills an important part in the action of the piece.

THE PERSONS OR CHARACTERS.

The *attendant Spirit*, afterward in the habit of *Thyrsis*.	The *Lady*.
	First Brother.
	Second Brother.
Comus with his crew.	*Sabrina*, the Nymph.

THE FIRST SCENE DISCOVERS A WILD WOOD.

The attendant Spirit descends or enters.

Before the starry threshold of Jove's court
My mansion is, where those immortal shapes
Of bright aerial Spirits live insphered
In regions mild of calm and serene air,
Above the smoke and stir of this dim spot,

Which men call Earth, and with low-thoughted care
Confined, and pester'd in this pin-fold here,
Strive to keep up a frail and feverish being,
Unmindful of the crown that Virtue gives
After this mortal change to her true servants
Amongst the enthroned Gods on sainted seats.[1]
Yet some there be that by due steps aspire
To lay their just hands on that golden key
That opes the palace of Eternity:
To such my errand is: and but for such,
I would not soil these pure ambrosial weeds
With the rank vapors of this sin-worn mould.[2]
But to my task. Neptune, besides the sway
Of every salt flood, and each ebbing stream,
Took in by lot 'twixt high and nether Jove
Imperial rule of all the sea-girt isles,
That like to rich and various gems inlay
The unadorned bosom of the deep,
Which he to grace his tributary gods
By course commits to several government,[3]
And gives them leave to wear their sapphire crowns,
And wield their little tridents: but this isle,
The greatest and the best of all the main,
He quarters to his blue-hair'd deities;
And all this tract that fronts the falling sun
A noble peer of mickle trust and power
Has in his charge, with temper'd awe to guide
An old and haughty nation proud in arms:[4]
Where his fair offspring nursed in princely lore
Are coming to attend their father's state,
And new intrusted sceptre; but their way
Lies through the perplex'd paths of this drear wood,
The nodding horror of whose shady brows
Threats the forlorn and wand'ring passenger;
And here their tender age might suffer peril,
But that by quick command from sovèreign Jove
I was dispatch'd for their defence and guard;
And listen why, for I will tell you now
What never yet was heard in tale or song,
From old or modern bard, in hall or bower.
Bacchus, that first from out the purple grape
Crush'd the sweet poison of mis-used wine,
After the Tuscan mariners transform'd,

[1] The opening of the poem presents that remarkable dignity, purity of thought, and grace of diction, afterward so eminently manifested in a still loftier manner, as due to the higher quality of the theme, in the opening lines of "Paradise Lost": "Before the starry threshold of Jove's court" (Milton has used the classic term Jove for Jehovah). The magnificent temple of the physical heavens may perhaps proximately typify the heaven of spirits—of bright aerial spirits.

The attendant Spirit—one of those immortal agents sent, we may say, "to minister to those who shall be heirs of salvation"—may not such an attendant be provided for every one, certainly all who strive for virtue, if for no other than to counteract the influences of evil?—descends, and in this opening speech declares his nature and mission.

Perhaps no higher conception of the habitations and employments of such beings can be expressed in general terms or in more beautiful human language—

"In regions mild of calm and serene air,
Above the smoke and stir of the dim spot which men call earth."

The principle of mental balance is here admirably and forcibly suggested. The "regions of calm and serene air" are but the reflected symbol of their inward mental state, the harmonious interaction of highly developed faculties.

[2] The spirit is sent to conduct a company through a wild beset with darkness and dangers. This is typical of the wilderness of the world. Milton believed that heavenly aid was always necessary, even to the best of men.

—"And but for such
I would not soil these pure ambrosial weeds
With the rank vapors of this sin-worn mould."

This seems to imply that even angels or spirits are not free from personal likes and dislikes; that effort and self-command are functions of their duty. They are not machines even of virtue.

[3] Power of administration in government is formed chiefly by the intellectual organs of Order, Causality, Calculation, Individuality, etc., with the association of the executive forces. In a well-endowed brain the higher grade of administration is shown through the influence of the sentiments in tempering severity, and exhibiting wisdom through a discreet magnanimity.

[4] This is a burst of patriotic fervor which is worthy of the grand mind that gave it utterance.

Coasting the Tyrrhene shore, as the winds listed,
On Circe's island fell:[5] (who knows not Circe
The daughter of the Sun? whose charmèd cup
Whoever tasted, lost his upright shape,
And downward fell into a grovelling swine:)[6]
This nymph, that gazed upon his clust'ring locks,
With ivy berries wreath'd, and his blithe youth,
Had by him, ere he parted thence, a son
Much like his father, but his mother more
Whom therefore she brought up, and Comus named;
Who ripe, and frolic of his full grown age,
Roving the Celtic and Iberian field,
At last betakes him to this ominous wood,
And in thick shelter of black shades imbower'd
Excels his mother at her mighty art,
Offering to every weary traveller
His orient liquor in a crystal glass,
To quench the drought of Phœbus, which as they taste
(For most do taste through fond intemp'rate thirst)
Soon as the potion works, their human count'nance,
Th' express resemblance of the gods, is changed
Into some brutish form of wolf, or bear,
Or ounce, or tiger, hog, or bearded goat,
All other parts remaining as they were;
And they, so perfect in their misery,
Not once perceive their foul disfigurement,
But boast themselves more comely than before,
And all their friends and native home forget,
To roll with pleasure in a sensual sty.
Therefore when any favor'd of high Jove
Chances to pass through this advent'rous glade,
Swift as the sparkle of a glancing star

"Swift as the Sparkle of a Glancing Star."

I shoot from heav'n, to give him safe convoy,
As now I do: but first I must put off
These my sky robes spun out of Iris woof,[7]
And take the weeds and likeness of a swain,
That to the service of this house belongs,
Who, with his soft pipe, and smooth-dittied song,
Well knows to still the wild winds when they roar,
And hush the waving woods, nor of less faith,
And in this office of his mountain watch.

[5] *The Tuscan Mariners;* they were transformed by Bacchus, whom they had angered, into ships and dolphins. See Ovid, Met. iii. 8. The story of Circe and her peculiar arts is well known.—*Homer, Odyss. x.*

[6] The charm of Circe's cup and its effects is a standard simile in the literature of temperance and social reform. Nothing better or more forcible has been found to express the tendencies of vicious indulgence than the classical legend. Milton employs it with nice appropriateness; he has, however, kept the body or frame of the charmed subjects human, only the heads being changed into those of different animals. Yet, as the head contains the brain, the mind center, with all its organic functions, the charm has effective control over their whole being. All the powers, feelings, affections, aims, and aspirations become subordinated to the control of the agent of vice. Quite apposite is the allusion of the poet to the variable influence of wine in depraving the character, and converting what is beautiful in form and feature into ugliness and deformity.

[7] The spirits, like mortals, are not unendowed with the faculties or the exercise of them, of Secretiveness, Caution, etc., for the uses of deception or disguise, but only to good end.

Likeliest, and nearest to the present aid
Of this occasion. But I hear the tread
Of hateful steps. I must be viewless now.

Comus enters with a charming-rod in one hand, his glass in the other; with him a rout of monsters, headed like sundry sorts of wild beasts, but otherwise like men and women, their apparel glittering; they come in making a riotous and unruly noise, with torches in their hands.

Com. The star that bids the shepherd fold,[8]
Now the top of Heav'n doth hold,

COMUS WITH HIS ENCHANTED CREW.

And the gilded car of Day,
His glowing axle doth allay
In the steep Atlantic stream,
And the slope Sun his upward beam
Shoots against the dusky pole,
Pacing toward the other goal
Of his chamber in the East.

Meanwhile welcome Joy and Feast,
Midnight Shout and Revelry,
Tipsy Dance, and Jollity,
Braid your locks with rosy twine,
Dropping odors, dropping wine.
Rigor now is gone to bed,
And Advice with scrupulous head,
Strict Age and sour Severity
With their grave saws in slumber lie.
We that are of purer fire
Imitate the starry quire,
Who in their nightly watchful spheres,
Lead in swift round the months and years.
The sounds and seas, with all their finny drove,
Now to the moon in wavering morrice move;
And on the tawny sands and shelves
Trip the pert faeries and the dapper elves.
By dimpled brook and fountain brim,
The wood-nymphs deck'd with daisies trim,
Their merry wakes and pastimes keep:
What hath night to do with sleep?
Night hath better sweets to prove,
Venus now wakes, and wakens Love.
Come, let us our rites begin,
Tis only daylight that makes sin,
Which these dun shades will ne'er report.
Hail, Goddess of nocturnal sport,
Dark-veil'd Cotytto,[9] t' whom the secret flame
Of midnight torches burns; mysterious dame,
That ne'er art call'd, but when the dragon womb
Of Stygian darkness spets her thickest gloom,[10]

[8] Comus may be considered as the type of vice, clothed in all the elegance, polish, and attractiveness of which vice is capable of arraying itself—born of an enchantress, and the god whom classic legend invests with all the best qualities of alluring sensuality; all the graces and polish of life are his endowment—Vice is made alluring by its physical splendors and accomplishments.

[9] *Cotytto*: a Thracian divinity who was worshipped at Athens and Corinth with festivals chiefly notable for their licentious frivolities.

[10] See contrasts and confirmations in lines 221-2, 373-5, 381-5.

And makes one blot of all the air,
Stay thy cloudy ebon chair,
Wherein thou rid'st with Hecat', and befriend
Us thy vow'd priests, till utmost end
Of all thy dues be done, and none left out
Ere the blabbing eastern scout,
The nice Morn on the Indian steep
From her cabin'd loop-hole peep,
And to the tell-tale Sun descry
Our conceal'd solemnity.
Come, knit hands, and beat the ground
In a light fantastic round.

The Measure.

Break off, break off, I feel the different pace
Of some chaste footing near about this ground.
Run to your shrouds, within these brakes and trees;
Our number may affright: some virgin sure
(For so I can distinguish by mine art)
Benighted in these woods. Now to my charms,
And to my wily trains; I shall ere long
Be well stock'd with as fair a herd as grazed
About my mother Circe. Thus I hurl
My dazzling spells into the spungy air,
Of power to cheat the eye with blear illusion,[11]
And give it false presentments, lest the place
And my quaint habits breed astonishment,
And put the damsel to suspicious flight,
Which must not be, for that's against my course;
I under fair pretence of friendly ends,
And well-placed words of glozing courtesy
Baited with reasons not unplausible,
Wind me into the easy-hearted man,
And hug him into snares. When once her eye
Hath met the virtue of this magic dust,
I shall appear some harmless villager[12]
Whom thrift keeps up about his country gear.
But here she comes, I fairly step aside,
And hearken, if I may, her business here.

[11] It is the attractiveness of vice that needs the watchful protection of rigid principle. The specious statement of Comus in the lines alluded to, fraught with all the graces of rhetoric and symbolism, are but the flowers which cover the pit or the decorations of the snare. Fine endowments of intellect, esthetic taste, etc., as all know, may be possessed by those whose only exercise of them is for the gratification of propensities and corrupting appetites.

[12] Comus, as well as the Spirit, here exercises the organ of Secretiveness, but to a very different end. In the one case this organ of prudence and reticence is made helpful to the sentiments of kindness, affection, and philanthropy; in the other it is the instrument of selfishness and depravity, of a motive which would pervert and destroy every element of beauty and sweetness.

THE "KING OF BEASTS"—WHICH?

THE "BLUES"; THEIR CAUSE AND CURE.

IN writing of the "Blues," perhaps it would not be out of place to inquire into the origin of the term, which, although very useful and universally understood, can not as yet be recognized as fully incorporated into the language. Webster declares the word to be a contraction of "blue devils," a common expression for extreme dejection or melancholy. The supernatural part of the latter metaphor is too evident in its application to need any explanation; the epithet "blue" is frequently used to designate anything stern, forbidding, or somber, in accordance with the mysterious law of association which has supplied the entire vocabulary of psychological terms.

Having found out what the term blues or "blue devils" means we are prepared to investigate their causes. In the first place, the intimate reciprocal relations of the mind and body are too well known to call for anything further than mere reference; now we must bear in mind that the blues are a disease, hypochondriasis, to speak by the card. We are not talking about an occasional dampness of spirits such as is at intervals the lot of all, but a downright, chronic, habitually recurring despondency, the most unenviable of all ailments. This latter breeds pessimism and cynicism, fosters misanthropy, engenders gloom, welcomes despair, and, if allowed its own course, terminates in insanity and suicide. The word "if," however, covers more ground than any other in the language. When James A. Garfield had been shot through the spine he asked the doctor if there were any hope of recovery. The physician, willing to reassure him, replied that there was just one chance that he might live. His answer contained all of the noblest philosophy of human life: "Well, doctor," said the stricken President, "I'll take that chance."

To return to the question of causes: hypochondria is frequently the result of physical derangement, disregard of sanitary laws, or immoral and pernicious habits. A lack of tone and vigor, indisposition to exertion, can not long subsist without producing a corresponding effect upon the mind. Among women, the circulation of the blood is impeded by tight lacing, acting by direct constriction, and by permanently mal-forming and contracting the thoracic cavity, impeding the respiratory process, and thus preventing the complete oxygenation of the blood. The result of this is cold extremities and a hot head, partial paralysis of the sympathetic nerves (especially of the lower limbs) and general derangement of the vital functions. Dyspepsia is a prolific cause of the blues; in fact, nothing is more certain to produce irritability and despondency than indigestion. In this also, as in many other cases, the importance of inherited tendencies can not be overlooked. The

law by which taints of blood and disorders of the mind are transmitted from generation to generation must enlist the serious attention of every thoughtful person. An inherited predisposition, however, fortunately by no means points to a certain realization. If vigorously resisted, a few generations may effect its entire extirpation; but if, as is too often the case, this predisposition is fostered and encouraged, an unhappy culmination is soon to be expected. Now, either a natural or an acquired disposition to depression of spirits may be nourished in a thousand different ways. Nothing subsists without food, a disordered fancy not more than a being endowed with flesh and blood. Melancholy feeds upon solitary broodings. It seizes upon the man who is always looking inward upon himself instead of out upon the world, believing that mankind hates him, and knowing that he hates mankind, who has closed his heart to the manifold sufferings of humanity, and sits in gloomy and solitary meditation over his own wrongs. Let those who find a dismal satisfaction in Byronic musings consider that selfishness is the very kernel of this melancholy, for such monologues invariably contain a subtle element of self-flattery which imparts satisfaction to the vanity. The worst egotist is of the Uriah Heep type: always masquerading under a feigned humility. Beware of the man who is fond of calling himself a worm, a poor, miserable, forlorn, unworthy creature of the dust: in his heart of hearts he believes that he is the elect and salt of the earth, created a trifle higher than the angels.

Now, a word as to the best method of fighting the blues. When a country is invaded with hostile intent, the first thing is to find out the nature and location of the enemy, the next to declare war, call out the troops, and march against him. In the first place, then, you must realize that you have been invaded by the blues, and that they are laying waste your happiness, disregarding your rights and honor, and impairing your manhood; then you are to lose no time in commencing hostilities. If, now, you stay at home and bewail your sad condition, the blues will gather head with amazing rapidity. On the other hand, on the first show of determined resistance, the blues are such arrant cowards as to flee the country without risking an engagement. To drop the metaphor, in addition to the removal of its physical causes, the most essential and effectual agent for exterminating this pest is sturdy will-power. Abandon the idea that there is anything romantic about melancholy; outside of novels the dumps are the most stupid and uninteresting things imaginable. Attach yourself to some useful purpose, and labor diligently to that end; idleness is the food of morbid sentiment, and industry its bane. Indolence *is* dolorous, in spite of etymology. The blues attack an idle mind as worms prey upon an old hulk rotting at its moorings; they flourish in the darkness like foul vermin in slimy dungeons, or fungi in damp woods.

When you read your Bible, don't turn to Job and Lamentations, to Jeremiah and Ecclesiastes; but consider the thankfulness of David, the confidence of Isaiah, and the faith of Paul. If you devote your attention to other authors, give no countenance to whining, drivelling pessimism, which believes that nature's quarries furnish only tombstones, and weeps over every fragrant and beautiful flower of human life as the type of general evanescence; but rather adopt the philosophy taught by such men as he who addresses his soul with such lofty exhortation:

> "Leave thy low-vaulted past,
> Build thee more stately chambers, O my soul!
> As the slow seasons roll."

Never truer words were uttered than those which say: "There is nothing either good or bad but thinking makes it so." Once upon a time a little girl sat by the roadside, weeping bitterly. A benevolent gentleman passing along was touched by her distress, and approaching inquired the cause of her grief. The poor child's utterance was broken by emotion, as she replied between her sobs,

"I was thinking (boo-hoo) what if I should ever grow up (boo-hoo-hoo) and get mar-r-ried, and have a little boy (boo-hoo), and the boy should grow up and go to war, and be sh-sh-shot," (climax of tears and sobs). There are a great many people in the world very like that little girl. JAMES WESTON CARNEY.

THE PULSE OF ANIMALS.—In horses, the pulse at rest beats forty times per minute, in an ox from fifty to fifty-five, and in sheep and pigs about seventy to eighty times. It may be felt wherever a large artery crosses a bone, for instance. It is generally examined in the horse on the cord which crosses over the bone of the lower jaw in front of its curved position, or in the bony ridge above the eye, and in cattle, over the middle of the first rib, and in sheep by placing the hand on the left side, where the beating of the heart may be felt. Any material variation of the pulse from the figures given above may be considered a sign of disease. If rapid, hard, and full, it is an indication of high fever, or inflammation; if rapid, small and weak, low fever, loss of blood, or weakness. If slow, the probabilities point to brain disease, and if irregular, to heart troubles. This is one of the principal and sure tests of the health of an animal.

LIGHT vs. DARKNESS.

THE very first of all created things upon the earth was luminous matter, "and God saw the light and it was good." Without going into a learned discussion upon the subject, I would impress upon the intelligent minds of my country-women, that light is absolutely necessary to life, health, and longevity. In no other country has the mania for dark homes been carried to such an extent as in America, in this progressive nineteenth century. Educated ladies profess an esthetic love for dark rooms, whose walls they decorate with dark papers, and in which they spread furniture of polished ebony; so that darkness almost Egyptian rules the household. Is health, the greatest of all earthly blessings, secured by living in an atmosphere of gloom? Is the air we breathe kept pure and wholesome when the sunlight is excluded? Darkness produces dampness, which generates malaria and kindred ills. Heat and light are life; cold and darkness, death. This is a very old and very true apothegm. We may find by analysis, no difference in a cubic foot of air from a dark room, with closed blinds, from that of a cubic foot taken from a light one with open portals; nevertheless it is a fact that the cheerful light and warmth of the latter have a better effect upon the animal economy.

It is said that an invalid should have 1,200 cubic feet of fresh air every two hours. Can they enjoy this blessed life invigorator in ill-ventilated rooms, where free ventilation is prevented by heavy curtains and closed blinds that shut out the beautiful sunlight? If we wish a choice plant to expand and give fragrance and bloom, we place it in a sunny window, and it becomes a thing of beauty and joy to the beholder. Are our human "olive plants" of less value than a choice exotic which we would cherish tenderly?

Who has not read of Florence Nightingale's observations in the Crimea, showing the difference between the shady and the sunny sides of the hospitals? In St. Petersburg the shady side of the hospitals was so notoriously unfavorable to the sick soldiers that the Czar decreed their disuse. Dr. Lewis says that when he was practicing in Buffalo, N. Y., during the memorable cholera seasons of 1849 and '51, he saw at least five cases of cholera in the houses on the shady side of the street, to one on the sunny side. He says: "Trees

should never stand near enough to a dwelling to cast their shade upon it; and if the blinds were removed, and nothing but the curtain within with which to lessen the heat on the hottest days, it would add greatly to the tone of our nerves, and to our general vigor. I am sure I have cured a great many cases of rheumatism by advising patients to leave bedrooms shaded by trees or a piazza, and sleep in a room and bed constantly purified by the direct rays of the sun."

The blood needs all the oxygen it can assimilate, that it may do all the work assigned it. If the air is vitiated we suffer, and the whole system feels the effect. Hence, plenty of light is necessary to keep us in health, while darkness, unnatural darkness, is injurious. The London *Times*, in giving an account of the opening of the Suez Canal, said: "It would take the conceit out of the grand European who fancies he is the flower of the human race to walk through a crowd of Arabs and measure their stature and breadth of shoulder. Their drink is water, their food millet, maize, and vegetables." The great source of their vitality, however, is the sun, and the pure air of the desert.

An article in a New York magazine says: "His ancestor, whom he remembered well, used to sun himself by the hour for many years. He reached the age of ninety-seven, and his father, who was equally a worshiper of the sun and basked daily in its rays, lived a hundred years."

The eminent French physiologist, Flourens, admits that human life may be prolonged under certain conditions of comfort, sobriety, freedom from care, regularity of habits, and the observance of the rules of hygiene, and he terminates his interesting study with the aphorism: "Man kills himself rather than dies." The German physiologist, Haller, maintained that man might live to the age of two hundred years. The strongest physical constitution would soon succumb to the evil effects of confinement in dark, noisome, unventilated apartments. It was the German physiologist, Hoffman, who summarized the means of reaching great age as follows: "Avoid excess in everything; *breathe pure air;* adapt your food to your temperament; shun medicines and doctors; keep a quiet conscience, a gay heart, a contented mind."

JENNIE F. SNELL.

THE GENESIS OF ALCOHOL.

BEER, WINE, AND THE "EVIL SPIRIT."

ALL kinds of beer are essentially the same in composition and in the composing, varying in amount of alcohol, in bitterness, in amount of malt extract, and in their proportion of water, as seen by the following tables, 1 and 2, 3 and 4:

TABLE 1.

Bavarian Lager Beer—
24 Berlin Scheffels Barley Malt.
43 " Pounds of Hops.
½ " " Carageen Moss.
1 Quart of Yeast.
1 Centner of Pitch.

TABLE 2.

Brewing of Bavarian Bock Beer—same as above, except
32 Berlin Scheffels Barley Malt, and
1 Pound Coriander Seed,

being 8 scheffels more of malt, which will yield so much more of alcohol, as we shall see if we observe the proportion of substances in each kind of beer according to Otto, quoted by Ure.

TABLE 3.

Bavarian Lager Beer—

Water,	91	per cent.
Malt Extract,	5.4	"
Alcohol,	3.5	"

TABLE 4.

Bavarian Bock Beer—

Water,	88.5	per cent.
Malt Extract,	6.5	"
Alcohol,	5	"

In none of these specimens are hops, or its bitter principle, Lupulin, mentioned. Yet it was there, probably included in the

malt extract. It should have appeared by itself.

The malt, hops, and water are the essential substances in the make-up of beer. Pitch is for the purpose of preserving it. The yeast is used to induce fermentation, and the moss is added as a mucilage to secure lasting foam and flavor, while the coriander seeds are used merely for flavor.

THE MAKING OF BEER.

Malt is produced by causing, in any manner, any kind of grain to grow, germinate, or sprout. Barley is usually taken, and steeped for some time in water, when it is heaped upon the floor, or spread and turned, to allow it uniformly to absorb oxygen, produce heat, and to sprout. These conditions induce in the grain the formation of a peculiar nitrogenous or albuminoid substance named *diastase*, that has the especial property of catalytically inducing starch in the presence of water to absorb it, and change into glucose. When the germination, or growth, has proceeded far enough, the life of the barley is killed by heating the incipient malt in a kiln. The malt is then cracked, and steeped in water of 176 degrees Fahrenheit, which readily dissolves the diastase, and brings it in close contact with the starch of the malt, inducing the formation of alcohol. The fluid, composed of water, malt extract, and glucose, is strained from the exhausted malt, and pumped into a boiler into which the hops are put, whereupon the whole is boiled for some time, and then rapidly cooled to the temperature of about 60 to 70 degrees Fahrenheit, when yeast in suitable quantity is added.

GENESIS OF ALCOHOL.

Now alcohol is first seen. It was not in the barley, as some say it was. Its elements were there in the form of starch, which is composed of oxygen, O_5, hydrogen, H^{10}, and carbon, C_6; while the alcohol (ethylic) is composed of the same elements, but in the proportions of oxygen, O_1, hydrogen, H_6, carbon, C_2. If to the starch one atom of water, O_1, H_2, is added, we have glucose, O_6, H_{12}, C_6. This can be split into 2 alcohol, O_1, H_6, C_2, and 2 carbonic acid, O_2, C_1.

This splitting of the elements of a starch atom, plus a water atom, and recombining those elements of glucose into carbonic acid and alcohol, is produced through the instrumentality of a *fungus* cell having a spherical form, and named *Torvula Cerevisiæ*. It is so minute that it is invisible except under a good microscope, where it can be seen that yeast is composed almost entirely of Torvulæ and another still smaller fungus cell named *Penicilium Glaucum*. See Pasteur, Ure, Fownde, Watt, etc.

In the menstrum that receives the yeast Torvula cell there must be a certain amount of nitrogenous or albuminoid material that may be used by the Torvula cell for its own growth, nutrition, and reproduction. To keep itself warm it needs glucose, which it splits up and burns in part, producing carbonic acid, which comes off from the menstrum in the form of bubbles, unless retained by some strong inclosing cask or bottle. The commotion caused by the bubbles gives the name fermentation to this process, although that name is often applied to other analogous processes. They are, however, usually designated by the addition of a defining adjective The alcoholic is also sometimes specified as the vinous fermentation. This action of the cell discharging carbonic acid induces me to name the Torvula a yeast *animal*, instead of a yeast plant, as it is usually named. Plants do not excrete but do absorb carbonic acid. The *Penicilium Glaucum* may be a plant in its character; yet, as it absorbs oxygen rapidly under favorable conditions, it also has animal indications.

After the carbonic acid is discharged from the atom of glucose by the Torvula, by an action analogous to the breathing of any other animal, the Torvula excretes the remaining elements of the glucose in the form of alcohol, as a *liquid excrement*,

this action being analogous to the *renal* action of other animals. The alcohol remains for a time in the menstrum, but ere long, unless confined, will slowly evaporate, or by the application of heat it will be rapidly driven off; and, if passed through a metal worm, surrounded by cold water or other cold substance, will be condensed and obtained by itself.

The Torvula, under favorable conditions, multiplies with great rapidity, in a short time making up by their immense number what they fall short in size. When the alcohol is largely increased, it kills the Torvula, which thus dies in and by reason of its own excrement, and the fermentation ceases.

It should be said, before I return from this digression, that some do not think the *Penicilium* is the cause of the production of lactic acid; but all agree that alcohol has but one cause of existence—the action of the Torvula upon glucose in some menstrum that also contains nitrogenous or albuminoid substance. Thus there is no alcohol in grain, but there is in leavened dough. The carbonic acid and alcohol produced in the dough raises it or lightens it; but when the dough is subjected to heat in cooking, the carbonic acid gas is still more expanded, and the alcohol is entirely driven off, so that there is none of it in bread nor in any cooked article.

As soon as the fermentation in the beer has produced the desired results, variable according to the case, it is stopped, at least it is allowed to go on only very slowly in the casks and bottles into which it is drawn, and where it is retained, that it may "ripen with age," as the expression is.

In the olden time, hops were not put into beer; and when brewers began to use them, severe laws were passed punishing whoever used this poison, as it was named, in making beer. At that time, water, malt extract, and alcohol were considered the only proper constituents of beer. Any cause of bitterness was not allowable. New tastes have been produced, and now the Lupulin of the hop, or its bitter substitutes, forms a part of all beers.

Any grain-malt may be substituted for barley-malt. Indeed, glucose from any source will supply the alcohol, if the Torvula and the albuminoid substance is properly supplied. Some bitter substances might be substituted for Lupulin with advantage to the health, and the desired flavor can by the chemist be imparted. Indeed, the liver, one of the most important organs of the body, is very unfavorably affected by either alcohol or Lupulin, if the use of either is long continued, and the effect of both acting together upon the liver is very bad indeed, since their action upon the liver, both directly and indirectly, unfits it to perform its very important duty of assisting in warming the body. Hence nature, when these substances are used deranging the liver, or if it is deranged in any other way, will if possible fatten the body so as to preserve, as far as possible, what little heat is produced. It will of course be seen that such fattening is not a mark of high health, but, as is noticeable among the Germans, it indicates an undesirable condition.

In this view, the force of what Dr. Fothergill says will now be appreciated. He remarks in his work upon Indigestion and Biliousness, that "The addition of alcohol to a dietary rich in all materials, especially albuminoids, is a fertile factor in the production of liver indigestion; and of all the alcoholic beverages, those prepared from malt act most potently for evil."

Alcohol is always a deceiver.

THE HERITAGE OF DRUNKENNESS.—The drunkard leaves a sad heritage to his child. It is bad enough for a man to debase and degrade himself, but still worse to transmit to his offspring his degradation. It is a generally recognized principle in the propagation of the human and animal species, that like produces like, and this principle is found to hold true as regards the offspring of drunk-

ards. Not all the children of drunkards will be addicted to the use of strong drink. Usually the mother is not addicted to the use of strong drink, and oftentimes loathes it with all the power of her soul. Her influence exerts a saving power over the offspring of the intemperate father, and some of the children will be able to resist the tendency which they feel to partake of strong drink. A large part of the children of the drunkard, however, inherit a strong appetite for alcoholic liquors, and it requires a powerful effort to resist the temptation to indulge. They have also inherited a depraved nervous organization, often with a weakened will and ill-balanced intellect. Samuel Royce, in his work on "Deterioration or Race Education," says: "The drinking habit of the parent is in most cases an irresistible impulse or disease in the child, uncontrolled by any motive whatever." When both parents are addicted to intemperance, very few of the offspring escape going the same way.

An appetite for strong drink is not the only heritage the drunkard leaves his children. Weakened intellects, ill-balanced minds, a predisposition to insanity, and even idiocy are also transmitted to the offspring. Many of the children of drunkards become insane, many are idiotic, and not a few on account of their unhappy organization are driven to take their own lives. Maudsley says that drunkenness in the parent is a cause of idiocy, suicide, or insanity in the offspring. Morell, who made the study of human deterioration a specialty, cites many cases of children of inebriates cursed in later years with the hereditary craving for alcoholic liquors, leaving one insane asylum for another, and ending in marasmus, general paralysis, in a perfectly brutal condition, with the utter extinction of reason and conscience. Of 300 idiots examined by Dr. Howe, in the State of Massachusetts, 145 were the children of intemperate parents.

Should the drunkard be allowed to bring into the world children imbued with an almost irresistible appetite for strong drink, predisposed to insanity and suicide, or perhaps idiotic? It is an infamous outrage upon the innocent child, and should be prevented by placing the drunkard in an asylum where he can not become a father until he has reformed. It would be far better for society and for the State to place the drunkard in an asylum and keep him there till he is reformed, than to allow him to become the father of imbecile, insane, or criminal children, whom the State must care for. Prevention in such cases is better than cure.

H. REYNOLDS, M.D.

MY SICK DAISY.

THAT is the name of my pet cow. The ladies call her pretty. She has a beautiful daughter, which my grandchildren have named Buttercup. Daisy is my pet, and Rex, the horse, my son's pet. I take excellent care of Daisy, and feed her well; sometimes, it may be, almost too well. I do not keep any pig, neither do my neighbors. Daisy is a favorite in all the neighborhood, and they bring crusts, crumbs, etc., to put with ours, for the nice cow to eat. She has a wonderful appetite. She is intelligent, gentle, yet inclined to gluttony, if I must tell it all. She feeds voraciously, and eats hay as if she had been fasting a long while.

Now, it happened that her mistress was taken sick, and the hired help put more than ever before into the cow's pail. Sour milk, which had been made into Dutch cheese, went to that pail. I had some misgivings, but kept on "stuffing" my dear, bright-eyed cow. Everybody who came along praised her sleek looks. She gave two pailfuls of the richest milk, each day. She is of the Jersey stock, mainly. So "knowing" is she, that if thirsty, tangled, or worried by flies, she

will call to me. I do not turn her away to pasture, but tether her here and there by day, putting her into the barn at night. She will lick my hand and follow like a dog. Occasionally, she thinks she knows best which way to go, and if I take up a little stick to carry my point, it does not scare or provoke her at all. She minds me then, but seems to say, "I knew you would not really harm me, and it is nothing to be remembered." She never tires of looking at me if I am in sight. The reader sees I am attached to her.

But just when she was being fed to the utmost, a matter so much excited me and absorbed my attention, that for once I forgot Daisy, and let her be out in a thunder-storm, hitched under a tree, and for about two hours after, the drops falling long on her back, and a colder air blowing. Soon her udder became swollen, especially upon one side, and one of the teats gave bloody milk. The milk nearly ceased, and became changed, thin, watery, in the other teats. Her appetite, yes, her appetite began to fail. She chewed slowly, as if her jaws were lame. It became difficult for her to get up, and she walked slowly, in a kind of sinking way.

When her sickness was known, all wanted to see her. One said she had the garget—a clear case of the garget. I must give her some of that root, raw beans, and a little saltpeter every other morning. Another guessed she had the creeps—cattle sometimes had the creeps. Dose her with sulphur. Has she lost her "cud"? It was clear she had, for she did not chew it. One must be made and put in her mouth. Had I bored her horns? It might be horn-ail. Put a little kerosene back of her horns. Had I sent for the veterinary? A cattle doctor lived not far away, reported well-informed. His patients sometimes died, it was confessed. One woman, with large perceptive organs, great energy, and iron temperament, made it a point to inquire if I had done this and that. In replying to her my sense of truth at last failed me, and I would answer just as I could best satisfy and get rid of her. That, you see, was startling, and to myself almost as queer as Daisy's sickness.

"Dear Daisy," I would say to her, and she would look at me so mournfully. The brightness had departed from her eye. Her pulse was too quick, and fluttered. Her breathing was rapid. A drivel ran from her mouth. She would try to eat and give over, like a sick person.

What *did* I do for her? Nothing that would harm her. I gave her warm drinks, and then cooler. I fixed her nice beds. I bathed her bag and the small of her back with warm water. I milked and milked her teats. I left her alone enough for rest. If she would take a little bran, a few oats, some heads of clover, a potato, nicely washed, a handful of selected hay, she had these. I encouraged her to take a little exercise, as her strength might be. I placed her where the breeze might refresh, but would not chill her. I made myself about sick working over her—even took some of her fever. I watched every symptom. One morning I came in and reported to Mrs. H., who was herself far recovered, that Daisy had a little less fever.

Now, it would take some time to tell how one symptom after another stood forth, showing that Daisy was going to live after all, and showing to some neighbors, as they chose to think how much good *their medicine* had done. Their medicine (!). Daisy and I know all about the remedies. She found her cud herself, is herself again, in all her wonted excellency, save that the one teat, which shed down blood and water, is not warm, and does not give as much as the others. But I milk it full as much, and notice that it gains in size, in amount of milk, and that I am going to recover it altogether.

L. H.

A ONCE famous quack doctor headed his advertisement: "Ho! all ye dyspeptics!" That's just what dyspeptics won't do. If they would all hoe vigorously, they would not need any other medicine.

NOTES IN SCIENCE AND AGRICULTURE.

The Carson Prison Foot-prints.—Prof. Joseph Le Conte, writing from Berkley, Cal., sends to *Nature* a brief account of the supposed human foot-prints found in the shale at Carson, and agrees with Professor Marsh and others in attributing them to a large sloth. "The so-called human tracks," he writes, "occur in several regular alternating series of fifteen to twenty. In size they are eighteen to twenty inches long, and eight inches wide. In shape they are many of them far more curved than the human track, especially in soft mud. The stride is two and a half to three feet, and even more. The outward turn of the track is in many cases greater than in human tracks, especially in soft mud. But the most remarkable thing about them on the human theory is the straddle—that is, the distance between the right and left series. This I found to be eighteen, and even nineteen, inches, which was fully as great as that of the mammoth tracks. This is probably the greatest objection to the human theory. On the other hand, the great objection to the quadrupedal theory is the apparent singleness of the tracks, and the absence of claw-marks. But it must be remembered that the tracks are deep, and the outlines somewhat obscure, and also that the mammoth tracks, on account of tracking of hind with fore foot, are in most cases, though not always, single.

"After careful examination for several days, the conclusion I came to was that the tracks were probably made by a large plantigrade quadruped, most likely a gigantic ground-sloth, such as the mylodon, which is found in the quaternary, or the morothenium, which is found in the upper pliocene of Nevada. The apparent singleness, the singular shape, and the large outward turn of the tracks I attribute to the imperfect tracking of hind and fore foot on the same side, while the absence of claw-marks was the result of the clogging of the feet with mud. This view seems to me most probable, but many who have seen the tracks think them human, and I freely admit that there is abundant room for honest difference of opinion."

Booming.—The term "booming" is applied, in mining parlance, to an operation much resembling the old process of "flushing," as used in Yorkshire, for discovering lead lodes. A reservoir is first constructed at the head of the ground to be worked. Into this water is conducted, from the most convenient source still higher up, by flumes or ditches. These reservoirs vary in size from a small pond to an acre or two lake, and the ditches are often eight, ten, and twelve miles long. When the basin is full, and a continuous head of water is in running operation, gates are opened, letting loose the whole volume of the liquid, which tears down the mountain-side in a huge volume, sweeping everything before it, carrying tons of bowlders, gravel, and dirt down to the gulch below. If auriferous ground is to be worked, a long and massive wooden flume is built at the foot of the hill, into which the *débris* is carried with all the force of the falling waters, and the sand and rocks washed along in its course, while the gold is deposited by its own gravity behind the riffles in the bottom of the race. These flumes are built with great strength and solidity to withstand the immense wear.

Should Women Ride like Men?—The above subject has created some discussion in the English newspapers. The *Lancet* thinks that it would be as well to leave the determination of the question to those whom it principally concerns. As a matter of fact, although it may not appear to be the case, the seat which a woman enjoys on a side-saddle is fully as secure, and not nearly as irksome, as that which a man has to maintain, unless he simply balances himself and does not gripe the sides of his horse either with the knee or the side of the leg. It is curious to note the different ways in which the legs of men who pass much time in the saddle are effected. Riding with a straight leg and a long stirrup almost invariably produces what are popularly called knocked-knees. Nearly all the mounted soldiers of the British army suffer from this deformity, as any one who will take the trouble to notice the men of the Life Guards and Blues walking may satisfy himself. On the other hand, riding with a short stirrup produces bowed-legs. Jockeys, grooms, and most hunting men who ride very frequently are more or less bow-legged. The long stirrup rider gripes his horse with the knee, while the short stirrup rider gripes him with the inner side of the leg below the knee. This difference of action explains the difference of result. No deformity necessarily follows the use of the side-saddle if the precaution be taken with growing girls to change sides on alternate days, riding on the left side one day and the right on the next. The purpose of this change is to counteract the tendency to lean over to the side opposite that on which the leg is swung.

Old Shoe-leather.—You probably think if you look very sharply at an old shoe when you throw it away, you will know it again if it ever comes back to you. But that doesn't at all follow. One of these days you may button your dress with an old pair of slippers you once owned, comb your hair with a boot, or grasp a cast-off gaiter while at your dinner. This is not romance, for old shoes are turned to account by manufacturers in the following manner: They are cut into very small pieces, and kept for a couple of days in chloride of sulphur. The effect of this is to make the leather hard and brittle. Next the material is withdrawn from the action of the chloride of sulphur, washed with water and dried. When thoroughly dry it is ground to powder, and mixed with some sub-

stance like glue or gum, that causes it to adhere together. It is then pressed into molds and shaped into buttons, combs, knife-handles, etc.

On the Colors of Water.—Viewed in relatively shallow masses, clear water appears wholly colorless. In our daily dealings with the liquid we seldom have occasion to observe it in great depths; hence it has been generally believed that water is quite destitute of color. The ancients were accustomed to explain the transparency of some bodies by assuming that they partook of the nature of water; and we now speak of a diamond as of the first water, to emphasize its perfect transparency and colorlessness. If, however, we regard the larger masses of water in nature—the seas, lakes, and rivers—we shall receive a different impression. In these, the water not only appears colored, but of various colors, and of a rich diversity of shades. The Mediterranean is of a beautiful indigo, the ocean is sky-blue, the Lake of Geneva is celebrated for its lovely and transparent azure waters; the Lake of Constance and the Rhine, the Lake of Zurich and the Lake of Lucerne, have waters quite as transparent, but rather green than blue; and the green waters of the little Lake of Kloenthal, near Glaris, can hardly be distinguished from the surrounding meadows. Other waters are of a darker color, like those of the Lake of Staffel, at the foot of the Bavarian Alps, which was quite black the day I saw it, though clear in shallow places.

These facts start the questions whether water, after all, has not a color; if it has, what the color is, and what causes the varied tints under which it is seen. The solution of these questions has long occupied the minds of scientific inquirers, and it can not yet be said that they have been answered. Disagreement still prevails respecting them.—*Popular Science Monthly.*

Garden Experiments.—The results of some of the experiments made at the New York State Experiment Station show:

That the period required for the *germination of peas* varies with the temperature of the soil; in other words, with the earliness of planting. Those planted on April 4th and 5th required for vegetation from twenty-three to twenty-five days; while others, planted on May 6th, required only from twelve to fourteen days. The earlier plantings were fit for use in seventy-seven days, the latter in fifty-four days. The period of ripening the seeds varied from seventy-four to one hundred and nine days.

The Earliest Cabbages, out of a list of twenty-nine sorts, were Early Oxheart and Nonpareil, the latter producing six heads in thirteen plants, while the former produced twenty-three heads out of twenty-seven plants.

The Mayflower Tomato (one of the *American Garden* premiums) is considered a very promising variety. Sown in a hot-bed April 7th, it vegetated April 12th, was transplanted into the garden May 29th, blossomed on June 16th, and furnished ripe fruit August 8th, two days before the Early Acme. These fruits measured three inches in diameter, somewhat larger than the Acme, and were nearly or quite as smooth. The plants were very prolific.

Potatoes raised from eyes cut large yielded more and were of better quality than those from eyes cut shallow. Single eyes cut deep yielded one hundred and fifty-two bushels; ordinary cuts yielded one hundred and twenty-seven bushels; and whole potatoes yielded eighty-three bushels of merchantable potatoes per acre.

Employing the Insane.—That the insane need not be altogether a burden upon the State, most of our economists know; but it has fallen to the lot of the Willard Asylum of New York to show that the insane may be employed in lines of useful labor which have been commonly regarded as altogether out of keeping with their mental condition; in fine, some may be trusted with tools and implements which we have been wont to consider as more likely to be used for deeds of violence than of use. The *Plattsville News*, in commenting upon the management of this institution, remarks:

"At the Willard Asylum pains are taken to keep the patients actively employed, and during the past year two hundred men were occupied three months in building a railroad four and a third miles long. Notwithstanding axes, picks, shovels, crowbars, and blasting powder were in constant use, no accident nor contusion occurred, nor was there any riotous or disorderly conduct on the part of the laborers. The report says: 'Judged by this experiment, in which one hundred and fifty to two hundred able-bodied lunatics were laboring together, the inference is conclusive that under proper management and with due care it is conducive to their mental comfort and health. Employment diverts from morbid fancies and troublesome hallucinations. Persons afflicted find a relief from their delusions and sufferings in the use of tools and in the engagements in the occupations of everyday life.'"

The Whitewash on the National Capitol.—The following is said to be the recipe for making the brilliant stucco whitewash used on the outside of the Capitol at Washington: Take half a bushel of good unslaked lime, slake it with boiling water (cover it during the process to keep in the steam); strain the liquid through a sieve, and add to it a peck of salt dissolved in warm water, three pounds of ground rice boiled to a thin paste; stir in, boiling hot, one-half pound of powdered Spanish whiting, one pound of white glue; add five gallons of hot water; let the mixture stand a few days, covered from the dirt, and apply with kalsominer's brush.

CHARLOTTE FOWLER WELLS, *Proprietor.*
H. S. DRAYTON, A.M., M.D., *Editor.*
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GAMBETTA'S BRAIN AGAIN.

NOT long ago some remarks were made in this place with reference to the probable causes of Mr. Gambetta's brain weighing so little, as was reported; whereas during his public life he was always described as having a large head. Being a man of extraordinary mental activity, and of unusual power as a controller of men, it was generally supposed that his brain was much above average size. We stated that the smallness of the weight, 1,100 grammes, as reported, might be due to changes in the cerebral substance, occurring in great part previous to his death; and as he died of a disease which conduces to rapid disintegration, or decomposition, the further changes of the soft cerebral tissues into—we might say—fluid, or semi-fluid matter, must have been exceedingly rapid after death, and had considerably advanced before the autopsy, so that the solid mass which was then removed from the cranium and weighed did not represent fairly the organ which the eminent Frenchman possessed in the full vigor of his powers.

Now our attention is again drawn to the subject, by the published opinion of an eminent Russian physiologist, Doctor Ivanofsky, of St. Petersburg. He evidently holds to the theory, that men of eminence possess large heads and correspondingly large brains. Doctor Ivanofsky says in a letter to a Russian newspaper: "That the weight of the brain in its normal condition that is free from organic pathological changes has its importance and meaning; but as Professor Syetchenoff has it in his work on the reflex action of the brain, 'even while admitting that the soul is not the product of the activity of the brain, yet since in every case the brain is the organ of the soul, that organ must change its quantity and even quality, in accordance with the use and misuse it had been subjected to by the soul.' Indeed, when viewed in this light, the men of science will find that, relatively speaking, Gambetta's brain was not as light as it seemed to them when weighed on their scales."

The Doctor goes further and asserts that it can be proved that the said brain weighed no less than that of Byron. The brain of Byron weighed 1,400 grammes, and was nearly equal in size to the brain of General Skobeleff, who died recently. It has been urged by the opponent of the large-brain theory, that Skobeleff is another evidence of importance in their favor, and that his brain was of the small class; its weight as shown at the autopsy was 1,427 grammes. Rating 1,100 grammes at 39 ounces, we shall leave it for the reader to approximate the weight in ounces.

To prove his assertion Dr. Ivanofsky reminds the gentlemen of science, and the public generally, that to begin with, Gambetta had but one eye, the left, and as a direct consequence the nervous apparatus of the defunct eye, designed by nature for receiving rays of light, and

transmitting their impressions to the *sensorium*, had remained inactive for long years. Now, this eye apparatus is composed of the retina, the optic nerve, and the optic center in the brain; and its prolonged disuse, which covered a period of thirty years, must have produced an atrophy of the right optic center, and that atrophy naturally affected greatly the subsequent weight of the brain matter.

We had occasion in one of our chapters on Comparative Phrenology to cite the case of the eminent mathematician, De Morgan, who had but one eye, and although his brain was very large as found after death, yet the optic center relating to the destroyed eye was so much reduced in the substance, as to reduce materially the dimensions of the hemisphere in which it lay.

Returning to Dr. Ivanofsky, he claims that leaving aside the retina, and that portion of the optic nerve which had to be severed during the withdrawal of the brain from the cranial cavity, the want of the optic cerebral center of the right side alone, taking into consideration its long standing, must have shown at the least a deficit of 120 grammes in the weight of the brain. Besides this fact which would add that amount to the reported weight, making it 1,220 grammes, "we should consider also the deteriorating process of the illness from which Gambetta suffered, as a well-known anatomist well remarks, until more attention is paid to the condition of the blood-vessels, and to the quantity of the serous liquid which soaks through the brain, or its vesicles, the weighing of the brain matter will prove itself of very little importance. Thus taking into serious consideration Gambetta's long illness, and the localization of the disease, as also his long absence from food, or rather the regular starvation he suffered for days before the end came, it must be that his brain exhibited the symptoms of its great lack of blood, or normal maintenance. If we remember still further that the quantity of blood and serous liquid that had filled the brain and vesicles, was neither ascertained nor weighed, and that consequently it must have been a very reduced mass of tissue, in fact wanting in fully 200 grammes, which would be the relative proportion of such blood and serous liquid; taking 1,100 grammes as the basis of calculation, we arrive at the weight of 1,420 grammes for the brain, a few more than Byron's, and a few less than the weight of Skobeleff's."

The reasoning of the Russian physician seems to us to be valid, or at least worthy of consideration; at any rate our own views have in it such confirmation that we feel constrained to present it, especially as nearly every week's mail since the death of Mr. Gambetta has brought us some fresh inquiry with regard to the apparently unsatisfactory statement, that the great Gambetta's brain weighed only 1,100 grammes.

PUT DOWN THE PISTOL.

THE mania for slaying, that, like the suicidal mania, appears at intervals in society, and furnishes the news reporter with a variety of items in horror fully equal to the demand of the public for sensation, suggests to every thoughtful mind that a great evil exists which the laws fail to reach. Not only in the prevention, but in the punishment of the act, does the law exhibit its shortcomings, for men are shot down in the public streets and common resorts of society

and the murderer is, in the great majority of cases, acquitted, and laughs in the face of outraged justice and of law-abiding people.

This is productive, naturally, of two results — retaliatory acts of desperation by the friends of the slain, and, what is still worse for the moral order of a community, the assumption of the vindication of justice by an enraged populace, that, blinded by passion and hasty in judgment, perpetrates murders if possible more revolting than those it aims to avenge. It may not be generally known that the average number of murders in these United States alone is between four and five daily, and in the great majority of cases the weapon employed is the pistol. In the street, the restaurant, the hotel, and even in the seclusion of home, in the city and in the quiet country village, the report of the revolver is heard. One is shot for destroying the happiness of a family; another because he has failed to settle a small debt; another for playfully changing hats with the shooter. The newspaper record of daily bloodshed is sickening, and the impotency of the law to punish makes one blush to own his nationality.

One chief cause of this ghastly evil consists in the unrestrained manufacture and indiscriminate sale of fire-arms, particularly revolvers. Produced at a cost that places them within the reach of all, and allowed transportation through the mails, these weapons circulate as common articles of merchandise, and get into the hands of the young and inexperienced, and, we might say, generally, that those who are the least fit to possess them are for the most part their owners. Few young men think their toilet complete without a half pound of wood and steel in the hip pocket, and which on slight provocation they may draw, and, by accident or design, use with deadly effect to another and to the ruin of themselves.

To the certain knowledge of the writer, one firm alone in this city, during the winter of 1881–'82, manufactured, sold, and distributed, *entirely through the mails*, over 5,000 revolvers, the immense majority of buyers being boys, or young men scarcely intelligent enough to write their own orders. The general manufacture, sale, and distribution of this weapon should be *stopped*, or else surrounded with such restrictions that the possession of them by untrustworthy persons would be almost an impossibility. True, many would cry out that manufactures were being crippled and fetters placed upon trade, but the common sense and humanity of the intelligent would make no protest; besides, common law in no case recognizes the legality of manufactures whose product is for the purpose of destroying human life, except when it is to be used for military purposes. People know that the purpose for which the revolver is used and carried is for the taking of human life, and although some may urge other reasons, yet in the last analysis they all converge to that one point. This is sufficient to condemn the weapon, and legislation should interfere to drive it out of common use.

The druggist is restricted in the sale of all active poisons and of those not necessarily fatal unless taken in large quantities. In several of the States he is required to pass an examination before he is allowed to dispense them, and is held to a direct responsibility for any mistake he or his subordinates may make when compounding them by a physician's order.

The manufacturer of explosives, a need-

ed article of mechanical industry, is restricted as to his location and vicinity to dwellings; even the saloon-keeper, if, by selling his slow poison causes death, may be liable to heavy damages; in short, the manufacture or sale of every article of commerce that by its indiscriminate distribution among the people might have the effect of destroying human life, is bound by statute restriction; but the revolver is practically unfettered, and although most deadly of all, is freely sold in the open market, offered as prizes in numberless cases, and so placed in the hands of old and young. Can not something be done for our bleeding and suffering people? Will not the law-makers do something to deliver us from the brutal ruffianism of the day which finds its support and stimulus in the loaded revolver at the hip; from the deadly carelessness of folly and ignorance, and also from those unhappy accidents which are of frequent occurrence even in the walks of culture and experience? A system of police regulation that would drive the pistol out of the hands of the general public, would be a grand step in the direction of moral reform.

THE NEW HEAD.

NOT a new outcome of the process of civilization which is more elaborate in its convoluted brain structure, and heavier than the maximum weight of the most highly endowed on the record of post-mortem analysis. Not a phenomenon in affairs craniological and cerebral which exhibits to our wondering sense new faculties and powers for which the old classification makes no provision. No, we do not refer to a prodigy of that sort, although the evolution philosophy encourages us to expect it, especially as some thousands of years have passed since those cerebral giants, Moses, Ptahhotep, Solomon, Homer, and Plato, lived; and with all the accumulating advantages of the growing centuries it would seem that there ought to be at least one conspicuous example of new tissue growth and its co-ordinate functions, evidencing the acquirement by man of original faculties unknown to the ancient mind. Our reference is to the new design on the cover of this Magazine; and it is made with the view to some explanation because several readers have asked its meaning. The illustration which formerly occupied the circle of honor, represented a hemisphere of the brain denuded of the outer membrane, and showing the relation of the brain to the skull, as well as the relative situation of a majority of the phrenological organs. That design possessed certain points of technical value best appreciated, perhaps, by the reader who had made some progress in the study of Phrenology. Its general teaching was substantially that the principles of phrenological science have chiefly to do with the brain and nervous system, recognizing nervous substance as the medium or source of the physical manifestation of mental power.

The new head teaches a practical lesson which we would impress upon every reader of the JOURNAL, and upon every one who thinks it worth while to look into the subject of Phrenology. It teaches a principle which every well-instructed phrenologist defines and illustrates on every occasion of the practical application of his vocation—a principle which has been a thousand times communicated through these pages, that the development of the human brain is from the

medulla oblongata as a center, and that fibers proceed from that in all directions to the convolutions; that the measure of development in any given region is dependent upon length of fiber and the comparative amount of brain substance indicated by careful observation. The size of an organ is not shown by any hump or bump, or hollow or depression; therefore such things may be due to cranial irregularity, injuries received in early life, and are of easy determination in their effect upon the apparent development of the brain itself.

The early teachers of Phrenology struggled against the imputation of "bumpology" flung at them by opponents and prejudice, and even to-day ignorance and prejudice are heard reiterating the senseless cry.

We would point the inquirer to the structure of the brain as shown by anatomy, and tell them our readings are predicated of development as nature has designed it; that we know nothing of bumps, and proclaim those who attempt to read character from such uncertain premises as unworthy of credit.

THE WAY-SIDE ROSE.

WE were walking in the suburbs of the city where lawns and hedges, wooded clumps, and an occasional stretch of meadow meets the eye that loves to dwell on nature's work in garden or in field, and our attention was drawn to an unusually large growth of wild rose, the bush extending fifteen feet or more along the side-walk. The frequent rains of spring and early summer had favored greatly the development of stalk and flower, and we stopped a while to admire the bush. Breaking off one of the most expanded of the roses, we were struck by the multitude of stamens and pistils which crowded its center. It seemed to us that nature was much too lavish in her provision for the reproduction and perpetuity of the plant. Not only was there the great strong bush holding to the tough soil by so many deep roots as to be able to defy, apparently, a cyclone, but each one of its thousand flowers contained the germs of a hundred plants. The reflection came as we scanned the flower, that nature made no exception of the wild rose, but generally in her work provided for its increase. Not only the plant, but insect and animal life showed this. The most insignificant worm was supplied with the power of producing hundreds of eggs, the smallest plant could develop its hundred or thousand spores, while the tree might cast a million seeds to the wind. And all this energy symbolizes an emphatic purpose to continue the life of each, and that the destructive influences which may surround animal and vegetable life shall not entirely triumph. Some of the eggs will develop new worms, some of the spores or seeds will germinate, and new plants or trees come to perfection, and the new growths will in their turn produce eggs and seeds. This principle in the life of the lower organisms has its lesson for man. It teaches him to expect success in hearty, earnest labor. It teaches him to hope for growth and expansion in his mental nature, as the result of self-study and training. A moral principle taken into the consciousness, nourished by reflection and developed by application in the manifest life, will grow and blossom and bear rich fruitage, expanding and ennobling the character of the man himself, and in radiating a sweet influence will sow seed of its kind in the mental life of others.

Our Mentorial Bureau.

To Our Correspondents.

QUESTIONS OF "GENERAL INTEREST" ONLY *will be answered in this department. But one question at a time, and that clearly stated, must be propounded, if a correspondent shall expect us to give him the benefit of an early consideration.*

IF AN INQUIRY FAIL TO RECEIVE ATTENTION *within two months, the correspondent should repeat it; if not then published, the inquirer may conclude that an answer is withheld, for good reasons, by the editor.*

TO OUR CONTRIBUTORS.—It will greatly *aid the editor, and facilitate the work of the printer, if our contributors generally should observe the following rules when writing articles or communications intended for publication:*

1. *Write on one side of the sheet only. It is often necessary to cut the page into "takes" for compositors, and this can not be done when both sides are written upon.*
2. *Write clearly and distinctly, being particularly careful in the matter of proper names and quotations.*
3. *Don't write in a small hand, or in pencil, as the compositor has to read it across his case, a distance of nearly two feet, and the editor often wants to make changes and additions.*
4. *Never roll your manuscript or paste the sheets together. Sheets about "Commercial note" size are the most satisfactory to editor and compositor.*
5. *Be brief. People don't like to read long stories. A two-column article is read by four times as many people as one of double that length.*
6. *Always write your full name and address plainly at the end of your letter. If you use a pseudonym or initials, write your full name and address below it.*

WE CAN NOT UNDERTAKE TO RETURN UNavailable *contributions unless the necessary postage is provided by the writers.* IN ALL CASES, *persons who communicate with us through the post-office should, if they expect a reply, inclose the return postage, or what is better, a prepaid envelope, with their full address. Personal matters will be considered by the editor if this is done. Anonymous letters will not be considered.*

SOCIAL ETIQUETTE.—*Question:* What traits prompt a person to offer one or two fingers in shaking hands? M. A. C.

Answer: A person who exhibits this want of courtesy is generally lacking in social development, the organ of Friendship, particularly, being deficient; and he may be said to want also in Benevolence, and that warm and active recognition of human fellowship to which a sanguine temperament conduces.

You ask also with regard to the organization of a person who would probably make a devoted step-mother or step-father. Large social organs, including, of course, a marked development of parental affection in the brain, would be a safe guide.

THE PREPARATION OF MANUSCRIPT.—The inquirer will find among the headings in script type of this "Department," some particular information on the subject of her inquiry. It is well—in fact, it is a matter of common courtesy—for a writer, when quoting from an author, to state the source of the quotation. The cost of the Government copyright of a book is but a dollar and two copies for deposit in the library of Congress. You should send the whole manuscript to the publishers, so that they can judge properly of its quality.

TEMPERAMENT OF NAPOLEON BONAPARTE.—W. H. P.—This remarkable soldier was, as you know, a Corsican by birth, and like Corsicans in general, had a dark complexion, dark eyes and hair. The temperament was mental-motive; he had a very large brain, it being particularly broad in the temporal region and between the ears, and of marked height in the coronal section. He was adapted to science, especially engineering; but his resolution, thoroughness of spirit, and leadership would have made him a captain in almost any sphere.

BUILDING A HOUSE.—A. M. E. P.—Feeble women should live in houses which are built low—pretty much all one story. Tall houses in the city, with their three, four, and five, and even more flights of stairs, are absolutely killing upon our wives and housekeepers who are compelled to live in them. In the ordinary city house of the old style, the housekeeper may be said to live upon the stairs, the most important rooms being separated by two or three flights, the kitchen and dining-room being in the basement, and the sleeping-rooms in the second or third and fourth stories. We hail the introduction of the French flat as an alleviation of many a feminine sorrow, but we would have them built upon more liberal plans than is common.

INVALID.—J. B. B.—You have probably some heart difficulty; the question is out of place in this department, being of a private nature; and as you have inclosed nothing to pay for the postage which a letter would require, it can not be expected that we shall write you. We have too many similar correspondents to make an exception in your case.

HEAD AND CONVERSION.—*Question:* Admitting that a person's character is determined mainly by the form of the head, how is it in the case of the sinful, lawless man who becomes converted and changed? Is the form of the head altered also? MACK.

Answer: Many a man is living a godless, law-

less, and desperate life, who possesses by original endowment a fairly organized brain. He is what he is because of the lack of training in right ways; unfortunate associations having been his from early life, the selfish propensities have been rendered especially active, while the sentiments, moral and religious, have been neglected and blunted, consequently don't exercise their restraint upon him. In other words, his action is the result of a lack of harmony and balance in the activity of the organs. Such a man, brought into new relations where he is influenced by good and noble people, in time experiences a very considerable modification. Then, his selfish propensities not being exposed to the old excitements, are kept in a calm, subdued state, and his moral and religious faculties become aroused from their old torpor and are made active; he appears in a new character, he is changed; yet the form of the head may not be absolutely altered, so that it is easily detected externally. Not long ago we published an article by a Presbyterian missionary of considerable prominence in the West, in which he stated a very interesting case which had occurred in his own experience. It was that of a man who had been given to ways irregular, but becoming converted, turned right about and engaged in religious work. In the course of a few years the upper part of his head increased, so as to be conspicuously larger than it was in the days of his folly and sin. We can say, generally, that if the person be young, change in his character will, in the course of years, be manifested in the form of the head; if he be in middle life, the change will be chiefly an interior one, that of organic exercise and activity rather than of such growth as will manifest itself exteriorly.

NATURAL SUGAR.—*Question:* Is the sugar in dates or any other sweet fruit more easily digested than that which is manufactured from cane? L. B.

Answer: Yes, the saccharine element in fruit and foods which are eaten much as nature made them, has, unless one over-eat, no injurious effects, as have the chemically prepared or manufactured sugars. We are told that in the sugar season of the West Indies, the colored people for the most part live upon the sugar-cane and thrive, but were they to attempt to subsist upon the sugar manufactured from the cane, there would be a very different result.

THE FRENCH LANGUAGE.—The best way to learn the French language quickly and well, is to live with French people, studying the text-books, and associating daily practice in conversation with what is learned from books. You can learn to read French by private study, but to speak it well, it is necessary to have oral practice. One of the best methods we know of for home-study is the "Mastery, or Meisterschaft," which is, we believe, conducted by correspondence with a teacher. We can supply you with a series of text-books for about a dollar and a half.

BISHOP SIMPSON'S HEAD.—J. A. S.—You are right in thinking that this eminent bishop of the Methodist Church has a good-sized head; it is very broad, and the forehead retreats somewhat, while the lower part of the face is rather heavy, this association of features imparting a depressed appearance to the head when viewed from the front. An explanation of this fact, which is occasionally met with among eminent men, was made in a late editorial. Bishop Simpson has a very strong, active, forcible organization; his temperament is thorough-going and spirited; he is essentially a worker. A self-instructed man in the main, he has brought himself up from a comparatively low position in life to one of prominence, and is, therefore, an example for young men of moderate endowment.

A STOPPING-PLACE.—C.—There are but few places pleasantly situated at which a person visiting New York City can expect to find hygienic fare. Dr. Charles Shepherd's "Hammam," on Columbia Heights, Brooklyn, occupies a fine position, overlooking the East River and Bay, and is very near the ferry, giving ready communication to all parts of the city. There one finds comfortable accommodation and a good table. D.

What They Say.

Communications are invited on any topic of interest; the writer's personal views, and facts from his experience bearing on our subjects, being preferred.

CONSCIENCE INNATE.—Mr. H. B. Fyfe, in his communication to your JOURNAL in the June issue, advances several interesting questions, but has evidently misunderstood Mr. B. F. Underwood's position in regard to an "innate conscience." Mr. Underwood, in common with most modern psychologists, holds that conscience, as well as the other mental faculties, has been developed gradually by the experiences of the *race* (not by mere individual experience alone); that conscience is only a blind guide until enlightened by experience or education. Surely, Mr. Fyfe will acknowledge that conscience in different races leads to opposite results—a blind impulse leading the Hindoo to sacrifice her child to Juggernaut; the Christian to burn heretics at the stake, to burn witches, to wage the wars of the Crusades, etc.

Conscience, when analyzed, is the feeling which

prompts us to do what we think is right, no matter whether it really is right or not. If it had been a divine endowment no doubt it would always have prompted us to do what was really right, but all history shows this has not been the case. Mr. Fyfe mistakes the bearings of Phrenology when he thinks it explains how the sentiments or faculties have originated. It really does not say whether conscience, or any other sentiment, has been created out of nothing, or whether it has been gradually evolved by the experiences of the race. All that Phrenology claims to have done, is that it has demonstrated the fact that brain is the organ of mind, and that the shape of the head indicates the quality of that mind. It does not state whence the mind came, or how it originated. Modern psychology shows very clearly that mind, or the nervous system, is not a separate entity, but is a property of so-called "matter," just as music is a property of a piano when played upon by the fingers of a musician. Mental qualities are a production of the brain when played upon by the forces of nature, operating upon the five senses.

Let us ask Mr. Fyfe what sort of a mind there would be if there were no sight, no hearing, no taste, no smell, no sense of touch? There could be no memory, there being no facts of sensation to recall; no music, never having heard a sound; no reason, there being no ideas of sensation or memory to reason upon. There would be nothing but the lowest vegetative life—such as the sponge, or the lowest animal undistinguished from vegetative life. Surely, he does not contend that man has an "innate" sense of justice! This is one of the highest attributes, and the last attained to. True, some well-developed minds will transmit the tendency to be just to their children, but even such children do not often manifest justice until manhood is reached and experience has shown its value.

"What constitutes right and wrong?" asks Mr. Fyfe. Surely, the individual conscience is not the standard of right. It may be said the "general welfare" is the ultimate standard of right and wrong. Important it is, indeed, that we should have such a *feeling* that prompts us to do what *we think* is *right*, otherwise we might know the right yet seldom do it, as is too often the case when conscience is not well-developed.

Your correspondent asks, also, why environments have not made animals moral as well as men. We reply by asking him another question. Why are not all trees oaks? why are not all animals sheep? why are not all men moral? Phrenology does not claim to answer these questions, but the evolution philosophy does, I think, to some extent at least.

Phrenology is not a *philosophy*, but a *science* demonstrating certain facts in regard to the human brain, and the outward manifestation of character by shape of head, etc. Certainly George Combe made some true philosophical deductions from the science; such as, in his moral philosophy, that "man is a creature of circumstances"; or, as he might have said, in other words, "man is governed and developed by his environment." It is sometimes said that the five senses are only the organs of mind. They are much more than that; they are the instruments used by natural forces in developing mind, just as the strings of the piano are the instruments used by the musician for developing music. Without the senses there would be no mind; without the piano strings there would be no piano music. The forces of nature—solar heat, light, chemical affinity, magnetism, etc.—operate upon matter, and vegetable and animal life is the result. Without the sun's heat and light there would be no rain, no rivers, no animal or vegetable life. After the senses are developed animal and mental life are mostly *automatic*. Ideas, thoughts, feelings, come and go in great part independently of the will. We can not remain without thoughts, even for five minutes, any more than we can stop the circulation of the blood. All we can do is to turn them into certain channels, a mode of self-control which is limited indeed, and possessed by some much more than by others.

J. B. SUTTON.

SALT AND LEAVEN INJURIOUS.—A correspondent residing in N. J., writes in regard to her experience in diet. She is a lady physician, judging from her signature, and therefore what she says is entitled to respect. She says:

"I have often thought I would acknowledge my obligation to you for much useful information gathered from your valuable JOURNAL. I have found, after nearly forty years' experience, that very much of the early decay of the teeth and a large portion of our nervous diseases, are engendered at home by the use of common salt, and the fermented food which forms part of meals. These cause irritation and inflammation, to cure which, a poultice of stimulating food or drink is put into the stomach, or a narcotic is used to deaden the sensibility. The final outcome of such cures is a worse condition; inflammation extends throughout the alimentary canal and may threaten its beautiful structures with ruin. I was tormented with toothache until I learned that salt was unnecessary. I contrived to live without it, and found that I could relish my food without salt, and found many exquisite flavors in food which I had never tasted before, and to my astonishment my teeth stopped aching, and have never ached since. The teeth which did not exfoliate are firmer and look better than ever. Other members of my family have been benefited in the same way."

Accompanying the above statements are some receipes for the hygienic preparation of some of

the cereals, which we shall hand over to the kitchen department for proving.

SELF-ESTEEM — SUPPLEMENTARY REMARKS.—In my article on "Self-esteem," which appeared some months ago in the PHRENOLOGICAL JOURNAL, I suggested changing the name of the organ to "Self-control." Since then a number of persons have sent communications in regard to it, some indorsing the idea, others opposing it.

I gave my reasons for the proposed change, and, from the tenor of my remarks, I do not think that it could be reasonably inferred that the suggestion grew out of any morbid desire to remove an old landmark, as I particularly stated that all the other faculties appeared to me to have names most appropriate for them.

As for the names and qualities given or ascribed by "standard authors," let not science be bound beyond reason by such authority; let science be governed by what is true and best. If more light suggests and approves a reasonable change, let us not hesitate to make it, for thereby we most surely advance the subject to a higher plane. Here is a name that implies that the faculty is mostly, if not wholly, absorbed in thinking well of oneself. If the term self-esteem implies anything it implies this. It is useless to say that it implies something else, self-reliance, for example, as this virtually proves the argument for change. The most prominent feature of this faculty is *control*; without it the mind has not complete control of the faculties. The individual may have fine faculties, but without this factor they are of inferior value, and with this faculty their value is increased many fold, or, perhaps better, they are worth their full value.

As for it being a part of *Will*, such has not been claimed. At some future time I hope to be able to make a few remarks on *Will*, or, better, Firmness. The ability to jump a great distance, to walk on a narrow, elevated place, or to play a musical instrument, does not depend on Will or Firmness. One may have the Firmness to force his faculties, but without Self-esteem [Self-control] he will find himself weak; reinforced with "Self-esteem," he will be strong.

It was not claimed that Self-esteem is a moral or non-moral faculty, but simply that it gives the mind the power of control over the faculties in the line the faculties of the mind desire to act; neither is it claimed as a "personal faculty." If it has founded tyrannies and been instrumental in perpetrating fraud and oppression, it has likewise founded and maintained the places of highest culture, been foremost in the ranks of liberty and morality, and done good works in every department of life.

I again repeat, that it is not a moral faculty; it is not conscious of the motive; it is simply the force which holds control and keeps the other faculties up to their mark, and is, as it were, a groove to support them. In this sense it may be termed a *moral* force, and in no other.

It argues nothing in this respect against it because it is large in the criminal classes; on the contrary, it argues in favor of the *control* or confidence idea. It takes considerable assurance on the part of a man to be a criminal, to commit offence against the moral laws of the land, especially when so many before him have been unsuccessful; only a large Self-esteem would give him assurance against such odds.

Outside of a few worthless fellows who purposely get into prison in order to secure a home —such as it is—those who commit crime do not expect punishment, for they always seem to work on the idea that they are smarter than the rest of mankind. Some other man committed murder or theft and got caught, but they are smart enough to "cover their tracks," but when it is too late they discover that it is a most difficult thing to do, for the simple reason that mankind has to be consistent. Unless consistent the world soon discovers that something is wrong, and then suspicion is aroused, and suspicion leads to detection. It is an easy thing for the truthful man to be consistent, but a most difficult and trying thing for the criminal to be. Self-esteem is not governed by the forehead, though in the majority of cases, I think, as has been remarked, the faculty will be found large when the forehead is small. In such cases the unthinking world is surprised at the smartness of the individual, but the well-informed phrenologist is not, for he well knows the value that this faculty gives to the weak frontal powers. It is a great mortification sometimes to men of fine ability to see men of low grade surpass them, and gain the confidence and approbation of the world, but if they would study the noble science of the brain which we term Phrenology, they would understand the cause, and might, in a measure at least, correct it; for it is an indisputable fact that a faculty can be developed and the brain thereby increased in power. No one ever held with pleasure, profit, and honor a public office without this faculty being well-developed. Some of our public men have not had it so well-developed as others. Webster, for example, I think, could not in this respect be rated more than "full," yet we see how well Mr. Webster's actions agree with this idea. He was not the ready man that Clay was. He had more intellect, but he had not Clay's readiness in speech. With more Self-esteem he would have been a greater success, and with a higher crown he would have been "God-like" in soul as well as in body.

Mere Self-esteem does not give conceit. Conceit, I think, is rather the product of an over-

large occiput. What we want in life is balance of parts, and strength of the whole. In nothing does this apply with more force than to Phrenology. We want a good balance as well as strength. That which is not well-balanced only reacts to the injury of itself. Where Nature has not given us balance of organism, it is our duty to discover, not only the weakness, but the remedy. Without the aid of Phrenology the fact of weakness and unbalance is detected, but not the cause. Phrenology is the only science able to detect the cause and supply the remedy. I. P. N.

PERSONAL.

In 1857 M. Renan wrote: "I am proud of my pessimism." In 1883 he writes: "In bidding adieu to life, I shall only have to thank the Source of all Good for the delightful passage through reality which I have been permitted to accomplish." Just a little contradictory, eh?

Ferdinand Schumacher, the Prohibitionist candidate for Governor of Ohio, is the well-known manufacturer of oatmeal and other farinaceæ, of Akron. He not only refrains from the use of liquor and tobacco himself, but he compels his employés, when about the mills, to do the same. Ohioans, elect him.

Mr. William Crawford, a Texas gentleman, in his eighty-sixth year, sends us an acrostic written on our firm name; he designs it, not for publication, but as the expression of his cordial good-will toward us; his sympathy in the mission of Phrenology shows that, although so old a man, his mental powers are far from feeble.

W. A. Hammond, M.D., has aroused the indignation not only of the women of New York, but also of the life insurance authorities, by saying in an article published lately that policies are refused to women, because they are so conspicuously inexact in their assertions concerning themselves. The insurance men assert that women tell the truth as well and as often as men, and that policies are constantly issuing to them, only they are charged a slightly higher per cent. W. A. H. should be more careful about his data.

Dr. Oliver S. Taylor, of Auburn, N. Y., the one surviving member of Dartmouth College's class of 1808, is now in his one-hundredth year of life, and enjoys perfect health of mind and body. The one slight attack of sickness he can remember occurred some seventy-three years ago.

And this same Dr. Oliver S. Taylor was our daily instructor in higher mathematics, natural science, and Latin grammar, in 1844 and 1845, at Franklin Academy.—*Ed. Prattsburgh News.*

And he did something of the same kind, brother Prattsburgh *News*, for the proprietor of the Phrenological Journal, only a half dozen years or so previously.

WISDOM.

"Think truly, and thy thought
Shall be a fruitful seed."

Face all things; even adversity is polite to a man's face.

There never was a mask so gay but some tears were shed behind it.

If I wished to punish an enemy I should make him hate somebody.—*Hannah More.*

The wheel of fortune turns incessantly round, and who can say within himself, I shall to-day be uppermost?—*Confucius.*

True liberty consists in the privilege of enjoying our own rights, not in the destruction of the rights of others.

A bad man is like an earthen vessel, easy to break and hard to mend. A good man is like a golden vessel, hard to break and easy to mend. —*Hindu* (*Hitopadesa*).

The more complete is the mental discipline, the greater is the productive power of society, and the greater the luxury for each.

At the bottom of a good deal of the bravery that appears in the world there lurks a miserable cowardice. Men will face powder and steel because they can not face public opinion.—*Chapin.*

Avoid accompanying your censure with any expression of scorn, with any phraseology which shall convey a wish of yours to degrade or lower in the social scale the object of your reproof.

Education is not learning; it is the exercise and development of the powers of the mind. There are two great methods by which this end may be done; one in the halls of learning, the other in the conflicts of life.

Self-preservation, not of civil society, but of popular self-government, rests on intelligent voters. The elector must be able to understand and obey the law made to govern him, and he must likewise be able to make the law.

I hold it as a great point in self-education that the student should be continually engaged in forming exact ideas, and in expressing them clearly by language. Such practice insensibly opposes any tendency to exaggeration or mistake, and increases the sense and love of truth in every part of life. Those who reflect upon how many hours and days are devoted by a lover of sweet sounds to gain a moderate facility upon a mere mechanical instrument, ought to feel the blush of shame if convicted of neglecting the beautiful living instrument wherein play all powers of the mind.—*Professor Faraday.*

MIRTH.

"A little nonsense now and then
Is relished by the wisest men."

A CLERGYMAN got into hot water lately, by asking the choir to attend a meeting, adding, "at least such of you as can sing."

"How are you, Smith?" said Jones. Jones pretended not to know him, and answered, hesitatingly, "Sir, you have the advantage of me." "Yes, I suppose so; everybody has that's got common sense."

A WOMAN applied for a place as a driver on the canal. "Can you manage mules?" asked an employer. "I should smile," she said, "I've had two husbands."

THE remains of a man have been dug out of the ruins of Pompeii, with both hands resting on his stomach. The building in which he was found is supposed to have been a cheap restaurant.

"WHAT a fine-looking man that is!" said one gentleman to another, noticing a face and form such as would attract attention anywhere. "Yes," was the reply, "he looks like an encyclopedia, but he talks like a primer."

"WILLIAM, my boy," says an economical mother to her boy, "for mercy's sake don't keep on tramping up and down the floor in that manner, you'll wear out your new boots. (He sits down.) There you go, sitting down! Now you'll wear out your new trousers! I declare, I never saw such a boy!"

A SCISSORS-GRINDER was ringing his bell, when a young man called to him, and asked: "Say, can you sharpen everything?" "Yes, efery-tings." "Can you sharpen my wits?" "Your vits? Vhell, I guess you haf to go und get a new handle und back-spring put in first. I must haf sometings to hang on py."

A NOBLEMAN once asked a clergyman at the bottom of the table why the goose, when there was one, was always placed next to the parson. "Really, my lord," said the clergyman, "your question is somewhat difficult to answer, and so remarkably odd, that I vow I shall never see a goose again without being reminded of your lordship."

"YAAS," exclaimed honest old Johann Kartoffelsalad, "young beebles haf got into extravagant noshuns. Ven I vas yung I rote on plain foolishness gap baper. Now my poy rites on schmall, golt-edge little schraps vot gost five times as much as a pig foolishness gap, und don't give you quarter so much room for ritin as dot good, old-fashun foolishness gap."

Library.

In this department we give short reviews of such NEW BOOKS as publishers see fit to send us. In these reviews we seek to treat author and publisher satisfactorily and justly, and also to furnish our readers with such information as shall enable them to form an opinion of the desirability of any particular volume for personal use. It is our wish to notice the better class of books issuing from the press, and we invite publishers to favor us with their recent publications, especially those related in any way to mental and physiological science. We can usually supply any of those noticed.

THE HEART OF THE WORLD; or, Home and Its Wide Work. By G. S. Weaver, D.D., author of "Mental Science," "Hopes and Helps for the Young," etc. 8vo. Illustrated. pp. 742. Price $4. The Elder Publishing Company, Chicago.

The author's name is a sufficient pledge to the book reviewer that this work is not an ephemeral, gossipy, summer-breeze affair. It treats on subjects with which Dr. Weaver has experience as an observer and a writer—subjects which may be said to belong to his peculiar province, the success of those mentioned in the title, besides "Aims and Aids for Young Men and Women," being evidences of his fitness to instruct the home-circle. In this new volume he comprises the results of his study and experience with reference to the office and function of the home in human life, and in his practical manner and yet always attractive style, treats of the various topics of importance which belong to this "first, greatest, and best of the institutions of civilized society." It is a book which can be urged upon the attention of people, for its reading will be likely, in every case, to produce some impressions which in the final outcome will better the manhood or womanhood of the reader. There is something in it to interest every one, whether old or young, great or small. We approve the course of the publishers in producing the volume, and shall be glad to know that it secures a wide distribution. The binding is neat and substantial, and several fine steel illustrations add their attractiveness to the text.

INQUIRIES INTO HUMAN FACULTY AND ITS DEVELOPMENT. By Francis Galton, F.R.S., author of "Hereditary Genius," etc. 8vo, pp. 380. With plates. Price $2.50. New York: Macmillan & Co.

This is another contibution to authropological research by this industrious observer, which will interest all who give attention to the important subject of heredity, by its detail of careful work on the part of Mr. Galton. His experiments in "Sensitivity," or the relative capability of different persons to distinguish minor differences of weight tone, color, etc., and also, with animals, to determine peculiarities of organiza-

tion with reference to hearing sound in different keys, furnish new data of value in anthropometry. He shows how keenness of vision in seeing distant or small objects may exist, with inability to discriminate nicely between differences of tint; and how one may have a quick ear for sounds in general, yet lack power to detect close variations of tone. Here he recognizes the effect of culture on nervine faculty. He claims that as a rule what is generally called nervous irritability, that quality which renders some distressed by noise, sunshine, etc., is not associated with acute powers of discrimination. He finds, what will be a surprise to most of his readers, that "men have more delicate powers of discrimination than women, and the business experience of life seems to confirm this view. The tuners of piano-fortes are men, and so, I understand, are the tasters of tea and wine, the sorters of wool, and the like." May it not be suggested with regard to these occupations, that women have not had the opportunity to obtain a similar experience with men? We know that in some branches of art, for instance, the manufacture of artificial flowers, women are regarded as much more skillful than men.

He also states that the popular belief concerning the superior sensitivity of the blind is due to exaggerated claims on their part, which in his observations have not been verified.

He has found that the great majority of people are unconscious of their personal peculiarities, and do not recognize that they owe their success in this or that line of effort to "natural gifts" of exceptional capacity and energy on the one hand, and of exceptional love for their special work on the other. In this he confirms the view of the experienced phrenologist, and, like the latter, asserts "the importance of submitting our faculties to measurement."

Mr. Galton's opinions on the transmission of physical and mental characteristics, especially in relation to criminal propensity, have sustained no change since the publication of "Hereditary Genius," rather they are reiterated with emphasis, and principles enunciated with urgency which he deems essential, in an endeavor to elevate the moral standard of society and improve the physical stock of the people. Hereditary taints must be bred out before we can rise to the position of truly free members of an intelligent society. He very encouragingly (to Americans) says that "the most likely nest at the present time for self-reliant natures, is to be found in States founded and maintained by emigrants."

The general reader will be entertained by the author's analysis of types of physiognomy, which he illustrates by his composite portraits, and also by his vivid presentation of the topics "Mental Imagery," and "Number Forms," in which his treatment assumes many novel phases. Mr. Galton apparently assumes the truth of the evolution theory, and considers it the "religious duty" of man to help forward the process of improvement "for his own personal advantage," "deliberately and systematically."

SEVEN DAYS IN A PULLMAN CAR. By Auburn Towner. 12mo, pp. 260. Paper, 50 cts.; cloth, $1. New York: J. S. Ogilvie & Co.

The author makes use of the old idea so deftly applied by Chaucer, Boccaccio, and others of less famous memory, but gives it a *locus* synonymous with progress—the elegant and convenient vehicle for long journeys on the rail, so well known by the name of its most prominent manufacturer. A party of married and unmarried people make a journey across the Continent. To fill up time agreeably, a plan is arranged by which some one tells a story, after night has fallen, each day while the journey lasts. We have nine stories, somehow, for the seven evenings, besides a pleasant little love affair growing out of the trip itself. The descriptions of character are generally good, and for the most part the book is an entertaining bit of summer reading.

COMPETITIVE WORKMEN. By Faye Huntington, author of "Ripley Parsonage," etc. 16mo, pp. 272. Price $1. National Temperance Society, J. N. Stearns, Agent, New York.

A new temperance story, founded, as all such stories must be, upon old themes, but the ever-recurrent themes of temptation, degradation, sorrow, ruin, so long as strong liquor shall be promiscuously sold and promiscuously drank. This tale, however, is an exemplary one for reform, as it shows how a thriftless country town, noted for its cider-drinking and spirit manufacture, ignorance, and disregard of the Sabbath, was changed in every way for the better through the efforts of two earnest workers—one a well-educated school-teacher, the other a German lad, poor in this world's goods, but rich in his love for truth and decency.

PUBLICATIONS RECEIVED.

DIO LEWIS' MONTHLY. New York: Clarke Brothers, Publishers. pp. 128. Price $2.50 per year. This new candidate for public favor makes its first appearance for August, 1883. Of course, we welcome it most cordially, as we do everything from the pen of Dio Lewis. His genial way of uttering sober, alarming, and even unwelcome truth, makes his reader follow him as by a strange and pleasant fascination. Of course, it is not expected that a massive magazine like this will be filled by one pen, though it be facile, and, therefore, we gladly meet several other names as contributors, which are well known in progressive and reformatory literature, whose

vigorous and timely articles will be read with pleasure and profit. For thirty years or more few names have been better known as teacher, reformer, and writer, than that of our friend Dr. Lewis, and it is easy for us to say that his monthly will deserve success. Whether or not the publishers are in accord with the spirit of the editor, we can not say, but a rather incongruous advertisement which appears in their department would seem to denote the negative. That, to be sure, is "business," but we can not help thinking such an advertisement is out of place in any part of such a magazine.

LIPPINCOTT'S MAGAZINE, for August, is a good specimen of that monthly. In quality, it is fully up to the average.. As a summer mélange, it is better than the average book for an afternoon's entertainment in a quiet nook by oneself. There is a sketch of river scenery in France, with fine illustrations, a moose hunt in the Ottawa valley, and a day at Lake Tahoe. There is also a thoughtful article on hydrophobia as the substantial element of the Number. J. B. Lippincott & Co., Philadelphia.

AMONG the magazines whose province is that of health, and which come to our table regularly, is the *Sanitarian* of New York. This recommends itself to the reader for its independence of opinion on matters relating to hygiene and the treatment of diseases, whether endemic, or epidemic, or sporadic. *Good Health* is another of the kind, and may be said to represent Western enterprise. It is published in connection with a well-known sanatorium in Michigan, but has for its conductor a pushing, broad-viewed man. *Herald of Health*, of New York, has long been known for its advanced opinions on diet, and is deserving of an extended circulation.

SCIENCE maintains its upward way, dealing in matters of technical research, and supplying those who are interested in scientific progress the information which they desire. It can not be expected that a single periodical covering so broad a field will be very minute, but the editor certainly should be credited with earnestness of endeavor to meet the want of a general reader, to know the result of work done in all departments of useful experiment and observation.

We are promised by Mr. King in a circular before us as we write, that the issues of this weekly for Aug. 17, Aug. 24, Aug. 31, Sept. 7, Sept. 14, will contain an elaborate report of the proceedings of this year's meeting of the American Association, which takes place in Minneapolis, Minn., beginning on Aug. 15, and ending on Aug. 22. Scientific men will be pleased to learn that they are to be thus early provided with reports of the meeting. These reports are to be made by thoroughly competent persons, and in many cases furnished or revised by the authors of different papers.

SUCCESSFUL MEN OF TO-DAY. No. 90 of the Standard Library, published by Funk & Wagnalls of New York, is founded on a series of addresses on success, which were chiefly delivered to young men by Wilbur F. Crafts. The book deals with facts in the biographical careers of such men as John Sherman, Alexander H. Stephens, Noah Davis, Neal Dow, Joseph Cook, Mark Hopkins, C. W. Elliot, and so on, they being made the text of pithy, practical remarks, the whole being designed as an aid to the young man in making his way in the world. An appendix contains replies received from prominent men in different parts of the country to questions relating to their early life, education, habits, etc. This seems, to us, the most valuable part of the book. Price 25 cts.

COLUMBIA COLLEGE has distributed a circular of information with reference to its proposed "Annex," to furnish collegiate education for women. Those of our lady friends who have aspirations toward high intellectual training in literature, history, the classics, and European languages, physics, and philosophy, may obtain the circular by addressing President F. A. B. Barnard, New York.

ALL the way from Bozeman, Montana Ter., comes a little pamphlet upon the places of recreation, the superior natural advantages, industries, and opportunities of Bozeman. It owes its being to the pen of Matt. W. Alderson, editor of the *Avant Courier*, a paper published in Bozeman. The showing is certainly very favorable for a town and neighborhood so far removed from the civilization which the Eastern people boast of. The price is 25 cts., to be had on application to the author.

BUILDING AND ARCHITECTURAL MONTHLY, published in New York, is a valuable paper for the use of builders, carpenters, architects, and the general reader who is desirous of looking into one of the most important interests of our country. Published at $1 a year.

THE POPULAR SCIENCE MONTHLY for September, as announced by its publishers, will contain among its papers the following pertinent topics: The Germ-Theory of Disease; The Chemistry of Cookery; Agricultural Experiment Stations; Insanity, by one who has been insane; The Growth of Hygienic Science; "Our Marriage and Divorce Laws."

THE NORTH AMERICAN REVIEW for August has an excellent essay on an economical question entitled "Making Bread Dear," while a *pro* and *contra* discussion of Science and Prayer will interest many readers.

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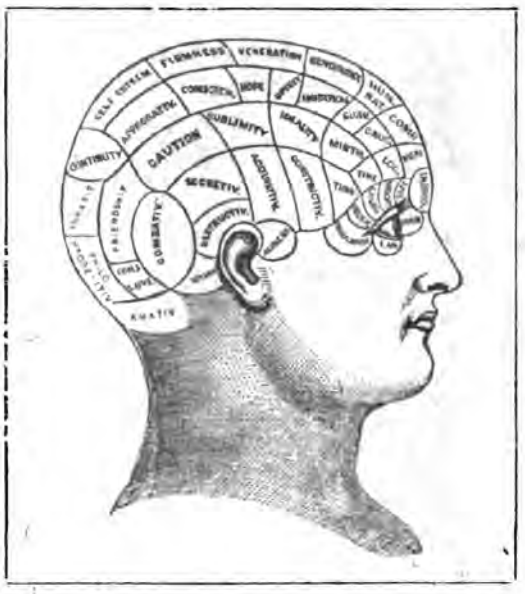

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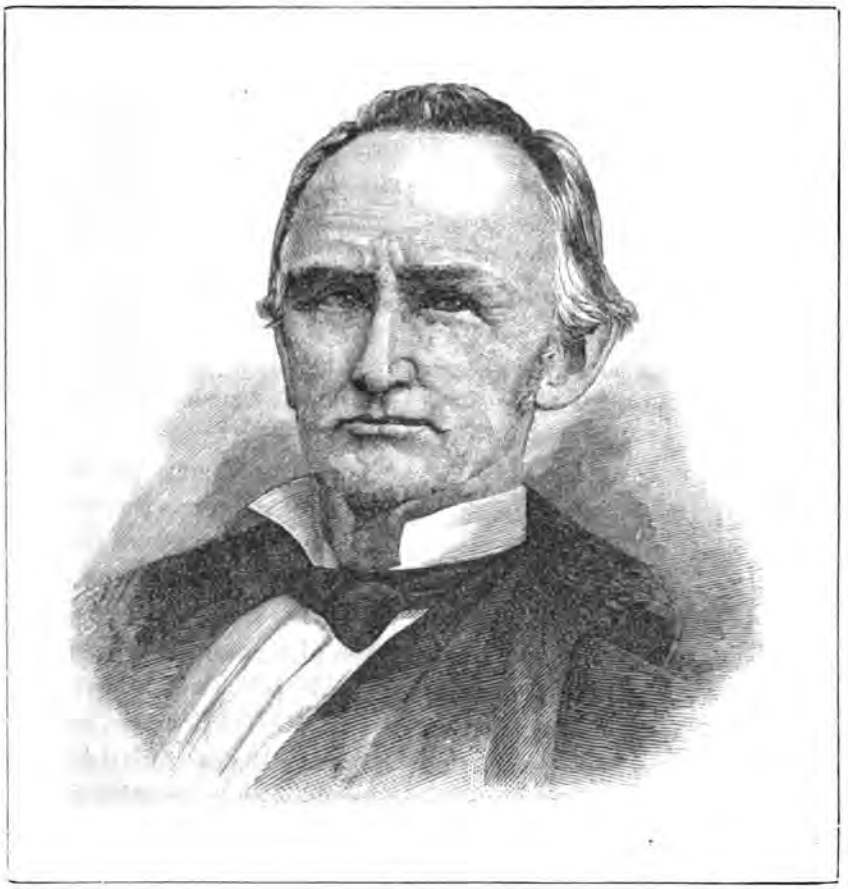

MONTGOMERY BLAIR,

THE EMINENT POLITICIAN AND POSTAL REFORMER.

THE history of this distinguished man is admirably corroborated by his physical and phrenological development. He had a tall and ample bodily development, and a manly and dignified presence. Not one man in fifty thousand surpasses him in these distinguishing characteristics. With a good body and large brain,

with ample culture and wide experience of men and affairs, and having a parentage which was distinguished, he early took, and admirably maintained, an influential rank among men of mark. This face is supposed to represent him at about seventy years of age, and without any marked indications of decay, we see some disposition to overwork mentally, and a lack in the circulatory forces necessary to the ample support of such a frame and brain.

The face and forehead indicate intelligence and sharp intellectual instincts, and he was quite as much governed by intuition, which was derived from his mother's side, in shaping his course and in appreciating men and affairs, as he was by logical inferences.

That is a scholarly brain, keen in appreciating facts, with remarkable power to hold them, and it must have been richly stored with available knowledge; that is the historical type of mind with an analytical method of investigation. He had logical power enough to sit in judgment on the facts and experiences he acquired, and to prognosticate logically the results derivable from his surroundings. The great reforms in the postal service which he inaugurated while Postmaster-General, evinced equally the theoretical, the prophetic, and the practical types of thought.

That squareness of the brow outward from the eye shows Order; that great breadth of the temples shows constructive ability—the power to think clearly in respect to complications. He would have made a fine manufacturer or financier for any department of difficult business.

The desire for property was evidently strong in him, and he would have made a wise business man if trained to it. His work in the post-office evinced constructive, historical, and practical talent.

He had a wonderful ability to read strangers and measure the motives of men; he was a man of courage and force of character, and dared to differ from those who were his friends in matters pertaining to the nation and political parties.

There is a high, moral head; integrity, sympathy, faith, reverence, stability, and dignity must have been marked traits in his character. The face indicates social power, a friendly spirit, the tendency to call men around him, and bind them to himself and his cause; hence he was a man of personal influence, and more inclined to be a leader than a follower.

In so large a brain and so well-sustained as this was, and endowed with power to obtain knowledge, skill, and practical judgment, aided by sympathy, stability, and affection, influential position and great control among men are the natural results.

The Blair family has been so long known to Americans because of its prominence in political affairs, that the subject of this sketch needs no special introduction to the reader. Members of it have taken high ground in the great questions of public policy which have commanded the attention of Congress, and the declarations of a Blair at such times excited the admiration or indignation of the public; the latter, however, generally in combination with respect for the boldness and ability with which these declarations were made.

MONTGOMERY BLAIR was born May 10, 1813, in Franklin County, Ky. His education was completed at West Point, where he was graduated in 1835. After serving for a short time in the Seminole war, he resigned his commission, and

turned his attention to the study of law, and a few years later was admitted to practice at the bar in St. Louis. Soon afterward he was appointed United States District Attorney for Missouri. In 1842 he was elected Mayor of St. Louis, and in the following year was advanced to the bench of the Court of Common Pleas, where he remained until 1849, when he resigned. Three years later he removed to Maryland, and there frequently engaged in cases before the United States Supreme Court, and was one of the counsel in the famous Dred Scott case.

His party affiliations then were Democratic, and his part in the Dred Scott case secured the appointment from President Pierce to the office of Solicitor to the Court of Claims. When the Missouri Compromise was repealed, Mr. Blair left the Democratic party and joined the Republicans—a step which lost him his position in 1858.

In 1860 he presided over the Maryland Republican Convention, and was a member of the Republican Electoral College of that State. In 1861 he was appointed Postmaster-General by President Lincoln, and administered the business of the department for three years with marked efficiency. One of his early acts was to prohibit the carrying of certain disloyal newspapers in the mails. This, of course, attracted widespread attention, and the matter was brought up in Congress; and, after extended consideration in the House of Representatives, Mr. Blair's action was approved. He also made many important improvements in the postal service, among which were the establishment of uniform postal rates throughout the country, the system of free delivery in large cities, the money-order system, and the postal railroad cars. While organizing these great systems for the benefit of the country, he also made the Post-Office Department self-sustaining.

In October, 1864, he withdrew from office, and returned to the Democratic party. He was an earnest supporter of Mr. Tilden for the Presidency, and probably foremost in having secured his nomination to that office. After Mr. Tilden's defeat he was prominent in making repeated attacks upon the title of President Hayes to his office. He wrote various letters, and made some speeches on the subject. In the spring of 1878 he prevailed upon the Maryland Legislature to pass a memorial to Congress, asking that the question be reopened. Naturally, he favored the candidacy of Mr. Tilden again in 1880, but he supported Hancock cordially, and made several speeches during the campaign.

In person Mr. Blair was tall and thin, with a large head and smoothly-shaven face. In manner he was simple and kind, his inclinations being for agricultural life. He was wealthy, owning a costly winter residence in Washington, while he retained, as a summer home, his father's fine homestead of 600 acres at Silver Spring, Md. He there paid much attention to the raising of choice cattle. He received from his father (Francis P. Blair), and leaves behind him, a large and valuable collection of manuscripts given by President Jackson to the elder Blair for the purpose of writing his biography. Upon that work both the Blairs spent much time, but it is yet incomplete.

He died on the 27th of July last, at his home, from a spinal disease of several years' duration.

OUR TWO MIRRORS.—We can, by the aid of two mirrors, possessed by every one, make ourselves each day more and more beautiful by contemplating ourselves in them and looking at the features each one reflects to the other. The one is the past and the other is the future, and by constantly referring to them we can so modify, reform and remodel our peculiar characteristics that all who know us will wonder what secret charms we work that our beauty is so enhanced.

TRUE BASIS FOR THE SCIENCE OF MIND AND THE STUDY OF CHARACTER.

RELATIONS OF PHRENOLOGY TO MODERN PHILOSOPHY.

BEFORE closing this essay it may not be out of place to show the important relation Phrenology bears to modern sciences which have directed their attention to the study of man. Phrenology teaches their genetics, power, and combinations. Now, it is evident that if Phrenology has separated the instincts and various innate tendencies in man and connected them with cerebral development, it must have an important bearing upon the evolution theory and the speculations of Darwin and Spencer. When Gall and Spurzheim gave their views to the world, the doctrine of the innate powers of the human constitution was at its lowest ebb. Hume, Paley, Hobbes, and others were the typical philosophers under whose yoke all men groaned. These philosophers reduced all our instincts, faculties, and everything which elevates us above the level of the dust, to mere bodily feelings of pleasure and pain. Notwithstanding that this doctrine seems absurd at the present time, it was then widely prevalent because urged alike by skeptics and Christian believers. To face the supporters of this groveling and debasing doctrine was the task of Gall and Spurzheim. Unfolding a system of mental philosophy, which not only recognized instinct as a part of our mental constitution, but that all our faculties were innate products of habit or association and not created by any law. This doctrine did not escape the venom of skeptics and Christian philosophers, who stigmatized it as a materialistic system destined to overthrow all belief in philosophy and religion. Its supporters were branded as heretics, charlatans, and ignorant quacks, and some of them driven from their native country.

Amid all opposition, however, the three faithful apostles of truth, Gall, Spurzheim, and Combe, spent their lives and fortunes in promulgating their principles. It is curious that some of this scorn and contemptuous neglect still continue to sway the minds of some even in our own day. Men carefully avoid stating that they derive any light from Phrenology. Yet many of the doctrines taught by the phrenologist have crept into the legitimate branches of anatomy and physiology, without credit being given to their authors. Many points settled by the phrenologist are being brought forward every day as new discoveries by the experimentalists. So valuable a collection of facts and truths as that embraced in the works of the phrenologists could not remain hidden, but found their way among the thinking public at large. And when once you affect the thoughtful class who constitute the readers and arbiters of philosophic truth, a pressure is brought to bear upon select and conservative schools of learning, and finally the philosophers of such schools find themselves secretly imbibing truths which openly they would reject with scorn.

Moreover, it is a deep truth, revealed by history, that truth must prevail, if not in the garb or body in which it is at first set forth, yet when culled of its disagreeable association or presentation, it silently makes its way where it was zealously debarred. It was even so with phrenological truth. It was bitterly opposed on all sides, but somehow or other men began to find themselves using its nomenclature and speaking of innate powers as part of the human constitution which were entirely unknown to the schools of their fathers and which would have shocked conservative circles to hear mentioned as worthy of philosophical consideration. If any one wishes to verify this statement for himself let him take up our modern philosophers, Bain, Spencer, Darwin, and see what they are willing to acknowledge as primitive faculties, and then compare them with the classification of their philosophical predecessors, and he will be surprised to find how many

faculties are now thought to be a part of our constitution which before were totally ignored. It is a fact evident to all who have studied the phrenological system that many of the faculties which they were the first to analyze and describe have been secretly appropriated by metaphysicians and scientists without even an acknowledgment. The most honest and candid of modern philosophers in this respect, however, is Professor Bain, of Edinburgh, a philosopher whose books on the "Emotions and the Will" and "The Study of Character" entitle him to a very high rank among that class of philosophers who have directed their energies and investigations to the solution of the difficult problems of the most useful of all the sciences, the science of human character. But it will become evident to any careful reader of Phrenology and of Bain's works that much of his reasoning and classification has been drawn from or suggested by the fathers of Phrenology.

INFLUENCE ON MODERN THOUGHT.

The doctrine of the innate powers of mind as taught by the phrenologist has great value in any system of morals, hence Combe's "Moral Philosophy" and "Constitution of Man" were the natural outcome of his study of Phrenology, and as these books were widely circulated in their day they have had an influence direct and indirect on our modern ethics.

Another science, the science of Ethnology, has had a flood of light thrown upon it by Phrenology. Under its principles this science has assumed a sure and definite character. The characters of the various races of men have been analyzed and classified. Regional Phrenology has been accepted as an indispensable element in the study of this science, even by those who object to organological phrenology. The classification of the characters of the people of the various nations has an important bearing upon the art of diplomacy, and it would be well if this department were more thoroughly developed. The revival at the present time of the study of innate powers by Spencer and others is a movement if not due to Phrenology is at least anticipated by Phrenology. The views of Spencer and modern scientists, that no matter about the genesis of the faculties we have instincts which are closely related to those in animals—this that the instinct which causes the squirrel to hoard his food is that which in man gives the love to acquire property—is nothing more than what Phrenology taught years ago. The modern scientists take up some of our instincts and discuss them somewhat in detail, but much of what they say can be found in the works of the phrenologists. It is not my aim to prove that modern scientists have not added anything to the science of mind either in the way of clearer definition or demonstration; far be it from me to slur in the least the earnest effort of modern philosophers to solve the different problems in the science of character, but in the name of impartiality I do protest against all egotistical efforts on the behalf of modern philosophers to glide over or ignore the truths of Phrenology to which they are indebted directly or indirectly.

The phrenological system has still much to offer modern science which can be pushed aside only to the detriment and delay of the study of human nature. The genetic faculties of the human constitution are not only analyzed and described by the phrenological system, but they are connected with cerebral development. Suppose we deny the truth of this cerebral connection, we can not shuffle aside the facts they have accumulated. These facts were collected during the life-long labors of men of marked abilities for scientific investigation, and therefore deserve our careful attention. Each instinct is separately considered, minutely described, and appropriately illustrated by facts gathered from the observation of the habits not only of men, but also of animals. The tendency of these facts is to support the principle that mentality depends for its manifestation upon cerebral development, that from the lowest to the

highest creature living there is a dependence upon cerebral structure, that in the lower species the brain and nervous organization are smaller in size than in the higher. There is not only an advance in development of the encephalon as a whole, but there is a marked difference in the development of the respective parts themselves. Thus, for instance, phrenologists find that the parts of the encephalon which they connect with different instincts are wanting in some and present in other animals, as in the case of the instinct of locality, which gives a knowledge of distance and direction, is large in birds which leave their homes for foreign countries in seasons when food can not be obtained, and is small in those birds which prefer to perish at home rather than fly to distant parts. So also the beaver, noted for its constructiveness, has that organ large. The squirrel is an acquisitive animal and has the organ of Acquisitiveness large; while many animals that do not construct houses or lay up food for themselves are deficient in these organs. The cock has the organ of Combativeness large and is noted for his pugnacity.

Spencer discusses at particular length the relation of the inner to the outer environment. It seems to me that from the basis of the phrenological system a similar doctrine could be deduced. The phrenologists do not express their views in terms of the relation of the inner to the outer environment, but they have given facts with respect to the action of the faculties which are well worthy of consideration at the present time. They hold that all the faculties they have discovered are not mere passive sensibilities, but all tend to actions, the larger having greater tendency to act than the smaller. These faculties can not be called into action by the influence of the will; we can not fear, love, hate, or pity simply by willing it, but internal or external causes may stimulate the nerve centers, and whether we will or not the emotions will be felt. As, for instance, how often do we feel an uncontrollable trembling of the body and signs of fear when placed in circumstances of danger. This is because the instinct of cautiousness is awakened by the circumstances of the outer environment which has the appearance of danger. In this and other cases we have the action of the outer phenomena upon the inner instinct and the corresponding effect, fear, which follows. There is a doctrine taught in one of our prominent universities (Harvard) that the signs, such as the trembling of the body in fear and the billing and cooing of some animals in expressing love, are not simply manifestations of innate powers, but are the very powers themselves. Notwithstanding that this doctrine is supported by one for whose learning and philosophical talents I have the deepest respect, yet it seems to be extremely absurd. It seems to me that such philosophers confound the sign of an organ with the organ itself.

NATURAL LANGUAGE OF FACULTIES.

Every instinct has its own peculiar language, and the very fact that the language itself differs would prove a difference of instinct or emotion behind this language. The language is the effect of the excited instinct, it is its natural expression, but the language is not the instinct itself. Thus the varied language of Amativeness: the billing and cooing in pigeons, the petting and caressing among animals, are not the amative propensity, but only its natural language. The crimson blush which steals over the cheeks of a modest maiden is the expression of self-consciousness or active love of approbation, but it is not the faculty itself. The true principle is rather that the instincts and their manifestations form a cycle. The excited instinct manifests itself in its own peculiar language, and this language by a sort of reflex action excites the instinct, so that when the language is presented to an instinct or emotion, that instinct or emotion will be awakened and will express itself in actions of the body or the voice. We have here a principle which in application is of the utmost importance especially in elocution and oratory, for we may arouse the emotion,

not by willing that the emotion should be aroused, but by assuming the language of the emotion. The best way to feel angry is to put ourselves in the environment necessary to produce anger, viz.: assume the gestures of face and body and the tones of voice which are the language of anger; this gives the external manifestation of anger; the internal will be developed by the external, and also by putting oneself in mental attitudes which stimulate anger, *i. e.*, to think over all the reasons we have for being angry, the slights we have received, etc. If we wish to restrain anger we withdraw ourselves from all the attitudes, both external and internal, of anger, and endeavor to stimulate the emotions which are of an opposite nature to those of anger. Although few phrenologists have treated the expression of the instincts in this way, yet I think I am justified in drawing such deductions from their mental classification.

Phrenology throws light also on that puzzling question in psychology, how it was possible to feel anger and compassion at the same time. Any one who has studied himself or other people carefully will find that there often rages in our bosoms at the same time two or more instinctive promptings—voices let us call them; one calls in one direction, while another prompts in just the opposite direction. Shakespeare, with that natural poetic instinct which has often put to shame the metaphysical philosopher by its deep insight into human character, illustrates this principle in the case of young Gobbo, whom he represents as in great perplexity whether to obey the voice of his conscience and return to his master the Jew, or follow the voice of his feelings, or, as he calls it, the council of the fiend, and run away.

So we have often felt the desire to punish an offender and have felt at the same time an instinct of kindness calling on us to spare the guilty, and thus there is in our constitution, in general, a conflict of instincts which restrain each other. This doctrine of the mental combat of instincts is due to Phrenology, and is in harmony with observed facts and the common practice of mankind. Nor does Phrenology stop here; it settles that most important question in ethics, which instincts in our nature should have the supremacy; it shows clearly that the highest development of our race consists in harmonious organization, and that in order that there should be harmony the higher faculties should prevail.

BAIN DISCUSSED.

It was my intention to have discussed Prof. Bain extensively, but I am sorry to say that space and time will not allow me. Bain, in his book on the study of character, begins by stating that he will give the analysis of the human character according to the phrenological system. It is to be regretted that Bain did not carry out his intention. While he gives the organs and their location according to the phrenological method, the facts supporting the location of these organs and the nature of their functions he does not give according to Phrenology, but steers out into a system of self-conscious reflection upon each individual organ, and attempts to show the errors in the classification. Now, this would not have been objectionable if he had not stated that he would give the phrenological system. He would have dealt more fairly with Phrenology if he had reserved his criticisms and made them in connection with his own system. It is not a matter of great importance to those who have studied the systematic works on Phrenology, but it has a tendency to mislead the novice in phrenological principles who is apt to believe that all the evidence which phrenologists bring to prove each organ is given by Bain and annihilated by him. Yet I have many objections to make against Bain's criticisms of the faculties thus presented, but have not time to do so. As a systematic exposition of character Bain's book is a successful production and shows how far a person of intelligence can become a phrenologist even by a system of mental introspection.

Bain could be taken as a fair phrenologist, though he professes to steer clear of their methods of investigation; but to take his book as one of the best phrenological books, or as the best on the study of human character, would be a great blunder. No one can form a correct estimate of Phrenology by a perusal of Bain. He proposes to follow the self-conscious method of investigation. He admits the correctness of the phrenological method, but refuses to follow it because too laborious. Now, this is the secret cause of the errors he falls into himself, and of the mistakes he makes in attacking the phrenological classification. Let no one therefore imagine for a moment that Bain has taken up the gauntlet thrown down by Gall and Spurzheim during their career and as defiantly thrown down by all phrenologists since. No, Bain does not undertake to prove Phrenology imperfect by methods of induction, but by self-introspection. Those who are doubtful as to the efficiency of the self-conscious method to determine the genetic powers of mind, I refer to what I have said upon this subject in the early part of this essay. I must hasten to give a concise criticism of Bain.

Professor Bain having stated clearly the method he intended to pursue, gives the phrenological organs in order and files objections against some and acknowledges others as correct. His main attack is on the description of the functions of the organs given by the phrenologists. Now, it appears to me that much of the discussion arises from the difficulty the phrenologists found in getting words to define accurately the functions which the observed facts indicated. Such confusion occurs in every system and is not confined to Phrenology. Still there is a seeming injustice on the part of Bain because he does not acknowledge that many of the points he treats and the objections he makes, were already discussed among the phrenologists themselves; and because the arguments which Bain uses, giving his readers to understand that they are the products of his own mind, are in many cases arguments which were brought forward by the phrenologists themselves in their endeavors to get a terminology to correspond with the facts observed.

The phrenologists avoided as much as possible mere strife of words; it was the facts alone they concerned themselves about; so even if Bain's criticism has succeeded in anything it has not in disproving the facts or principles of the science, but only some errors or cross-divisions of functions of the organs. If Bain had given the phrenologists a better terminology he might have done something; but while he has shown much ability in endeavoring to tear down the fabric erected by Phrenology, he has not shown unerring skill in his reconstruction of the system.

I have said that many of the objections urged against the phrenological classification and organology by Bain may be found in the phrenological works themselves. Thus, for instance, Bain has long discussions to make about whether the absence of one faculty would lead to the manifestation of the opposite function, as, for example, if Combativeness were absent would timidity or fear be the consequence, or is it necessary to have a new organ for fear under the name of Cautiousness? Now, this mode of discussion is found among the phrenologists themselves, and if Bain had taken the trouble to look into Gall's works he would have found that Gall had the same opinion as he himself entertains. So also Bain thinks that the organs of Size and Form ought to be made into one and called extension or space. But if he had consulted Gall and not confined his reading to Combe he would have found that Gall had already denominated these organs as extension or space. Many other points which Bain brings up as objections to be made against Phrenology are really not objections against the science, but against some of the metaphysical disquisitions of George Combe. Indeed Bain, in many of his arguments, shows much of the same acumen as is shown by almost every person who begins the study of

Phrenology, but has not sufficient leisure to pursue it according to its methods of investigation. He constantly betrays his insufficient knowledge of the fathers of Phrenology, and oftentimes he gets involved in his own metaphysical subtilty and can not disengage himself from it. Then again he forgets that he had started out with the intention of evolving Phrenology from the internal depths of his own self-consciousness, and makes statements and arguments which can only be drawn from observation. Indeed, his system is a mixture of two conflicting elements, bred in the schools of philosophy which recognized the introspective method as the only process of investigating the mind. He seems at one time about to throw off its trammels and soar on the wings of induction into the region of clear proof, then he suddenly flops down again and is willing to accept as proved many things which the general consciousness of man can not harmonize. Thus while he agrees that many of the instincts and propensities recognized by Phrenology are innate powers in the constitution of man, self-consciousness testifying to the fact, he makes exceptions to some, and yet it is peculiar that many of those organs which he accepts are ones less clearly demonstrated by the introspective method.

ILLUSTRATIONS OF BAIN'S METHOD.

For example, he is willing to recognize, nay, he is absolutely positive, that Alimentiveness, which gives a taste and relish for food, is a primitive faculty. It is a favorite method of his, upon other occasions, to show that some of the phrenological faculties are explainable by supposing their seat to be in the body and not in the brain centers. Now, what faculty is more connected with the body than Alimentiveness? Could we not account for the love of food and the desire to satisfy hunger and thirst purely from bodily feelings? The claims of the body for food and drink are imperious. The stomach gnaws with irresistible craving for something to feed upon, and the sense of want may be nothing more than the desire of an empty stomach. And besides, the love and relish for different kinds of food may be only the result of the delicate discrimination of the tongue. The existence of an organ of Alimentiveness is, therefore, by the self-conscious method of argumentation which Bain skillfully employs upon other occasions, totally unnecessary.

There are many other organs which Bain acknowledges which could be objected to upon the evidence of self-consciousness; but I must hasten to bring this essay to a close. Bain displays a very confused conception of the two phrenological organs of Love of Approbation and Self-esteem. He thinks that as presented by the phrenologists they neutralize each other. He can not see that there is any great difference between being confident of our own powers and esteeming ourselves, our personal identity and all we call our own, as anything distinct from the instinct of approbation, which desires the praise of others. Now it seems to us that there is a clear and necessary distinction made here by the phrenologists, which Bain fails to grasp. It is something very different to have a selfish pride in our own abilities, and to desire the approbation of others. In other words, the egotist who is satisfied with himself and cares not a straw about the opinions of others, is different from the sycophant who desires to be esteemed by others, and whose character manifests itself very often in vanity and in a fawning, cringing disposition. There are persons who, rather than be deprived of the esteem and praise of others, will surrender their own views and adapt their conduct and opinions to please those whose commendation they value. Cicero is a good example of those whose character is influenced by the love of approbation; he was always troubled about what the people, and especially what future generations, would say concerning him. Much could be said regarding the marked difference between the conceit which makes us esteem all things belonging to us and the vanity which desires the praise of

others; but I must hasten to glance at some other of Prof. Bain's exceptions to Phrenology.

He files an objection against the explanation of the organ of Benevolence as given by the phrenologists. In his own system he recognizes an organ of sympathy. I will endeavor by the self-conscious method to meet Bain, not that I think the self-conscious method of investigation is able of itself to settle the question; but as that is the method Bain pursues, I desire to meet him on his own grounds. Now, it seems to me at least, that according to self-introspection sympathy is a general power, and not a special instinct. How can we separate sympathy from any power, and make it a distinct instinct? Do we not sympathize with those only who have feelings and sentiments in common with us? Thus man can not sympathize with a monkey, because he can not enter into its feelings. Neither can an infidel sympathize with a spiritualist, because there is no bond of connection. Neither can the virtuous man sympathize with the profane sinner and evil-liver for the same reason. Sympathy depends much upon the power we have of entering into other people's thoughts and feelings, and this power depends upon the relative number of faculties we have in common. Sympathy in the sense of pity is clearly performed by benevolence. Benevolence is the foundation of philanthropy, and if we admit an organ of Benevolence there is no necessity for an organ of sympathy, for benevolence acting with other faculties will give all that Bain places under sympathy.

BAIN'S ORGANS OF ELOCUTION AND PLOT-INTEREST.

Prof. Bain is still more ambitious in his attempts to evolve Phrenology from his consciousness. He thinks there ought to be an organ of cadence or elocution.

Now, I was very desirous at first to follow Bain in his views upon the necessity of an organ for elocution and evolve such an organ from my own consciousness, but I thought it only fair to hear those on the subject who might be expected to have a clearer consciousness of this subject than either Bain or myself, namely, professional elocutionists. I put the question to several well-known professors of the art of elocution, whether there was anything in elocution which might not be accounted for by tune and time. The answer was clear and unequivocal. These gentlemen showed me that the great difference between music and recited speech was a difference of pitch only, the former being concrete and the latter discrete. All the varied harmony of music and intonations of speech depend upon the organs of Tune and Time. Bain's attempt, therefore, to evolve an organ of cadence by the self-conscious method seems to be a failure. The difference which Bain observed between speech and music must have been the quality of the tones of the voice, although he does not clearly state that to be his view, but if he had made a more thorough observation of great actors and orators, he would have discovered that all the difference in the quality of intonation was due to the peculiar effect of each of the phrenological faculties. The instincts and sentiments have all their effect upon the voice; for example: Secretiveness muffles the voice, its natural expression is a whisper; bereavement is low and plaintive; Veneration soft, subdued, and reverential, Destructiveness is sharp and guttural, and Self-esteem is hard, positive and dogmatic, while Combativeness has abrupt, harsh, emphatic tones; Sublimity gives depth, grandeur, swelling, and profound quality and quantity to the voice and all the force of enunciation is on a grand scale; Mirthfulness has light, playful tones; and so on, every sentiment or propensity adds a certain coloring to the tones of the voice. It was probably from having observed all the various intonations of the voice which each individual faculty of the human constitution produced, that Bain was led to think that there ought to be an organ of elocution or cadence. But all the functions such an organ

could perform can clearly be ascribed to other faculties.

Bain having reached a certain height in his phreno-self-conscious method does not wish to surrender his elevation or remain there, but spreads his pinions wider and ends by introducing a new organ which he thinks will be a good addition to the phrenological system, called plot-interest. Now, I should like to have such an organ made a part of the analysis of the human mind, but I am afraid if its existence depends upon the self-conscious method of investigation, it will never exist. Plot-interest is only the effect of a combination of faculties, as, for example, in a novel the plot-interest depends upon the number and kind of sentiments and propensities excited by the events of the story. Thus benevolence will be aroused by the suffering of the various characters which are described in the story and will anxiously watch the plot to see if the objects of its interest will be safe. So with the love of the marvelous, all things which are new, strange, and miraculous will be watched by it with intense interest. So with the organ of Cautiousness, dangers and hair-breadth escapes, gloomy caverns, and all kinds of adventures will be interesting to that faculty, and the plot-interest which appeals to it will be powerfully intensified. So Combativeness will be aroused to activity by events of heroism and self-defence, descriptions of battles, etc. Veneration, Hope, Justice, and all the various faculties may be actively aroused by the incidents in the novel, and thus the plot-interest will be rendered intense. The more numerous the organs excited by the events in the novel, the more intense the plot-interest, and besides there is one organ above all others which tends to deepen the plot-interest, the organ of Secretiveness, whose function is the desire to pry into hidden things. Now, the chief point of interest in a plot is to conceal the true nature and result of the story as much as possible, and concealment is highly delightful to Secretiveness, and much of the interest we have in a highly-drawn plot is due to the excitement of this faculty. Thus we see that plot-interest can be accounted for by the activity, more or less intense, of the sentiments and propensities, singly and in combination, and there is no necessity for a separate organ for plot-interest.

Prof. Bain's book is well worth a careful study and does him great honor. It is really the first production on the science purporting to come from the self-conscious school, although it in many essential points is far from being a product of self-consciousness, so many of the truths contained therein being derived from the works of phrenologists and from the method of observation and induction in general. To Bain must be given the credit, however, of being the first philosopher of the introspective school to produce anything like a fair consideration of the phrenological classification of mind. But it must be remembered that Bain is not a philosopher of the purely self-conscious school. Though brought up in that school and retaining many of its doctrines, he has gone out in a different path, and has taken in matter and truth from other schools.

It may be thought that in this essay I should meet the various objections to Phrenology which from time to time have been urged against it, but this would be an endless task. The objections against this science generally spring from those who are ignorant of its principles or who have become acquainted with Phrenology through its opponents and have therefore obtained a stock of misrepresentations, false quotations, and hackneyed, puerile, and contemptible objections. I can not answer such objections in detail; suffice it to say that the founders of Phrenology were perfectly capable of looking out for all the little side issues of the science. Let nobody suppose, however, that I have not seen the objections urged against Phrenology by such men as Galton, Carpenter, Bastian, and Lewes—the objections of these men are all easily met; some of them are the product of sheer ignorance or mere misrepresentation. Dalton has

withdrawn his objection. Sir William Hamilton is supposed to have annihilated Phrenology. Well, I have no doubt but that Sir William would have annihilated Phrenology if he could, but nevertheless Hamilton is dead and Phrenology is still alive, and I venture to say that all the William Hamiltons that ever lived could not annihilate Phrenology. It is not necessary to discuss Hamilton's objections, since the points at issue between the phrenologists and Hamilton have been decided in favor of the former by modern physiology and anatomy.*

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* The reader who has found this article of interest, and has not read the two preceding articles under the same title, and may wish to do so, will find them in the July and September numbers. The three taken together form one essay and should be read in order. ED. P. J.

THE URNER SEE.

THE ST. GOTHARD RAILWAY.

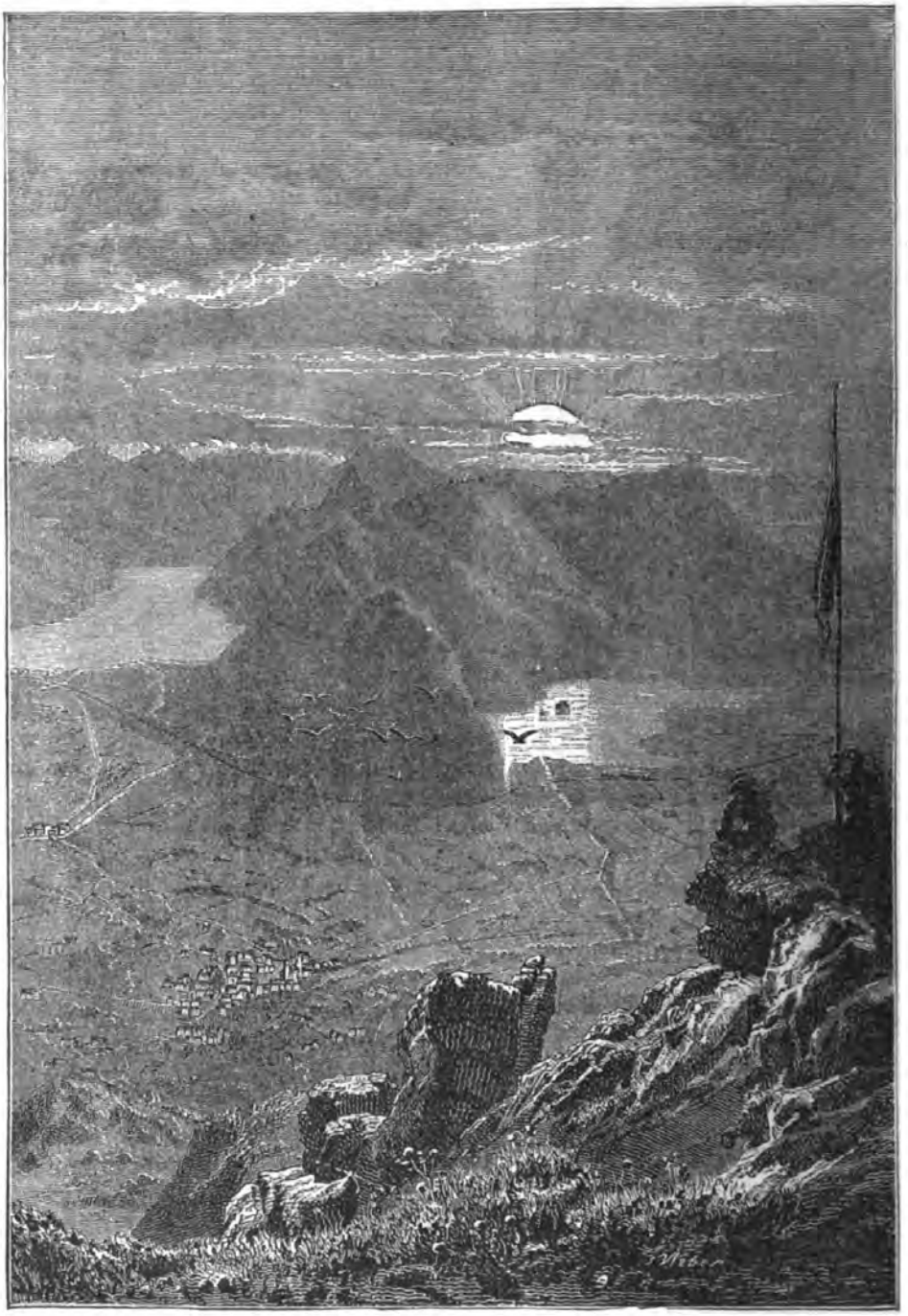
IT is scarcely four years ago that we found ourselves coursing down the well-kept pass of the St. Gothard in the very comfortable coupé of a diligence, on our way from Andermatt to Flüelen. Like all travelers who have a special fondness for mountains, we found the grand panorama of rugged cliffs, foaming streams, near and far mountains, with summits whose snow gleamed in the morning sun, and precipitate depths, in which clustered villages and hamlets most fascinating, awakening emotions of indescribable delight. Now and then, however, our feelings were rudely jarred by the rattle of steam drills, and occasionally the roar of a blast awakened the echoes of the valley. A turn in the road would bring into view groups of workmen patiently constructing a terrace in the mountain-side, or en-

deavoring to penetrate an overhanging cliff. At times we found ourselves on a level with a group of them, and in such close proximity, that the fact was forced upon our unwilling consciousness that commercial enterprise had at last invaded that quiet region, and was building one of its chief instrumentalities—a railway—and in a few years the heights and depths so long held consecrated by the sentiments of ideality and sublimity, would resound to the shriek and roar of the straining locomotive as it drew its load of passengers and freight up the spiral incline.

THE ENTRANCE TO THE ST. GOTHARD TUNNEL AT GOESCHENEN.

We had heard of the bold project of building a railway and tunnel which

should make the passage of the hoary St. Gothard easy, and bring into quick communication the beautiful Lake of the Four Cantons and the charming lake country of Italy; but when we found ourselves, with three or four stranger companions, in a diligence, whose six horses labored up the steep and narrow roadway, and our vision ranged down the declivitous sides of the mountain, we almost rejoiced in the thought, that surely here are too many difficulties in the way of the



THE GRAND OUTLOOK FROM SCHWYTZ.

engineer; the vast trouble and expense will render the building of a railroad a profitless undertaking. Yet at that very time the work was going on, and scien-

St. Gothard and the Bernardino until 1830, although the pass was the shortest way through the Swiss territory to Italy; and when this road was eventually con-

THE DEVIL'S BRIDGE ON THE OLD ROAD.

tific skill was rapidly conquering the tremendous obstacle which Nature had erected.

Such were the difficulties of the ascent, that there was no carriage-road by way of

structed, it could not compete with the Brenner and the Semmering routes, which were so much lower and easier of access. Though the St. Gothard road had the advantage of being shorter, it

had the more serious disadvantages of being steep, with numerous abrupt turns, and frequent suggestions of danger, which are not at all relished by the majority of travelers. We shall never forget the ride down the pass, our horses being on a full run, the heavy coach swaying to and fro, and in making a rapid turn, there was sometimes an abrupt lurch of the vehicle, which swung its wheels close to the margin of the road, beyond which there was in some localities an almost perpendicular fall for fifty or more feet, with anything but an inviting bed of rock at its sharply-inclined base. We shall never forget our sensations as we dashed over the famous Devil's Bridge, and gazed down into the foaming water of the Reuss, as that rapid stream dashed through the broken and jagged masses of rock which obstruct the river's downward flight. The engraving gives but a faint idea of the narrow gorge through which the mountain stream rushes there.

The romancing tourist may prefer the knapsack and staff, or the post-diligence, in his junket through these interesting defiles; but the traveler who would go comfortably through their lower precincts, and can be satisfied with vanishing bits of the mountain glory, will patronize the railway; besides, it is time and money saved to him who would run through Switzerland in a short time.

The St. Gothard Railway starts from the Lake of Lucerne; it travels along the Bay of Uri to Flüelen, up the zig-zag valley to the tunnel entrance at Göschenen, issuing from the tunnel at Airolo, and thence proceeding downward to Lugano on Lake Maggiore.

The mountain tunnel is regarded as one of the greatest feats of modern engineering; it is nearly nine miles in length, and over 3,000 feet above the sea level. There are fifty other tunnels on the route of the railway, several of them a mile or more in length. It is the character of its tunnel system which renders the St. Gothard specially noteworthy among mountain railways. Seven of the subterranean passages between the Lake of Zug and the Italian frontier are spiral, or double upon themselves screw-fashion.

Between Erstfeld and Göschenen there are three of these spiral passages, made necessarily in that form because of the narrowness of the Reuss Valley. Generally abrupt ascents in railways are overcome by making long curves proportioned in length to the height to be surmounted, that the grade need not be steeper than a common locomotive is able to ascend. This is not possible in the Valley of the Reuss between the points mentioned—the road is therefore doubled on itself, like a winding stair, and the difference in grade is surmounted within a tunnel. The railroad rises thus in the neighborhood of Wasen one hundred and thirty-six metres (over 450 feet), by means of the three tunnels of Pfaffinsprung, Wattengen, and Leggestein. Between Airolo and Lugano, there are four other spiral tunnels, each of which is about 1,500 metres, or nearly a mile in length.

The illustrations show parts of the railway, with glimpses of the picturesque and gorgeous scenery along the line.

As a commercial venture, this railway will probably more than realize the sanguine expectations of its projectors. It is already having some effect upon the trade of Northern Europe, considerable traffic beginning to set in by way of Antwerp. The fact that this route is practically the shortest southward across the vast Alpine chain will not only naturally secure for it the traffic of the Rhenish regions immediately to the north of it, but also that of the greater part of Western Germany and Eastern France, as well as Belgium and Holland. EDITOR.

WHEN the spirit, worn and weary,
'Neath its daily load of care,
Finds the pathway long and dreary,
And the burden hard to bear,
Tired with hoping, faint with fearing,
Sighs to reach the golden gate,
Then in accents soft and cheering,
Patience whispers, "Only wait;"
For a brighter day is dawning,
Joy awaits us in the morning,—
In the beauty of the morning—
"Only wait."

SOME GENERAL OBSERVATIONS ON AMATIVENESS.

IN what I have to communicate, it is important that everything be considered abstractly, and with the utmost candor. The reader will, therefore, excuse the little circumstance that I withhold my real name, as even that might, in a slight degree at least, deflect from a strict impartiality of judgment.

In such a work, for instance, as Mrs. Child's "History of Religious Ideas," one can learn how anciently the devotees of India regarded the material world. They cherish much the same impression of matter at the present day. Their notions have descended with the ages, reappearing in modified forms in more modern philosophies and religions. Matter was gross, evil, the enemy of the Highest. The best saint would despise, and as far as possible ignore it; dissever sensibility, seek abstraction, negation, having contact only with spirit.

In what I am about to offer, I shall encounter embarrassment, because of my consciousness of oriental bigotry lingering still in the life of to-day. Nor can I invoke aid from the poetic mythologies of Greece and Rome. We do not believe in gods and goddesses. We can not exalt the human figure or earthly action, by painting the portraits and reciting the biographies of celestial and immortal beings. We can not dream, we can not look aloft; we are hemmed in to the mere cope of every-day life. And this life, among us, is bereft of all imagination, tediously repeated, hastening, if not checked, to become altogether "commonplace."

The application of these introductory remarks may soon begin to appear. Amativeness is a fortunate term which phrenologists have applied to that portion of the brain from which arises all special interest between the sexes. Its seat is the *cerebellum*, the "hinder and lower division of the brain." This division may be detected by passing up the cords of the neck until we reach what begins to be properly the head. On the average, it embraces five times as much brain as is allotted to any other faculty; is a brain of itself, has immediate connection with several vital functions: hence its force, its independent activity. It is generally large with poets and orators, actors, persons of powerful constitution, men and women of commanding presence and influence. If we find a person genial, noble, warm-hearted, we may infer large and healthful amativeness. It has been an element in some of as fine inspirations as the world ever saw. In animals, its scope is somewhat extended; in the human race, anyway, its range is almost infinite. It is not only the source of physical love, but it can take on an endless number of shadings and exaltations, appearing as sentiment, attachment, mere love of proximity, gentle dalliance, gallantry, courtesy, good manners, refinement, and so on.

Now we have no new theory of morals to propound, and assail no institution. What we would break up, are falsities. What we would remove, is incompleteness. Our work is conservative, not revolutionary. We humbly take our position on the side of the Lord. We rejoice in all His works. We trust that matter is His servant. To us, "all things are of God." Our struggle is to throw off superstition, correct narrowness, repent of impatience, take our place with the all-comprehending Creator and Father, seek out His plan, hail His suggestions, execute His will. What He has bestowed can not be common or unclean. What He has elaborated with unspeakable skill is holy.

All this applies directly to our subject. Sexuality reaches throughout the animal and vegetable kingdoms; perhaps pertains to the mineral. We possess sex as man and woman, in keeping with the entire universe. It is no strange thing. Nothing is more universal. Nothing is more vital. Nothing is more mysterious. By no other endowment are we permit-

ted to take part with Jehovah in the origination of life. No other one relation of this world involves so much of happiness or misery.

It follows, that in respect to no other topic should there be more of reverence, of gratitude, of devotion. In regard to Amativeness and its correlatives, sermons should be preached, conventions held, lectures delivered, books multiplied. Herein should be the utmost of searching, the greatest frankness, the strictest compliance with divine law. All of life should be organized around its origin. Any curiosity in childhood to know the genesis of being ought to be noticed with exultation. What is masculine? What is feminine? How do these powers coalesce? How can they be brought to perfection? Who is the worthiest man? Who the most delightful woman? How may each conduce the most to the other's happiness, and the community to the felicity of its members? What has science to tell? What can be culled from literature? What has this or that one to give as testimony? More than everything besides, what was the comprehensive purpose of the Deity?

In an adequate investigation, some little light might arise from a disreputable source. As John Wesley adopted festive tunes into his meetings, as miserable, bitter growths are developed by cunning culture into fruits, weeds constantly transferred into plants; as young Whittier could read every word of Burns, and not be touched at all with wanton desire, the time may ere long arrive when the few then remaining libertines and harlots shall be closely interviewed for special information, and grand committees collect from pages of raging lust some genial phenomena that shall broaden the sacred domain of human love.

It is a curiosity to me, that the community, that legislators never caught the idea, that the most effectual way to stop the circulation of obscene literature was to augment the circulation of the scientific upon the same thesis. A clergyman with a *penchant* for physiology, an inclination induced by the study of phrenology, accumulated a library which included books of an esoteric character. Not one of these did he hide from son or daughter. If reading, hearing, or thinking suggested inquiries, the door was open to father or mother to have them answered. If the child was not old enough to understand fully, the exposition ended with the promise that more would be communicated when he or she was able to receive. None of his children have ever occasioned him a moment's solicitude as to morals. His daughter attended a select school for young ladies. Into it there crept a very lewd and suggestive song. Eva (we will call her) immediately on its coming to her knowledge, informed the preceptress. The original was caught up and burned, but some of the girls, especially those brought up under an awful pressure, had slyly copied it. To Eva the subject of sexuality was nothing new or strange. She had been taught, too, to distinguish between the wholesome and the unwholesome. Neither fashion nor pleasure was in itself aught but a gift of God, yet might be appealed to for a selfish purpose in a nefarious manner, to lure the ignorant and weak.

A few days since, a learned physician, with much pride, told me how his reading of a costly work on the structure and functions of woman had been delayed. His daughter, fourteen years of age, had got a glimpse of the volumes as soon as the express left them, and wished to read. He readily granted permission. "But, father," added the witty girl, "this is all about mother and me. May I also read of you and Charlie (a brother)?" "Why, certainly," responded the Doctor. "It is only an exposition of the workmanship of the Universal Father, whose will is perfect." His voice, he thinks, grew reverent. Such truly was his state of mind. Dewy tears came into the eyes of this daughter, already noted for her grace, beauty, and intellect, and she put her arms around her father's neck, and most tenderly kissed him.

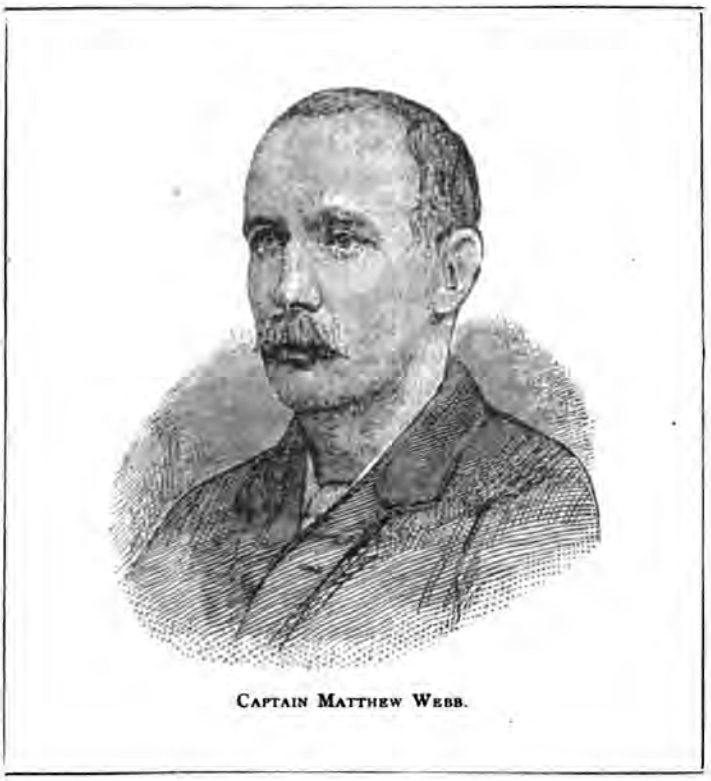
IMPERSONAL.

CAPTAIN MATTHEW WEBB,

THE UNFORTUNATE SWIMMER.

IT is several years since this gentleman became known to the American public as a swimmer of extraordinary capabilities. He had spent his life, in great part, on shipboard, and so was thoroughly familiar with water in its roughest phases. In 1875 he became famous by performing the hitherto unaccomplished feat of swimming across the English Channel, from Dover to Calais, and that without artificial aids. Afterward he exhibited his skill as a swimmer in Europe and this country, everywhere winning admiration because of his great powers of endurance, and the long distances which he covered.

He was born in Shropshire, England, in 1838, and after leaving school went into the English merchant service. He continued in this sphere of industry until Captain Boyton crossed the English Channel in a swimming suit, designed as a protection against drowning; this extraordinary feat being an illustration of the capabilities of the invention. Captain Webb was fired by this accomplishment, and determined to out-do Boyton by swimming the channel unassisted by artificial means. After a course of training he succeeded in doing it, on the 24th of August, landing on the French coast at Calais, after being in the water nearly twenty-two hours. In this country he distinguished himself in 1879 by swimming from Sandy Hook to Manhattan Beach; during this effort he was in the water five and a half hours.



CAPTAIN MATTHEW WEBB.

The illustration shows the head to be of average circumference, but of more than average height, the indications being that,

in the region of Approbativeness, Veneration, and Benevolence the development is large. The head is also broad just above the ears, and full in the back part, giving him a thorough-going spirit, resolution, and force. The generous side of his nature is particularly well developed, and we infer, from the indications of the temperament, that he was impetuous and spirited in the manifestation of the kindly side of his nature, as well as prompt to compete in what he regarded himself capable of doing.

His attempt to swim through the whirlpool of the Niagara River, which resulted in the loss of his life, has much of the foolhardy in it, for the reason that all those familiar with the character of that river considered the whirlpool as its most dangerous part. The waters there whirl around with great rapidity, and have the appearance, which is presented by the movement of water in a large basin out of whose bottom the plug had been withdrawn, the downward rush of the water exercising a tremendous power of suction. People on the banks have seen vast trees drawn into the whirlpool and disappear. A block of ice as large as a house was once observed to float on the current until it reached the mouth of the whirlpool; there it was suddenly swallowed up. This vortex Captain Webb imagined that he could dare successfully, on the theory that a man could swim where a boat could not live.

One would think that this gentleman had won applause enough by reason of his remarkable achievements as a swimmer; he had also earned considerable money, but he had been promised a large sum as the reward of the attempt; and this, doubtless, added strength to his conviction that he would be successful.

We look at his organism, and find in that elevated crown and buoyant temperament evidences of the spirit of emulation which is never satisfied with its previous accomplishments. We can not say that he was lacking in average intelligence, the intellectual development shows otherwise; the reflective faculties were perhaps the stronger. Men who are successful in any line of pursuit, and especially those whose success is in an advancing ratio, are those who are disposed to overestimate their capabilities in the direction of their success. We are inclined to think that was Captain Webb's error; what he had accomplished stimulated him to greater things; and in shooting the Niagara whirlpool he expected to win greater applause than hitherto. He was not satisfied with having distanced all competitors—he would distance himself. He thought little of danger. His aspiration and self-confidence dominated over the principle of fear, and the outcome of it all was a poor, mutilated, lifeless body, and a wife and two children left without their natural protector. The boast of the great swimmer was laughed to scorn by the furious maelstrom. The circumstances attending his drowning there appeared to illustrate the fierce joy of the waters in having this champion finally in their power, for scarcely had he entered within its circumference, when he was observed to throw up one of his arms, and in another instant he was lost from the view of the spectators on the bank of the river.

Captain Webb was a compact, solid-looking man of light complexion, wearing his hair closely cut, his fresh, ruddy color giving him a distinctively English appearance. He was a good-humored, hearty, earnest fellow, having much of the manner of the typical sailor; and although long associated so prominently with a department of sporting life, and frequently taking part in matches, he was never known to act dishonestly.

A TRUE FATHER.—He was a gentleman who wore overalls and carried a tin dinner-pail. His clothes were ready-made, and his boots were not symmetrical. He said the long journey of five miles each way to and from his work was trying. "Why don't you live in the city?" "Because, sorr"—in a rich Milesian brogue—"if I live in the city, I should have to live in a tenement-house. You don't

know the kind of people who live there, generally. Sights go on, no woman or child should see. I want to save my wife and children from seeing corruptions, so I moved out here. Good-night, sorr!" And he left the car at the little cottage, whose inmates were sheltered from "corruptions," and was greeted with a chorus of "Here's father!" that showed the gentleman with the dinner-pail had not lavished care without receiving a return in love.

SEED-TIME AND HARVEST.

We stand at morn on border-land of youth,
In joyous sunlight dreaming,
The new-sown fields and meadow-lands of life
With harvest promise teeming.

Noon comes with radiant bloom and flowers bright
In summer roseate glory,
While sweet and strong earth's working-fields among
Is heard love's olden story.

And evening cometh holy, calm, and still,
The lingering sunlight falling
On golden harvest fields, where sweet and clear
Are heard the reapers calling.

Onward they come thro' twilight's silver glow,
Bringing to heavenly portal
A lasting harvest from the fields of earth,
To grace the life immortal.

"Knowledge is power," one wisely said of old,
And they who teach true living,
Earth's first and rarest knowledge do impart,
In fullest measure giving.

In fields of thought the golden seed you sow
Of Life's best use and duty,
That earthly autumn-time in blessing yield
A harvest of true beauty.

CALLIE L. BONNEY.

OSSIAN.

IN the year 1762 the literary world was startled by the appearance of the poems of Ossian. They purported to be translations from ancient Erse manuscripts, and to date back to the second or third century. The translator was a young Scotchman, James Macpherson. The poems were unique, and were destined to create an epoch in literary history. "They are," says Hume, writing in 1763, "if genuine, one of the greatest curiosities, in all respects, that ever was discovered in the commonwealth of letters."

Ossian was one of the ancient bards of Scotland. He was the son of Fingal, King of Morven, a fictitious kingdom on the west coast of Scotland. That Ossian was a veritable bard of early Scottish times, can not be doubted, as allusions to him were common among the people of Scotland, long prior to the time of Macpherson. Fion na Gael, whose name was modernized to Fingal, was also an undoubted character in early Scottish traditions. The occasion of some of the poems, at least, was veritable history, as the contest of Fingal with Caracul or Caracalla, the son of the Emperor Severus, and the invasion of Ireland by Swaran, during the minority of Cormac, whom they murdered in the palace of Temora.

The poems bear the marks of antiquity, and relate to an age when men were little removed from a condition of barbarity. The language, the figures, the subjects denote men of a primitive state. The subjects are of love and war. The images and descriptions are wild and picturesque. We see the thistle shaking its lonely head; the moss whistling in the wind; the fox looks out from the deserted windows; the rank grass of the walls wave round his head. In the halls of Selma the clang of arms ascends. The gray dogs howl in their place. We see the lance of Fingal; terrible is the gleam of his steel; it is "like the green meteor of death, setting in the heath of Malmor, when the

traveler is alone, and the broad moon is darkened in heaven." The voice of the bard is "pleasant as the gale of the spring that sighs on the hunter's ear when he wakens from dreams of joy, and has heard the music of the spirits of the hill." The music of Carril "was like the memory of joys that are past—pleasant and mournful to the soul. The ghosts of departed bards heard it from Slimora's side. Soft sounds spread along the wood, and the silent valleys of night rejoice." Such language and images were something new in literature, and created a sensation in literary circles.

"If genuine," said Hume. But were the poems genuine translations from Ossian, or were they the inventions of Macpherson? This was the question; and the literary world at once ranged itself in two factions. Of those who contended for the genuineness of the poems, Dr. Hugh Blair was, perhaps, the most conspicuous; of those who believed them the inventions of Macpherson, Dr. Samuel Johnson was the leader. Their Scotch origin alone would likely have been enough to determine Dr. Johnson, who had, or pretended to have, a strong dislike for everything north of the Tweed. This was a strange feature in this great man's character, especially when it is remembered that many of his friends, and particularly his biographer, Boswell, one of the most devoted worshipers that any man has ever had, were Scotchmen. This antipathy to everything Scotch sometimes manifested itself in downright rudeness, as when Boswell was introduced to him as a gentleman from Scotland, Boswell, knowing of Johnson's dislike for the Scotch, remarked that he could not help coming from Scotland. "No more can your countrymen," said Johnson. But it is doubtful if much of Johnson's manner toward the Scotch was not mere pretense or affectation, for he had a great regard for many Scotchmen, and notably for Boswell. "There are few people whom I take so much to as you," he said to Boswell. Once when the latter was about to leave England, Johnson said: "My dear Boswell, I should be very unhappy at parting, did I think we were not to meet again."

It would be out of place to attempt here to adduce all the arguments for and against the genuineness of Ossian's poems. But some idea of their character we may be able to give. Dr. Blair, in behalf of the authenticity of the poems, argued that if there had been any imposture in the case, it must have been contrived and executed in the Highlands of Scotland two or three centuries before, as up to the time in which he was writing, both by manuscripts and by the testimony of a multitude of living witnesses as to the incontrovertible tradition of the poems, they could be clearly traced. "Now this is a period," says he, "when that country enjoyed no advantages for a composition of this kind, which it may not be supposed to have enjoyed in as great, if not in a greater degree, a thousand years before. To suppose that two or three hundred years ago, when we well know the Highlands to have been in a state of gross ignorance and barbarity, there should have arisen in that country a poet of such exquisite genius, and of such deep knowledge of mankind and of history, as to divest himself of the ideas and manners of his own age, and to give us a just and natural picture of a state of society more ancient by a thousand years; one who could support this counterfeited antiquity through such a large collection of poems, without the least inconsistency; and who, possessed of all this genius and art, had, at the same time, the self-denial of concealing himself, and of ascribing his own works to an antiquated bard without the imposture being detected, is a supposition that transcends all bounds of credulity."

To this argument Dr. Blair adds two others, namely, the total absence of religious ideas from this work, and its entire silence with respect to all the great clans or families among the Highlanders. He considers these as two strong points in favor of the genuineness of Ossian's poems.

Dr. Johnson's principal arguments on this question occur in the account of his "Journey to the Western Islands of Scotland." We shall quote but a small part of what he has to say. "The Erse never was a written language," says he; "there is not in the world an Erse manuscript a hundred years old; and the sounds of the Highlanders were never expressed by letters till some little books of piety were translated, and a metrical version of the Psalms was made by the Synod of Argyle. Whoever, therefore, now writes in this language, spells according to his own perception of the sound, and his own idea of the power of the letters.

"That the bards could not read more than the rest of their countrymen," he continues, "it is reasonable to suppose; because, if they had read, they could probably have written; and how high their compositions may reasonably be rated, an inquirer may best judge by considering what stores of imagery, what principles of ratiocination, what comprehension of knowledge, and what delicacy of elocution he has known any man attain who can not read. The state of the bards was yet more hopeless. He that can not read may now converse with those that can; but the bard was a barbarian among barbarians, who, knowing nothing himself, lived with others that knew no more."

But the great, final, all-sufficient argument would have been the exhibition of the manuscripts themselves. This was what Johnson demanded. "I suppose my opinion of the poems of Ossian," he says, "is already discovered. I believe they never existed in any other form than that which we have seen. The editor or author never could show the original, nor can it be shown by any other. To revenge reasonable incredulity by refusing evidence, is a degree of insolence with which the world is not yet acquainted; and stubborn audacity is the last refuge of guilt. It would be easy to show it if he had it, but whence could it be had? It is too long to be remembered, and the language formerly had nothing written. He has doubtless inserted names that circulate in popular stories, and may have translated some wandering ballads, if any can be found; and the names and some of the images being recollected, make an inaccurate auditor imagine, by the help of Caledonian bigotry, that he has formerly heard the whole."

Macpherson was of a peculiarly haughty and irascible temper. Hume said of him: "I have scarce ever known a man more perverse and unamiable. He will probably depart for Florida with Governor Johnstone, and I would advise him to travel among the Chickasaws or Cherokees, in order to tame and civilize him." In another letter he says: "The absurd pride and caprice of Macpherson himself, who scorns, as he pretends, to satisfy anybody that doubts his veracity, has tended much to confirm the general skepticism." To a man of such an arrogant spirit, the rough side of Johnson's tongue must have been peculiarly irritating; hence we find that he wrote a threatening letter to Johnson, which he lost; but we have Johnson's reply, in which he says: "I received your foolish and impudent letter. Any violence offered me I shall do my best to repel; and what I can not do for myself, the law shall do for me. I hope I shall never be deterred from detecting what I think a cheat, by the menaces of a ruffian. What would you have me retract? I thought your book an imposture; I think it an imposture still. For this opinion I have given my reasons to the public, which I here dare you to refute. Your rage I defy. Your abilities, since your Homer, are not so formidable; and what I hear of your morals inclines me to pay regard not to what you shall say, but to what you shall prove."

The original documents were never produced. Macpherson scornfully withdrew from the field, and left the combatants to fight it out alone. The Ossianic controversy continued to rage for many years. We shall not attempt to enter into the merits of the arguments on either side. In the year 1805 a report was published by a committee of the Highland Society of Scotland, appointed to inquire

into the nature and authenticity of the poems of Ossian. They reported that they had been able to procure poems and fragments of poems similar in substance, and sometimes of the exact expression given by Macpherson in his translations. But they had not been able to obtain any one poem the same in title or tenor with the poems published by him. They gave it as their belief that "he was in use to supply chasms, and to give connection by inserting passages which he did not find, and to add what he conceived to be dignity and delicacy to the original composition by striking out passages, by softening incidents, by refining the language; in short, by changing what he considered as too simple or too rude for a modern ear, and elevating what, in his opinion, was below the standard of good poetry." This was, no doubt, about the true state of the case. Macpherson claimed to have made his translations from ancient manuscripts. This, we think, is where he made his great mistake. Had he claimed to have reduced to form and writing the traditionary poems recited among the Highlanders; to have collated different versions as they were recited by different persons, and to have given them in the best and truest form of which they were susceptible, his word would not have been gainsaid, and his own credit and that of Ossian would have been none the less.

The poems of Ossian are still published from time to time, but there is slight interest taken in them now. Yet they are full of beauty. Whether they are the poems of Ossian or of Macpherson, or of both, and how far of each, is a matter that can now never be fully determined, and the question will always remain one of the mysteries of literature.

T. J. CHAPMAN.

THE *Irish World*, a newspaper especially devoted to the interests of Ireland, says:

"If every Irishman in the world would agree to drop his beer and liquor during the present famine in Ireland, devote what he would otherwise spend for drink to aid the Land League in ridding the country of the landlords, and assisting the starving, the proceeds would load every table in Ireland with plenty, and banish landlordism inside of a year." We believe the *Irish World* on this point, for the grievances and sorrows of that unhappy island are greatly increased, if not entirely caused by alcoholism.

A LETTER AND ITS ANSWER.

FOR WIDE-AWAKE BOYS.

DEAR AUNTIE:—I don't want to be a prig, or a "dude," or a goody-goody, or a snob, or a fellow who doesn't think of anything but his clothes, and the impression he is going to make on girls and other people. I despise that sort of a fellow. But it seems to me just as if my folks wouldn't be satisfied with me unless I was one or the other of these specimens. Now, Auntie, do you think a boy should be lectured because he does not keep his bureau-drawers in order—it makes me feel mean to even write bureau-drawers—and do you think the whole family should pitch into a fellow because he sometimes forgets—I mean generally forgets—to put his soiled clothes in the hamper? Now I don't think it is a boy's business to do these things. Mother says it makes her ill all day to go into my room after I have left it of a morning. Then, I don't brush my clothes enough, and my boots distress 'em all, and sister Alice says she trembles for the furniture every time she sees me coming into the drawing-room.

I believe sister Alice would like me to part my hair in the middle, and sit down, and get up, and walk round as if the earth wasn't good enough for me. There's a fellow who comes here sometimes, and he has feet like a dwarf, and he wears

patent-leather shoes, and he is just beginning to have a mustache, and he twists the down with his delicate little fingers till his lip is as red as a turkey's comb, and Alice says he's a perfect gentleman. I'd like to get him into our nine. I tell you Auntie, he'd get something then besides his upper-lip.

There's another thing that bothers me, and that's about slang. Perhaps it is vulgar; but, Auntie, there's some slang that expresses a fellow's thoughts better than anything I've found in a rhetoric so far. I don't like all slang, and I can't bear vulgarity or profanity, you know that. Now please answer right away and tell me if you think that boys should be expected to do things like girls. If it is right for me to sort and arrange my handkerchiefs and collars, and fuss over bureau-drawers like a girl, why, I want to do it, that's all. Perhaps it would be as well for me to make my bed while I'm about it.

Mother has provided me with a good many conveniences, first and last, and I expect every day to find a work-basket on my table, all fitted up with needles and thread, and a big gold thimble, so that I may do my own sewing, as well as my own house-cleaning. Now please write me a good long letter, Auntie, and tell me what you think about all these things, for I am just as muddled as I can be.

Yours with a lot of love,

HARRY.

As my correspondent is not the only one who is "muddled" on these subjects, it seemed to me it would be a good plan to reply to this letter in such a way as perhaps to help others also, especially as there need be no violation of confidence. The writer was tolerably sure that Auntie would find it an impossibility to give him much of a lecture in reply to his clever, if somewhat illogical, letter. I must say, to start with, that the boys I have enjoyed the most have been very much such boys as Harry. They are honest, happy, sturdy boys, full of life and vigor, ready for all sorts of innocent fun, and with so genuine a dislike for priggery and femininity, as to swing pretty well over to the other extreme, and in many cases to affect a coarseness of manner, a slip-shod style of carriage and conversation which has been a great trial to their relatives and friends. I have found myself unconsciously moving out of the way, when some of my young friends have come into a room, lest I might be accidentally run over; and have trembled, as Harry says his sister does, for flower-stands, and bric-a-brac, as well as for delicate upholstery and polished woods. A few of these boys have been really victims of awkwardness; but nine-tenths of the shuffle and the swagger have been put on. If one must affect a manner, there is certainly more character in that of a clown than of a dandy, but affectation of any kind is detestable. My correspondent invariably forgets to be awkward as soon as he becomes interested in conversation. His exits, like those of other boys, are always more elegant than his entrances. He has forgotten all about himself, and is therefore a natural as well as a safe companion. The boy whose elbows are prominent at table, and who kicks and wriggles about promiscuously, and seems in constant danger of dropping his knife, or fork, or glass, or spoon, is a very uncomfortable neighbor. One never knows what is coming next.

On looking back over the numberless times that I have been apprehensive of serious consequences, I can not recall one time when anything really disagreeable occurred, except in cases where awkwardness was not simulated. The truly awkward boy upsets as he goes along. The other is always going to, and never does. I have often wondered, when I have seen my nephew's arm come in contact with some breakable article, why it was that he never did break it. I have wondered, too, if it was a pleasure to him to see me jump out of my chair as if suddenly pricked by a bayonet, because I feared that my Psyche, or my pretty calla-lily, or my cut-glass cologne-bottle was going to be smashed. I have wondered also at the peculiar smile which at such times played about his rather good-look-

ing mouth, as he returned my spools and scissors, which had been scattered in all directions by my unpremeditated jump. He was always too polite to allow me to recover these utensils by my own efforts. And yet how I should have preferred it!

"Don't stir, Auntie dear, I'll get them for you."

Ah, Harry boy, how many times I have held myself down to my chair by main force as you crawled about among my pretty things, apparent destruction in your heels and elbows; and yet you never left a scratch on anything. I always laugh when I recall these scenes, and yet there is a very cruel side to such fun. Boys do not stay boys, that's the trouble. Habits are formed and riveted in the transition-period from boyhood to manhood, which endure till the last breath is drawn, and, for all we know, longer. The boy with common-sense needs no argument to convince him that boyhood ought to be spent in preparation for manhood. Now there are many men, husbands and fathers, who are never known to do anything inconsistent with good citizenship, who are very uncomfortable persons to live with. The man who has carried his love of practical joking into his more mature life stands at the head of domestic pests.

Auntie can laugh, and heartily too, at the recollection of her nephew's boyish tricks; but the wife, the mother, and the children who are obliged to bear with the chronic persecutions of a full-fledged practical joker are among the most miserable creatures on the face of the earth. The boy who can make people laugh, and at the same time fulfill the law of kindness, is a public benefactor. There is no other medicine half so potent as a good hearty laugh. But there is no safety in anything but kindness. The joke that could by any possibility wound another should never leave the lips. Now it seems to me that there is no need of Harry's entering his mother's drawing-room like a bear, because he has a dislike for prigs and "dudes," whatever they may be. If Harry had ever studied logic, he would see how utterly untenable was his conclusion. Let's see how the proposition looks stated:

"1. Prigs are disgusting creatures.

"2. It is wrong to be a disgusting creature.

"3. Therefore I'll be a bear."

That will never do. Use your reason, boys, and always remember to be kind; then you can not go amiss.

Now about bureau-drawers. I shouldn't like to see Harry or any other boy fuss much over bureau-drawers. But the law of kindness comes in here. Harry is old enough to realize that the domestic machinery of a great house is a very complex affair. Two or three stirred-up bureau-drawers, a scattered wardrobe, and disorder generally in one room, will sometimes complicate things seriously. To have such things happen day after day is very discouraging. I do think that Harry should take some pains to keep his linen properly placed. There is certainly no excuse for emptying a bureau-drawer every morning, and leaving the contents scattered over the floor. This is not kind. On the contrary, it is exceedingly selfish and slovenly. It seems to me only decent also for a boy to pick up his soiled clothes, and transfer them to the hamper. I think it is very mean, too, for a boy to throw burned matches and torn papers on his carpet, and yet how many there are who habitually do these things. If there were no other reason for Harry's being careful about his room, it should be enough that his mother desires it.

I knew a gentleman who, after twenty years of married life, could not tell in which drawer his linen was kept, although they had never occupied but one place during all that time. Whenever a change was necessary, he invariably overhauled every drawer on the second floor before he struck the right one, and it was overhauling indeed. In every respect but this there was perfect harmony between this couple. But the wife was by nature and education very methodical and I have known her to weep bitter tears over this chronic disarrangement of

bureau-drawers, and tumbling of freshly-ironed and spotless linen. Surely this man ought to have taught himself better at any cost.

Now Harry is very thoughtful of his mother's comfort in most things. He would walk five miles to get her a book she wanted, or anything else she expressed a wish for, but nevertheless manages to wound her every day of his life in her most sensitive place. Of course he never thought of it in this way.

Now about slang. We hear once in a while a slang expression which is extremely pertinent and witty, and so wonderfully applicable to the subject in hand that one can not but be amused by it. The test of the propriety of slang as well as all other expressions must be good taste. We may always indulge in any fun that is wholesome. We have a slang dictionary, which, I am sure, would please Harry and my other friends to look over.

"Yes, Auntie likes slang so much she had to have a dictionary," Harry will say. I will not contradict the statement this time.

Write again, my boy, to your loving Auntie, "E. K."

THEOLOGICAL ODDITIES OF THE PAST.

WE often hear the commonplace aspersion cast upon the popular preachers of the day, that they are sensational in their efforts to win the public ear, and seek to hold their hearers by a studied eccentricity of style or seemingly incongruous subject; the chronic grumbler usually closes his dire lament over clerical idiosyncrasies with an enthusiastic eulogy on the good old times of his fortunate ancestors. But as we wander through the recorded curiosities of pulpit eloquence and literature belonging to past generations, we espy here and there quaint and startling subjects from which even our grumbler would recoil aghast were they to emanate from the pulpit of the nineteenth century. Imagine, if possible, the consternation that would seize his hearers, were Mr. Beecher to begin one of his inimitable sermons with this peroration:

"I have brought you some fine biscuits, baked in the oven of charity, carefully conserved for the chickens of the Church, the sparrows of the spirit, and the sweet swallows of salvation."

It is quite probable the famous speaker might be invited to display his literary "biscuits" in an asylum for lunatics, yet a sermon was preached before the University of Oxford, many years ago, prefaced by the description just quoted.

Among oddly titled sermons we find the following: "The Nail Hit on the Head and Driven into the City and Cathedral Wall of Norwich"; "The Wheel Turned by a Voice from the Throne of Glory"; "Two Sticks Made One; or, The Excellence of Unity"; "Peter's Net Let Down; or, The Fisher and the Fish Prepared Toward a Blessed Haven."

Col. Higginson tells us of a certain divine by the time-honored name of Smith, who was blessed with two daughters whose dispositions seemed to range "from grave to gay, from lively to severe." Mary, a pattern of propriety, was about to marry a young Mr. Cranch; and her father, well-pleased, permitted the young lady to select the text for a sermon, as a great honor and favor; she chose this:

"Mary hath chosen the better part which shall not be taken away from her." A certain Squire Adams came wooing the gay little Abby, to her perfect contentment and her good father's ire; he would not even invite his future son-in-law John to dinner, upon which Miss Abby begged leave, in her turn, to select a text for her father to preach from. We fancy her selection was not approved, as it read:

"John came neither eating nor drinking, and they say he hath a devil."

Possibly the good parson changed his mind when he realized the good qualities

of the man, for Abby became the wife of one President, and the honored mother of another.

We have all read of Lorenzo Dow's text, intended to strike terror to the feminine hearts that doted on a fashionable style of hair-dressing, "Top-not Come Down," Matt. xxiv. 17. This is equalled by the text of an ex-fisherman: "I Feared Thee Because Thou Art an Oysterman." Here also we have a trio of texts preached from, doubtless to the amusement if not edification of the hearers: "Thou Makest my Feet Like Hens' Feet"; "Take It by the Tail"; "Old Shoes and Clouted."

In theological literature we find some striking title-pages. Two religious tracts were published, entitled: "Die and be Damned," and "A Sure Guide to Hell"; the former, an attack upon the then new Methodist doctrines; the latter a warning against the follies of the times. In the "Sound of the Trumpet" we have the day of judgment portrayed, while "A Fan to Drive Away Fire" is a treatise on purgatory.

Among other titles we take note of are: "Matches Lighted at the Divine Fire"; "The Gun of Penitence"; "The Shop of the Spiritual Apothecary"; "Supplication of Pierce Penniless to the Devil"; "A Groat's Worth of Wit Bought with a Million of Repentance"; "The Devil's Law Case"; "The Pricke of Conscience" (1350); "St. Peter's Complaint"; "Mary Magdalene's Funeral Tears"; "Harrowing of Hell": "Sighs from Hell"; "Letters from Hell"; "White Devils."

That his satanic majesty is an interesting subject to many, must be allowed as one looks through a curious volume compiled by Henry Kernot, and published a few years ago, entitled: "The Bibliotheca Diabolica"; it is a collection of the titles and matter of 700 books that treat of his infernal highness in every shape, form and color that mind is capable of imagining.

One digression ere we close. The lugubrious title of a certain poem: "A Descent into Hell," was made famous by a bon mot of that sparkling wit, Douglas Jerrold. The author of the poem used to bore Jerrold very much, and one day rushed upon him with the query:

"Ah, Jerrold, have you seen my 'Descent Into Hell'?"

"No, I should like to!" exclaimed the exasperated wit.

A. L. R.

MARY TURNER.*

BORN DEAF, DUMB, AND BLIND.

OUT of curiosity on my own account, and believing that those who are interested in mental science would be pleased to read the account, I visited Mary Turner, a woman 37 years old, who has *been deaf, dumb, and blind from birth.*

She lives with her aged father, who is a widower, and two nieces, twins, about 14 years of age, near Ava, Mo. She is certainly one of the most melancholy examples of nature's afflictions I have ever seen. When I entered the room she was sitting in a chair before the fire. I had been sitting down but a few moments when she began to make wry faces, and utter strange and disagreeable sounds. One of the girls referred to told me I must move away, as she would suffer no strange *man* to sit near her. I moved to a sufferable distance and she ceased her complaints. The father and his two granddaughters, by request gave me some information respecting her peculiarities. She would suffer no strange man to come in close proximity; if he did, and did not heed her warning complaints, he would

* The accompanying portrait is taken from a pencil sketch sent us by the writer, who does not profess to have any artistic ability, but was desirous to supply us with some representation of this strange woman's head; and the disproportions have been somewhat exaggerated by the artist.—[Ed. P. J.]

receive a modest hint in the shape of her chair.

Her twin nieces were so much alike that I could not distinguish one from the other, but this strange creature could not only distinguish them, but she went farther: she would not allow one of them (Sarah) to come about her, or do anything for her whatever; while the other (Jennie) was a great favorite, and permitted to take playful liberties with her. Toward the one she was scowling and bearish, toward the other all sunshine and gentleness. She knew when any one entered the room, whether he was a favorite or otherwise, a stranger or an acquaintance. This knowledge she manifested in a way that did not leave the person in ignorance of its import. She was affectionate toward her parents—a fact which she demonstrated in various ways; but her brother she hated even to loathing, and would never permit him to come near her if it were possible to prevent him. And as she was not only an expert in finding chairs, but an adept in their use also, it was not a hard task to keep him at a distance.

She was not ready to form friendships, but once a friend, she remained so. Her judgment of human nature was remarkably accurate, the persons she hated being usually those who merited her aversion. She was remarkably destructive in her disposition—a fact which not only appeared in her phrenology, but in her conduct as well. The victuals she did not like took wings and flew into the fire, upon the floor, or against the wall, and in her extreme paroxysms of rage she not only made chairs, dishes, and people fly, but her own hair, clothes, and everything else she could find loose or that could be gotten loose. Her Acquisitiveness, too, revealed its power in many ways. She would get a stick, chip, *hair*—any small object whatever, and cling to it with unyielding tenacity; and if another attempted to seize it, she would transfer it from her hand to her mouth in an instant, and there it would remain until she deemed all danger of its loss to be past. So delicate is her sense of touch, that she can find a hair on the floor with her feet, take it up with her toes, and transfer it to her hand.

All the knowledge she has obtained came through the sensitiveness of two sénses—touch and smell; and the amount which she has collected through those two mediums alone is wonderful. This creature presents the most remarkable instance which has come to my knowledge in demonstration of the amount of knowledge it is possible to acquire through the channels of such inferior senses as touch and smell. She displayed a knowledge of matters that it would seem

MARY TURNER.

impossible to acquire without the intervention of sight or hearing.

How could she know the dispositions of people? How could she distinguish between the sexes? Is each of the organs of the brain an individual instinct that will, without the modifying influences of outward surroundings, assert itself? This woman displays most of the characteristics common to other people—many of them in a limited degree, it is true, but they are recognizable notwithstanding. Her Comparison in the intellectual group is especially large. So is her Benevolence fairly developed in the moral group, but stoutly opposed by larger Acquisitiveness. In fact the side organs at the base of the brain near the ear are generally strong.

J. I. JOHNSON.

COMUS:

A MASK. — BY JOHN MILTON.

The Lady enters.[13]

THIS way the noise was, if mine ear be true,
My best guide now; methought it was the sound
Of riot and ill-managed merriment,
Such as the jocund flute or gamesome pipe
Stirs up among the loose unletter'd hinds,
When for their teeming flocks, and granges full,
In wanton dance they praise the bounteous Pan,
And thank the Gods amiss. I should be loath
To meet the rudeness and swill'd insolence
Of such late wassailers; yet O where else
Shall I inform my unacquainted feet
In the blind mazes of this tangled wood?
My brothers, when they saw me wearied out
With this long way, resolving here to lodge
Under the spreading favor of these pines,
Stept, as they said, to the next thicket side
To bring me berries, or such cooling fruit
As the kind hospitable woods provide.
They left me then, when the grey-hooded Even
Like a sad votarist in palmer's weed,
Rose from the hindmost wheels of Phœbus' wain.
But where they are, and why they came not back,
Is now the labor of my thought; 'tis likeliest
They had engaged their wand'ring steps too far,
And envious Darkness, ere they could return,
Had stole them from me: else, O thievish Night,
Why should'st thou, but for some felonious end,
In thy dark lantern thus close up the stars,
That Nature hung in Heav'n, and fill'd their lamps
With everlasting oil, to give due light
To the misled and lonely traveller?
This is the place, as well as I may guess,
Whence even now the tumult of loud Mirth
Was rife, and perfect in my list'ning ear,
Yet nought but single darkness do I find.
What might this be? A thousand fantasies
Begin to throng into my memory,
Of calling shapes, and beck'ning shadows dire,
And aery tongues, that syllable men's names[14]
On sands, and shores, and desert wildernesses.
These thoughts may startle well, but not astound
The virtuous mind, that ever walks attended
By a strong siding champion, Conscience.
O welcome pure-eyed Faith, white-handed Hope,
Thou hovering angel girt with golden wings,
And thou, unblemish'd form of Chastity;
I see ye visibly, and now believe

[13] The faculties of the spiritual sense are beautifully represented by the Lady in her soliloquy. Hope, Faith, Veneration, etc., are all expressed, imparting a cheer to the lines akin to the feeling she entertains. To be sure, something of fear and anxiety are present, but how subordinated to thorough trust in a good Providence. In the thickest darkness she sees the silver-lined cloud, and reads the scroll of hope and courage on the panel of her consciousness. Of course, as a woman, she has human weaknesses and fallibility, and it is but natural that the gloxing words and compliments of Comus should win upon her confidence and overcome her prejudices, or, rather, determine her course in a dilemma that seems almost insoluble. The only solution emphatically relied upon is the firm trust expressed in the lines—

"Eye me, blest Providence, and square my tread
To my proportioned strength."

[14] This beautiful expression was not at first written so. The line was, "That *lure night-wanderers.*"

That he, the Supreme Good, t' whom all
things ill
Are but as slavish officers of vengeance,
Would send a glist'ring guardian if need
were
To keep my life and honor unassail'd.
Was I deceived, or did a sable cloud
Turn forth her silver lining on the night?
I did not err, there does a sable cloud

SONG.

SWEET Echo, sweetest nymph, that liv'st
unseen
Within thy aery shell,
By slow Meander's margent green,[16]
And in the violet-embroider'd vale,
Where the low-born nightingale
Nightly to thee her sad song mourneth
well;

THE LADY ALONE IN THE WILD.

Turn forth her silver lining on the night,
And casts a gleam over this tufted grove.
I can not hallow to my brothers, but
Such noise as I can make to be heard
farthest
I'll venture, for my new enliven'd spirits
Prompt me; and they perhaps are not
far off.[15]

Canst thou not tell me of a gentle pair
That likest thy Narcissus are?[17]

[15] This is a very ingenious invention to introduce the beautiful song which follows.

[16] The allusion here is to the winding course of the river in Asia Minor, whose irregular course made it to be often quoted; and its introduction here in connection with the wandering, uncertain returns of an echo is appropriate.

[17] Narcissus in the classical mythology was the beautiful youth whom the Nymph Echo loved in vain. She pined away until nothing was left of her but her voice. But Narcissus was punished for his obtuseness by being made to fall in love with his own reflection as he bent

O if thou have
Hid them in some flow'ry cave,
Tell me but where,
Sweet queen of parly, daughter of the sphere;
So may'st thou be translated to the skies,
And give resounding grace to all Heav'n's harmonies.

Com. Can any mortal mixture of Earth's mould
Breathe such divine enchanting ravishment?
Sure something holy lodges in that breast,
And with these raptures move the vocal Air
To testify his hidden residence:
How sweetly did they float upon the wings

COMUS AND THE LADY CONVERSING.

Of silence, through the empty-vaulted Night,
At ev'ry fall smoothing the raven down
Of Darkness till it smiled! I have oft heard
My mother Circe with the Sirens three,[16]
Amidst the flow'ry-kirtled Naiades[17]
Culling their potent herbs, and baleful drugs,
Who, as they sung, would take the prison'd soul,
And lap it in Elysium; Scylla wept,
And chid her barking waves into attention,
And fell Charybdis murmur'd soft applause:
Yet they in peaceful slumber lull'd the sense,
And in sweet madness rob'd it of itself;
But such a sacred and home-felt delight,
Such sober certainty of waking bliss,
I never heard till now. I'll speak to her,
And she shall be my queen. Hail foreign wonder,
Whom certain these rough shades did never breed,
Unless the goddess that in rural shrine
Dwell'st here with Pan, or Sylvan, by blest song
Forbidding every bleak unkindly fog
To touch the prosp'rous growth of this tall wood.

La. Nay, gentle Shepherd, ill is lost that praise
That is address'd to unattending ears;
Not any boast of skill, but extreme shift
How to regain my sever'd company,
Compell'd me to awake the courteous Echo
To give me answer from her mossy couch.

Com. What chance, good Lady, hath bereft you thus?

La. Dim darkness, and this leafy labyrinth.

Com. Could that divide you from near-ushering guides?

La. They left me weary on a grassy turf.

Com. By falsehood, or discourtesy, or why?

La. To seek i' th' valley some cool friendly spring.

Com. And left your fair side all unguarded, Lady?

La. They were but twain, and purposed quick return.

over a fountain, and was afterward transformed into the flower which bears his name.

[16] In associating Circe with the Sirens, the poet here takes a liberty with the legend scarcely warranted by its terms. It will be remembered by the reader that Circe in the *Odyssey* warns Ulysses against the temptation to which he will be exposed after leaving her island on account of the sirens, and advises him how to escape it. On the moral side, however, we find the poet true to nature, for the propensities never act alone; error in its course employs many devices, and self-indulgence must array on its side several qualities of the animal nature.

[17] This and the following verse were added by Milton to the original copy, and inserted in the margin.

Com. Perhaps forestalling Night prevented them.

La. How easy my misfortune is to hit!

Com. Imports their loss, beside the present need?

La. No less than if I should my brothers lose.

Com. Were they of manly prime, or youthful bloom?

La. As smooth as Hebe's their unrazor'd lips.

Com. To such I saw, what time the labour'd ox
In his loose traces from the furrow came,
And the swinkt hedger at his supper sat;
I saw them under a green mantling vine
That crawls along the side of yon small hill,
Plucking ripe clusters from the tender shoots;
Their port was more than human, as they stood:
I took it for a fairy vision
Of some gay creature of the element,
That in the colours of the rain-bow live,
And play i' th' plighted[20] clouds. I was awe-struck,
And as I pass'd, I worshipp'd; if those you seek,
It were a journey like the path to Heav'n,
To help you find them.

La. Gentle Villager,
What readiest way would bring me to that place?

Com. Due west it rises from this shrubby point.

La. To find out that, good Shepherd, I suppose
In such a scant allowance of star-light,
Would overtask the best land-pilot's art,
Without the sure guess of well-practiced feet.

Com. I know each lane, and every alley green,
Dingle,[21] or bushy dell, of this wild wood,
And every bosky bourn from side to side,
My daily walks and ancient neighbourhood;
And if your stray-attendants be yet lodged,
Or shroud within these limits, I shall know
Ere morrow wake, or the low-roosted lark[22]
From her thatch'd pallat rouse; if otherwise,
I can conduct you, Lady, to a low
But loyal cottage, where you may be safe
Till further quest.

La. Shepherd, I take thy word,
And trust thy honest offer'd courtesy,
Which oft is sooner found in lowly sheds
With smoky rafters, than in tapestry halls,
And courts of princes, where it first was named,
And yet is most pretended: in a place
Less warranted than this, or less secure,
I cannot be, that I should fear to change it.
Eye me, blest Providence, and square my trial
To my proportion'd strength. Shepherd, lead on.

(*To be continued*).

[20] *Plighted*, instead of plaited, to avoid its jarring with *play*.

[21] *Dingle* is defined in the old vocabularies as a little hollow, such as might be made by a blow. It is from the old verb *to ding*, which is found in the Scotch, and from which comes *dint*.

[22] Mr. Keightley comments on this passage thus sharply: "The ideas here belong to a hen-house rather than to the resting-place of the lark, which has no *thatch* over it, and in which, as it is on the ground, he does not *roost*. Milton, whose mornings were devoted to study rather than to rambles in the fields, does not seem to have known much of the habits of the lark." But Prof. Masson comes to the defense of the poet and claims that the charge of incorrect description and ignorance of the lark's habits arises from "a gross misreading of the passage (in *l'Allegro*, where a similar allusion occurs) and neglect of its obvious syntax": that Milton means simply "the lark in her low resting-place."

THERE would seem to have been an attempt on the part of the post-office authorities to consider their appropriate symbolism in selecting the distinctive colors for the stamps to be used in the different State departments. The color for the navy is blue; for the war department, a sanguineous red; the post office, black, presumably out of respect for the dead letters; the department of justice, purple, emblematic of truth; the department of agriculture, straw or corn color; the treasury, a rich velvet brown; the executive, carmine; the state department, with a faint suspicion of humor, has been assigned green; and the interior, vermilion, the war-paint of the Indians.

LAWS OF HEREDITY.

THE principle of hereditary influence is an old doctrine. It was proclaimed in the times of Moses. Numerous illustrations of it are found in the Sacred Scriptures. It was taught by the Greeks and Romans, as well as by many able writers since their day. But it was not till near the close of the eighteenth century that systematic attempts were made to improve in this way the stock of domestic animals.

By careful study and close observation it was found that experiments in this direction proved very successful. Great changes, both in Great Britain and in this country, have been made in improving the qualities and character of domestic animals. To such an extent have these experiments been carried that they have been reduced almost to a regular science. The same general principles that have been employed in the animal creation apply also to the human species.

Physiology, upon which these principles are based, is comparatively a modern science. Within a few years, great progress has been made in the practical application of this science, and just in proportion as it is brought to bear upon the relations between the parent and the child, or one generation and another, do we find marked indications of hereditary influences. It may be safely said, we believe, from the numerous testimonials and illustrations on this subject, that there must be much truth in these laws of inheritance.

But a great difficulty or barrier stands in the way of improvement on this subject—that is, the want of a *general principle or law* by means of which all the facts or knowledge of this kind can be classified and reduced to a system. In all departments of natural history or the sciences in their early stages, there is a period of experiment, of observation, and discovery, before the facts can be classified and arranged under general principles. It is this kind of work—the establishment of a general law—that the facts on heredity need more than anything else, and such is the object of this paper.

In all the works of nature, its primary laws or general principles are perfect in their character, and are based upon subjects or objects without defect or blemish. This rule holds good in all the natural sciences. Thus in tracing back hereditary influences to their primary source or origin, the presumption is that they stand upon some general law or perfect standard.

After many years of study, observation, and reflection, we venture to submit a general law or standard, upon which all hereditary influences are based, and from which they have their start or origin. This law, of course, is based upon physiology. What, then, is this general principle or standard? *It consists in the per-*

fectionism of structure and harmony of function; or, in other words, that every organ in the human body should be perfect in its structure, and that each should perform its legitimate functions in harmony with all others. Though this perfect physical organization is nowhere to be found in nature, we can readily conceive of such a standard, and that there may be all manner or degrees of approximations toward it. The nearer this standard is reached in physical organization, the better will be the mental and physical conditions, and the hereditary effects will partake of the same character—a sound and healthy organization will be transmitted. Thus will be secured such a thing as a normal perfect structure throughout the whole system, and where all the functions are performed in a natural, healthy manner. Now let one or more of the organs become changed in structure, and impaired in discharging its proper functions, the effect more or less in degree, is transmitted to the off-spring.

It will be seen at once how weaknesses and predispositions to disease may be transmitted. Suppose there is an enlargement of the heart or some valvular difficulty, or suppose the lungs may be weak or some part of them diseased, the effects of such an organization are quite likely to be transmitted in this direction. The same law governing the body applies also to the brain. If certain portions of the brain are imperfectly or excessively developed, thereby causing weak or strong points in the character, similar developments and characteristics will be found in the child.

Let us illustrate this law by taking some of the most striking facts in heredity, such as the defective classes—the idiotic, the feeble-minded, the blind, the deaf and dumb, etc., etc. The law is based upon a normal, healthy standard of the whole body—every organ normal in structure and performing its natural functions in a healthy manner. This presupposes that the brain is well-developed, and performing its own legitimate work, and, also, that the senses of sight and hearing are sound and healthy.

Now would such an organization beget offspring idiotic, feeble-minded, deprived of sight and hearing? Assuredly not; it would be impossible. While we do not find such perfect organizations, but only approximations to them—the nearer this approach comes, the less such defects are likely to occur. Suppose this physical standard, naturally sound and healthy, has become impaired — some parts abused and diseased—then these imperfections will be transmitted. This law of hereditary influence applies to the brain and to the senses, as well as to all other parts of the body.

It has long been admitted by the best writers on medicine that there is a large class of diseases called hereditary, from the fact that the germs or predisposition to these complaints are transmitted. There may be instances where the disease can not be traced back to the parent or grandparent, but may have existed in some of the ancestors, passing over one or two generations. The diseases most likely to be transmitted are consumption, scrofula, rheumatism, neuralgia, disease of the heart, liver, etc., etc.

Perhaps there is no organ in the body where the predisposing causes to disease are greater than the brain. It is estimated that fully one-third of all the insanity may be traced directly, or indirectly, to hereditary influences. The brain, from its delicate structure and incessant activity, is more likely to be disturbed, and its functions become more or less deranged than almost any other organ in the body. If the morbid, diseased action of one organ implies that there must be a normal, healthy standard, why may not all these be combined, and make a general, universal standard? And why should this not constitute a general law of heredity, from which all minor points have their start and origin?

If we could always have the same data —the same organization upon which to base hereditary influences, the results would be determined more definitely. But in applying this law of heredity we encounter a serious difficulty at once; there must be two active agents, not pos-

sessing the same organization, which may be constituted widely different. It is in this union, or combination of similar and dissimilar qualities, that the results or effects of inheritance must be estimated. As a general thing where there is great similarity in the agents, there will be sameness in results; while on the other hand, the greater the differences the more widely marked the results.

Notwithstanding there may be obstacles in the way of understanding just how these hereditary influences always operate, and we can not calculate definitely the results, this does not invalidate the fact of a general law. In some respects this law may be compared to the principles of gravitation, electricity, or chemical affinity where their application is affected by certain conditions or is dependent upon the material upon which they operate.

One of the most important elements in constituting a good organization is that there should be a balance or harmony in the organization. In this case, we shall not find any marked excesses or defects; and provided both parties possess such an organization, it is almost certain that the offspring will have sound and healthy constitutions. The same principle applies to the brain, if its parts are not well developed—some excessive and others deficient—the mental qualities of the child will not be evenly balanced.

In entering into matrimony, it would be very desirable that the parties coming together should combine such organizations as to match each other; that wherein one was deficient, the other should make it up. This would conduce greatly, not only to the interests and happiness of the parties themselves, but it would insure most favorable hereditary influences. In order to secure such advantages there is great need of understanding this general law of heredity.

The various facts scattered here and there on this subject can not be satisfactorily explained nor classified without some general principle to guide us.

The law here described as regulating hereditary influences is not confined to this one topic, but has a wide and very extended application. Upon this same standard is based the great law of propagation or population, which may be thus described: *It is based upon a perfect development of all the organs of the human body, so that there shall be a perfect harmony in the performance of their respective functions.*

In making application of the law, it presupposes that other conditions are favorable; such as the age, the union, and the adaptation of the married parties—provided no natural laws are violated or interfered with—there will uniformly be found with such an organization, not only the greatest number of children, but they will be endowed with the greatest amount of physical vigor, strength, and health. It should also be added that with such an organization, the best development of all parts of the brain might be expected, giving balance and symmetry to all mental qualities, whether social, intellectual, or moral. In fact, it is the highest and most perfect development or standard which nature sets before us.

This organization consists briefly in the perfectionism of structure and function; or, in other words, is the normal standard of anatomy and physiology, in their highest and best estate. Upon this basis is founded, not only the law of human increase, but also the general law of health and longevity. All weaknesses and diseases originate in deviations from this standard or in violation of some of its laws. Thus in all the changes taking place in the human body there are general principles to guide us, and a universal standard of appeal. By this means clearer views and more definite knowledge can be obtained of all the weaknesses and diseases to which the human body is subject.

There is a great advantage in having a standard of organization constantly before the mind, as it enables us to detect more readily in every case what diseases are constitutional or hereditary. We can

thus judge far better of the relations which one disease sustains to another. This knowledge will also enable us, not only to treat this class of diseases more successfully, but to understand how they may be prevented.

This same organization affords the groundwork or the constituent elements of long life as well as good health, and therefore may be designated as the Law of Longevity. In some respects the human body may be compared to a perfect machine made up of many complicated parts. Each organ has a specific work to do, and in its normal state can do so much and no more. In this state, "the wear and tear," or the demands which nature makes to support life and carry on its operations, come upon all these organs alike, without infringing upon that of any other.

Now a careful investigation will show that it is the constitution or organization here described that survives the longest or reaches the greatest age. It is this type of the physical system or combination of forces that insures longevity. And the most powerful of these forces is that of heredity. All writers agree that one of the indispensable requisitions for long life, is good healthy stock or long-lived ancestry. If there is any condition, property, or principle that composes and regulates these inherent qualities and tendencies, there must be some general law overruling the whole.

There is another test in favor of this normal type of physiology, that is, it is the true standard of beauty. In the creation of man there must have been a standard, a form, a size, a fullness, a proportion, an outline, etc., that was more beautiful than all others. Man was created with a sense of taste; with a love for the beautiful, which, cultivated and perfected to its highest state, might find objects in nature capable of gratifying it to the greatest possible extent.

The physical standard here described represents the organization of man as perfect—the same model and type that it was when he came from the hands of the Creator.

It is this same standard or model that Grecian and Roman artists have attempted to imitate in statuary. Art may create such models, but what a failure on the part of nature! What countless deviations from this standard do we find everywhere among all people! What has been the most powerful agency in producing these changes? It is the *law of inheritance*—first and foremost, above all other agencies. Why should not such a power be better understood? Why should it not be more under the control of the human will?

Within a few years the interest in this subject has greatly increased, as indicated by the publication of several new works, as well as by discussions in the journals and newspapers. Some advocates of the doctrine are so enthusiastic that they claim, if the principles of heredity could be generally applied, it would revolutionize the present state of society; that it would go far to eradicate evil and crime as well as pauperism and insanity. In their zeal for this new doctrine they overestimate altogether its advantages, and do not consider the difficulties in the way or how slow must be the process of improvement. It is the work of successive generations.

On account of the advocates of the doctrine making such high pretensions of what it can do, some persons have become very much prejudiced against it, and ridicule its followers. It is not the first or the only time that new doctrines have been opposed and ridiculed. This arises in a great measure from ignorance and prejudice. The facts on this subject are so common and abundant that they must convince every candid and reflecting person that there is much truth in them.

The principal reason why the laws of inheritance have not hitherto been better or generally understood, is because the principles of physiology have not been applied any more to practical life. In fact, this science is practically in its infancy. It is only a few years since the relations between pure air and the healthy state of the lungs and the blood became

known, or the importance of regular exercise of all parts of the body, in order to maintain good health.

The relations which the physical system, with its various organs, sustains to education and religious culture, are, as yet, very imperfectly understood. So is the application of sanitary laws to public health; also to the prevention of disease and the preservation of human life. The farther inquiries are pushed into the relations which this science sustains to the public welfare, the more useful and important do they appear. It may be found that this law of inheritance will become one of the most powerful agencies that can be employed for advancing the best interests of a people. Such an agency certainly should not be despised or ignored.

The inquiry may still be made, if the doctrines advocated in this paper are so important, why have they not before become generally known and their truth admitted? The same question might have been raised in reference to many other discoveries. It seems to have been the design of Providence that the great truths of nature should slowly be brought to light at different periods, and by a variety of agencies.

Such has been the history of nearly all the sciences. A great amount of knowledge may exist on some subjects without being reduced to system or applied under any general principles.

It is so in regard to heredity. A very large body of facts have been gathered by a great number of individuals, each operating in different fields. Now let all these facts be carefully analyzed and classified, to see if some general principles can not be deduced from them—some principles which will enable us to understand better their origin, their connection, and application. In the very nature of things there must be some general law to explain and regulate these phenomena.

In concluding this paper, we submit if it does not contain data and argument sufficient to claim some attention. Let the reader take the *normal standard* of physiology as here described, and study it carefully from all points of view; let him select individuals and families among his acquaintances, and see what are the deviations in their case from this standard; let him examine into the relations between parent and child, and see what are the resemblances—what physical and mental qualities are inherited. The more striking and peculiar the organization and character of these persons are, the greater and more marked will be the hereditary effects. Let him take the defective classes, such as the feeble-minded, the blind, the deaf and dumb, and the insane; let him select cases from the highest and lowest grades in society and examine into the character of the offspring—physical and mental—and we are sure he will be convinced that there is such a thing as the law of inheritance; and, if it is true in one single case, there must be a great universal law covering the whole.

NATHAN ALLEN, M.D.

A SAFE DOCTOR.—A New York medical monthly reports: "Dr. Joseph Fanyou was charged in Jefferson Market Police Court with issuing prescriptions without a license or diploma. The complainant was Mr. David Webster, President of the Medical Society of the county of New York. He brought forward as witness a young man of small stature, who had called on Dr. Fanyou for treatment, and who claimed to have received the prescription in question. 'What kind of a prescription did you get?' asked Justice Gardner of the witness. 'The doctor examined my hands, and said that I should take a bath regularly, and drink a cup of hot water every morning and night.' 'And that is all the prescription you got?' 'Yes, sir.' 'Were you advised to take medicine?' 'No, sir.' 'Then he is a safe physician to be at liberty,' said the magistrate. 'Any doctor who prescribes water can certainly do no harm to the community. It would be well for many patients if their physicians would order more water and less physic.' Dr. Fanyou was therefore discharged."

THE EFFECTS OF ALCOHOL UPON THE HUMAN BODY.

THE digestory canal is a long passage mostly tubular, having but two expansions, one the mouth, the other the stomach. The opening of this organ into the intestinal canal is small, about an inch in diameter when distended, and is closed by the contraction of a strong muscular ring, named the pylorus or gate, which is opened by the relaxation of the said muscle.

The opening and closing of the automatic pylorus has always elicited the admiration of all observing physiologists. It remains closed while the digesting food is moved about by the contracting walls of the stomach, but the instant that any of the contents of the stomach prepared to enter the intestine touches the pylorus its muscle relaxes, and exactly so much, and no more, of the contents of the stomach is allowed to pass the gate, which is instantly closed against whatever should not pass.

If, however, some small substance—a seed or a cherry pit, or the like—which is indigestible, touches the pylorus, it permits the passage thereof, as if it was not worth while to detain such small indigestible substances in the stomach until it should be irritated to get rid of them by vomiting. But, if the undigested or indigestible substances are in large quantity they will not be allowed to pass for a long period. If then the pylorus perceives, so to speak, that the stomach can not or will not discharge its contents by vomiting, it relaxes and permits the contents to pass, which, of course, irritates the whole of the intestinal canal, but which is the better of the alternatives.

The pylorus is permanently and always closed against the passage of alcohol. It is never permitted to pass that guardian gate, and inflict its evil action directly upon the delicate tissue surface of the intestinal canal. Our attention will therefore be confined (1) to the action of alcoholics upon that portion of the digestory canal above the pylorus, namely, the mouth, throat, esophagus, and stomach. (2) We shall trace the alcohol from the stomach through the liver to the right heart, (3) thence through the lungs to the left heart; and (4) thence into all parts of the body.

Enough has, however, been already shown in the action of the ever true and faithful pylorus, to indicate to the expert physiologist that alcohol is a hateful poison to the pylorus, which even in the inebriate is a teetotaler of the most radical and fanatical stamp. Three cheers for the pylorus and the instincts of its governing nervous center, more wise and protecting than the pseudo-wise brain of alcoholic drinkers.

Any one can see the effects of even the weakest alcohol, by dropping some into his own eye, or into that of a cat, or of a dog. Does he fear for his eye? Is that more delicate or more important than his stomach, or his liver, into which he will pour, without hesitation, a large quantity of the same alcoholic? He may snuff some of the mildest alcoholic into his nose, and watch the effect by his feelings and by means of a looking-glass. He will realize by his pungent sensations and by the reddened color of the inner surface of his nostrils that the mildest alcoholic is very irritating to that surface.

If he holds the same drink in his mouth, he will be conscious of a less pungent sensation, yet in case of distilled spirits the effect will be very strong; so much so that drinkers hasten to swallow the unpleasant fluid, and follow it with a drink of cooling water to wash away the burning sensation. He thinks not that his poor stomach, because uncomplaining, is a still greater sufferer! But if he tries to hold any watered alcoholic in his mouth for a little time, when he is thirsty, he will find that both water and alcohol have disappeared, although he has not swallowed nor spit out either. What has become of them? They have, so to speak, soaked into the lining of the mouth, and into its blood tubes, and have become a part of the blood therein, and will soon

be circulated through every part of the body.

A thirsty person could, by holding successive portions of alcoholics in his mouth, become intoxicated, as was once seen, when a person, being unable to swallow, was obliged to take his drinks by the mouthful at a time. But, if a person, not thirsty, takes a mouthful of any alcoholic, and in a little time spits it out and examines it, he will find that the alcohol has almost entirely or entirely gone. Where?

Alcohol is very diffusive, and will readily diffuse itself into, and through, all animal tissues, especially if moist, as they are when living. Thus the alcohol enters readily into the lining of the mouth, and passes very quickly through the delicate sides of its minute blood tubes, and is soon mingled with their blood, and with it courses through the body.

If the drink only passes through the mouth, only a slight effect is produced there. The same kind of effect, but still greater, is produced in the stomach. This is not problematical, but was witnessed by Dr. Beaumont, who, before the beginning of the temperance reformation, was surprised, upon looking into the stomach of Alexis St. Martin, to observe the flushed condition of the stomach, and that if the drink (wine) was continued for a few days the stomach would actually become inflamed, while Alexis felt in no wise different from what he usually did. A remarkable proof of the insensibility of the stomach under abuse, and of the very prejudicial effect of alcoholics. Dr. B. says that in a week or ten days, if the daily use of even such weak alcoholics as wine was continued, sores would be produced, some of which would bleed; "thick drops of blood would exude," are the words he used. Yet no pain was felt, nor any unusual sensation. Is it safe to drink the causes of such effects?

(2) The alcohol soon leaves the stomach by general diffusion into it, its blood tubes, and through it into adjoining organs.

But there is another fact of great importance. In the sides of the stomach there are numerous nerves. Yes, nerves of both systems—the motory and the nervous circulatory. The centers, or ganglia, of the former are found in bony inclosures, the cranium and back-bone, from which there is communication with all parts of the body by two classes of nerves. Through one, the motory, there is an outflow to the muscles of all parts of the body, inducing their contraction or relaxation (both acts together being named musculation). Through the other nerves, the sensatory, that lead from all parts of the body to their centers, there is an influence producing sometimes sensation, but oftener only reaction of a salutary nature.

The centers, or ganglia, of the nervous circulatory (also named ganglionic, organic, nutritive, sympathetic, etc.) system are found in front of each side of the cranium and of the spinal column, and by nerves are connected with the large and the most minute arteries, and control their size, and thus control the flow of blood through each part of the body. All the ganglia or centers of this system are associated by connecting nerves, yet each ganglion or center has its own domain, within which it controls the arterial blood tubes. (The two systems are also connected by nerves.)

Now when the alcohol leaves the cavity, diffusing itself through the sides of the stomach, it meets and acts upon the nerves of both systems, and through both kinds of nerves an influence is exerted upon both classes of centers—the motory and the nervous circulatory. The latter are thereby paralyzed, and hence unable to exert their normal outflow upon the minute arterial blood tubes; hence these dilate and allow a gush of blood to take place through them, distending the capillary blood tubes, the fine network into which the minute arteries everywhere open. This, for the moment, gives a flushed condition to all parts, and such an appearance to all parts which can be seen. For the moment all the parts within and at the surface of the body

glow with additional warmth. But as soon as, in a moment or two, this heat of the parts is expended, or wasted, the blood being partially stagnated by the partially paralyzed condition of the nervous circulatory centers, coldness is induced as a result, and a general derangement of all the functions pro rata to the amount of alcohol swallowed.

T. S. LAMBERT, M.D.

BRAIN vs. TEETH.

IT is predicted by certain advocates of the evolution theory, that the future man will be toothless and hairless; a startling announcement to the lovers of physical beauty in man and woman, especially woman, for fine teeth and luxuriant hair are considered most important factors in her claim of personal attractiveness. We are horrified at sight of a cavernous mouth which displays only ridges of epithelium, and turn with disgust from a woman whose scalp is shining bare. That is bad enough in a man, but familiarity with his bare poll has hardened us so that our æsthetic sense can bear it. There must be some truth, however, in the opinion of the evolutionist just mentioned. We see too many jaws vacant of teeth, and too many scalps denuded of hair in our daily walks not to be impressed that there is a growing tendency that way. Besides, the immense number of dentists in full practice of their peculiar art, and the multiplying shops where hair, artificial and real, is sold under different names and different forms, contribute their strong testimony to that unpleasant prediction.

We might mention, also, the extensive sale of lotions by almost numberless manufacturers for the revival of hair growth on bare or thinly-furnished heads, as another class of evidence bearing on the matter.

The evolutionist may seek to displace the sad reflections which his inference has started by telling us that the future man will also be the intellectual superior of the present man, and his bare poll will contain a higher cerebral development than we can boast, and probably that his higher sense of beauty will contemplate things much above the cognition of our day; and have little to do with such inferior matters as one's physical personality. That man in that remote era, will be absorbed in employments of the noblest, highest, purest character, and the self-nature be kept quite out of view, is not an impossible conjecture, but speculation aside, the best instructed dentists insist that the premature decay of teeth is mainly due to the want of those nutritive principles which enter into the composition of teeth; hence, if we do not take food containing bone-making substance into our stomachs, as a habit, in our dietary, we can not expect to have good, sound teeth. Especially do we find imperfect teeth in the educated classes, or among those who, by organization and association, are brain-workers. The active brain draws heavily on the blood for the supply of phosphatic material, and if that supply be deficient for the general wants of the system, the brain gets all it can, and leaves the bones and muscles to their fate. A French writer claims that the brain when over-worked steals all the phosphates and leaves none for the teeth, or else that a deterioration of the general health is brought about by excessive study; and in this deterioration all parts suffer.

The experiments of Lehman may be quoted, as they go far to prove that the food deficient in phosphates will not build up the bones. He fed a young pig with potatoes for 126 days, and the animal suffered from rickets; but other pigs fed with potatoes and dry phosphatic aliment developed normal skeletons.

I am convinced from my own observation that properly selected food will do much toward counteracting even a constitutional tendency of teeth decay. In a family of which the parents have poor

teeth, the mother, particularly, having lost almost all hers in early life, the children were early introduced to a diet of farinaceous food, such as crushed or cracked wheat, oatmeal, hominy, whole wheat bread, etc., and fed almost entirely upon it. Now, in their teens, these children each possess a mouthful of ivory which is the envy of their associates. They have naturally very active brains, but the food they eat abundantly meets the demand made upon the alimentary function. In my own case the effect of a bread diet rich in gluten, has, I am sure, been most happy in suspending the rapid decay of teeth, which in my youth were impaired by a careless and ignorant diet. The miseries suffered by children in teething are due, for the most part, to the want of tooth substances in their little bodies. Stomach derangement, the doctors will tell us, is at the bottom of it, but if the children were fed as they should be, regularly, simply, purely, the functions of stomach, lungs, and heart would go on normally, and the teeth appear at the proper time almost unconsciously to the little ones. M. E.

INSPIRATION OF PIE.

I HAVE dreams. Sometimes I dream of pie
In the full meaning of that splendid word;
The subtle mince-pie, which few men can eat,
Though all may tackle it—perchance to die;
Its soggy crust, by countless raisins kissed,
Buried in tallow that will make you pitch
And dive around and dream about the witch
Of Endor and some more unpleasant things.
You wake at 2 A.M., and 'gin to kick
As steers are said to do in current slang.
That is my dream of pie.

WARM WATER COOLING.

WHEN I was a boy I read somewhere that the Chinese instead of drinking iced water in the heat of mid-summer, take hot tea.

This notice horrified me; born in a mountain region of Germany, where from high summits clear, limpid streams are seen moving in their serpentine course through the verdure of fertile valleys, I was used to consider cool spring water not only as the most delicious drink, but as the most if not only legitimate means of quenching the thirst. I set down the Chinese as the antipodes not only of the inhabitants of Europe, but also of its enlightenment and better understanding, and when later, in Holland, I saw the first live Chinese this notion was, by the look of them, most forcibly confirmed. I left the hot tea for the winter, and in the hot days of summer I continued to drink cold spring water.

No, that is not true. How could I have done it? There is no spring water in Holland, at least not in Rotterdam, where I used to live. There all water is—well, it is difficult to tell what it is. Very often it is brackish. I have seen the water of the River Maas at high tides rise 18 feet above the level of the land, and many an anxious face leaned over the doors of the large dike that protects the low land from the waves of the rolling sea. Instead of drinking water I drank cold Bavarian beer at that time. The whole German colony, mostly young chaps under 25 years of age, did, and usually much more too than they ought to have done, and certainly more than was needed to satisfy thirst. Perhaps this is not true either, for the more you drink of that so-called "refreshing" beer, the more your system gets heated, till by the reiterated firing up, you get to a climax, where the usual reaction in such

cases produces a dulling sensation. Then the "cooling" obtains indeed, but that is not an agreeable condition. The Germans by some singular linguistic abuse call it *Katzenjammer*, but its correct way of spelling is "Kotzenjeuammer," from "Kotzen" or heaving up, because the overladen stomach, unable to digest the unnatural repletion, gets forcibly rid of its embarrassing contents.

Later on I lived in France, Spain, Italy, and the East. In these countries I lost the habit of drinking beer altogether. There was a good reason for it. There was none. But that was not all. The customs of those countries had something to do with it. In Spain you may be a gambler, you may be even a scoundrel in love affairs, without impairing your social record in the least. But if you are a *borracho* or even a drunkard, you have irretrievably lost your credit in society and you will find no mercy.

When I came back to Germany, and when I lived in New York, I found myself in a kind of middling position until I settled down in the United States altogether to ice-water. That was not alone due to the fact of American beer being most wretched stuff; I had become a convert to teetotalism and vegetarianism. But ice-water and ice-cream was a kind of creed; I abhorred "temperance" in water, and I intended once to write an article in favor of the car horses, which I imagined to be cruelly treated by being compelled to drink water that had for hours been exposed to the rays of the sun.

Then I went to Florida. In the winter we were all right. Although we lived out in the country where there is no ice natural or artificial, yet we had plenty of oranges, and as long as this luscious fruit was on our table, nobody investigated nor inquired about the temperature and other conditions of our drinking water. But winter passed by, and skipping the spring nature furnished us with as big a summer as anywhere she fabricates in the U. S. The thermometer does not rise so extremely high. Although we live in South Florida we have known it go higher in New York on a very hot day; but while in the North a thunder-storm will cool down the temperature suddenly to a low point sometimes; it may keep up here, and when there is no air stirring, a perfect purgatory is shining down from heaven. Usually, however, there is more wind in this region, and whatever may be said of Florida in the North, I have thus far found the summer here a great deal more agreeable than in the vicinity of New York.

But anyway, it is warm enough here in the summer-time, and a person is liable to become extremely thirsty, and more particularly if he is a market gardener, working a lake margin in the glaring sun from its rise till when it sets, as I used to do, in order to raise the vegetables which I, as a vegetarian, am bound to have.

What could I do? The lake was at hand, and it was a pretty lake too, full of nice limpid water. But the force of the rays of the sun overpowered the influence of the springs. The surface temperature rises much above that of the lower regions, and when you take up a cupful it is much like water that has just commenced cooking, or like hot water that had been allowed to cool down.

To drink or not to drink, that was the question. Generally speaking, people here are extremely apt to turn all things to their advantage, and so when they first told me that the warmth of the drinking water here is a wise provision of nature to prevent dyspepsia and consumption, I thought they wanted to fool me. The impression of my youth that water in order to cool the body must be cold was too lively to be soothed down to a tepid condition like that of my Silver Lake—I may say "my," for they made me pay for a part of the lake when I bought the land—but by and by I found that there is truth in it, and at this day I consider the use of ice-water as an evil. The irrationality of a cold application to the stomach in order to lower its temperature and that of the body is not quite so great as that of drinking lager on ice,

but it comes next to it, and in order to satisfy you of the veracity of this state of things, you need only to try some hot lemonade and you will speedily discover that its reaction, instead of being heat, as it is the case when you drink ice-water, is coolness. There is not by far so much perspiration, and the effect of the drink you take keeps up for a much longer time. I drink my lake water all the time when I feel thirsty, not caring even about the well water, to which I would have access by taking the trouble to walk a hundred yards. It is *not* much cooler either, and with my lake water I may be sure that I may, without injury, empty my cup, holding a pint, as many a time as I choose. I have changed altogether my boyish notions about John Chinaman. He is a shrewd fellow, and although the first man who ever wrote a book on anatomy and physiology in the Chinese language was an American M.D., yet I feel perfectly confident that in this particular we are offered a point of hygiene in which the yellow man is our superior, and that we shall feel a great deal more healthy if we regulate our habits upon the pattern which he offers in this respect.

C. A. F. LINDORME, PH.D., M.D.

NOTES IN SCIENCE AND AGRICULTURE.

Geological Science in the Bible.—We find a paragraph from the *London Record* which is interesting on this agitated point:

"Dr. Samuel Kinns, the author of 'Moses and Geology,' has for some little time past been giving a series of lectures in the drawing-rooms of the aristocracy of England on 'The Marvelous Scientific Accuracy of the Bible.' The last took place at the Earl of Shaftesbury's, and was attended by a large and very distinguished company. Dr. Kinns, in carrying his audience through his course of reasoning described the various geological strata and the story told by the fossil plants and animals of the earth's condition during the various epochs of its history. He especially interested them, however, in his description of fifteen creative events which he showed were placed by Moses in the correct order of sequence according to the latest discoveries in science. These events, which are very concisely stated in 'Moses and Geology,' were summarily described in the review of 'Moses and Geology,' which appeared in the *Record* of March 22, 1882. Dr. Kinns then proved that the number of changes that can be made in the order of fifteen things is more than a billion, viz.: 1,307,674,368,000; and, therefore, if Moses placed fifteen important creative events in their proper order without the possibility of traditional help, as most of them happened millions of years before man was created, it is a very strong proof of his inspiration, for group them as one may, and take off a further percentage for any scientific knowledge possessed by him, still the chances must be reckoned by hundreds of millions against his giving the order correctly without a special revelation from God. To lead his auditors to appreciate this, Dr. Kinns mentioned that a clock beating seconds would take over 30,000 years to tick a billion times; and that if any fifteen different events could be written down once in every ten minutes, it would take 24,000,000 of years to write all the variations that could be made in their order, writing them day and night without intermission; and to further illustrate it, he distributed slips of paper for each to write down the first fifteen letters of the alphabet in an order known only to himself, something in this order:

g m h d a j b k c f e n i o l

and not one corresponded with his. He told them that if all the people in the world were to try to imitate his unknown order, there would be still a thousand chances to one that the whole 1,200,000,000 attempts would be incorrect.

"Or, in other words, if all the people in a thousand worlds, each having a population equal to our own, were to try, there would still be a probability that not one list would agree in sequence with the unknown list. After this he asks how will the skeptic explain the marvelous, nay miraculous, accuracy in sequence of the Mosaic cosmogony."—*London Record.*

How Animals have Foretold Earthquakes.—An Italian writer on the dreadful catastrophe which occurred so recently on the Island of Ischia mentions those prognostications of an earthquake which are derived from animals. They were observed in every place where the shocks were such as to be generally perceptible. Some minutes before they were felt, the oxen and cows began to bellow, the sheep and goats bleated, and rushing in confusion one on the other, tried to break the wicker-work of the folds. The dogs howled, the geese and fowls were alarmed and made much noise; the horses which were fastened in the stalls were greatly agitated, leaped up and down and tried to break the halters with which they were attached to the mangers; those on the road stopped suddenly and snorted in a very strange way. The cats were very much frightened, and tried to conceal themselves,

or their hair bristled up wildly. Rabbits and moles were seen to leave their holes; birds rose as if scared from the places on which they had alighted; and fish left the bottom of the sea and approached the shores, where at some places great numbers of them were taken. Even ants and reptiles abandoned, in clear daylight, their subterranean holes in great disorder, many hours before the shocks were felt. The dogs, a few minutes before the first shock took place, awoke their sleeping masters by barking and pulling them, as if they wished to warn them of the impending danger; and several persons were thus enabled to save themselves.

Parsnip Culture.—A contributor to the *American Gardener* says:

"The parsnip is one of the most desirable as well as most wholesome of winter and spring vegetables, and should be cultivated in all gardens, however small. It flourishes best, and produces the largest, longest, and smoothest roots when grown quickly, in a very rich, deep soil, for, if fresh manure is given, the roots will become forked; or, if the seeds are sown in a shallow or poor soil, the roots will be of small size, tough, forked, and almost worthless. The best and easiest method of obtaining a satisfactory crop is to prepare the ground thoroughly the previous season. This should be done by ploughing or digging the ground very deep, and at the same time working in an abundance of decomposed stable manure in which a quantity of bone-dust had been mixed. If at all possible, let the ground be thrown up in ridges throughout the winter and as soon as the ground is in working condition in the spring, a good sprinkling of guano should be given, the ground neatly leveled, and the seed sown in drills from eighteen inches to two feet apart. The seed should be covered to the depth of three-quarters of an inch, and as soon as the young plants are from three to four inches in height they should be thinned out to a distance of six or eight inches apart. All the care and attention they require after this is to be well cultivated and kept free from weeds at all times.

"The roots are perfectly hardy, and are very much improved by leaving them in the ground during the winter, care being taken to place enough in the cellar to last during the cold weather. The roots require to be covered with sand when placed in the cellar, thus preventing them from becoming dry. One ounce of seed will sow about 150 feet of row, and as the seed is thin and scale-like, it will not retain its vitality for over a year."

A Floor Covering Home-made.—A new papier-mache process for covering floors is described as follows: The floor is thoroughly cleaned. The holes and cracks are then filled with paper-putty, made by soaking newspapers in a paste made as follows: to one pound of flour add three quarts of water, and a tablespoonful of ground alum, and mix thoroughly. The floor is coated with this paste, and then a thickness of manilla or hardware paper is put on. This is allowed to dry thoroughly. The manilla paper is then covered with paste, and a layer of wall paper of any style or design desired is put on. After allowing this to dry thoroughly, it is covered with two or more coats of sizing made by dissolving half a pound of white glue in two quarts of hot water. After this is allowed to dry, the surface is given one coat of "hard oil-finish varnish," which can be bought already prepared. This is allowed to dry thoroughly, when the floor is ready for use. The process is represented to be durable and cheap; and, besides taking the place of matting, carpet, oil-cloths or like covering, makes the floor air-tight, and permits its being washed.

Osier Willows.—"The demand for basket willows in this country appears to be unlimited. We import a large quantity from Europe, and peeled willow is worth ten cents a pound in New York. We have taken occasion several times, speaking of diversified industries, to call the attention of our people owning river and creek lands, or wet land, to the value of planting osiers. We doubt whether at this time any orchard or crop will pay so well, leaving out the fact that lands too wet for cultivation can be used and made profitable. There are in New York little townships that produce over 1,000 tons of willows. Frequently this crop is sold green as cut, and brings about $30 a ton, and this would clear about $500 per acre, or more. Now, we have another idea. What are called the false banks on James River are very rich, and would produce osiers as thick as wheat, and of the best quality. The crop, besides its money value, would protect the banks, and thus prove doubly valuable. As soon as we produce willows and broom corn, we shall have springing up in the villages basket and broom factories, just as sheep walks and cotton fields are insuring woolen mills and cotton factories."—*Washington Commercial.*

Peanut Flour.—"No doubt ere long 'peanut flour' will be an important product of the South. The crop of the country has averaged $3,000,000. Virginia is set down this year for 2,100,000 bushels; Tennessee for 250,000, and North Carolina at 135,000 bushels, these being the chief States engaged in their cultivation, and those in which it was first introduced from Africa. In Virginia they are called 'peanuts,' in North Carolina 'ground peas,' in Tennessee 'goobers,' and in Georgia, Alabama, and Mississippi 'pinders.' Virginians are beginning to turn the peanut into flour, and say it makes a peculiarly palatable 'biscuit.' In Georgia there is a custom, now growing old, of grinding or pounding the shelled peanuts and turning them into pastry, which has some resemblance, both in looks and taste, to that made of cocoanut, but the peanut pastry is more oily and richer; and, we think, healthier and better every way. If, as

some people believe, Africa sent a curse to America in slavery, she certainly conferred upon her a blessing in the universally popular peanut, which grows so well throughout the Southern regions that we shall soon be able to cut off the now large importation altogether."—*Savannah Telegram.*

Good Corn-meal.—It is said by those who claim to know, that the use of corn-meal for cooking purposes is rapidly decreasing in all the Northern States. In fact, such is said to be the case in the South, where corn was formerly preferred to wheat for making bread. The great increase in wheat production and the improvements that have been made in manufacturing flour have doubtless had much to do in bringing about this result. The price of corn now more nearly approaches that of wheat than it did a few years ago, and this circumstance operates in favor of using the latter. Few persons now use corn-meal for economical reasons, but many would prefer it a considerable portion of the time if a good article could be procured. The complaint is generally, however, that a really prime article of Indian corn-meal can not be obtained in towns and cities. In the opinion of some the corn that is produced in the prairie regions of the West is very inferior for making bread. It is certain that the corn produced in the Southern States is vastly superior for cooking purposes. The meal made from it is at once softer and sweeter. The flint corn raised in the New England States is excellent, but it requires a large amount of cooking. The softest and best flavored meal is made from new corn, which the proprietors of large mills dislike to grind. All know that corn-meal can not be kept long without deteriorating. The best corn-meal is obtained at country mills, where the grinding is done slowly, and ample opportunity is given the meal to become cold before it is moved.

To Clean Brussels Carpet.—All carpets, whether intended for dry or thorough cleaning, must first be well beaten, and swept or brushed with a hard broom. Put a bag of very fresh bullock's gall into a pail containing two gallons of cold water, with four ounces of pearl-ash dissolved in it, and well mix it either with a stick or your hands. Have ready, besides this, two pails of cold water, a large sponge, a couple of flannels, and some dry, coarse cloths. Dip the cloth into the gall and water, and scrub the carpet, a square yard at a time, as quickly and as carefully as possible. Rinse and suck up the gall and dirt with a large flannel or sponge, which is to be frequently rinsed in the pails of cold water. Well dry with clean cloths before beginning a second square. By adopting this simple process, any carpet, whatever its size, may easily be cleaned on the floor. The only objection to this method is that there is often a disagreeable smell left in the carpet; but if the gall be obtained from a fresh-killed bullock, and the carpet be hung out for a few hours in a fresh breeze, the whole of the smell will go off.

Wheat not Indigenous to America.—It may be news to many that this most valuable food product of our country is not native to our soil. It was not found in America at the period of her discovery, but soon afterward was brought over from Europe. A slave of Cortez, it is said, found a few grains in some rice sent from Spain, preserved and planted them, and thus originated the wheat of Mexico and the Northern Pacific. It was brought to Massachusetts in 1602, and to Virginia in 1611. The Valley of the Mississippi received it in 1718, and the first flour was shipped in 1746, from the Wabash River to New Orleans. Such was the beginning of a trade whose greatness and importance it is now difficult to estimate.

A Telegraph Yarn.—A Troy paper is responsible for this: A gentleman of the Western Union Telegraph office at No. 145 Broadway, New York, was sitting in the cable room when a telegram from Philadelphia destined for Paris came over the wires. This message, like all others for France, was to go over the cable *via* Duxbury, Mass. The operator called Duxbury a few times, and then said: "That fellow is asleep, evidently; but the cable men are always awake—I'll have to get one of them to go in and wake him up." So he stepped to another desk, called Plaister Cove, in Newfoundland, and sent the following message: "To cable operator, Duxbury: Please go in and wake up my own true love." This message Plaister Cove hastened to send across the ocean to Valencia, Ireland, who in turn "rushed" it to London; thence it was hurried to Paris, and still onward to the European end of the French cable at St. Pierre; the operator there flashing it back to Duxbury. In less than two minutes by the clock the message had accomplished its journey of some 8,000 miles by land and sea, as was evidenced by the clicking of the instrument on the Duxbury desk, which ticked out in a manner a little more petulant: "That is a nice way to do; go ahead. Your own true love!"

A Bee's Industry.—It is estimated that 125 clover blossoms contain one gramme of sugar. As each blossom consists of 60 calyxes, at least 125,000 by 60, or 7,500,000 calyxes, must be rifled to afford a kilogramme of sugar; and as honey contains 75 per cent. of sugar, it requires 5,600,000 calyxes of clover to yield a kilogramme of the former. Hence we may imagine the countless number of flowers that bees must visit to be able to stock their hives with honey.

Experiments with Seeds.—Further experiments this season, by Dr. Sturtevant at the Agricultural Experiment Station, give additional verification of the fact that the vegetative power of "tip" kernels of seed corn is greater than that of either the butt or central kernels. We quote this summary of results from the Doctor's last bulletin: Tip kernels, 83 per cent.; central kernels, 82 per cent.; butt kernels, 75 per cent.

CHARLOTTE FOWLER WELLS, *Proprietor.*
H. S. DRAYTON, A.M., M.D., *Editor.*
NELSON SIZER, *Associate Editor.*

NEW YORK,
OCTOBER, 1883.

OUT OF CONSIDERATION.

WE have voted in favor of early closing, of a half holiday on Saturday in summer, and also in favor of special consideration for the girl clerk who must stand so much in attending to her duties behind the counter, and for the sewing-girl who must keep the treadle moving so many hours ere she is thought to have earned the pittance which is accounted the price of a day's labor. We believe in holidays, in leisure for out-of-door recreation, and in time and opportunity for the enjoyment of the beautiful in nature and art. We hold that it is a cruelty to prevent the development of the higher faculties of the intellect, and of the emotions of the moral nature, by forcing the workers of society to continue on the treadmill of bread winning, day-in and day-out, without allowances of time for the exercise of these faculties and emotions, especially as society in most of our industrial centers has provided liberal means for such exercise. Constant employment at the counter, sewing-table, and desk promotes the activity of but a minor part of the brain. Nature in endowing man with nearly forty organs designed them all for use, and any limitation of their exercise by an ordinance o society or by individual caprice is an offense, the consequences of which must appear in inequality of brain development and inharmony of mind.

For the happiness of the individual, there is special need of the activity of the sentiments, and of physical health, and it is in the hours of leisure that the sentiments come into free play, and the functions of the body receive their best stimulus.

The movement in behalf of early closing and of half holidays has done much in certain quarters, but there is a very large class of clerks and indoor workers for whose benefit this movement seems to have accomplished nothing; they somehow appear to be entirely ignored by it, and yet they have the most need of its philanthropic influences. These workers are expected by their employers to be at their posts early in the morning, and are often found there even after the midnight bell has sounded the passage of a day. Not only are their hours long, but their work is specially dangerous, even more so than that of the powder-mill, where relays of hands are employed, and abundant relief is afforded the weary. It is dangerous not only to themselves, but also to those who patronize the stores and places in which they serve. In fine, public sentiment seems to demand that they shall sacrifice themselves entirely; for while the tens of thousands in other callings demand as a simple right times of leisure and recreation, these very tens of thousands would regard as utterly preposterous a like demand on the part of those who serve in the dangerous places, for they must render service particularly

in the times of leisure which the tens of thousands enjoy. Hence, they are slaves to a most exacting and pitiless practice. They are the conspicuous representatives of popular inconsistency. While the sons of labor gathered in special rendezvous eagerly and indignantly discuss the wrongs and oppression imposed upon them by capital, no voice is raised in behalf of the class of workers to whom we refer. No impeachment is preferred against capital in its relations to them. In spite of its cruel exactions, in spite of the baleful influences to which it exposes its employés constantly, it enjoys an entire immunity from censure. Nay, more, in that special and large field of employment it is accorded special privileges for the use and abuse of its servants; it is monopolistic and arbitrary in the extreme, and the multitude looks on its course with approval.

Who are these workers so hardly treated by society and by capital? The bar-tenders of the dram-shops.

There are hundreds of thousands of these men in the country. In the city of New York alone there are probably over twenty thousand, but we have never heard of their protesting against long hours and every-day service, like the dry-goods clerks and the grocers' clerks, and even the drug-store clerks. We have never heard of their striking for higher wages like carpenters, brick-layers, iron-founders, railway hands, telegraphers, etc., although in point of numbers they outnumber the artisans and operators in special callings, and they claim for themselves a sort of professional fellowship. We think these servants of the public propensity for bibation are hardly treated. They ought to strike, and we most heartily urge them to do so, without notice to their employers. We should not fear any damaging result to the interests of the community; no suspension of the commercial currents; no disturbance of the markets which would prove disastrous in an economical sense. There might be an eruption of talk loud and fierce on the part of employers and their bibulous customers, but the fuss would chiefly exist among the unemployed and unproducing, while the great mass of the industrious and decent would look on in amused unconcern; and, we doubt not, that to those of the strikers who resolutely hold out, other and more desirable places would be offered. Perhaps a grateful sentiment entertained by certain classes would prompt this mode of relief, and weary and suffering bar-tenders be set in more pleasant places. Let them strike, and fear not.

A GALL MEDAL.

AN expert in numismatics, Mr. D. Petrowsky, of this city, lately showed us a medal which was struck by the Hamburg mint in the beginning of this century, and commemorates the services of Dr. Gall, as a promoter of human science. As shown by the accompanying engravings the design on one side is a bust of the great phrenologist, which is shown on the medal in strong relief, the head being a fine portrait in profile, worked up with much detail, with the inscription surrounding it: *Dr. Franz Joseph Gall, aus Wien, Geb.*, 1758. *Im forschen kühn, bescheiden im behaupten*; or, in English: "Dr. Franz J. Gall, from Vienna, born 1758. In inquiry bold, modest in assertion."

On the reverse the central design represents a skull resting upon a square base,

the front face of which bears the well-known staff of Æsculapius, with the serpent coiled around it, and crossing at

right angles to the staff a lighted torch. This, we believe, was a symbol adopted by Dr. Gall. The inscription over the design is, *Der seele werkstatt zu ersphn fand er den weg* (The soul's workshop to observe found he the way). Under the design is, *Lehrte in Berlin*, 1805 (Taught in Berlin, 1805).

The artistic merits of the medal are of the highest character, the drawing being as beautiful and true as anything we ever saw on a medal; the portrait commending itself at once as an exquisite model of fidelity, while the skull shows no small degree of anatomical skill as well as understanding of the doctrine which Dr. Gall represented. Indeed we were informed by Mr. Petrowsky that the artist, Franz Loos, had no superior in his day as a designer for work in gold and silver. We regret that we have not the data relating to the origin of this medal, but presume that it was struck under the auspices of a Dutch phrenological society. Fifty years ago there was a phrenological society or circle in nearly every important city of Western Europe. These sprang up as sequels to the teaching of Dr. Gall and Dr. Spurzheim, and indicated the enthusiasm which the early dissemination of phrenological doctrines produced among the learned. Some of these societies had medals struck in honor of

the great masters of the science they were organized to promote.

THE CLASS OF '83.

THE time approaches for the opening of the annual session of the "INSTITUTE OF PHRENOLOGY," viz., the first Tuesday in October, and letters from every part of the country are reaching us asking questions relative to the course of instruction, the best text-books, duration of the course, the topics taught, whether one course will qualify a man of fair intelligence to understand the subject and enable him to set it forth in theory and practice so as to command respect and earn a sufficient compensation to reward him for his time; and finally, if one course will entitle the student to a DIPLOMA?

We may say that the aim of the instructors is to make Phrenology both theoretically and practically as plain and clear as our large cabinet of specimens and scores of years of experience may enable them to do it. The attainments of different students vary as their aptness to learn may differ. Some take the field at once, and win success from the start, and find the occupation both "pleasant and profitable." Some men take a course to aid them in their work in the pulpit, in the school-room, in the store, in canvassing commercially; and we have attestations

from representatives of all these pursuits that the course of instruction in the science of human nature has more than doubled their power. Some years ago two students in the Union Theological Seminary, New York, attended thirty or forty of our noon-day lectures, then being given, and when admitted to the work of the ministry, these two students, not the most promising in the seminary, soon commanded the attention of prominent churches, obtained settlements, and shortly became known among the most promising young men in their denomination, greatly to the astonishment of their teachers and fellow-students. They candidly and gratefully informed us that the lectures on man, which they had listened to in our hall, made the difference, putting them ahead ten years in power and influence, and enabling them to command twice as great a salary as any others of their class.

We have this comfort, that the lectures they obtained were public and free, and the compensation we derive is not measured by the commercial standard, and the benefit they derived from our work will not cease when our work shall be finished, but go on in ever-increasing force for coming ages. A garment, a carriage, or a house which the artisan may construct will, in a few months or years perish in the using, but any elevating or widening of the human mind will be enhanced from generation to generation, and thus be perpetuated.

All who may desire further particulars on this subject may address the publishers of the JOURNAL asking for "Institute Extra," which contains a list of students hitherto graduated, and also a list of textbooks, and the topics taught in the Institute; also directions to students how to reach New York safely, and the probable cost of living while attending the course.

Our Mentorial Bureau.

To Our Correspondents.

QUESTIONS OF "GENERAL INTEREST" ONLY *will be answered in this department. But one question at a time, and that clearly stated, must be propounded, if a correspondent shall expect us to give him the benefit of an early consideration.*

IF AN INQUIRY FAIL TO RECEIVE ATTENTION *within two months, the correspondent should repeat it; if not then published, the inquirer may conclude that an answer is withheld, for good reasons, by the editor.*

TO OUR CONTRIBUTORS.—It will greatly *aid the editor, and facilitate the work of the printer, if our contributors generally should observe the following rules when writing articles or communications intended for publication:*

1. *Write on one side of the sheet only. It is often necessary to cut the page into "takes" for compositors, and this can not be done when both sides are written upon.*
2. *Write clearly and distinctly, being particularly careful in the matter of proper names and quotations.*
3. *Don't write in a small hand, or in pencil, as the compositor has to read it across his case, a distance of nearly two feet, and the editor often wants to make changes and additions.*
4. *Never roll your manuscript or paste the sheets together. Sheets about "Commercial note" size are the most satisfactory to editor and compositor.*
5. *Be brief. People don't like to read long stories. A two-column article is read by four times as many people as one of double that length.*
6. *Always write your full name and address plainly at the end of your letter. If you use a pseudonym or initials, write your full name and address below it.*

WE CAN NOT UNDERTAKE TO RETURN UN*available contributions unless the necessary postage is provided by the writers.* IN ALL CASES, *persons who communicate with us through the post-office should, if they expect a reply, inclose the return postage, or what is better, a prepaid envelope, with their full address. Personal matters will be considered by the editor if this is done. Anonymous letters will not be considered.*

TO LEARN THE STEAM ENGINE.—F T.—A thorough, practical knowledge of steam in its application to machinery can best be learned by getting into a machine shop, and acquiring the details of the work there done. After having learned something of the principles by which the different parts of the steam-engine are adjusted, you can go into the engine-room, and in a short time master the special duties of an engineer. There are books on the subject, and it is well for one to read them in connection with his shop work, for in associating study and work, the most rapid advancement will be made. There is great need of competent men to run locomotives and steam-engines. There are too many half-taught and careless bunglers in charge of valuable engines. A thoroughly competent and energetic young man need not be without constant employment as an engineer.

MESMERISM.—*Question:* Is there such a thing as Mesmerism?

Answer: Yes; and it is likely that Mesmerism has existed from the beginning of human life. Doubtless there was a period when man exercised his Mesmeric influences without being conscious of power in that respect. But from the time of Moses to the present day, during all the long ages of Magi, charmers, sorcerers, and magicians, Mesmerism has been known and applied for good or ill purposes. There are books on the subject which will instruct you in the methods of its practice. One by Deleuze covers the field. Price, $2.00.

CAPACITY FOR AGRICULTURE.—M. A. C.—We have described the organization appropriate to the farmer many times, and can but repeat things which we have said. The life of the husbandman is more nearly natural than that of any other worker in the great field of life. There are more farmers than other workers, so your question is pertinent. It is a great mistake for people to think, as they are inclined to, that the farmer needs no great amount of capability; that one who is but "half made" can manage to get along on a farm. A good organization and high culture show in the management of a farm as prominently, yes, even more prominently, than in any other vocation. Again, a fine organization and high culture are likely to reap more of substantial success, and, therefore, happiness, in the tillage of the soil than in any other vocation.

We know men of exceptional capacities and training in the walks of rural life, who find there an abundant field for the exercise of their talents and education. Somehow or other, we are inclined to think a well-organized man has a natural bias toward the pursuit of agriculture. Great men have, as a rule, loved to be amid green fields, and where they could spend the larger part of their lives on farms, they have done so. Washington, Jefferson, Webster, and so on, loved best to be in the country. However, this is not answering your question directly; but you may infer from what we have said, that the better the organization, the more successful the farmer is likely to be. He should, of course, have a fair intellect, good observing faculties, fair mechanical endowments, and a rather broad head, giving him energy. He should have a good degree of ambition and poise of character. Be hopeful and thorough-going. He should have a good physical constitution. There is hard work to be done on a farm, and often emergencies will arise, which will require the proprietor to take hold and do a great deal of it himself. A social temper also is desirable, for the sake of family helpers and neighbors. A good practical outlook is more essential than a philosophical tone of mind, a tendency to regard closely the economical side of affairs. A farmer's life is a varied one; he is required to be something of a mechanic, geologist, a merchant, and a physician, and especially is this the case if he have a large estate.

ABNORMAL GROWTH.—B. H. S.—We infer from your description, that the protuberance is a glandular tumor, and it will be likely to prove a very serious matter unless treated speedily for its reduction. Have you not consulted a good surgeon on the subject? Probably it can be removed by a small operation, or dispersed by the injection of some suitable fluid.

UNEVEN SKULL.—A. B.—The head, by its contour, indicates racial as well as family derivation, and also special organism. Where the head is very one-sided; that is to say, one hemisphere is much larger than the other, the indication is that the person in early life lacked vitality; owing to ill-health the nutritive supply was deficient, and the brain did not receive a sufficient amount of blood for its harmonious growth; one side, generally the left, being more active, absorbed the bulk of the supply, leaving the other to starve. Organs naturally strong, if circumstances favor their special exercise, will grow more rapidly than small organs. Herein is seen the necessity of intelligent training. The parents of an irregularly-organized boy, knowing the peculiarities of his cerebral development, can put into practice means tending to render the weak organs active, so that, in time, there shall be a better proportion between the different parts. Strong faculties, allowed to run wild, often prove the ruin of a mind which, had it been carefully trained, would have done eminent service for the community.

What They Say.

Communications are invited on any topic of interest; the writer's personal views, and facts from his experience bearing on our subjects, being preferred.

DOES THE MIND SLEEP?—Editors of the PHRENOLOGICAL: In the January and February Numbers I noticed dissertations on the oft mooted subject of "Brain Sleep." With your permission I would like to present to my fellow-readers a few thoughts concerning it.

The author of the article in the January Number seems to think brain sleep a fact "too well-known to be in doubt." He may be echoing the opinion of Flint or of Foster, but let us, for a moment, submit the question to experience.

I presume that every thinker will admit that the brain is the "seat of the mind"; and the brain, in this mortal life, can not sleep while the mind is awake. This being admitted, we may

say, If the brain sleep, the mind sleeps; but does the mind sleep? If the mind ever sleep, ever rests, then it must be a tangible substance, and can not live when the body has "gone back" to dust. We know that the mind is frequently active while the body is asleep; for, if it were not so, we would never dream. We all dream. Indeed, *dreams* are the spice of life. We hold that the mind is ever dreaming when we are asleep, even in our deepest slumbers. This conclusion may seem strange, inasmuch as we frequently awake in the morning without the faintest recollection of having dreamed during the night. Reflection will tell us that we have spent the night in dreaming, but that memory failed to take cognizance of our dreams. During our waking moments, if we are not engaged in conversation or in reading, our minds are immediately swept by a train of thought. Frequently the thought is so trivial that it fails to impress the memory. It shifts across the mind as shadows across the stream, coming and going, but leaving no trace behind. A whole day may be spent in this way; and at night-fall, were we to attempt to recount the thoughts of the day, memory would present scarcely more than a blank sheet. Yet who would say that the mind had been sleeping during the day?

Again, when we are aroused in the morning, we do not feel that we had ceased to exist during the night, but that we had simply withdrawn our attention from the restless world around us. This would not be so, if the mind slept with the body. A minute of sleep and a night of sleep would leave the same impression; we would have no idea whatever of what time had elapsed during our slumbers. Men of well-disciplined minds can awake at any hour during the night. The organ of Time stands guard until the appointed moment, and then gives the alarm. This principle is forcibly exemplified in Napoleon's life on the battle-field.

Another thought. When one leaves the quietude of country life and makes his home amid the shifting scenes of a noisy city, his slumbers, for a time, are broken by the constant rumble. Soon, however, the noise of the city ceases to disturb him, and he sleeps as soundly as though he were sheltered by wings of silence. But let some new noise, as that made by the purring of a cat or by the soft tread of a burglar pervade his chamber, and he is instantly aroused. This goes to prove, not that the mind was asleep, but that it was standing ready, like the sentinel on the watch-tower, to raise an alarm at the occurrence of anything uncommon. These facts, and many others that might be adduced, tend to raise a strong presumption in favor of our theory, that the mind does not sleep and therefore that the *brain* does not sleep, until it sleeps the sleep of death. Yet we do not claim that our theory can be fully demonstrated. This question of "Brain Sleep" is one that will bear much study.

Respectfully, W. B. SUGG.

J. C., of Knoxville, Tenn., thus writes: "My appreciation of the JOURNAL grows profounder with each Number, for I think that there is hardly a field of human knowledge into which it does not lead, and scarcely a state of existence for which it does not furnish a cheering aspect, and lend a true inspiration. I wish it more and more success."

TO BELIEVE OR NOT TO BELIEVE.—A correspondent comments on a late article in the PHRENOLOGICAL, not unreasonably, thus: "Nearly all subjects have two sides to them; some of them have very many. Neither theism nor atheism will stand in the way of a dispassionate examination of the subject of God and immortality. Whatever a man believes, he believes it because it appears to him to be true; and it appears true to him, because he has what he considers evidence for it. That which appears false, he believes false, on the evidence that causes it to appear false; hence a man's belief depends upon evidence, or should depend upon it. If the evidence is at fault, the man is not at fault, because he did not make the evidence. If a man is blind, surely that is not a fault of the man, but a misfortune. If the atheist or the agnostic can not see the evidence for God and immortality, that is not a fault, but a misfortune.

"What merit can there be in believing a proposition true because you see it true, and are thus compelled to believe it true? What demerit in believing a proposition false, because the evidence shows it false?

"Granting that to some minds the evidences for God and immortality are as plain as the sun at noonday, to other minds, I think, should be granted that such evidence does not reach them. The agnostic says he can not see any evidence for or against, therefore he is in suspense. Is there anything criminal in that attitude? I believe that an honest agnostic has as good a chance of eternal life—if eternal life is a fact—as any one else, because belief is not a merit, or disbelief a crime. To the philosopher it is of no importance which is true—his duty is to improve humanity; to show man his duty upon earth; to persuade man to make this life a Paradise if possible, so that if there is an 'immortality' he can be better fitted for it, rather through holy work than through blind faith.

"What a poor creature must be that man who expects to be rewarded for what he believes. So much faith for so much pay. One of that kind is far away from the kingdom of heaven. Set heaven open and let honest men in, no matter what they believe. Honesty ought to win 'immortality' for those who have the manly cour-

age to act out their belief or their disbelief. If honesty is not a passport to 'immortality,' then unfurl the banner of hypocrisy, and give a premium to the highest bigot who can believe without evidence anything and everything.

"CHARLES AUDLEY."

THE "C. L. S. C." WHAT IS IT?—EDITOR OF PHRENOLOGICAL JOURNAL: — The mystic letters which head this article are tolerably well known to your readers by this time, but all are not equally well informed concerning the object of the Chautauqua Literary and Scientific Circle, and for this reason I have ventured to present a few facts which you are at liberty to publish.

The grand aim of this Society is not, of course, to give a complete college education—which would be quite impracticable—but to give its members the same general outlook upon life which a college course gives. This it does by a broad and liberal course of reading in Ancient and Modern History, Astronomy, Geology, Literature, Physiology, Hygiene, etc.; in fact, nearly all subjects familiar to the college student. The books are written in a clear, condensed style, which gives the reader all the most important facts on the subject, without the trouble of consulting innumerable other books. The time required for reading—only forty minutes a day—is so slight that one might at first suppose little could be accomplished. Nevertheless, the results of a "C. L. S. C." course are visible and surprising. The Circle does not claim to make doctors, lawyers, or clergymen, but it gives its students clear and liberal views of the various sciences, which are of inestimable value in after-life.

The Circle is open to both sexes, and is designed to especially help those who have passed their school-days without the advantages of the best instruction. Mothers who wish to keep in sympathy with their college sons, farmers who have lost the advantages of a city education, invalids, and many others will find in this a delightful and inexpensive way to make up for early deficiencies. It must not be supposed, however, that these are the only ones who take advantage of the C. L. S. C., for it counts many eminent and highly educated men who find in its methods the most agreeable way of keeping abreast of the times on all matters relating to the culture of the mind.

The regular course lasts four years, and the expense is $2.00 a year, *including* $1.75 for the *Chautauquan*, a large monthly magazine devoted to the promotion of true culture. The whole expense, including books purchased, is about $5.00 a year. Any one wishing to join will be supplied with full particulars by addressing MISS KATE F. KIMBALL, or J. H. VINCENT, both of PLAINFIELD, N. J.

A VOICE from Warren Co., Penn., says: "I value the JOURNAL very highly, and will not be without it. The more I learn of Phrenology the more interesting it becomes. I am a young man just starting in the race, and have determined to make my life-work the dissemination and teaching of the truths of Phrenology. I think I can do the world and myself the most good in this pursuit. H. H. H."

PERSONAL.

THERE is a female barber at Haley, I. T., who is earning from $40 to $60 a day. She charges four bits for a shave, while the male artists of the town receive two bits for the same kind of work.

MISS SUSAN B. ANTHONY has been traveling in Europe for some time, being warmly received wherever she makes herself known. The cause and the historical work which she represents have found greater encouragement in England and on the Continent than was expected.

STILL another paying employment for women. The New York *Sun* tells us that Mlle. Blanche is the name of a young ant merchant in Paris. Her business extends even as far as Germany, and receives ten sacks of ants daily. The ants lay eggs, and these are sold for feeding pheasants.

REV. DR. JAMES WILLIAMS, for forty-six years the rector of St. Mark's Church, Orange, N. J., died on the 2d of September last. He belonged to one of the oldest families in the State, his ancestors having settled in Orange as long ago as 1680. A retiring, modest man, he was notably kind and gentle, and conducted his ministry with earnest fidelity, building up a strong and flourishing parish.

JUDGE JEREMIAH S. BLACK died August 19th, at the age of seventy-three. He was one of the men whom America delights to honor. He rose from the plow to the bench of the Supreme Court of his State, and thence to a seat in the Cabinet of President Buchanan. In that trying time he acted with wise patriotism, and won the approval of the public. In his latter years, while holding no office, he continued to exercise great influence in public affairs. Intensely combative by disposition, he was always regarded as a fair and honorable opponent by his antagonists, and enjoyed the esteem of public men generally.

A. B. FOX, of Gowanda, is one of twelve children, six sons and six daughters; a remarkable family. Their parents were married in 1816, and lived together sixty years. The first death that ever occurred in the family was that of the father, who died aged eighty. The mother died soon afterward. The twelve children are all

married, and have six children each. Old Mr. Fox was six feet two inches high, and weighed 250 pounds. His wife was six feet tall, and weighed 200. Not one of their children is less than six feet tall, and the lightest weighs 200 pounds. The youngest is forty-four, and the eldest sixty-six years old.

WISDOM.

"Think truly, and thy thought
Shall be a fruitful seed.'

He who knows most, grieves most for waste time.—Lavater.

Enjoy the little you have while the fool is hunting for more.

Never court the favor of the rich by flattering their vanity or their vices.

The light of friendship is like the light of phosphorus—seen the plainest when all around is dark.

How little do they see what is, who frame their hasty judgment upon that which *seems*.—Southey.

Success soon palls. The joyous time is when the breeze first strikes your sails, and the waters rustle under your bows.

There is no time in a man's life when he is so great as when he cheerfully bows to the necessity of his position, and makes the best of it.

To know how to say what other people only think, is what makes men poets and sages; and to say what others only dare to think, makes men martyrs or reformers, or both.—Mrs. Charles.

Distrustful sense with modest caution speaks,
It still looks home, and short excursions makes;
But rattling nonsense in full volleys breaks,
And, never shocked and never turned aside,
Bursts out resistless with a thundering tide.
—Pope.

The greater part of all the mischief in the world arises from the fact that men do not sufficiently understand their own aims. They have undertaken to build a tower, and spent no more labor on the foundation than would be necessary to build a hut.—Goethe.

Peace is better than joy. Joy is an uneasy guest, and is alway on tip-toe to depart. It tries and wears us out, and yet keeps us ever fearing that the next moment it will be gone. Peace is not so. It comes more quietly, it stays more contentedly, and it never exhausts our strength, nor gives us one anxious, forecasting thought.

MIRTH.

"A little nonsense now and then
Is relished by the wisest men."

"Why," asked a governess, "do we pray for our daily bread?" "Because we want it fresh," replied the ingenuous child.

A Detroit paper says that Mr. George Barrel committed suicide because he was disappointed in a love affair. He couldn't bear the thought of remaining a single barrel.

"I can marry any girl I please," he said, with a self-satisfied expression upon his languid face. "No doubt," she responded, "but what girl do you please?" They don't speak now.

"My dear," said a fond wife, "when we were engaged I always slept with your last letter under my pillow." "And I," murmured her husband, "often went to sleep over your letters."

Whoever doubts that the newspapers have a mission should enter a horse-car and see how useful they are to the men, particularly when a fat woman with a big basket is looking around for a seat.

A stump speaker exclaimed: "I know no North, no South, no East, no West, fellow-citizens!" "Then!" exclaimed an old farmer in the crowd, "it's time you went to school, and larnt jogerfy."

"Jane," said a father, "I thought you hated stingy people, and yet your young man"—"Why, pa, who said he was stingy?" "Oh, nobody," replied pa, "only I could see he was pretty close as I passed through the room."

Oliver Wendell Holmes is reported as saying that bad air, bad whiskey, and irregular habits keep the doctors alive. He must be laboring under a mistake, for those very things have killed several doctors we once knew. Oh, perhaps he means differently!

"I declare!" exclaimed Fogg, at the dinner-table to-day, "this is the most affectionate pie I ever saw." "Affectionate pie?" cried every one at the table, including the landlady. "Yes," said Fogg; "the upper and lower crusts are so confounded affectionate that they can't get anything between them."

A bachelor and a maiden who had been schoolmates in youth and were about the same age, met in after-years, and the lady chancing to remark that "men live a great deal faster than women," the bachelor replied: "Yes, Maria; the last time we met we were each twenty-four years old; now I'm over forty, and I hear you haven't reached thirty yet."

In this department we give short reviews of such NEW BOOKS *as publishers see fit to send us. In these reviews we seek to treat author and publisher satisfactorily and justly, and also to furnish our readers with such information as shall enable them to form an opinion of the desirability of any particular volume for personal use. It is our wish to notice the better class of books issuing from the press, and we invite publishers to favor us with their recent publications, especially those related in any way to mental and physiological science. We can usually supply any of those noticed.*

TOKOLOGY. A book for every woman. By Alice B. Stockham, M.D. Pp. 300. Cloth, $1.50. Sanitary Publishing Company, Chicago.

Another volume relating to the important subject of maternity, and one which, in the main, is a creditable preparation for the use of women. The language is well-chosen, clear, refined in tone, and earnest, evidently that of one who knows from experience whereof she speaks, and is desirous of imparting information to her fellow-women, whose need of enlightenment with reference to their special functions is everywhere manifest enough to the intelligent observer. Her advice is founded mainly upon hygienic principles, although here and there she indicates some drug commonly used by the old school practitioner in certain cases. The field Dr. Stockham has entered is a very extended one, and her treatise of 300 pages but touches on its border; yet if it will stimulate its reader to further investigation to know more particularly of her organization, its needs and possibilities, it will do good work.

INDIA: WHAT CAN IT TEACH US? By Max Müller. 12mo, pp. 282. Paper, 25 cents. Funk & Wagnalls, Publishers, New York.

It is unnecessary to state that the author of this very instructive volume is one of the chief of living authorities on Oriental history and literature, and the publishers mentioned above have done the public a favor in issuing this compilation of lectures delivered before the students of Cambridge University, in so convenient and cheap a form. The lectures are rich in instruction concerning the ancient religion and literature of India. It would be difficult to name any other writer in the same field who furnishes so much information in a given space, and who, at the same time, imparts by the charm of a fluent, graceful style, a special attraction to his matter. He is remarkably free from bigotry and prejudice, yet as an eminent philologist he is found affording not a little help to candid Christian theology. A well-written introduction by Prof. Alexander Wilder will assist the reader, who may be unacquainted with the subjects discussed in the volume, to an understanding of the character and work of Max Müller, and it was a good thought on the part of the publishers to obtain it. There are, also, some critical notes in the course of the text, in which we recognize the same scholarly hand.

PREPARATION. A Novel. By Mary L. Hall. 12mo, 300 pages. Handsomely bound in cloth. $1.25. New York: J. S. Ogilvie & Company.

The author of this new book writes with a youthful fervor, and aims to illustrate principles of high moral tone in her rapidly succeeding events. There is a freshness about the plot and the general style of the treatment which will please most readers, although the critical may not be always contented with her mode of reflecting on the conduct of her heroine. Opening the book somewhat at random our eyes fell on this sentence on page 59: "Sadder and slower the beautiful chords sounded beneath the nerveless fingers yet thrilling with their earnestness. . . . . The music shrieks as it wails forth her fierce despair." It seemed to us that the author here presented us with a metaphysical problem, for we are quite at a loss to understand how such musical effects could be produced by "nerveless fingers." Probably she intended to say *nervous*. Other slips occur which are due, evidently, to inexperience in authorship; but if this be a first book, it is a good "preparation" for another.

PHYSIOGNOMY: A Practical and Scientific Treatise. Being a Manual of Instruction in the Knowledge of the Human Physiognomy and Organism, considered Chemically, Architecturally, and Mathematically. By Mary Olmstead Stanton. 8vo, pp. 351. Price $2. Printed for the Author by San Francisco News Company, San Francisco, Cal.

The author in the outset makes a high claim for her subject, viz., that it has advanced to the third stage of scientific development, and has its special "correspondence to the general and fundamental laws which underlie all matter—viz., those of chemistry, architecture, and mathematics." We think that this position will be disputed by most of her educated readers, while they will generally award her credit for earnestness in arguing for her opinion. She very properly avers that man should strive to study and know more in regard to himself; how to improve his faculties and his capacities; how better to protect and improve his bodily and intellectual powers; how to prevent and remedy the diseases which assail him, etc. This kind of information is of far more importance than many of the studies upon which much valuable time is spent, both in youth and after-life, without really advancing, to any considerable degree, his most important interests. She is infallibly right in maintaining that this information must come

largely through a knowledge of anatomy, physiology, and hygiene; and if she had added Phrenology to these instead of physiognomy, we should agree entirely with her. But she adheres to the opinion of men like Haeckel, of whom, it would appear, that she is a devoted follower, that the "mind adheres in the entire organization, and that the brain is only one source of the mind"; that the mind has its seat, not only in the brain, but in the viscera, muscles, bones, and general nervous ganglia as well. In this we think that the author exhibits that confusion which several writers have not been free from in their attempted analysis of the relations of the spinal organism to the encephalon. Does she forget that Broca, Ferrier, Benedikt, Jackson, J. C. Dalton, Maudsley, and other eminent physiologists, accept the brain as the head-center of mind? To be sure, there are quotations in Chapter VII. from some of these, but they are far from sustaining the general statement she makes concerning mind distribution; and we think that Dalton and Maudsley would not recognize her representation of their convictions by such brief paragraphs.

In defining facultative manifestation, she starts with the three grand divisions already intimated—of chemical, architectural, and mathematical—and sets off the head and face accordingly. Then she has five "systems of functions," which are substitutes for the temperaments of Phrenology.

Many of the statements made here and there, remind us of a recent volume on physiognomy, which, though entertaining reading, has little claim to scientific precision. And although we here and there recognize points of excellence—for instance, in the condensed recital of the physiognomy of disease, and in the setting forth of principles of value in hygienic practice—we think that the work, considered as a scientific treatise, is more a plea for evolution *à la* Haeckel, than a well-digested and synthetic argument for the recognition of physiognomy by the scientific censor.

We can not but congratulate Mrs. Stanton for the courage of her opinions, and for the perseverance in study and observation which her book evidences.

PUBLICATIONS RECEIVED.

THE BUILDING AND ARCHITECTURAL MONTHLY, published in New York by W. T. Comstock, is worthy of the attention of the trade generally which it represents. It contains articles of a practical nature on topics relating to building, with fine illustrations, plans, designs, etc. Current Numbers received.

HARPER'S WEEKLY, in its late Numbers, has several striking illustrations of scenery on our coast, particularly those places of common resort which are lively during the summer. We notice an improvement in the spirit of the cartoons, some of the scenes by Rogers, Bellew, and Shepherd being well conceived.

ST. NICHOLAS is bright with speaking illustrations, and generally of a character to delight the juvenile, and please the adult who now and then condescends to play the child, as a relaxation from the grave duties of our driving era. Century Company, New York.

THE BAD BOY ABROAD, by Walter T. Grey, is a series of letters supposititiously written by a boy traveling with his parents in Europe. The humor seems to us extraordinary; the boy's mischief is excessive, bordering on wickedness often; yet to the million it will be funny enough. Price, 25 cents, in paper. J. S. Ogilvie & Co., New York.

INDICATIONS OF CHARACTER, with Head and Face. Illustrated. By H. S. Drayton, editor of the PHRENOLOGICAL JOURNAL, etc. Third edition, revised. This brief treatise will be found, in its new form, to be an excellent introduction to the study of phrenological science. The facts of cerebral development as recognized by leading physiologists and thinkers, are set forth clearly and interestingly. Price 25 cents. Fowler & Wells.

THE PULPIT TREASURY, conducted by a corps of eminent clergymen, is a monthly designed for the use of ministers, Christian workers, etc.—furnishing suggestions for sermons and addresses in a practical way from sermons which have been delivered by prominent divines, outlines and epitomes, etc. E. B. Treat, New York, publisher.

HOW TO BECOME A GOOD MECHANIC. Intended as a Practical Guide to Self-Taught Men. By an Old Apprentice. Price 15 cts. New York: The Industrial Pub. Co. In brief, this pamphlet contains answers to many questions with reference to what books should be studied, and how to act when difficulties are met—and sundry excellent hints for the edification of the ambitious young man who would be proficient as a machinist, carpenter, tinsmith, iron worker, etc.

SPEECHES OF MR. P. A. TAYLOR AND MR. C. H. HOPWOOD on vaccination, in the House of Commons, England, June 19th, 1883. Revised from the Reporters' Notes. London: E. W. Allen and W. Young, 114 Victoria St., Westminster, S. W. Powerful arguments in opposition to Compulsory Vaccination. We would have the public, including the medical profession, read them, as the question is presented in an exceedingly clear and candid manner by the able members of the British Parliament.

1884

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We present below a List of Articles offered as Premiums for Clubs to THE PHRENOLOGICAL JOURNAL A SCIENCE OF HEALTH, and would call special attention to the very liberal offers and conditions given. The artic are all new and useful; the very best of their kind. Besides these, to each subscriber is given a splendid Premiu

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SECOND.

The Diseases of Modern Life. A work on the avoidable causes of Disease. By Benjamin W. Richardson. 12mo, extra cloth, 520 pages. $1.50.

One of the most important Health Books ever published. We have secured a large edition, handsomely published, for distribution among our subscribers for 1884. It treats most fully of prevention of disease, by pointing out in a simple and practical manner the avoidable causes.

THIRD.

Expression: Its Anatomy and Philosophy. By Sir Charles Bell, K.H. With numerous Notes, and upwards of Seventy-five Illustrations. Price $1.50. We continue the offer of this great work as a premium to subscribers to THE PHRENOLOGICAL JOURNAL for 1884. The work considers Expression in all its details as affected both by anatomy and by mental characteristics. The following from the Table of Contents will show something of its scope:

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FOURTH.

Reminiscences of Spurzheim and of George Combe. And a Review of the Science of Phrenology from the period of its discovery by Dr. Gall to the time of the visit of George Combe to the United States in 1840. By Hon. Nahum Capen. With Portraits. One volume, 12mo, extra cloth, price $1.50.

The author of this work was very intimately associated with Dr. Spurzheim, being his confidential assistant and adviser during his visit to this country; and his correspondence and personal matters all passed through Mr. Capen's hands; and in offering it as a premium to subscribers to the PHRENOLOGICAL JOURNAL we feel confident that we are giving to them that which will prove of the utmost interest to old-time readers, as a review of the subject, and to the younger readers as a historical work.

TERMS.—The JOURNAL is now published at **$2.00** a year (having been reduced from $3.00), single Numbers 20 cents. Twenty-five cents extra must be received with each subscription, to pay the expense of boxing and packing the Bust, which is sent by express at expense of subscribers, or for postage on the Premium Book and JOURNAL, which is now sent to all subscribers, prepaid. Amount may be sent by P. O. O., P. N., or Registered Letter. Postage-stamps received. Address

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JOSEPH K. BARNES,

EX-SURGEON GENERAL U. S. ARMY.

JOSEPH K. BARNES was born in Philadelphia, July 21, 1817, and died at Washington, D. C., April 5, 1883; his life covering a span of sixty-six well-spent years. Some may doubt that his years were well spent, for the reason that he worked so quietly and unostentatiously that he did not appear to accomplish much. He was very peculiar in this respect. Not that he affected indifference,

but because it was his natural bent of mind. Possibly his soldier training had some influence in this direction, for he was, in every sense of the word, "an old soldier." In all the acts of his life he was consistent with this trait. What he did he must do with dignity, and in a quiet, reserved manner. This peculiarity caused some people to question his ability, but a near and close contact with him soon dispelled this idea. For although one of the most dignified men, he was not cold or indifferent; on the contrary, he was exceedingly affable and kind, and not only kind, but thoughtful and able.

Some people are born in the world with more ambition than talent, while others have more ability than ambition. General Barnes was of the latter order; it kept him in the background and prevented him from doing things that mere ambition would have prompted many men to do whereby to create a sensation. Too many people seem to think that they are not accomplishing anything in life unless they often appear before the public and their names are spread before the public gaze in sensational head lines of the public press.

General Barnes being the kind of a man he was, the world may think he had not very large approbativeness or self-esteem, but in this it would mistake, for both of these organs were large in him; but other faculties, especially those of the reflectives and caution, kept them in control, so that he sought no common or cheap notoriety. What was in his line of duty he did in the most quiet way, and he chose rather to trust to the well-settled future than to any light and transient approbation of the present. In this respect his approbativeness was of the far-sighted order.

By nature, as well as by training, he was well fitted for the position he held. He gathered about him worthy lieutenants, and in them he placed the utmost confidence and trust. Above all things he disliked "bossing" or confusion; with him all must go smoothly and regularly. His lieutenants knew and understood this so perfectly that a mere hint from him was far more effective than a string of forcible words from some rude overseer could be. If there was anything he delighted in it was in having official work go on with quietness and regularity.

Sometimes he who "stands and waits," serves as well as he who runs and attracts much attention; also he serves and serves well who does so quietly without pretense or ostentation. Each must be true to himself. General Barnes was in all respects true to himself. There is nothing which proves a man's honesty more than this, in that he is simply *true* and does not affect something foreign to his nature in order to the better obtain some cheap and common praise.

As a superior officer he was kind to those below him in rank, and courteous to all, to the low as well as to the high—to all he was the gentleman. As a companion among his peers and in social intercourse he was entertaining and even jovial, whereby he was most pleasant company. He was trusted and highly appreciated by his friends—by such as knew him well. He sought few favors from others, but was ever ready to bestow when called upon. During his life he became the guardian of a number of estates, not for money, but as a friend for those who were near to him. Here in Washington he erected at least three large houses for those, or the heirs of those, who put their private affairs in his hands; and this he did with a single thought to their best interests, and while he thus built for others he never built for himself. The world at large knew little of these acts, only the few who were connected with the work, or had the right or privilege to know, knew of his industry and integrity in these matters. He conducted this private business for his friends without compensation, in the same manner as he attended to his official work. He employed the best men, had the work done in the best manner, and all went smoothly and quietly from beginning to end. The houses were completed in all their parts, and not a line or even a hint

appeared in the public print that he was the chief agent in bringing it all about.

The world may think that General Barnes should have lived to a greater age. He was of fine physique—tall and well proportioned, with a most commanding figure—regular in habits and calm in mind. But his death was consistent with his life—as he lived, so he died.

As before remarked, he was an "old soldier." The law of the land is that the officer shall be retired at the age of sixty-four. Owing to certain combinations his time was a little extended, about a year. When he was retired, he looked more like a man of fifty than of sixty-five. Years seemed to have dealt lightly with him. Could he now have retired to a farm and indulged in out-of-door occupation—attended to the lighter duties of the farm, riding, walking, etc., whereby he could have had some regular duty to occupy his mind, there is little doubt but that he might have lived fifteen or twenty years longer. Taking him from his regular routine work was death to one so constituted. He was lost—his occupation gone; and *occupation* is all in all to such men. Without doubt he suffered more from this than the world knew, for it was not in his nature to parade his afflictions. As he lay in his coffin, dead, the lines about his face plainly indicated great suffering. Yet there was no help for it, the law of the land is just and must be obeyed.

I do not think that he complained about that. He was simply a victim to circumstances from which he could no more escape than he could escape from his inner self. In life and in death he was true to this inner spirit.

A brief summary of his life should include the following facts:

His early academic education was received at the celebrated Round Hill School at Northampton, Mass., established by Mr. George Bancroft, and Joshua Green Cogswell, in 1830. After which he entered upon a collegiate course at Harvard University, Cambridge, Mass., but owing to failing health was obliged to withdraw before graduation. He began his medical studies under the supervision of Dr. Thomas Harris of the navy (subsequently surgeon general of the navy), and graduated at the medical department of the University of Pennsylvania in the spring of 1838. After graduation he served for one year as one of the resident physicians at Blockley Hospital, Philadelphia, and one year as outdoor physician for the N. W. District of Philadelphia. On June 12, 1840, he passed a very creditable examination before the army medical examining board, then in session in Philadelphia, and on the same day was appointed, and on June 15, 1840, commissioned an assistant surgeon, U. S. army.

He served in this position in Florida and Louisiana, and later with distinguished ability during the Mexican war.

In his report after the battle of Molino del Rey, Major E. V. Sumner, commanding the Dragoons, makes the following reference: "I have also to state that Assistant Surgeon Barnes was very assiduous in his duties and took such measures that our wounded men received prompt attention." From the close of the Mexican war to the beginning of the civil contest he performed duty at different posts being last on duty at Fort Vancouver as post surgeon until June 20, 1861, when he proceeded to New York City and reported in person at the headquarters of the army in compliance with orders from the war department. He served as medical director of the Western Department and Department of Kansas, also in the Department of the Mississippi under General Halleck, until May 2, 1862, when he was ordered to report in person to the surgeon general, and was assigned to duty as attending surgeon to officers and their families in Washington, D. C.

On February 9, 1863, he was appointed lieutenant colonel and medical inspector and was assigned to duty in the middle department, with station at Washington. He was appointed colonel and medical inspector general, August 10, 1863. On September 3, 1863, under the provisions

of the Act of July 4, 1836, he "was empowered to take charge of the bureau of the medical department of the army, and to perform the duties of the surgeon general during the absence of that officer," and on September 4, 1863, entered upon the duties of acting surgeon general. About a year later he was appointed surgeon general, with the rank of brigadier general.

The active service of General Barnes in the field and on the frontier was unusually extensive and varied; his record in this respect comparing favorably with that of any medical officer in the army. In the early days of the late war, General Barnes came naturally to the front, well prepared by a professional training of twenty years, to take an active and intelligent part in the events of that period. It was at this time that he fell under the observation of Mr. Stanton, then Secretary of War, who discovered in him the qualities essential to the energetic and successful administration of the important duties of the medical department of the army. Once assured of the correctness of his conclusions, Secretary Stanton used his powerful influence to place him at the head of the medical bureau, and gave him his full confidence in all matters pertaining to its administration.

In the strong, life-long friendship which existed between the Secretary and General Barnes we find the source of that influence, which proved so beneficial to the welfare of the medical department, and which was especially exemplified in the determination of the independent status of general hospitals in time of war, and in the removal of hospital transportation, both by sea and land, from any interference from other than medical authority.

How thoroughly this influence was appreciated by General Barnes may be seen in the following tribute to the Secretary in his annual report for 1866:

"It is a matter of just pride and congratulation to the medical profession throughout the civilized world, that your deep interest in the health and hygienic condition of the army, your constant vigilance and most liberal assistance to all that could in any manner conduce to the greater comfort and welfare of the sick and wounded, and your official recognition of faithful and meritorious services of officers of this department, have been responded to on their part by redoubled exertions, unfailing devotion to duty, and an *esprit du corps* that secures to it professional talent of the highest order.

"Letters from most eminent surgeons and physicians in Europe, in acknowledgment of the publications from this office, do not express more astonishment at the magnitude of the war, than admiration of the unvarying support and encouragement extended to the medical staff under your administration of the war department."

In his official character he was clear-sighted, prompt and decisive; punctiliously attentive to the duties of his office and thoroughly acquainted with the necessities of his department. Under his administration the medical department of the army attained a high degree of discipline and efficiency, and may, to-day, be considered one of the best organized and best supplied of any similar department in the world. I. P. N.

IN THE RIGHT PLACE.

THE following sensible article with the above heading recently appeared in the *Public Ledger* of Philadelphia. Its practical observations on the condition of society are worthy of reproduction:

"Every advance in civilization bears with it certain dangers, which only come to be seen and appreciated after the step has actually been made. While the questions of a free government, a free press, equal rights, and equal opportunities earnestly engage the attention of every lover of justice, it is not to be expected

that the evils which may probably attend such transitions should occupy much thought. But when they are once securely established we are too apt to rest in content upon our laurels and close our eyes to the new perils which threaten us from a source hitherto unknown. Among these, one stands prominent and calls for more intelligent consideration than it has ever yet received. It is that people, being no longer held down by laws, or custom, or public opinion, from entering into any sphere of employment they choose, conceive that all hindrances to whatever their ambition or fancy dictates are entirely removed, and that every career is open to them, dependent only upon their energy and resolution. The fiat having gone forth that no one shall be held incompetent on account of birth, or rank, or station, to fill any office of public trust or private enterprise, people straightway imagine that no other incompetence can intervene, and that all they have to do is to march boldly to the post that pleases them best, or promises the largest reward, and occupy it. Instead of each man and woman searching for the particular work which he or she can do best, each eye is fixed upon something else, supposed to be higher, or more respected, or better paid, or less laborious, and each hand is stretched forth to grasp it.

"Thus it is that there comes to be so much pushing and striving, so much poor, slipshod work, so much social confusion, so much wasted energy. Men with assurance and push succeed in gaining places which they are unable to fill, thus crowding out modest ability, while their own proper work is abandoned to others equally unfitted to perform it. Now the lesson that *external* restrictions in this matter are unjust, and should be removed, has been very generally learned, and no longer needs special emphasis, but the lesson that yet remains to be learned is that there are inward restrictions from each one which can not be disregarded with impunity. While, on the one hand, no authority of any kind has the right to debar a man from filling a position for which he is fitted: on the other hand, no man has a right to assume any position which he has not the requisite ability to fill.

"The happiness and welfare of each individual, his value to society, and the well-being of the community are alike involved in this. True freedom demands stern self-discipline, and in nothing so much as in finding and keeping our right places, and doing our right work. It was once said of an ambitious man, who had left a good trade to study divinity, that he had spoiled an excellent shoemaker to make a very poor preacher, and this kind of work is constantly going on in various directions. Youths who might have made their mark as masons, carpenters or machinists, sink into utter insignificance as pettifogging lawyers, incompetent physicians, or inferior tradesmen. The man who had it in him to become a scientific farmer turns himself into a third-rate bookkeeper, and the other who might easily have worked his way up to the head of a large manufactory, struggles with poverty in an attic, writing what no one cares to read. What is the meaning of the crowds of unsuccessful aspirants for every vacant place in office and in store, but that they have mistaken their vocation? and what can account for the long lines of ill-paid and inefficient seamstresses, or the throng of poorly prepared applicants for teaching, or the multitudes of office-seekers, but that the majority of these mistaken people have failed to discover or refused to accept the one thing that they might have done well, and in which they might have earned an honorable independence?

"With all our boasted education, we have yet to utilize those lessons of self-knowledge and self-respect which should inspire each young boy and girl not to look forward with greedy eye to the possibility of becoming Governor or President, or leader of fashion or star, but to search diligently for his or her capability and to develop it, whatever it may be, in all earnestness, faithfulness, and loyalty.

Both in home life and in school life our influence over the young should always be in this direction. It is not a depressing influence—on the contrary, it is ennobling and full of the brightest hope. It is the only path to happiness, for no one is ever more happy than when he is successfully engaged in doing that which he can do well. It is the only path to value, for assuredly the worth of an individual to society depends upon his being in the right place, and doing his own appropriate work. It is the only path to national welfare, for just as the health and perfection of the body depend upon each organ fulfilling its own function, so the health of the body politic depends upon each individual understanding his own powers and his own limits, and developing the one without overstepping the other."

THE EYE OF THE BALTIC.

IF in the last of May, when the land is robed in her bright spring mantle, you sail along the eastern shores of Sweden, in passing through the Malar and short canal, into the Baltic, you will see the sun rising at three in the morning, and hear the nightingales warbling in the groves, and through the long twilight a lovely island rises above the sea, called the "Eye of the Baltic." This is the island of Gothland, lying almost equidistant from Sweden, Russia, and Germany. It has a balmy climate, beautiful streams and lakes, and extensive groves of oak and pine. With the sheltering sea around it, it escapes the long, cold storms ruthlessly bursting on the surrounding shores. As you near its coast, you see a "long line of yellow limestone cliffs, dotted with dark woods, and a grand old town, whose stately towers rise like watchful sentinels, guarding magnificent ruins, and looking sternly down upon the calms and storms of an ever-changing, hyperborean sea." This is the ancient town of Wisby, where once merchants gathered from all the world.

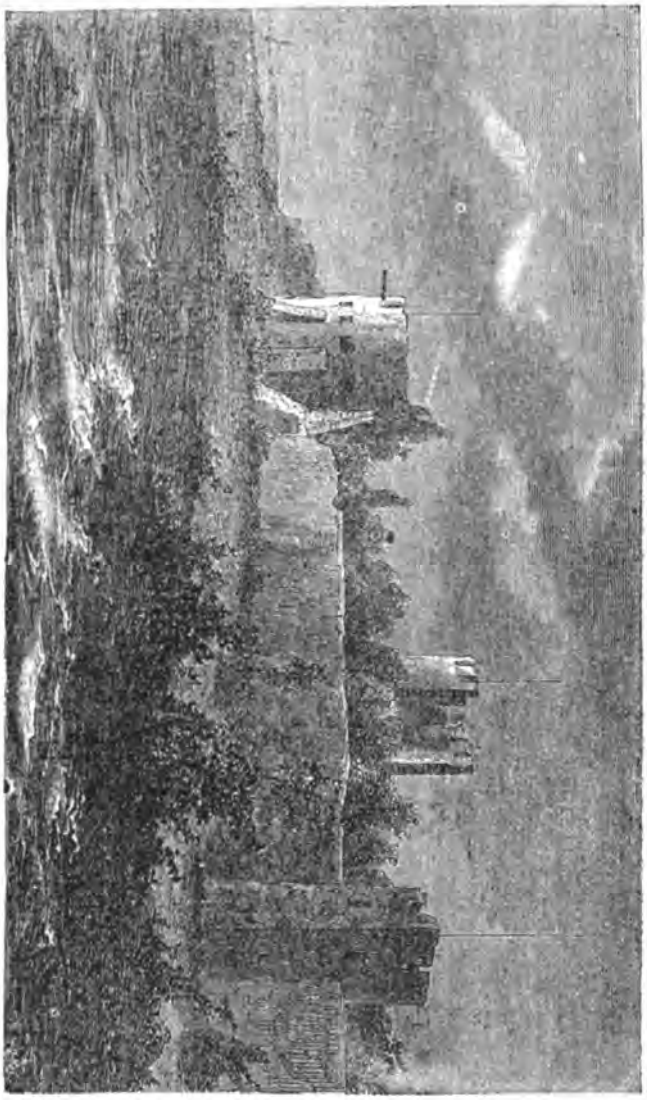
About a thousand years ago, a flourishing city of traders, called Vineta on the Oder, was destroyed by some great influx of the waters, aided by attacks of Swedes and Danes; the harbor was choked up and useless, and the merchants settled there came to Gothland, whereon they built the city of Wisby. In this city they carried on their operations with great vigor and magnificence, as may be inferred from the beautiful ruins they have left behind them. But society in Northern Europe was in its rudest stage. The rich cargoes continually passing gave birth to swarms of pirates, making the narrow gateways of the Baltic dangerous to enter. Trade was endangered, personal safety was threatened by the rapacity of rulers, marauders on land, and pirates at sea, and the frequent storms, and shipwrecks near the Baltic's rugged shores. The Hanseatic League was formed about 600 years ago; it was a trade-union between several northern cities for monopolizing the commerce of the world, for the prevention of marauding, piracy, and shipwrecks, and the protection of trade.

For many years this Hanseatic League was the undisputed mistress of the Baltic, and German Ocean. At one time the League numbered eighty-five towns.

During its rule, agriculture, manufactures, fisheries, and mines were increased and protected. Its ships and armed men, its factories and funds accomplished wonders. This was the first systematic trade-union in the history of European nations. It protected, defended, extended the rights and immunities of commerce. It excluded other competitors in trade. In its large factories the men had daily sports and recreation, regular celebrations of festivals, regulations for comfort and cleanliness, avoidance of everything hurting the prejudices of foreigners, conformity to the lawful habits of every country where they resided or

tarried. For nearly three centuries this Hanseatic union kept its supremacy over shore and sea, until the discovery of America, and of a new sea-route to India, turned the direction of the trade of Europe. In the councils and transactions of this powerful League, Wisby at one time took the lead. The marine code issued from her port was enforced with the strictness of sovereign power, and the laws of Wisby were universally respected by all nations. These laws, its ancient celebrity, and its present grand ruins, prove it to have been once the emporium of a great commerce.

This small island of Gothland, with a superficial area of about 1,200 square miles, being about 80 miles long, and 33 broad, is wreathed around with an indescribable charm of poetry and romance, breathing everywhere, from broken lattice and deserted shrine, the memories of unrivalled monastic splendor. The town of Wisby rises in the form of an amphitheater from the sea. It looks like the pictures of ancient Troy with its long lines of embattled walls, its towers and double moats, its sally-ports, portcullis and gates. There are ruins of eighteen large cathedrals, more than forty embattled towers,



PART OF OLD WALL AND TOWERS ON THE SEA SIDE OF WISBY.

a castle, and many convents, with a perfect "line of fortifications encircling the whole."

Within these walls are many curious old houses, winding, narrow streets, covered with their thick grassy carpet, here and there irregular, angular, open spaces, ornamented with odd-looking gables, rude flights of limestone steps, Anglo-Saxon arches, great iron door-frames, and iron-work wonderfully and beautifully wrought. Behind the curious wooden balconies, jutting out at every corner, and through the garden palings, you see the gnarled walnut, the graceful elder-flower, and the venerable apple trees, and you meet everywhere the most beautiful ruins, Gothic, Saracenic, Byzantine, and every other mediæval sort of architecture.

Wandering around among these ruins, and cackling through the grassy streets, you see crowds of geese, little caring for the beauty above and around them in this most unique and picturesque of cities, whose crumbling arches are covered with the bright greenery that for hundreds of years has clung protectingly around the deserted walls, falling over them in heavy, graceful festoons, with the deep blue sea shining in the background. To antiquary and artist, to poet and scholar, this ancient town is a delightful study. Here and there, among the more modern buildings and cottages, appears an old Hanseatic house, its crumbling walls covered with ivy, and overhung by linden, walnut, mulberry, and elm. Here is a picture of a burgomaster's house in Wisby.

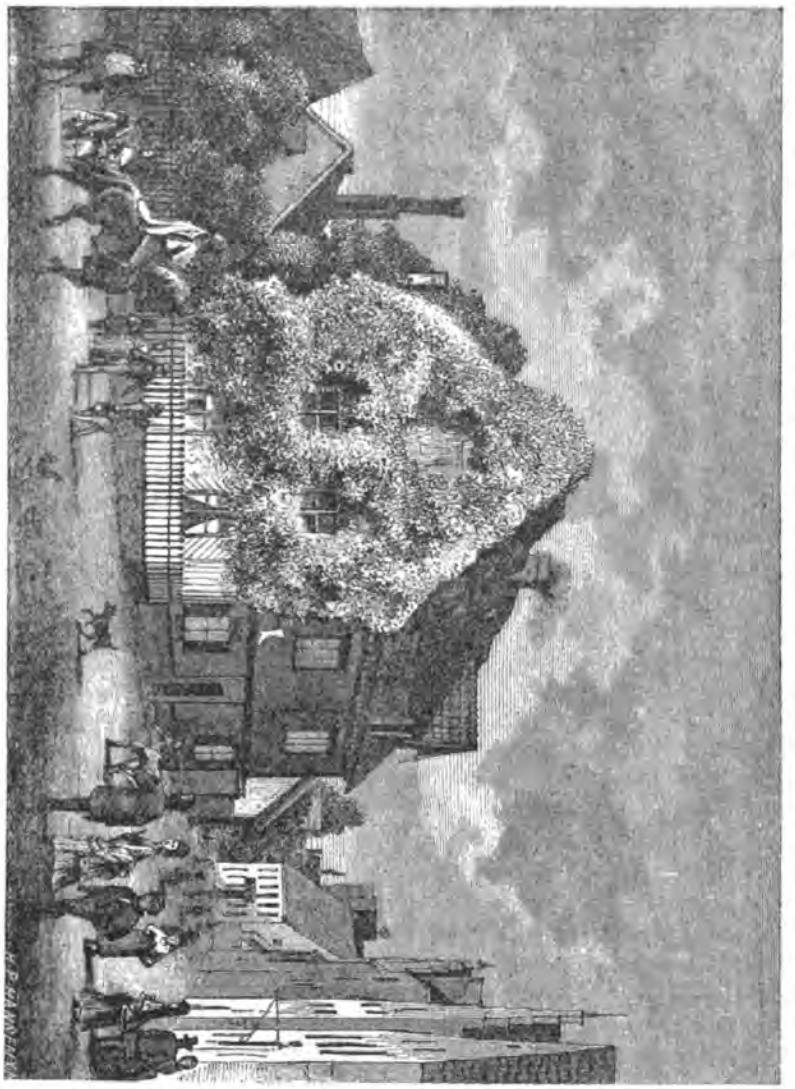
While art has left her glory in this lovely island, and nature has been most lavish in her gifts, it has nearly a thousand varieties of plants in its rich Flora. Grapes thrive most luxuriantly. The mulberry, elm, chestnut, and many trees unknown in Sweden and Norway give their varying charms to the summer landscape; while between the broken arches, over the greenest and freshest of sward, hangs the fringe of the loveliest wild roses. Gothland has been like a precious pearl for centuries, claimed and struggled for by many foreign nations, It has been invaded by Norwegians, mortgaged to Prussians, redeemed by the Danes, regained by the Swedes, and for a short time invaded by Russians also. It is now Sweden's favorite island. There is between it and Sweden a submarine telegraph. There the Princess Eugenie, that noble and gifted woman, the sister of Oscar II., the king of Sweden and Norway, has her summer home, in a charming cottage on the Baltic borders, among the firs and spruce. She is an invalid, and the mild air of the island is to her very refreshing and delightful. She gathers around her in this peaceful home many children of poverty and genius, who share in the comforts and delights she has wherever she rests. From a rock near her cottage she has a beautiful view of the walls and towers of Wisby, only two miles distant, and she has established many noble charities in and near the town. She is glad to have June come, that she can go to this island home. Its reception-room windows open toward the sea, and she can look from the top of the neighboring rocks, when the sea is calm and clear, far down into its blue waters. She is a musician, and poet, and has called her home Fridhem, or home of peace. There, all summer long, you may hear the voices of happy children, for she delights in having children around her. She has never been well since the death of her favorite brother, Prince Gustaf, and has devoted her life to doing good. Her name is beloved and revered in all Scandinavia.

Twelve thousand wealthy burghers once lived within the walls of Wisby in quaint and picturesque mansions. It is said that the window-frames of many of their houses were of solid silver, and the furniture throughout of equal splendor Their storerooms and warerooms were all under the same roof with their homes. Many thousands of artisans and laborers resided in the suburbs, their quarter extending more than a league around the city. Here, too, were halls of guild, libraries, monasteries, and a strong fleet of merchantmen, and vessels of war.

Nothing is left of all this but the ruins

of homes and temples. The new route to India by the Cape, the westward moving of the fur trade, the invasion of Waldemar the Dane, and other fierce enemies thereafter, completed the destruction of Wisby. But so rich were once the treasures of Wisby, that when Waldemar the Dane took possession, he demanded to have placed before him two large brewing-vats filled with gold and silver, and then he ordered one more, as he said, "for good luck; three was an uneven and lucky number." But it was bad luck for him, for his vessels were so heavily laden with their costly treasure that they swamped in the Baltic, and went down with all their gold and silver, and all on board perished with them.

When this Waldemar took Wisby by storm, he took the gold and silver from the churches, but he founded a chapel for himself on the very spot where the severest battle was fought. The chapel is gone, but near the spot where he entered the city through a breach at the southern gate, stands now, as a solitary monument of the siege, a cross, called Waldemar's Cross, which he put up to the memory of

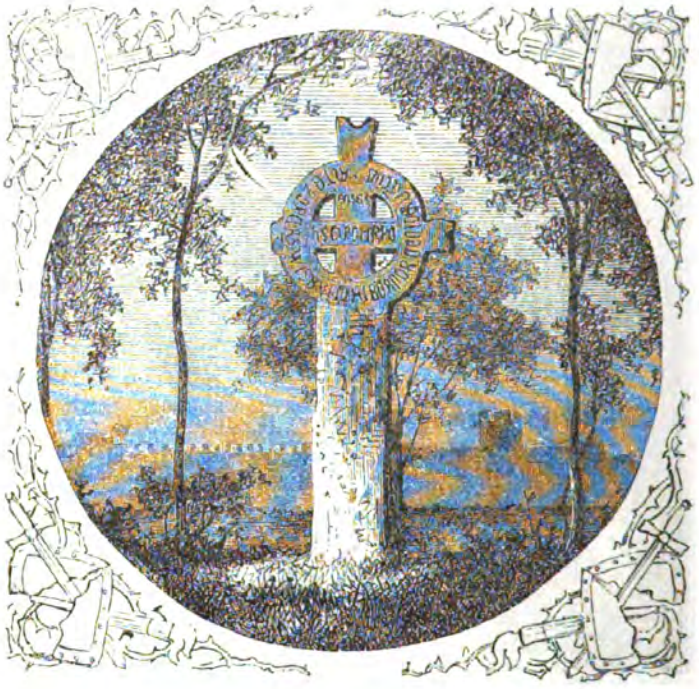


An Old Burgomaster's House.

the slain, with a Latin inscription, still legible, of which the following is a translation: "In the year 1361, the Tuesday after St. James' Day, the Gothlanders fell before the gates of Wisby by the hands of the Danes. They lie buried here. Pray for them." But the victorious king's stolen treasures went down in a storm near the island of Carlso.

The Gothlander fishermen tell you now "that far in the depths of the still, blue sea may be seen, after sunset, the flickering of the long-submerged bullion."

The walls of Wisby encompass the whole town, enclosing an area of about 170 acres, and are the works of several different eras. Their original altitude has been very much increased and strengthened by an inner bi-vaulted wall, showing a much finer art of fortification as the "cunning and strategy of war increased." The whole town was most stoutly defended by high turrets opening to the city side, having several stories, and placed about fifty yards apart. Above the town and harbor rose the tall castle. Thirty-six towers were erected by the inhabitants of the island, each county building one. There were more than forty towers in all. The castle had strong outworks, advancing on the land side to the south and southwest. This strong fortress was destroyed by the Danes just before the peace of Fontainebleau. It has been at times the stronghold of several royal pirates, who issued from it on the Baltic and surrounding seas. They committed acts of great violence and outrage, and made the Baltic completely impassable. This was before the forming of the Hanseatic League, which defeated the treacherous Eric of Pomerania, and the desperate Waldemar. Eric had from Margaret the Great the triple crown of Scandinavia, but quarrelling constantly with his subjects, he forfeited his throne and shut himself up in the Castle of Wisby with his favorite mistress and his band of followers. Here for ten years, deserting his royal duties, "he pillaged the ships, and infested the coasts of the lands he had once governed." The Hanseatic



WALDEMAR'S CROSS.

League sent to Gothland a fleet of 248 ships, containing 12,000 soldiers, against Eric, and drove him from the castle. The memory of Eric is execrated in the island

ciates her name. The quiet ruins of Wisby Castle can tell us little of the riot and revelry that once resounded within its stately walls.

INTERIOR VIEW OF RUINS OF ST. CATHARINE'S CHURCH, WISBY.

of Gothland, but his lovely wife, Philippa, the daughter of Henry the Fourth, will be forever remembered and beloved for the noble deeds with which tradition asso-

The general style of the Wisby church architecture is "the elder Gothic, or Byzantine, with the round arch succeeded by the younger or purer Gothic with the

pointed vault." The temple of Helge-And or Holy Ghost, built in 1046, is the most ancient and most curiously constructed church in Wisby. It is a small bi-vaulted building not more than 50 feet in diameter. No antiquarian can explain its strange construction. "The body of the church is octagon, composed of a lower and upper choir, the former having four octagon, the latter an equal number of round, pillars. The only way you can reach the upper apartment is by a narrow stone stairway built in the thickness of the wall." In the ceiling of the ground choir is a large octagonal aperture, placed exactly in the center; this is the feature of the ruin that puzzles all. "Is this the opening for a voice conductor from below when the service was performed for the nuns or novices who were seated above, that they might join in it without being exposed to the gaze of the congregation in the lower seats?"

Perhaps the upper story was reserved for the heads of the sect to which the church belonged, that they might be free from the stare of the lower orders. In all the world there is no other ecclesiastical architecture like this "solid and somber old church."

Helge-And is the oldest and quaintest; perhaps St. Catherine's is the finest church in Wisby. It was built by the Franciscan monks in 1233. "The body of the church is an oblong square, with twelve octagonal pillars standing in two rows, while the choir is pentagonal in shape. It has a singularly fine oriel window, composed of seven exquisitely lanceolated openings in high preservation. The pillars of the main aisle and transepts are octagon, and show the chisel marks as freshly as if they were struck yesterday. The grass is the only floor. Most of the old stone slabs have been taken away for door-steps and other purposes. On one of the slabs remaining is chiselled the figure of a priest, and in his hand a chalice, on which is cut the date, 1380. Under the southern part of the church is a small crypt." The loveliest wild roses wreathe the tops of the ruins, and smile down on the green sward carpeting the whole of this majestic church.

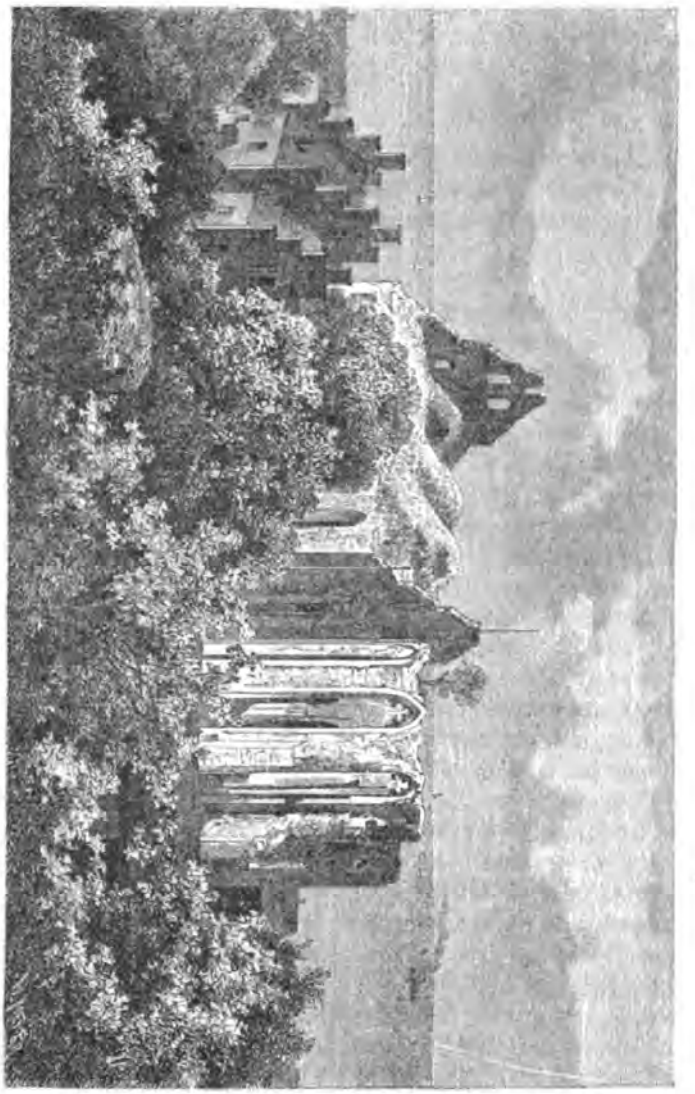
There are the remains of two churches at Wisby, named after St. Lars (Lawertius), and St. Drott, or Trinity, which are called sister churches, from the fact of their having been built by "two joint heiresses to one of the richest burgesses in the place, from the honest hatred they bore each other; the two amiable ladies resolving not even to sit under the same holy roof, so cordially did these two pious maidens cherish the family feud." St. Lars was built in the shape of a Greek cross, and like its neighbor belongs to the middle of the twelfth century. Inside, it is 106 feet long by 76 feet wide. "Along the outer wall is a gallery extending around three sides, approached by a flight of stairs on each side, and each gallery is separate; the arches are rounded."

In the St. Nicholas ruin, every window varies in size and shape, and is placed as irregularly as possible. "One, of the most beautiful rosette form, cut from a single piece of limestone, is placed far from the center of the doorway, varying from every architectural rule. The eastern window is extremely fine, a group of lancets being mullioned into a vast oriel of exquisite proportions." St. Nicholas was the largest church in Wisby, and belonged to the Dominicans. It has a mixture of round and pointed arches. The inner width is 65 feet; the length, 199 feet. Ten square pillars remain standing, two of which are damaged. The main building has 22 windows. On the west side are three very gracefully pointed. In the rosaces of St. Clemens' Cathedral were once embedded two carbuncles, carried off by Waldemar. It is said their light shone so brightly they could be discerned by mariners far out at sea when no stars were visible. Nothing like them was to be found elsewhere in the whole earth, and the people greatly mourned their loss.

The geology of Gothland is very interesting also. In many places, after removing the soil for thirty feet, you come to the limestone rock, polished and striated by glaciers. The earth above has pre-

served the rock from the action of the weather, and it is as smooth as glass, looking like enamel. The grooving in some places is a foot deep.

St. Maria's church, the only church in which service is now performed in Wisby, is equally irregular in its peculiar style, the windows varying also in size and shape. There are three wooden turrets, elaborately carved, and ornamented with galleries around them, surmounting the towers of this church, and giving it an exceedingly chaste and curious appearance. The gateway is peculiarly quaint and striking. The interior contains some few monuments of the wealthy burghers and their families, on several of which are portraits in the uncouth style of the period. One who has heard the beautiful strains of Luther's hymn peal from the organ of St. Maria, can not but think of the time when the forefathers of Gothland and their fair daughters gathered in solemn worship within these hallowed walls.



RUINS OF ST. NICHOLAS' CHURCH, WISBY.

St. Maria is 173 feet long by 75 feet wide, floored with ancient slabs of different periods, inscribed with monograms, Runic-

characters, Latin inscriptions, scrolls, etc., dating from the 12th to the 15th century, in old Goth, and German, Dutch, and Danish. This is the resting-place of many important personages connected with the history of Gothland. Here rests Philip Axelson Thott, Danish governor over the island at the time, who died in 1644. Near this church are seen the bones of a whale, believed in former times to be the remains of a virgin giantess who had built the edifice.

There is a very rare and curious collection of coins in Gothland, some of which furnish proof of monetary transactions of a very early date in Gothland, long before the word commerce was known. There have been nowhere in the world found such a rare collection of superior Anglo-Saxon coins. In 1870, more than 1,500 were discovered in one place, weighing over ten pounds. There were imperial coins of the Roman Empire of the West, all of standard silver, dated in the last half of the first century after Christ. They have well-cut images of emperors and empresses, and are called *denarii*. There are also Roman gold coins from the fourth century, in fine preservation, with a beauty of device and execution which is striking. There are coins from Bagdad and other Asiatic cities, some covered with inscriptions, more than 10,000 of these having been found on the island. The oldest are from the sixth century.

Many beautiful ornaments have been exhumed, such as rings, shoe-buckles, belts, girdles, amber and glass beads, clay of many colors, ivory combs, hairpins, twisted bars of silver and gold, and seals of the once powerful guilds, inscribed with the names of patron saints. There are also found in Gothland, coins of Edgar and Ethelred, so sharp and clear in outline that we would think they were struck off during the last fortnight. This money was paid by weight, and bears proof of having been clipped when it exceeded the sum needful. The Swedish Government prizes these coins so highly, that it has kept a series of duplicates of the old Anglo-Saxon, many of whose dies England does not possess, and refuses to part with one. Fifty different English towns are named on the dies in the cabinet of England, some of these places being now unknown.

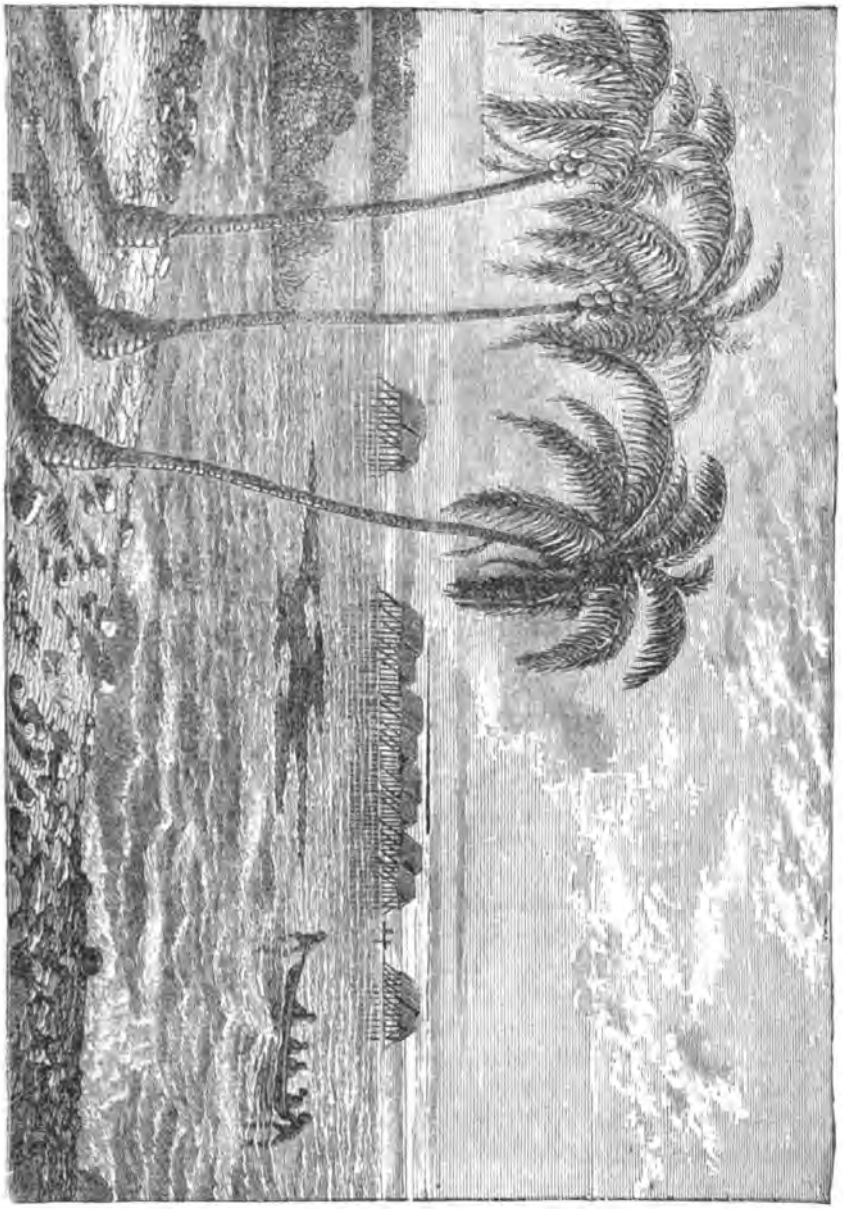
Walking in the midst of the town we breathe the perfume of cherry, plum, and apple blossoms as we pass beneath the overhanging branches of the linden, elm, walnut, maple, and mulberry, while over the waters the sea-eagles are flying, and the shrill cries of the sea-gull are heard. If we walk along through the town, we may possibly see a bride standing by the window. One who was present on a wedding occasion at Wisby, tells us "that the fair betrothed was married at six o'clock in the evening, and immediately afterward was brought to the window, in which a number of lighted candles were placed, where she had to blush (if she could) and show herself till eleven, an immense crowd being gathered below, according to the privilege accorded by custom of demanding her to come forward, should she be absent from it longer than suited their notion of propriety. On this occasion the groom was a clergyman, and equally public property for the night. The lady was handsomely attired and kept her place well, but the parson, though repeatedly called for, could scarcely be forced to the front. He seemed to have more of the white feather about him than his "better-half," gaily plumed as she was.

Among the most interesting remains of Gothland are the memorial stones, standing erect, some of whose rude markings represent a viking's boat, with mast, and sails, and high prow, with many men on deck, and above them others, all engaged in fighting. Over these are figures of men and animals. There, too, in the midst of boulders, is often an urn of clay containing ashes. Most of the tablets have Runic characters, so defaced they can not be read, but everywhere through this far away sea-girt isle the lonely ivy wreathes around the time-worn arches, in the old ruins, the ever living saga of its departed glory.

LYDIA M. MILLARD.

THE LAKE DWELLERS OF VENEZUELA.

IN many parts of the world, particularly in Europe, there are remains of the structures of an ancient people known as Lake Dwellers, from the fact that they lived in houses built over the water. In that beautiful sheet of water in Switzerland, Lake Geneva, there are such remains, but there are savage tribes in Oceanica who illustrate the ancient practice to-day, dwelling in huts built upon poles, at a considerable distance from land. In America the only instance of this mode of house-building is found in the lake of Maracaibo, which lies in the north of Venezuela. Whether or not this habit of living suspended above the water is indicative of special characteristics, in which fear of enemies is the chief ele-

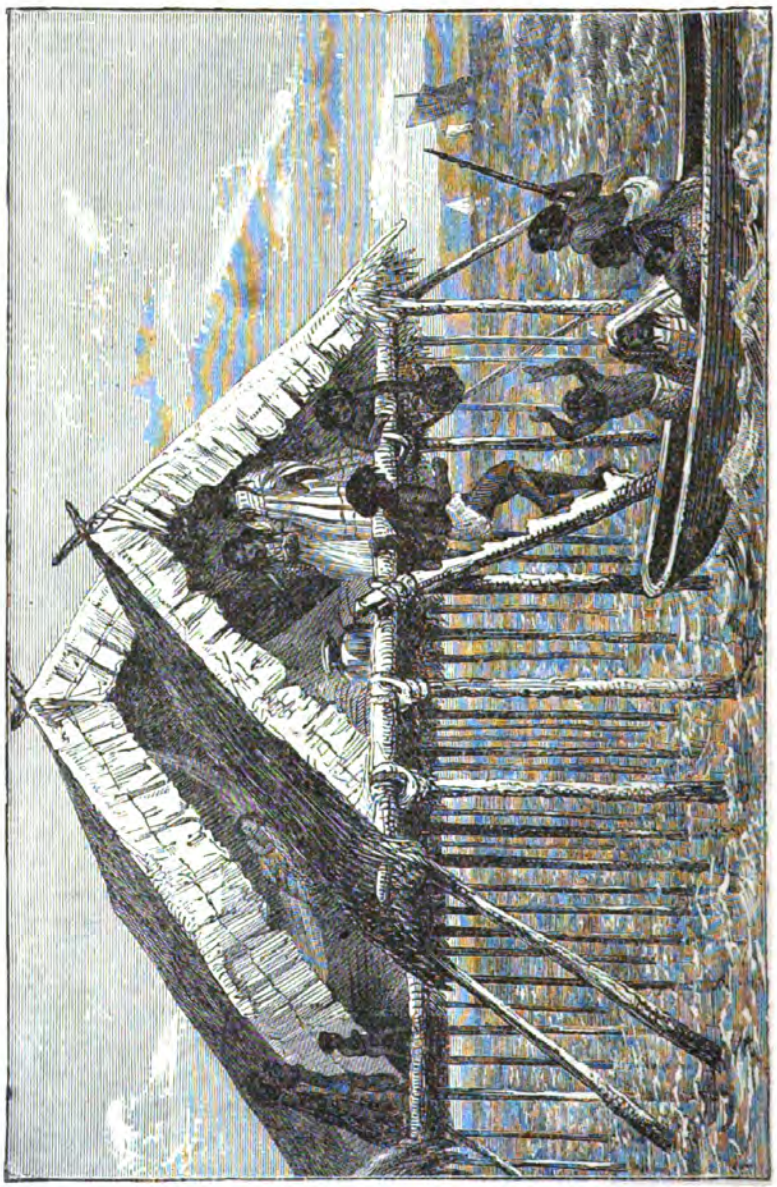


A PILE VILLAGE IN THE LAKE

ment, we are not ready to say, but it seems altogether likely that such is the case, as the tribes who live in this isolated fashion, are generally distinguished by a peaceable or non-warlike disposition.

ing to their boats, they sailed away for the purpose of seeking a new region in which they might dwell.

This lake, which is about one hundred miles in length and sixty wide, is con-



A Pile House and its Occupants.

In regard to the Maracaibo Indians, who are believed to be an offshoot from the Venezuela Indians, this is true, as it is related that many years ago a violent war arose among the Indians of Venezuela, and the conquered were driven out. Tak-

nected with the Gulf of Venezuela by a strait twenty-five miles long. The conquered Indians had purposed to pass through the strait on their way in search of a new country, but a violent storm came up, and compelled them to mass

their boats closely, and tie them together with bamboo poles for protection. This maneuver enabled them to meet the storm successfully, and it suggested the idea of their building pile houses over the lake, which would be safe from fire and flood, and give them security against their enemies. They proceeded to carry out the idea, and ere long a village of bamboo houses sprang up, as it were, out of the water. Strong poles driven firmly into the bottom of the lake, and secured at the top by cross-pieces, constitute the foundation on which their houses are built. The roofs are formed of a framing of bamboo, arched as in the illustrations, and neatly thatched.

For sleeping purposes they use hammocks. The hygienic conveniences of these houses are superior; ventilation and drainage are matters of nature's own provision, and cases of pulmonary disorders are unknown. These houses are built near enough together for access between them by means of short footbridges.

Living, as these people do, directly over the water, they subsist largely by fishing. They also make many articles of bamboo, and gather shells on the beach, and fruit on the neighboring land, which they sell in the city markets of Maracaibo. It is said that they have a stronger disposition to industry than the natives of Venezuela further inland. But this may be due to their mode of living, and in being compelled to exert themselves to obtain the necessaries of life. The illustrations show a group of the lake huts, with a part of the mainland in the foreground, and a near view of one of the houses and its occupants.

SOME GENERAL OBSERVATIONS ON AMATIVENESS.—No. 2.

IN illustration, I may the more frequently refer to the girl rather than the boy, for, as a rule, I think girls are more in darkness in respect to our topic, more delicately organized and situated, hold the more central position, and have a most favorable temperament for making the best use of the light. Just to direct a right attention to them may not be in vain.

I have overheard girls talking and revealing an intense desire to know the origin of life. One promising girl of ten years vehemently declared that she should be willing to be sick to ascertain from whence the babe. If a mother is aware of such curiosity in a daughter, to what gracious account she can turn it, by beginning to read with her such a book as Mrs. E. R. Shepherd's "Special Physiology for Girls." And here I would like to quote a few words of hers from p. 171: "Pure, refined ladies and gentlemen are always careful to talk and behave as well when with children as when with those of their own age. It is sometimes right to talk about some of these things; always when we wish to learn to preserve the health of the bodies God has given us. A mother, a sister, or some dear friend, who has not a sneaking, low way, are the ones, and the only ones, you should trust yourselves to talk with. The best earthly friend a girl can have is her mother. She will never intentionally do, or say, or advise anything that will lead a daughter to harm."

What excellent words! How well guarded! She does not say but a mother may *un*intentionally do harm. Mothers are understanding their duty better, yet some mothers now teach their daughters shame, when the instruction should only be modesty. The difference is almost infinite. She may instruct her daughter in modesty from an innate reason, and because of the law, and because of the demand of society. At the same time, she may assure and justify her. She may inform her that the Creator has exercised boundless skill in her entire formation, rendered her physiologically

beautiful, especially attractive to the other sex, and that each of the members enhances the beauty of all the others.

> Why were our curious bodies made,
> And every part in order laid ?
> Why, but that each of us might stand
> A living wonder of His hand.

There is immeasurable inspiration in this idea. On it you may raise a lofty and thrilling ambition. The opposite is a kind of blasphemy. It is liable to fill the mind with confusion and torture. The escape from humiliating feelings may be in a blaze of passion or a groveling life. How careful the mother should be, that in no moment of haste, irritation, or anxiety, she should so speak, emphasize, and appear that the withering influence should strike inwardly upon the heart, that her dear girl would have reason to be ashamed, even in the presence of her God. I have heard exclamations from conscientious mothers which in their secret effect upon mind and body must be horrible.

The average girl, when she would look well, covets some outward adornment. That may not be unnatural; but one profoundly and devoutly instructed, would most think of keeping in harmony with nature, perfecting her selfhood, so that dress could only be a servant to personal perfection—at best a kind of sacrifice.

In this present view, the average woman is unsound. Woman has been humiliated in her own estimation. She does not fully appreciate her own sex. She often appears as if some apology was due for her presence. She must run, hide, deceive, pretend, and do as well as she can with the misfortune and perplexity of sex. By being a woman, she is doomed to mortification. Not to be mortified is immodest. How much anguish, embarrassment, and evil has accompanied the doleful delusion. Every phenomena of her generous being has been, in ages agone, a subject of mortifying reference. Sometimes the poet has been more just than the theologian and essayist.

> Auld Nature swears, the lovely dears,
> Her noblest work she classes, O!
> Her 'prentice han' she tried on man,
> And then she made the lasses, O!

When slavery existed, if a slave thought of fleeing North, his greatest danger arose from other slaves who would betray his intention to their master. I asked a colored physician why it was so. The "degrading effects of slavery," was his answer. It may be denied, but I think woman has often been false to woman. Two-thirds of her friendship she has given to man, when he has not deserved more than one-third. She does not to-day apprehend all the loveliness of her own sex. She has fostered the side of the stronger. I have heard women speak with astonishment that the friendship of earlier days had so faded out. Men may laugh and remark as if those girl-friendships were not sincere. They were; yet when brought into competition with love and devotion to man, her lord, they paled and sank away.

Many think that negro slavery was a greater curse to the whites than to the negroes. All tyranny or usurpation at last punishes the oppressor. As man exalts woman to her true place, as her own estimates follow upward, she cherishes her own sex. In self-admiration, in mutual helpfulness women become more and more the companions, the charmers, the helpmeets of man.

One of the most original, most important utterances of this century was made a short time since by Miss Emily Faithfull, of England, while visiting America: "I like all women." I will give the reader the full report as published in a newspaper:

"Miss Emily Faithfull is reported as saying after a visit to Vassar College: 'You know an audience of young lady students is the hardest one in the world to address. I always feel like surrendering at discretion when confronted with a battery of six hundred girls' eyes. They listen politely, but you never know what they think. They applaud kindly, but reflect afterward. I was most struck at Vassar with the alertness of your American women. They are full of nerves; they are eager, quick, excitable; and they seem to combine thoroughness with a vivacity we slow-coach English folks don't

possess.' 'Then you like our American women, do you?' asked the reporter. 'I like all women,' said Miss Faithfull. 'Your American women are more nervous and active and eager than ours. Your climate is more exasperating; it is "beastly" weather here sometimes; the London fogs are not a circumstance to some of the weather you endure without complaining. But it tells on women, who are more susceptible to such influences than men. I notice that many of your intellectual women, your women of culture and writers, have a meager, stinted look. It isn't considered "nice" for ladies to eat much here. I find that they regard "feed" as a nasty word. As a result they lack physique. They ought to take more square meals, and have more care for creature comforts and get more repose, to offset the effects of your too electric and exhilarating climate, and your too driving ways of living.' 'Do you think it better to educate girls by themselves or with young men?' 'Better together than apart, but far better apart than not at all.'"

The universe is mastered by occult force. Shame diffused upon the mind of a child, kind of honey-combs body and soul, as we have already set forth, while reverent admiration feeds the sources of life like a perennial spring. It is plain to see that Mrs. Shepherd loves girls, loves their figures, hovers over them for their development and safety. Her book is very admirable. What a grand proof that noble woman, Catharine E. Beecher, gave long years ago, of her regard for her sex, by the books she wrote. The one, expressly for girls, I remember had diagrams in it. A great political paper criticised the impartation of such knowledge in such a way. It was a very poor criticism. It will look more miserable as the years roll on. I have seen women passing out from a private lecture by an able, true man, some of them looking askance, abashed, or as if about to snicker, make sport, and the like. Such women were uncultured, ignorant, or bigoted. I would have them all appear as ladies usually do issuing from religious worship. God's work and word are one empire. What He was not ashamed to form, we, under proper regulations and conditions, most certainly should not blush to study.

I have collected before me a number of startling accounts of cases where a woman has been cruel to a girl under her charge. In some of these the cruelty and disdain were awful. Negroes do not like colored overseers. These women are themselves, in part, the victims of the enthrallment, the degradation of women. Suppose these women could for one moment see these girls as a physiologist beholds them, as a phrenologist, as they look to angel, to Christ, to the Deity—how horrified they would become over their unnatural, unfeeling conduct. Let the girl be initiated into the study of herself.

Says one, wishing to dismiss the whole subject, 'They will learn such things fast enough." *Who* will tell them? What errors, what temptations may accompany this miscellaneous, vulgar education? What mischievous habits may be formed, what dangers encountered under a complete delusion? Shall we not lift them up, shall we not prepare them to love one another, by scientifically expounding the nature bestowed from the Infinite, meeting an instinctive curiosity with comprehensive facts?

What a silly, what a dangerous matter is this "falling in love," which figures so largely in many sensational novels. The reader may have known several cases, where the girl would not honestly listen and adhere to anything reasonable. All her affections had been starved, it may be; she had led a dismal life; she met with attention and respect; new, deep, romantic impulses arose in her heart, and she was bewitched. Had the girl been kindly reared; had she been forewarned; had she been informed of the existence and function of Amativeness—how to guide herself in all cases—she would have been her own accomplished engineer. She would have understood herself, the other party, the way of wisdom, been

always self-poised, ready for counsel, reasonable.

Let us never despair of the power of truth, or of the law of progress. They will finally reach all. There are young men now reading Lewis on "Chastity," and kindred works. If the reader introduces the query, he will find those who will say such chastity is unattainable. Others, that such strictness is undesirable. Now, the writer is not fanatical upon any subject, nor does he always indorse every hint of a favorite author. He does think, however, that the human race, upon all subjects, especially upon those that wrap up vital interests for the present and onward, should have points from which they may reckon latitude and longitude "in this world of God's." I think it will be found that the majority of readers assent to the statements, philosophically considered, of Mr. Lewis and his school. The more they ponder, the more they apprehend the thousand ways the sexes may minister to each other—love, joy, health, companionship, and holy freedom augmenting, in the ratio of wisdom, enlightenment, sanctification. Each sex thrilled with its glory, with the glory of the respondent sex, would effect improved general conditions, and be able always to secure the true marriage, the union of those best fitted for each other.

I am not discouraged because the majority of girls hate physiology, and would be startled with the mention of special physiology. Lads have less choice as to studies, if they may have plenty of time to play. The idea of bones, of naked bodies, is offensive to this or that girl, and perhaps makes her think of butchering-day at her father's, if a farmer. The girl is an index creature. She reveals the whole state of our civilization. She is plastic also. She can be readily modified, can wonderfully mould herself. Let there be a distinct, penetrating demand for girls of classic bodies, and how rapidly the number would increase.

I can remember when, in my father's neighborhood, the idea of a girl coasting, learning to swim, or skate, would have been shocking. Now "it is just the thing." They play ball, and so on. Short dresses used to worry the grandmothers. Now they would not have their granddaughters dress in long gowns. If short skirts are so nice for the girl, if her "rig" is so convenient, conducive to health, and taking, the older ones will draw an inference.

As what we call society grows rational, truly tasteful and spiritual, normal development of what the Almighty took myriads of ages to organize, will become a supreme ambition, a fashion, and girls will have unbounded animation to become learned in all natural science.

Woman will keep company with man. She had rather he would go toward Heaven; but if he will travel the downward road to Hades, she is on the broad road too. She may suffer, sometimes complain, protest, and the like—she will not forsake. Deprived of his rights, man will fight for their restoration. Women will not shed their brothers' blood. She waits, she prays, she endures. Nor is it in vain. Gradually, like a mountain rising out of the sea, her cause comes into universal notice. As man gets light, he executeth justice. His philosophy will yet include the real welfare of "sister woman." She is ever his dear, earthly reward. This may seem to be the language of enthusiasm, of social optimism, but the fact is there that the world is little to a man without the home woman can make him. There is now a large company of men who are the enlightened friends of woman, encouraging her in the way of physical and mental completeness. They are above jealousy, they magnanimously vote to woman the freedom of the world. This company shall increase. The day hasteneth of woman's emancipation from all legal enslavement, social disability, and when her training shall be in strength, truth, growth. At length, the infirmities, inherited and acquired—mental and material—which have crippled and tortured her, shall vanish away. So mote it be!

IMPERSONAL.

"GET OUT OF YOURSELF."

A GREAT cloud overshadowed the sky making things look dismal without; and in the cosey sitting-room where sat Mrs. Howe a heavy gloom seemed to pervade the atmosphere. For several months this once joyous little woman had given herself up to deep grief, brooding over an overwhelming sorrow in solitude, refusing to even listen to kindly words of friendly sympathy. Death had entered this household and taken from it a child and a loving father and husband, and with them seemed to have vanished all happiness of the one who now so mourned their loss; herself and one little girl alone remained, but her heart was with the beloved dead, and the light of her life seemed to have gone out. Not that she had been a helpless sort of person, but always strong, cheerful, helpful; her life had been, selfishly perhaps, so inwrought with that of children and husband that their deaths had fairly paralyzed her powers, and a complete surrender had been made to a crushing sorrow. And to-day the woman was glad that the sun did not shine, for in this darkened day there seemed to be a sympathy with her own feelings.

The door gently opened, and a little girl came gayly tripping in. "Mamma," she exclaimed, "the butterfly has got out of itself; come and see it, please, won't you? It has beautiful wings, and is flying all about."

"What does my little Nellie mean by a butterfly getting out of itself?" asked Mrs. Howe, as she drew her arm around her daughter, and softly smoothed back the curls from the fair forehead.

"Why, mamma, don't you remember that little ugly brown thing by the window in the big closet that you called a chrysalis, and you said it would turn into a handsome butterfly some day, but it has just got out of itself, and left a brown crust broken into pieces. Won't you come, mamma?"

"Yes, little daughter. But I think your butterfly should have chosen a more sunshiny day to come out of itself; and Nellie, your face is so bright and happy-looking to-day that I begin to think you must have captured a bit of the sunlight this morning before it hid behind the clouds."

"I guess," replied Nellie, as she took hold of her mother's hand to hurry her along to where the butterfly was trying its new wings, "I guess the sun is shut in like the butterfly was, and will get out of itself after a while, and shine better than it did before. And, mamma, I wish something would shine into your face and make it look happy again like when dear papa was living."

This last was uttered in a lower voice, and with a tearful look in the clear eyes as they glanced upward.

Mrs. Howe stooped and kissed the child, but said nothing. As she entered the closet and spoke in admiring terms of the brightly-colored insect, much to Nellie's delight, her own brain was busy with other thoughts awakened by Nellie's words. "Get out of self" seemed to again and again repeat itself to her. For had not she been wrapped up in herself like this butterfly in its brown crust? If she wished no more happiness in this world for herself, ought she not to help make happier and better somebody else? To remain absorbed in her sorrowful self was foolish and wrong. But without stopping long to think, she said: "Nellie, how would you like to help me gather a pretty bouquet of flowers to carry to Miss Perry? You know she is so fond of flowers, and it would please her to have some of those new roses that are just in bloom."

"O, I would like it so very much. And mayn't I fill my little basket with some of those ripe cherries for old Mr. White, they are so soft and juicy that he won't need any teeth to bite them; we could go by there on our way."

"Yes, Nellie; and we shall have to start right away or it will be late for our return home."

And very soon Mrs. Howe and Nellie were on their way. When they had gone but a short distance beyond their gate they met a ragged boy carrying a heavy bundle.

"That is the new boy in our Sabbath-school, the children called 'Tattered Tat,'" whispered Nellie.

Mrs. Howe stopped to speak kindly to him, while Nellie offered him a handful of cherries from her basket, which he accepted with a stare and a "thank'ee, Miss." Then the boy went on with a brisker step, the kind word, smile and cherries had made him feel so much stronger. Once he turned around to look after them, while he said, half aloud, "What handsome folks to notice a ragged fellow like me; and that little girl belongs to the Sabbath-school class next to the one I was put in; I'll go every day, I bet I will, and if I can't have fine clothes I'll keep a clean face anyhow, I will." This last with a decided nod of his head as he trudged on.

On their way they met a good many persons with whom they exchanged a bow and a pleasant "good-morning." Finally Nellie said, "How nice it is to speak to people."

"Yes, dear, I never before thought what a real pleasure there was in these little greetings. But we must hasten on, we can not be out long to-day, the clouds have some appearance of rain."

But it did not rain that day, and as they were returning home the clouds broke away, and the sun shone out, when Nellie exclaimed:

"O, see! The clouds look as if they were breaking open like the butterfly's chyrsalis and letting the sun get out of itself."

"Nellie, you are a queer little girl to-day to say such things. But here we are home again; and Nellie, look there, your butterfly has flown through the open window, out into the sunshine among the trees and flowers."

"Well, I don't care, it would be too bad to keep it shut up in the room, wouldn't it?"

"I think it would, Nellie, and it is too bad for people to keep themselves shut up, too."

"What do you mean, mamma?" inquired Nellie.

"I have been thinking," replied Mrs. Howe, "that people sometimes shut themselves in a chrysalis of self much uglier than the butterfly's brown crust."

"I don't understand you," said Nelly, with a puzzled expression.

Mrs. Howe appeared to be talking more to herself than to Nellie, as she continued:

"Some shut themselves up in pride, some are encased in a prickly covering of ill-nature, some are wrapped up in ambition or avarice, some in sloth, some in petty cares, a few in a self-conscious sensitiveness, and I have been enveloped in a covering of selfish sorrow. O, if we all would only keep outside of self."

Then observing Nellie's wondering look, she added:

"Nellie, if people would give pleasure to others, as the butterfly did you when it escaped from its chrysalis, how much more beautiful they would be, and they'd receive a hundred-fold more happiness in return, just as the butterfly now enjoys the pure air and sunny warmth of our garden."

That evening when Nellie kissed her mamma good-night, she put her arms about her neck and said:

"We won't live inside of a crust, or let black clouds cover us either, will we, mamma?"

"No, my daughter, let us keep out of ourselves, think of others, be like the sun—shine upon them if we can."

"Mamma, I guess something has been shining upon you, for you look so much happier to-night."

But Mrs. Howe had that day, like Nellie's butterfly, got out of "self" into a world where she found there was still some deep joy and much loveliness. And though in after days the clouds often came and went, still there was a glorious sunshine that filled the earth with light and sweetness. Unselfish goodness had

broken through the chrysalis of self, and as the days passed by Mrs. Howe's deeds of love were making glad many hearts, and reflecting back upon her own heart a peace and beauty in life before unknown.

SARAH M. BIDDLE.

USE OF BIG WORDS.

"HE goes on his own hook" has been rendered more elegantly, in deference to and in accordance with the spirit of the times, in this manner: "He progresses on his own personal curve"; and a barber in London advertises that his "customers are shaved without incision or laceration for the microscopic sum of one halfpenny." "One might have heard a pin fall" is a proverbial expression of silence; but it has been eclipsed by the French phrase, "You might have heard the unfolding of a lady's cambric pocket-handkerchief"; and as it is somewhat vulgar to say "pitch darkness," it has been so improved as to read "bituminous obscurity." Another polite way of expressing the fact that a man is naturally lazy is to say that he is "constitutionally tired"; and "Nominate your poison" is the poetical way of asking, "What will you drink?"

On one occasion, we are told, a doctor of divinity rung the changes on "He that hath ears to hear, let him hear." "He that is accessible to auricular vibration," said the doctor, "let him not close the gates of his tympana." Then, again, we have that old-fashioned saying, "The more the merrier," delightfully translated in this way: "Multitudinous assemblages are the most provocative of cachinnatory hilarity." It is even reported that not very long ago a clergyman spoke of seeing a young lady "with the pearl-drops of affection hanging and glistening on her cheek." He meant that she was crying. Certain critics, too, occasionally launch out in a similar metaphorical style. Concerning a young and aspiring orator, one wrote: "He broke the ice felicitously, and was immediately drowned with applause."

Quite recently a literary man of some celebrity, in a letter describing the early fall of snow in Switzerland, did not say the storm abated, but "the flakes dwindled to flocculi!" and instead of vulgarly putting it that they melted a potful of snow to obtain water, he said that firewood was "expended in rendering its own heat latent in the indispensable fluid." Equally as good was that which relates to a certain eminent professor, who observed that very wonderful things were occasionally discovered nowadays. He had found out lately that "Nystagmus, or oscillation of the eye-balls, is an epileptiform affection of the cerebellular oculomotorial centers"; and he added, "Don't forget in future what sort of a thing a 'nystagmus' is."

"You have mentioned several times during the evening," observed one of the audience to a lecturer, "the word 'periphrasis'; would you kindly inform me of its precise meaning?" "Certainly," said he. "It is simply a circumlocutory and pleonastic circle of oratorical sonorosity, circumscribing an atom of ideality, lost in verbal profundity." As this explanation was received in solemn silence we trust it was deemed a satisfactory one. It is, however, recorded that the gifted orator was not called upon again to explain for the rest of the evening.

London possesses a phraseology of its own, and is at times rather amusing than otherwise. Two pedestrians were recently accosted in terms the most magniloquent by a street beggar; "Good gentlemen, will you kindly administer the balm of consolation to a wretched and debilitated constitution?"

"Our 'buses," said a conductor in answer to an inquiry made, "runs a quarter arter, arf arter, quarter to, and at!" A young man from the country, while ex-

ploring one of the quiet lanes in the city for a dinner, had his ears mysteriously saluted by a shrill voice from an eating-house, which uttered in rapid tones the following incomprehensible jargon: "Biledlamancapersors, Rosebeefrosegoose, Bilerabbitbileporkanonionsors, Rosemuttonantaters, Biledamancabbagevegetables, walkinsirtakeaseatsir!"

Sometimes, in ordinary conversation, we find people very apt to make use of a particular sentence or a somewhat puzzling word even, with merely a vague idea of its proper meaning. Take the following as an instance: A rich but ignorant lady, who was rather ambitious in her conversational style, in speaking of a friend, said, "He is a *paragram* of politeness." "Excuse me," said a wag sitting next to her, "but do you not mean a parallelogram?" "Of course I do," immediately replied the lady. "How could I have made such a mistake?"

It is well, by the way, to bear in mind a celebrated maxim of Lord Chesterfield's which runs thus: "It is advisable, before you expatiate on any particular virtue, and give way to what your imagination may prompt you to say, to ascertain first whom you are speaking to." The following will exemplify the necessity of this precaution: "My dear boy," said a lady to a precocious youth of sixteen, "does your father design you to tread the intricate and thorny paths of a profession, the straight and narrow ways of the ministry, or revel in the flowery fields of literature?" "No, marm; dad says he's a-going to set me to work in the tater-field."

As an example of meaningless phraseology, take the following anecdote of O'Connell. In addressing a jury, and having exhausted every ordinary epithet of abuse, he stopped for a word, and then added, "This naufrageous ruffian." When afterward asked by his friends the meaning of the word, he confessed he did not know, but said he "thought it sounded well." By this admission we are reminded of a certain critic who charged a flowery orator with using "mixed metamorphosis;" and of an afflicted widower who recorded on the tombstone of his deceased wife that here lay the "meretricious mother of fourteen children."—*Chambers' Journal.*

A ROCKY MOUNTAIN PIONEER.

BAKERSFIELD, CAL., *May* 22, 1883.

EDITOR of the PHRENOLOGICAL JOURNAL:—I send you a pencil drawing of the head of Capt. Elisha Stevens, and also an autobiography of him. He is a neighbor of ours, of French origin, born in South Carolina, settled at New Orleans, then migrated to California—known at that time as New Mexico—in 1844. The following is his phrenological character as I read it: His organization indicates a highly sensitive, sanguine temperament, and in combination with it he is cautious, polite, hopeful, courageous, prudent, plain, domestic, generous, attached to friends, firm, persevering, and successful. He generally seeks no advice, but carries a world within himself. He forms his own plans, and strives to carry them out to the end. Is an adventurer, and usually meets with success in his endeavors. He was born to command, rather than to be commanded, but his conquests are made peaceably.

Capt. Stevens carries a brain of moderate size, but of compact material. The moral organs are now even more fully developed than those at the base or in the posterior part of the head. He is of slim build, with long neck, and the head is comparatively narrow. The high crown gives him positiveness and individuality. He stands erect, and is very elastic in his movements, his perceptive faculties are strong, and the reasoning faculties active, while those belonging to the mechanical group show ability to plan and organize.

Capt. Stevens is now in his eightieth

year; was forty-one years of age when he left Council Bluffs, then a military post, Neb., on the 18th of May, 1844, and made his way to Sutters Post, on the Pacific side, arriving there on the 22d of December of the same year. He traveled by way of Fort Hall, Oregon, in charge of a party of men, women, and children, over 100 in number, and conducted all safely through the toils and dangers of the unknown wilderness. Two children were born in the company on the route. He made the passage of the mountains by his own study of the country, and broke or cut out his own pathway. At one point, at the foot of a mountain range, he found such great obstacles that he was much troubled what to do, fearing he would fail to work his way over, and he says, as he lay down at night, he prayed earnestly that the best way might be pointed out, and it was given to him in a vision to keep right on up a ravine, where he found only one point naturally impassable for his teams and wagons; but all hands went to work with energy, and threw down stones and made a rough passageway. This cost several days of severe labor, but it was successful and all made their way over.

CAPT. ELISHA STEVENS.

He set out from Council Bluffs with twenty-six wagons and teams fully equipped and provisioned. At Fort Laramie, on the Platte River, he took in eight more wagons, making a total of thirty-four, all drawn by ox-teams. They proceeded over a route hitherto entirely unknown to white men, with mountains and alkali springs, and streams to overcome and fully fifteen hundred miles in length.

The party separated at Fort Hall, near

Walla Walla, Oregon. One party went down the river to Portland, and the other into the Sacramento Valley. With the latter was Capt. Stevens. Many of his party settled in Santa Clara County, now a part of California, but then governed by Mexico. At San Jose may be found the families of James and John Murphy and Moses Steinbergers, at Nappa the family of Nat. Horton, at Stockton Mrs. Webb, in San Francisco John Sultivant, and in other parts of California and Oregon the members of this pioneer company or their families still live.

At the opening of the Mexican war Capt. Stevens served as a blacksmith at Monterey, under United States government protection. For years his principal occupation was boating up and down the rivers and lakes—roaming in the wilds as an adventurer—trapping for otter and other furs. Now he lives—as he always has done—a sort of hermit's life, on the banks of the Rio Bravo or Kern River. I took these minutes in his cabin some time ago, on the spot where he made his pitch to settle down, in Kern County. You will find him busy at something in doors or out, and always wearing his hat about as I have sketched him. He surrounds himself with domestic fowls, and keeps an apiary; has made some valuable improvements in the arrangement of bee-hives, especially protecting the bee against moth. His hives contain over 100 pounds each of honey. He has a comfortable home, and some means left him from the sale of his original pitch and homestead to one of my children, where there is a lasting flow of water for irrigating purposes, just at the point where Kern River emerges into the vast plains, from the Sierra Nevada and foot hills and near the county seat, known as Bakersfield, which is a thriving village.

SOLOMON W. JEWETT.

RAILROAD THOUGHTS.

Puff, puff!
We are off!
Get on steam,
Whistle, scream!
Station past,
Flying fast,
Swifter go,
Drowsy grow.

Musing and dreaming, till
Strange thoughts my fancy fill.
Think of a larger train
That doth all men contain;
Started, whence none can know,
Centuries long ago—
On at terrific pace,
Dashing along in space.
Passengers come and go,
Whence, none can surely know.
Walks the conductor grim,
One by one called of him,
All, silent, through the door
Pass, and are seen no more.

Throughout the car we trace
Marks of a former race,
Who lived and rode, and passed
Where all must go at last.
Their records we can see—
Some traced indelibly
With diamond on the pane,
As long as time remain.
Various minds are here:
Some happy, know no fear,
Trusting the engineer;
Some from the windows gaze,
See nothing but a haze.
Logical, they insist
None but themselves exist;
Some, eager, forward lean,
Engine is never seen,
So they, with eyes that blur,
Look on the ceaseless whirr
Of the wheels as they go,
Seeing nought else below,
They come at last, of course,
To call the wheels the force
Which all the train doth move.
What is there that can prove
Such stuff as *steam* to be,
Since steam we never see?

Others, indeed, there are
So busy in the car,
Getting their seats arranged,
Worried lest aught be changed.
Scarcely they think at all
Till the conductor's call
Comes, and with frightened faces
They hasten from their places.

Others with trifles gay
Fritter their time away.
Some search the floor for gold;
Some fret—too warm, too cold;
Some roam from car to car,
Pleased never where they are;
Some, and their names are blessed,
Give aid to those distressed—
Comforts are glad to share—
Have kindly words to spare.

Sometime the wheels shall slow,
Shrilly the whistle blow,
All sleepers shall awake;
Down fall the heavy brake.
Stopped by the Master's hand,
Fast shall the engine stand.
Happy, then, they who come
Unto their Father's home.

M. E. B.

A MODEL GIRL.

A CORRESPONDENT of one of our exchanges thus describes a piece of feminine sculpture which seems to have made complete conquest of his approval. He describes her with a minuteness of detail which suggests the devotion of more than æsthetic admiration; and perhaps the reader will not altogether disagree with his judgment in pronouncing her a rare specimen of solid maidenhood:

"I saw a girl come into a street-car the other day, who had, I was ready to bet, made her own dress, and how nice she did look. She was one of those clean, trim girls you see now and then. She was about 18 years old, and, to begin with, looked well-fed, healthy, and strong. She looked as though she had a sensible mother at home. Her face, and neck, and ears, and her hair were clean—absolutely clean. How seldom you see that. There was no powder, no paint on the smooth, rounded cheek, or firm, dimpled chin; none on the moist, red lips: none on the shell-tinted, but not too small, ears; none on the handsomely-set neck—rather broad behind, perhaps, but running mighty prettily up into the tightly-corded hair. And the hair! It was of a light chestnut-brown, and glistened with specks of gold as the sun shone on it, and there was not a smear of oil, or pomatum, or cosmetic; there was not a spear astray about it, and not a pin to be seen in it. As the girl came in and took her seat, she cast an easy, unembarrassed glance around the car from a well-open gray eye, bright with the inimitable light of 'good condition,' such as you see in some handsome young athletes who are 'in training.' There were no tags and ends, fringes, furbelows, or fluttering ribbons about her closely-fitting but easy suit of tweed, and as she drew off one glove to look in her purse for a small coin for fare, I noticed that the gloves were not new, but neither were they old; they were simply well kept, like the owner and their owner's hand, which was a solid hand, with plenty of muscles between the tendons, and with strong but supple fingers. It would have looked equally pretty fashioning a pie in a home kitchen, or folding a bandage in a hospital. It was a hand that suggested at the same time womanliness and work, and I was sorry when it found a five-cent piece and had been regloved. One foot was thrust out a little upon the slats of the car floor—a foot in a good walking-boot that might have plashed through a rainstorm without fear of damp stockings—and an eminently sensible boot on a two and one-half foot, with a high instep, a small, round heel, and a pretty broad tread. The girl was a picture, from head to foot, as she sat erect, disdaining the support of the back of the seat, but devoid of all appearance of stiffness. Perhaps the whole outfit to be seen, from hat to boots, did not cost $40; but I have seen plenty of outfits costing ten times, or even twenty times that, which did not look one-tenth, or even one-twentieth, as well. If our girls only knew the beauty of mere simplicity, cleanliness, and health, and their fascination!"

COMUS:

A MASK. — BY JOHN MILTON.

The Two Brothers.

E. Bro. Unmuffle, ye faint Stars, and the fair Moon,
That wont'st to love the traveller's benizon,
Stoop thy pale visage through an amber cloud,
And disinherit Chaos, that reigns here
In double night of darkness and of shades;
Or if your influence be quite damm'd up
With black usurping mists, some gentle taper,
Though a rush-candle from the wicker hole
Of some clay habitation, visit us
With thy long levell'd rule of streaming light,
And thou shalt be our star of Arcady,
Or Tyrian Cynosure.
Y. Bro. Or if our eyes
Be barr'd that happiness, might we but hear
The folded flocks penn'd in their wattled cotes,
Or sound of pastoral reeds with oaten stops,
Or whistle from the lodge or village cock
Count the night watches to his feathery dames,
'Twould be some solace yet, some little cheering
In this close dungeon of innumerous boughs.
But O that hapless virgin, our lost Sister,
Where may she wander now, whither betake her
From the chill dew, amongst rude burs and thistles?
Perhaps some cold bank is her bolster now,
Or 'gainst the rugged bark of some broad elm
Leans her unpillow'd head, fraught with sad fears.
What if in wild amazement and affright?
Or, while we speak, within the direful grasp
Of savage hunger or of savage heat?

E. Bro. Peace, Brother, be not over-exquisite
To cast the fashion of uncertain evils:
For grant they be so, while they rest unknown,
What need a man forestall his date of grief,
And run to meet what he would most avoid?
Or, if they be but false alarms of fear,
How bitter is such self-delusion?
I do not think my Sister so to seek,
Or so unprincipled in Virtue's book,
And the sweet peace that goodness bosoms ever,
As that the single want of light and noise
(Not being in danger, as I trust she is not)
Could stir the constant mood of her calm thoughts,
And put them into misbecoming plight.
Virtue could see to do what Virtue would
By her own radiant light, though sun and moon
Were in the flat sea sunk. And Wisdom's self
Oft seeks to sweet retired Solitude,
Where with her best nurse, Contemplation,
She plumes her feathers, and lets grow her wings,
That in the various bustle of resort
Were all too ruffled, and sometimes impair'd.
He that has light within his own clear breast
May sit i' th' centre, and enjoy bright day:[22]
But he that hides a dark soul, and foul thoughts,
Benighted walks under the mid-day sun:
Himself is his own dungeon.
Y. Bro. 'Tis most true,
That musing meditation most affects

[22] So, in his "Prose Works," I. 217, edit. 1698, Milton says: "The actions of just and pious men do not darken in their middle course; but Solomon tells us they are 'as the shining light, that shineth more and more unto the perfect day.'"

The pensive secrecy of desert cell,
Far from the cheerful haunt of men and herds,
And sits as safe as in a senate house;
For who would rob a hermit of his weeds,
His few books, or his beads, or maple dish,
Or do his grey hairs any violence?
But Beauty, like the fair Hesperian tree
Laden with blooming gold, had need the guard
Of dragon watch, with unenchanted eye,[24]
To save her blossoms, and defend her fruit
From the rash hand of bold Incontinence.
You may as well spread out the unsunn'd heaps
Of miser's treasure by an outlaw's den,
And tell me it is safe, as bid me hope
Danger will wink on Opportunity,
And let a single helpless maiden pass
Uninjured in this wild surrounding waste.
Of night, or loneliness, it recks me not;
I fear the dread events that dog them both,
Lest some ill-greeting touch attempt the person
Of our unowned Sister.

E. Bro. I do not, Brother,
Infer, as if I thought my Sister's state
Secure without all doubt, or controversy:
Yet where an equal poise of hope and fear
Does arbitrate th' event, my nature is
That I incline to hope, rather than fear,
And gladly banish squint Suspicion.
My Sister is not so defenceless left
As you imagine; she has hidden strength,
Which you remember not.

Y. Bro. What hidden strength,
Unless the strength of Heav'n, if you mean that?

E. Bro. I mean that too, but yet a hidden strength,
Which if Heav'n gave it, may be term'd her own:[25]
'Tis Chastity, my brother, Chastity:[26]
She that has that is clad in complete steel,
And like a quiver'd nymph with arrows keen

May trace huge forests, and unharbour'd heaths,
Infamous hills and sandy perilous wilds,

[24] When the Christian religion supplanted the pagan worship, such was the attachment even of zealous converts to the old established days of jubilee and joy in honor of the gods and goddesses of Olympus, that it was found necessary to do something of the sort for the Christian cause, and accordingly a long line of saints, male and female, took possession of the set times of heathen jubilee, and reigned in the stead of Diana and Apollo. In like manner the domestic mythology of the pagans yielded to that of the Christians, and the deeds which the infernal gods wrought of old were now accomplished by their successor, Satan

[25] The "if" here is somewhat of the sense of "though," and the meaning is "yes." She is protected by that general unseen strength of heaven we speak of; but she has another strength also, which exists in her organization, its nice balance of parts by inheritance, we may say, through culture and exercise giving her a special sharpness of discernment of the proprieties and refinements of true womanhood.

[26] The passage which begins the line and extends to line 475, is not only a concentrated expression of the motive or moral of the whole masque, but also an exposition of what was the cardinal idea with Milton through his whole life; and perhaps the most central idea of his personal motives and social sentiments in early manhood (see introduction to Comus). Reference may be made also to a passage in one of Milton's tracts, where he defends himself against certain moral charges made against him by Bishop Hall; he breaks out into an exposition of the doctrine of personal purity which may be regarded as a prose explanation, in 1642, of the present passage in Comus written in 1634.

Where, through the sacred rays of Chastity,
No savage fierce, bandit, or mountaineer,
Will dare to soil her virgin purity:
Yea there, where very Desolation dwells
By grots, and caverns shagg'd with horrid shades,
She may pass on with unblench'd majesty,
Be it not done in pride, or in presumption.[37]
Some say no evil thing that walks by night,
In fog, or fire, by lake, or moorish fen,
Blue meagre hag, or stubborn unlaid ghost,
That breaks his magic chains at curfeu time,[38]
No goblin, or swart faery of the mine,
Hath hurtful power o'er true virginity.
Do ye believe me yet, or shall I call
Antiquity from the old schools of Greece
To testify the arms of Chastity?
Hence had the huntress Dian her dread bow,[39]
Fair silver-shafted queen, for ever chaste,
Wherewith she tamed the brinded lioness
And spotted mountain pard, but set at nought
The frivolous bolt of Cupid: Gods and men
Fear'd her stern frown, and she was queen o' th' woods.
What was that snaky-headed Gorgon shield
That wise Minerva wore, unconquer'd virgin,
Wherewith she freezed her foes to congeal'd stone,
But rigid looks of chaste austerity,
And noble grace that dash'd brute violence
With sudden adoration, and blank awe?
So dear to Heav'n is saintly Chastity,
That when a soul is found sincerely so,
A thousand liveried Angels lacky her,
Driving far off each thing of sin and guilt,
And in clear dream, and solemn vision,
Tell her of things that no gross ear can hear,
Till oft converse with heav'nly habitants
Begin to cast a beam on th' outward shape,
The unpolluted temple of the mind,
And turns it by degrees to the soul's essence,
Till all be made immortal: but when Lust,
By unchaste looks, loose gestures, and foul talk,
But most by lewd and lavish act of sin,
Lets in Defilement to the inward parts,
The soul grows clotted by contagion,
Imbodies and imbrutes, till she quite lose
The divine property of her first being.[40]

[37] All things are lawful, but all things are not expedient. Fitness both as to time and place should be observed – Ideality, Conscientiousness, Benevolence with Causality enter largely into the observance. Taste, refinement, courtesy, should be regarded as essential elements in Christian ethics. Austerity, monasticism, asceticism are no more fitting recommendations than disparagements They may be attendant upon the good and bad, according to circumstances or condition. Vice may lay its wiles under courtesy's as well as reason's garb, but it is not therefore necessary that honesty should be rude.

[38] Allusion to the popular superstition which survived until the present century in Great Britain among the peasantry, that ghosts and other supernatural beings had liberty to begin their wanderings at the sound of the evening bell. That Milton looked with learned eyes on the superstitious beliefs which he wrought into his verse, these lines bear proof, but his learning adorned rather than oppressed popular fiction; the horned and hoofed fiend of Gothic belief became in his hands a sort of infernal Apollo; the witch who drained cows dry, shook ripe corn and sunk venturous boats, grew with him "a blue meagre hag," a description which inspired the pencil of Fuseli.

[39] Milton, Thyer fancies, took the hint of this beautiful mythological interpretation from a dialogue of Lucian, betwixt Venus and Cupid, where the mother, asking her son how, after having attacked all the other deities, he came to spare Minerva and Diana, Cupid replies that the former looked so fiercely at him, and frightened him so with the Gorgon head which she wore upon her breast, that he durst not meddle with her; and that as to Diana, she was always so employed in hunting that he could not catch her.

[40] This dialogue between the two Brothers is an amicable contest between fact and philosophy; the younger draws his arguments from common apprehension, and the obvious appearance of things; the elder proceeds on a profounder knowledge, and argues from abstracted principles. Here the difference of their ages is properly made subservient to a contrast of character. The soul grows clodded by contagion, as by purity and heavenly aspiration the body may rise into identity with spirit, being drawn up through the powerful action of the moral faculties. The effect of these is well known even in sickness, conducing to an invalid's recovery when all medicaments have failed. By sensuality the soul may sink in its identity, and finally reach that depth where all divine essence is lost. Milton, as Warton noticed, appropriated here a passage in Plato's Phædo;

Such are those thick and gloomy shadows damp
Oft seen in charnel vaults, and sepulchres,
Lingering, and sitting by a new-made grave,
As loath to leave the body that it loved,
And link'd itself by carnal sensuality
To a degenerate and degraded state.
Y. Bro. How charming is divine philosophy!
Not harsh, and crabbed, as dull fools suppose,
But musical as is Apollo's lute,
And a perpetual feast of nectar'd sweets,
Where no crude surfeit reigns.
E. Bro. List, list, I hear
Some far-off halloo break the silent air.
Y. Bro. Methought so too; what should it be?
E. Bro. For certain
Either some one like us night-founder'd here,
Or else some neighbour wood-man, or, at worst,
Some roving robber calling to his fellows.
Y. Bro. Heav'n keep my Sister. Again, again, and near;
Best draw, and stand upon our guard.
E. Bro. I'll halloo;
If he be friendly, he comes well; if not,
Defence is a good cause, and Heav'n be for us.

(*To be continued*).

the passage is translated by Mr. Jolliet substantially as follows: The soul which has been polluted and is impure at the time of her departure, and is companion and servant of the body always, and is in life fascinated by the body until she is led to believe that the truth only exists in a bodily form, which a man may touch, and see, and taste, and use—she is engrossed by the corporeal, which the continual association and constant care of the body have made natural to her.

A FRAGMENT.

As a stone that is carelessly cast
From the heart of the sea on the strand,
Is changed to an exquisite gem
By the skill of the lapidist's hand;

So some thought of an untutored mind
In rude sounding language expressed,
By the poet is eagerly caught,
And with rhythmical diction is dressed.

ALMEDA COSTELLO.

PHRENOLOGY IN CALCUTTA, HINDOSTAN.

[AN esteemed correspondent communicates the following summary of phrenological affairs in India.—ED.]

IN the year 1825 there was a "Calcutta Phrenological Society," instituted on the 25th March, of which Dr. Abel was the President, Captain W. N. Forbes was the Vice-President, C. E. Egerton, Secretary, S. Smith & Co., Treasurers. The Managing Committee consisted of the President, Vice-President, Treasurers, Secretary, J. Mellis, M.D., Mr. J. M. Dove, Mr. W. Carr, and Mr. D. Drummond. The object of the society was to investigate phrenology by means of meetings at which phrenological discussions might take place, and communications be made, and by the collection of phrenological works, skulls, casts, and every kind of phrenological documents and illustrations. This Society, if we are not misinformed, was presided over at the last by Dr. G. Murray Patterson, No. 15 Royal Barracks, Fort William, in Calcutta. Mr. Drummond, in his "Objections to Phrenology," says it was established under very promising auspices and included several gentlemen of literary and scientific distinction. Its numbers, however, did not increase, as was at first anticipated, not because the subject did not excite interest, but only lack of sufficient interest to metamorphose apathy into exertion. He also says: "There are many talented individuals in

Calcutta, but the division of *caste*, which is almost as strictly observed by Europeans as by Hindus, is destructive to every attempt at general association; added to this, other matters than intellectual improvement are the *alpha* and *omega* of Indian existence." Dr. Patterson allowed metaphysical discussions, instead of purely phrenological ones, to be carried on in the Society, and this was one of the reasons for the lack of interest which led to the Society's suspension. The objections raised by David Drummond, who had a school in Calcutta, commonly known as Dhurrumtollah Academy, were read as addresses to the Society, and replies to them by Dr. G. Murray Patterson used to be published in the *John Bull* from time to time, and subsequently were collected and printed in the form of a book, "Objections to Phrenology," by Mr. D. Drummond, in the year 1829. He says in one place, what is too rich to pass over: "Truth is not of easy acquisition. Her visits are few and far between, and even the holy light is vouchsafed to man. Seldom are its glories permitted to expand until, after much effort and many observations, the heavy clouds of prejudice are finally dissolved. Truth, however, has nothing to fear from candid opposition. Tyranny may silence her voice—her votaries may become her victims; but, like the gold of Ophir, she comes triumphantly forth, and with seven-fold refinement, from every furnace of investigation." It appears that there was a good deal of controversy in Calcutta at the time, and discussions appeared in the *John Bull*, under the signatures of Dr. Patterson, Mr. A., Mr. B., and A Phrenologist, with ample quotations from the works of Dr. Gall, and Spurzheim, and Mr. Combe.

On Saturday, the 7th June, 1845, at the rooms of the "School Society's School," a meeting was held by Hindu, Mussulman, and Christian young gentlemen, thirteen in number. Kally Kumar Dass was voted to the chair, and he, in his address, proved to the satisfaction of all present that the science of Phrenology had a peculiarly strong claim on the attention of every man, and the second "Calcutta Phrenological Society" was established on that day with the purpose of a methodical course of study in Phrenology. This Society used to hold weekly meetings, when lectures on Phrenology were delivered by Kally Kumar Dass, the President; and on the Physiology and Anatomy of the Brain and Skull, by Nundo Lall Ganguly, the Vice-President. The lectures were published in the English weekly newspaper, conducted by a native gentleman, called the *Hindu Intelligencer*. The members were students of colleges and schools, and out of their own private pocket-money they contributed toward the maintenance of the young Society. It had no permanent habitation, and the consequence was that meetings were often held at the members' private residences, or places lent by friends for the purpose. The Society was able to scrape up a few rupees, which they remitted to the late lamented George Combe for books, etc., and he thus noticed it in the *Edinburgh Phrenological Journal*, No. XCIII, New Series, No. XL. for October, 1847, page 459, under the head, "Intelligence": "A Phrenological Society, consisting of Hindus, has lately been established in Calcutta, and in August last included fourteen members, of whom two are schoolmasters, four belong to the medical profession, and the rest are engaged in mercantile pursuits. They have sent a remittance to Edinburgh, to be expended in purchasing a suitable collection of casts, books, etc. We wish them much success, and shall be happy to learn that the study of Phrenology becomes general among the Hindus."

The books and casts were forwarded by him with an autograph letter to the President, the late lamented Kally Kumar Dass. With these, the purchases made in this country, and the presents received from members and friends, the Society soon possessed a good and useful library, strong enough to impart a thorough knowledge of Phrenology to the beginners. The members, it is worthy of note, commenced their work with zeal and as-

siduity, and the two professors fought their battles well in the field, and paid every attention to the advancement of the Society.

The Vice-President, Nundo Lall Ganguly, died at a comparatively early age, to the great grief of the members. His mantle fell on Nil Comul Mitter, and the Society rejoiced at such a happy and worthy selection. This gentleman put his shoulders to the wheel, and delivered some valuable lectures at the Society's regular weekly meetings. The Society existed for several years, and, as fate would have it, the time of the greater portion of its members was engaged otherwise as they became older, some going into the up-country, where they exerted themselves to establish societies for the culture of the science, with, however, little success. So, in fact, the limbs of the native Society were scattered to the four winds, and it died when nine years old.

Kally Kumar Dass started, in 1850, *The Pamphleteer*, a monthly journal of Phrenology, science in general, literature, and arts.

Raj Kumar Dass, one of the members of this Society, has a studio in Amherst street, where he practices the art of examining heads for a moderate fee.

Near the beginning of the present year a gentleman, with the name W. Ecydrof, advertised himself in the Calcutta newspapers, *Indian Daily News* and the *Indian Mirror*, as a practical phrenologist. The editor of the latter submitted himself to his examination, and subsequently acknowledged in glowing terms, in a leading article on the 4th February, 1883, the correctness of the examiner's analysis of his character, and said that those who doubt should try for themselves.

It may be mentioned here that some years ago a European gentleman, Professor Hume, came to this city and delivered a couple of lectures or so, in the Town Hall, on Phreno-Mesmerism; but the public patronage was not sufficiently encouraging to the Professor to continue his course.

Our much-respected townsman, Dr. Mahendra Lal Sircar, who is well to the front in the intellectual world, read a lecture on the Physiological Basis of Psychology, in the Howrah Canning Institute, in April, 1870, and published it in parts in the Calcutta *Journal of Medicine*, conducted by him. It is much in accordance with the teachings of Dr. Gall and his coadjutor, Dr. Spurzheim, but the lecturer calls the name Phrenology a misnomer, assigning reasons for his doing so. Speaking of the period in which Dr. Gall lived, he says that "Physiologists up to his time had agreed that the brain was the seat or the organ of the mind, but they did not suspect that the faculties of the mind had each a seat in a definite area of the cerebral substance. And this determination has been based upon pure observation, and must remain unshaken forever."

Calcutta. R. B. DOSS.

BROWN EYES.

I HAVE brought you a wreath, Brown Eyes,
'Tis a wreath which shall harmonize
With your color, so clear and pure;
With your roses becoming mature.
'Tis a wreath which Nature weaves—
'Tis a wreath of autumn leaves!

There are vine leaves, and oak, and ash,
And the maple-tree's scarlet dash;
There is yellow and brown and red;
Such a wreath for your beautiful head!
'Tis a wreath which Nature weaves—
'Tis a wreath of autumn leaves!

Oh, I would not your wreath of leaves—
There are others which Nature weaves;
For the season of leaves is gone,
And the time of fruitage is come!
Such a wreath I can not wear,
For the leaves are dead and sere!

All their beauty betrays decay,
And it tells of a bygone day!
See, the harvest now crowns the year,
And the fruits—what a crown for my hair!
But your wreath I can not wear,
For the leaves are dead and sere!

GRACE H. HORR.

THE EFFECTS OF ALCOHOL UPON THE HUMAN BODY.—No. 2.

THERE are one or two doubts about the mode of action of alcohol after it has diffused itself into the walls of the stomach. Some think a portion of the alcohol diffuses itself further than the walls of the stomach and into the adjacent tissues, and thus affects those important nervous circulatory centers named the semi-lunar ganglia, and their congeners that lie just back and near the stomach. But as I have never seen or heard of alcohol in any case being found in the lubricating fluid, named serum, of the abdomen, which freely moistens the outer surface of the stomach, I judge that the diffused alcohol does not go farther than the walls of the stomach, but that it passes into the blood circulating there, and is therewith carried away.

Another doubt exists. In my last article I attributed the immediate effect of the alcohol upon the nervous centers to the effect produced through the nerves by the alcohol acting upon them in the stomach. There can be no doubt that an effect is thus produced, and perhaps all the effect that I mentioned. Yet it may be that a part of the effect thus accounted for is produced a moment or two later by the alcohol itself visiting with the circulating blood the nervous centers. We shall see. But before that, however, we will notice some very interesting and strongly argumentative points against alcohol.

As everybody knows, or ought to know, all the blood, and whatever goes with it, is led by the stomach vein into the portal vein. This has five roots; one from the stomach just mentioned, one from the spleen, one from the pancreas, and two large ones, one from the upper and one from the lower bowels. This fact is important in illustrating how, by obstruction in the portal vein, enlargement of the spleen may occur, or how likewise the distension of the veins about the lower, or exit bowel, or piles, might occur.

The portal vein extends but a short distance before it reaches the under back part of the liver, within which it divides and subdivides until it reaches every minute part of the liver, where its contents are poured into a network of capillary or hair-like tubes, though they are much smaller than hairs, not visible to the naked eye. The alcohol having found its way into the blood, leaving the stomach is carried to these capillaries, where it immediately makes a vigorous attack upon this undefended, delicately-constituted, and most important organ, the liver.

Michael Foster thinks that one-fourth of all the blood in the body at any one time is in the liver. I think this proportion too large. It is at least one-sixth. The liver in life must be about two-thirds blood. But not one-sixth only of the alcohol in the blood is constantly in the liver. It is the alarming fact that all of it, nearly, that enters the blood circulates

through the delicate capillaries of that sensitive organ. To think of this in its true and unexaggerated aspect, is enough to make the hair stand in horror upon the head of any user of alcoholics. Why shall he thus, by a glass of lager or domestic wine, poison such a friend, such an important part of his mechanism as the liver is, just to gratify an appetite?

Now comes a very important and interesting fact to notice. Although alcohol is so diffusive, its poisonous character is so detrimental to the bowels that not a particle of alcohol is allowed to diffuse itself into the bile of the liver, or into the gall of the gall bladder. Both those fluids are always free from the smell or taint of alcohol. It will be understood that if alcohol was allowed to get into the bile, or gall, it would go with them immediately into the bowels, exciting inflammation there, while the alcohol would be there again diffused into the veins, and pass up through the portal vein into the liver, and it would continue to go its round —world without end.

Now, the point is to get the alcohol out of the body as quickly as possible. Hence, and to prevent its injuring the inner surface of the bowels, the wise and curiously-constituted liver will not allow the alcohol to diffuse itself with its usual freedom, but refuses its passage through certain parts. A vein—the hepatic—leads from the liver up to the larger vein that opens into the right heart, which is acted upon within by all the alcohol that has been making so much mischief in the liver.

As the labor of this heart is usually so much easier than that of the left heart, it would naturally be supposed that the troubles of the left heart would be the more frequent; so they are in the case of non-drinkers, but not so is it in case of those who use alcoholics. The heart trouble with them is almost always in the right heart before the left is affected—showing that the action of alcohol upon any of the delicate surfaces in the body is very prejudicial.

From the right heart the blood is thrown into each lung, and there exposed by means of an immense extent of surface to the free action of air, into which the alcohol diffuses itself. It may also be expelled by the action of the internal lung surfaces with the air. At once the expelled breath signifies that it has washed a surface where alcohol existed, which is thus carried out of the body, dispersed through the air, and by its levity moves upward, where it can never more do harm to the body.

Stop now and think. Is there any other instance in which any substance leaves the body, driven from it in the same condition precisely as when it entered the body and is called good, or a good? Would it be likely that the lungs would take pains to expel a useful substance from the blood? Is not that elimination of alcohol in the lungs a proof positive that alcohol in any form is, to speak no stronger, undesirable in the body?

But one portion of the alcohol is expelled upon its first round through the lungs. Again and again will it return to offend the lungs, and each time an additional quantity will be expelled from the blood, until the last vestige is gone. But ere that time, it will play sad havoc with all parts of the body, but with some more than with others.

The blood, loaded with alcohol, and partially free from what it had when it entered the lungs, flows back from the capillaries through the veins into the left heart, injuring it less than the greater quantity of alcohol did the right heart, but leaving its trace. By the powerful action of the left heart, the blood bearing the alcohol is poured out in common into all parts of the body. Now, portions of it visit all the nervous centers, and perhaps not until that moment is the evil wrought that I described in my last paper. We know that very soon after alcoholics of any kind are swallowed, the nervous centers are acted upon. To be sure, it requires but a minute, or two at most, for alcohol literally to pass the round I described; that is, to diffuse itself into the sides of the stomach, enter its veins, mingle

with their blood, pass with it through even the remote parts of the liver, act there injuriously, and to go up to the heart, then out to the lungs, round to the other heart, and thence distributed to reach the nervous centers.

Doubtless part of the effect named immediate is produced by each mode, the effect induced through the nerves and by the effect of the alcohol acting in its own most unfortunate way. In what way that is, so far as the effect is seen by everybody, nothing need be said—it is the most humiliating that is ever witnessed by humanity. There is no redeeming feature, no palliative excuse for the deep degradation into which the victims of alcoholics are rushed. As there is nothing in alcohol that can be of service in renewing the nervous centers, if their increased action is caused, it must be by exciting them to greater activity.

Alcohol, as before shown, is constituted of carbon, hydrogen, and oxygen—$C_2 H_6 0$—but the active or cellular part of the ganglia, or nervous centers, wherever they are, are constituted chiefly and essentially of Lecithin (le-cith-in), each atom of which (or molecule as some name) is constituted of C_{44} H_{90} N.P.S.O_9. That means that 44 atoms of carbon, 90 atoms of hydrogen, one atom each of nitrogen, phosphorus, and sulphur, and 9 atoms of oxygen, peculiarly constituted or compounded, are one atom of lecithin. It would be nonsense, therefore, to talk about building up, repairing, or supplying the brain, nourishing it by means of any number of atoms of alcohol.

Now, instead of alcohol acting like a stimulant to excite action, which could never be understood when it was believed, it is found, as I said in my last paper, to be a narcotic in its action, and that it tends to paralyze, instead of induce activity in, the nervous centers; especially at first the circulatory nervous centers. More than fifty pairs of these, few of them larger than a grain of wheat, are located all the way from the front part of the cranium, in a double chain, along each side of the spinal column—each connects with its neighbor above and below, and with the mentory or cranio-spinal nerves, in its vicinity; and from those in the lower part of the chest, and in the upper part of the abdomen, nerves extend toward the organs of the chest and of the abdomen, and in or upon or near those, other ganglia exist, which are thus connected with the extended chains. One quite large cluster of these ganglia, namely, five, named the semi-lunar ganglia, are situated just back of the lower part of the stomach, and about a quarter of an inch in front of the spot where the bullet that killed Garfield stopped—the jar of it disorganizing this cluster, sometimes named the abdominal brain.

Now the point is, that each of these ganglia controls the circulation of blood in the minute arteries, by which its constant flow is superintended, that is, controls the circulation in its own domain—for which purpose nerves extend from each ganglion to a neighboring artery, and follow it along until its minute extremities are reached (a very long way), and all parts of the body are thus reached, and the flow of blood through all parts of it regulated. When the circulating center is paralyzed, its ability to do its work is diminished, and the little arteries under its supervision relax, enlarge, and the heart working away with perhaps usual, or more than usual, activity, pumps the blood into those minute, relaxed, and distending arteries. The appearance is a gush or rush of blood to all parts of the body where these minute arteries are, and as they are everywhere, there is a gush everywhere. Wherever there is an increased flow of blood, there is increased activity, hence increased activity will exist everywhere, and considerable warmth will be everywhere felt, both because the increased flow of blood brings more heat, and because it is also increased by the increased activity of the parts. But all this is momentary. There is no continued flow of blood. That which came in a gush is soon exhausted of its heat and its nutriment, and the parts show coldness and exhaustion. The alcohol has already,

at its first ingoing, attacked the stomach and liver, and thrown them *hors de combat;* digestion fails, and the whole man runs down at the heel. Thus things go on from bad to worse, until the victim has nothing to run down at the heel, and his deceived feet are frosted, and ulcered, and one foot already in the grave, when some one comes along tooting him to get up and be a new man; and he tries, only in a short time to fall to a lower degradation. Discouraged, he holds up his hands and exclaims, "Oh! that I had known and feared my enemy when he stood bright, ruby-like, and tempting in the first glass."

But I must conclude with a very curious matter, much like what I before showed. I have never known the eliminations that pass the kidneys to be tinctured with alcohol, even in case of drunkards. The kidneys, like the liver, prohibit the passage or diffusion of alcohol through the secretory tissue of which the kidneys are largely constituted. The reason evidently is, that alcohol would have a remarkably bad influence upon the inner surface of the ureters and bladder. It would also diffuse itself into the bladder and re-find its way into the circulation. Its chief ways of outlet are the lungs, and the perspiratory tubes; through these it may go without inducing additional harm.

T. S. LAMBERT, M.D.

OUT OF DOORS.

A LONG EXTRACT FROM A VERY LONG LETTER.

"SUCH a nook as I am in this morning! It is a chilly, breezy morning, by the way. In the house my arms were all goose flesh, and the great cook-stove in the kitchen tempted me to put my cold feet in its comfortable oven. But I have learned better than that, the summer boarders taught me.

"My nook! Well, imagine a hill covered with sweet fern, and barbery, and golden rod, and pretty blue asters; imagine me at the bottom of said hill, leaning against an enormous boulder, my feet braced against lichen-decorated rocks, and a charming bit of seascape directly before me, or should I say directly opposite me in the distance? I have brought my morning's work out here—buttonholes for the children's fall dresses—and the children themselves are roaming within sound, getting red leaves, autumn flowers, grasses—anything. They are not particular, since they are only toddlers of four and six years. But they are as happy as if they were in Japan collecting bric-a-brac. They have such ideas about decorating mamma's room, and surprising papa when he comes home.

"It is a new idea for me, this of living out of doors a part of each pleasant day. For years I have envied tourists who go to lovely places every summer, and spend their time from sun to sun in the open air. 'If I could do so,' has been my discontented thought, 'I should have better health, and more nerve force; I should be a better mother and a happier wife.'

"Well, we had two boarders this summer, my husband's cousins, who begged us to let them come to the farm, and promised to join our six o'clock breakfast, and take farmer's fare. One of them writes for the newspapers and magazines, and one is an artist in a small way. But such pale, tired-looking creatures as they were when they came. Not a bit more so than I, however. My husband said so himself. Well, they seemed to think the old farm was the most wonderful place in the world. Such paths, and rocks, and cosey places as they found! They used to come in with such glowing faces to tell me about the 'perfectly lovely' spots they had discovered. Out of doors! Why, they literally lived out of doors, only coming in to eat and sleep.

"'If there is so much health and pleasure to be found on our own farm, within

a stone's throw of the back door, I don't know why I should not have some of it! I said to my husband, one day. 'By George! that's so,' said he. 'Nell and Kate take their work and their books out of doors, why shouldn't you?'

"Now, I'm progressive when I get hold of an idea, though I can't originate. That very afternoon I took the children to the beach—we live on a seaside farm—and while Nell scribbled, and Kate sketched, I sewed and gave the little folks their lesson. You see my work is taking care of the children, and making their clothes chiefly. I have a fairly good girl in the kitchen. But, dear me, I am getting so strong that I think seriously of doing my own housework the coming winter.

"I have two boys—you know what boys are!—no, you don't, for you haven't any of your own, and no description can do justice to boys. Well, I asked myself why they should not camp out at home as well as in the Adirondacks. They have always been crazy to camp out, you must know. I talked with their father, and he being reasonable and possessed of uncommon common-sense, agreed with me. We both came to the sound conclusion that there was no reason why farmers and their children shouldn't take comfort on their own land, enjoy their own picturesque scenery, and inflate their lungs with their own oxygen. In fact, husband grew quite excited as he talked the matter over, and waxed indignant at the idea of city people skimming all the cream, so to speak, of country life.

"And so the boys set up a tent in the pine grove north of the house, and ate and slept there till they grew tired of it. We all visited them, and picnicked, and lunched around a gipsy kettle, and lounged on pine boughs till there was danger of the father and mother becoming as young as the children.

"'Depend upon it we make a great mistake in our way of living,' said husband to me one day, getting up from his lounging place under a pine tree and shaking the dry needles from his clothes. 'Why, here is the very perfection of enjoyment under our very noses, and we've been fretting all these years because we were too poor to go journeying.'

"'It was our mission to come and wake you up to a sense of your blessings,' said Kate, looking up from her sketching.

"To be quite serious, dear friend, all this has set me to thinking. Do any of us realize, until we are in for it, the terribleness of nervous exhaustion? To be old before our time—long before—to make ourselves unlovely to our children because of unmanageable nerves; to lose the joy, and, far sadder, the use of living, is not all this to be dreaded, to be avoided with all the reason and wit and energy that God has given us? What is success of any kind if our brains and stomachs are worn out? Poor Jane Carlyle, writing to her husband after one of the greatest of his literary triumphs, says: 'If we could only sleep, dear, and what you call *digest*, wouldn't it be nice?'

"Only think of the rich people, the successful people who are running hither and thither to Switzerland, to Italy, to the far north in search of health and pleasure, to whom after all, health and pleasure are forever denied. They have overdrawn their account at Nature's depository, and would give all their fame and money for the simple health of a little ragged country urchin.

"Some of us farmers' wives are in danger of losing our most precious possession for this world, without getting in return much fame or money. I for one have turned sharp about, and am going to try to get something out of the old farm besides corn and potatoes, and milk and butter. There is a crop for the heart and the spirit and the nerves if one be wise enough to discern it.'

MRS. M. F. BUTTS.

HOW SALT INJURES FLESH FOODS.—A French physician, Dr. Hussen, has been making experiments to discover the effects of salt and other condiments when used in cooking, and adds his testimony

to the facts already in possession of the hygienists. His experiments show among other things, that in cooking butchers' meat only an ounce of salt should be used with from six to twelve pounds of meat. If more is employed, it will do one of two things: it will modify the structure of a portion of the muscular fiber so as to render it more resistant to the action of the gastric juice, or it will itself check and retard the peptic fermentation, the very ground work of digestion. It follows that salted and smoked meats are more indigestible than fresh. Vinegar, it appears, may be used with good effect, provided it is not in a quantity to irritate the stomach, and it is a pure dilution of acetic acid, freed from sulphuric or hydrochloric acids, the latter of which, though an active principle of the gastric juice, must not be in excess in the stomach, or it will retard digestion. The hungry man will, therefore, be careful how he uses salt and vinegar, and Dr. Hussen will by and by tell him something about pepper and mustard.

THE FASHIONABLE DOCTOR.

ONE leading reason for the slow progress made in the substitution of hygienic physicians for the drug doctors of society, is the fact that the hygienist is compelled by virtue of his system, to point out the irregularities and vices of his patient's life, and show how nature is set at naught, even in her simplest ordinances. The popular doctor of the world is he who pays little attention to the moral delinquencies of a patient, and apologizes for the little remorse one may feel who is disposed to contemplate them.

A correspondent of the London *World* indulges in some very witty remarks on this subject, showing a very clear insight into the subject of the fashionable doctor's popularity, and traces to some extent the differences between the essentials to popularity to-day as compared with what was essential fifty years ago. The essentials to this popularity, according to the correspondent, are very strongly in support of statements which are frequently made, to the effect that success in the directions in which success is usually estimated, is much more largely dependent upon extraneous qualifications than upon those which may be considered strictly medical or scientific. For instance, we are told that the successful physician must know the ways and weaknesses of his clients, and not dream of playing the part of their moral, instead of their medical mentor. How much soever moral discrepancies may be the direct cause of disease, patients, as a rule, dislike very much to be reminded of their delinquencies, and this is especially so in the case of those who flatter themselves that their peccadilloes are being conducted without the knowledge of the polite or respectable circles in which they move, and in which circles such transactions are roundly condemned. The successful physician must, therefore, be blind to immoralities of conduct, and talk learnedly in a manner which is calculated to convince the patient that the essential cause of the trouble has been overlooked. The successful physician must be familiar, too, with all the topics of the day, and yet he must not have positive convictions on any of them, for it would be unwise to offend those on whom he thrives. He may write medical works—the more the better—but society is skeptical regarding omniscience. The successful physician may, therefore, not dabble in outside matters, unless it be very strictly as a means of recreation. He must not be an atheist. Society has not come to that yet, and nervous women are always pious. Unless the physician be a dissenter, it is best for him to be strictly orthodox, neither too broad church nor yet with a suspicion of incense, or the eastward position. For-

merly the curate was the pet of the ladies, but that very important functionary is being largely supplanted in their estimation and affection by the truly good doctor, and as a consequence there can never be anything very much in common between the curate and the doctor. The doctor must, therefore, be strictly careful not to offend any of those sensibilities over which it has for so long a period been the peculiar office of the curate to preside.

TO MOTHERS.

WE all love to see the sweet unconsciousness of youth, full of charming impulses and unstudied graces. Youth is the poetry of life. We come soon enough to the stern realities and the prose of life. There is no time when our daughters stand so much in need of earnest, loving counsel as in youth. When they are most lovely they are most tempted, and often the least ready to meet it. We, as mothers, should teach our girls to know themselves; to have a true understanding of the needs and desires of their being, and of what they are liable to come in contact with out in the world. This knowledge would be to them a mantle of protection. Sin and ignorance go hand in hand. We shun not the hidden evils, and sometimes not the glaring ones. Many a good, young girl, the joy and pride of prudish parents, has fallen an easy prey to an ardent and unprincipled lover who afterward cast her aside, she, unused to the ways of the world, scarcely understanding why he loves her no more, she had loved so well.

Girls, beware! If a man says he loves you, and is honest, he will never allow a breath of scandal to touch you through any act or thought of his. Love means protection, care for your reputation, which he would guard with his life.

The genuine article is fair and healthful, and blesses its object; while the spurious is full of promise, but yields only the fruits of sorrow. Let us mothers try by earnest teaching and loving guidance to help our girls to be strong, and true. Let us keep our homes pure and happy, full of brightness and sunshine, a place where the lamp of love is always burning for our dear ones. We must teach our daughters the laws which govern their lives if we would have them morally and physically strong. BONNIE.

NO, SIR.

IS the American Anti-Tobacco Pledge a vision of the past? a stranger asks. We answer emphatically, No, sir! It is an existence of the present, and will rise to a broader growth with the future. An effort for good never dies; it is immortal. Ill-health may maim, and the Great Harvester gather in the standard-bearers, but the banner of truth and reform is imperishable, and waits but for strong hands to bear it aloft. The American Anti-Tobacco Pledge has many signers; men whose names are an honor to the cause of purity, and boys for whom the years to be are full of light.

A closer and more general organization would doubtless extend our method of work. In this regard other countries outvie us. We had an invitation to attend the fifteenth annual meeting of the English Anti-Tobacco Society and Anti-Narcotic League, held in Association Hall, Manchester, England, Feb. 19th, 1883, and have since received an encouraging letter from their secretary, Mr. Frank Spence; also a copy of their Annual Re-

port, form of pledge, plan of work, monthly letter, and several pamphlets. Mr. Spence reluctantly admits the reform moves slowly, but he adds, "we keep on distributing literature, and delivering lectures when opportunities arise, and are encouraged by the result to go on in the good work. Our cause is right, and must eventually succeed."

The Society makes us pleasant offers of co-operation. Their pledge sheet and application for membership reads: "To the English Anti-Tobacco Society and Anti-Narcotic League, Manchester. Being an Abstainer from Tobacco, and all other Narcotics,* and heartily sympathizing with your movement, I shall be glad to be enrolled as a member." A small annual subscription fee is imposed. Each member receives an illuminated certificate of membership, and periodically the Society's monthly letter. The Very Rev. F. Close, D.D., late Dean of Carlisle, is President, and an imposing list of titled scholars Vice-presidents. We extend our most cordial congratulations to the League.

Under the head of "Raison D'etre," their late report reads: "Since 1841 the population of the United Kingdom has increased 25 per cent., but the consumption of tobacco 43 per cent. Now *more than one-quarter of a million sovereigns are spent every week* on this narcotic. For this outlay we reap an untold amount of physical, mental, and moral injury."

It is a lamentable fact that many of our race in high social and financial positions are almost constantly absorbed in the indulgence. Tobacco permeates the air to such an incredible extent, that we are all smoked, in a degree, though we may be confident we would keep better without it.

It is the favor with which the good and gifted entertain a useless practice, that feeds and swells an enthralling habit. Boys see those high in age and rank above them use tobacco, and before their own powers of discrimination are developed they have acquired a taste for the unwholesome and unpleasant narcotic which it takes years to overlive.

It is not to the worn slaves of habit that the anti-tobacco laborers in this country look particularly, solicitously, and hopefully. It is to the growing youth, the dear boys, the great and gifted men that are to be. To them the American Anti-Tobacco Pledge calls—come! let us band together for purity! Let us lead better lives, and become a more vigorous and refined race! It is the youth who have answered this call, and their friends ever near with cordial support, who ring out emphatically, No, sir! The reform is not a thing of the past. It and we are of the present and of the future.

MRS. S. L. OBERHOLTZER.

* The principal narcotics in use in various quarters of the globe: Alcohol, Opium, Tobacco, Chloral, Absinthe, Haschisch, Cocoa Leaf, Betel Nut, Intoxicating Fungus, and Kava.

NOTES IN SCIENCE AND AGRICULTURE.

The Forests and the Rivers.—"It is clearly the duty of the Government," says *The Nation*, "to preserve in every way the great rivers of the country.' It can not be done if the forests which 'guard the flow of great rivers such as head among the Adirondacks or the Sierras of California, the Alleghanies, or the Rocky Mountains,' are destroyed. The forests of Michigan or Louisiana may be exterminated, as have been those of New England, without seriously affecting the nation as a nation, but if the forests which protect the sources of the great rivers are cut down, the disturbance would be widespread, and the nation in its lives and property seriously affected. It is suggested, therefore, that the Government set aside the mountain regions in which the great streams have their source—the Missouri, the Columbia, and the Saskatchewan, for instance—as a forest preserve. The suggestion is an important one, and worthy of serious thought. The nation is worse than dull, it is criminally foolish, if it allows the experience of Egypt, of France, nay, of portions of its own territory, to go unheeded. The work of destruction as commonly prosecuted is a wanton disregard of economy, and on that score demands the attention of authority; and we trust the time is not far distant when there will be in Congress a body of men whose patriotism will laugh at partisan selfishness; when the education of a people and the prosperity of States will be questions of far more

moment than who shall hold a gavel or head a bureau."

Classes of Marble.—An American correspondent now in Italy gives the following account of the different qualities of marble: "Marbles are generally divided into three classes—the *brecciati*, the *bardigli*, and the *bianchi*. The first, as its name implies, seems to be composed of a mass of small stones, and is much used for ornaments; the second is white, with dark blue streaks; while the third is a white, spotless species, and therefore of the greatest value and importance. White marble for statuary purposes, indicated to the miner by a covering of schist which is called *madre*, is of many varieties, that from Monte Crestola being the most beautiful. Its flesh-colored tints, fine crystallization, freedom from impurities, and size, make this marble invaluable to artists. In the hands of Michael Angelo, Canova, and Tenerani, this was the species of marble which was converted into such divine forms of grace and beauty. The Polvaccio is the quarry which supplies the largest monoliths, some of them measuring sixteen cubic metres. It was from this quarry the material came out of which arose the 'David' of Buonarotti and the 'Wellington' of Canova. Some of the masterpieces of Canova, Tenerani, and Vela are made of *bianco chiaro*, which is well adapted for colossal monuments. On the banks of the Carrione are forty-two sawing establishments, provided with appropriate machinery; while in the town of Carrara are 145 workshops, with 500 men. About 3,000 persons, men, women, and children, are occupied at the quarries. The blasting at the quarries is the cause of many deaths yearly. Charges of pounds of powder are sometimes inserted at a depth of sixty feet, and the effects of the explosion are terrific. A horn is blown to give notice, when the men around take refuge in openings prepared for them in the rocks, masses of stone passing over their heads and falling at great distances. Not infrequently, however, masses of rock roll down unexpectedly and cause the death of passers-by. Bells used to ring on these occasions, calling to prayer for the dead and dying at the quarries; but the frequency with which this occurred produced such terror among the work-people that the tolling had to be stopped."

Analysis of American Wheat.—At the recent meeting of the American Association for the Advancement of Science at Minneapolis, Minn., a paper was presented by Prof. Clifford Richardson, first chemical assistant in the Department of Agriculture, on the "Composition of American Wheat and Corn," from which the following facts and tables are obtained: During the past ten years more than 200 analyses of wheat, and 100 of corn have been made of specimens sent to the department. These were generally carefully selected and their average is probably high; but some of them were extremely poor. The averages are all of American wheats, most of them winter varieties, and were taken, first, from all the known analyses made; second, from the remainder, after omitting incomplete analyses; third, from the remainder after excluding the exceptionally rich wheats of Colorado. Comparisons were also made with several averages taken from foreign reports. While our wheats are but a trifle lighter than the foreign wheats, they contain less water, about the same amount of ash, more oil, less fiber, and less albumen.

The following table gives the limits of variations:

	Lowest.	Highest.	Variation.
Water	6.05	13.52	6.47
Ash	.80	2.98	2.18
Oil	1.39	3.93	2.54
Starch, etc.	67.94	78.94	11.00
Fiber	.44	2.76	2.32
Albumen	8.05	17.15	9.10

The extremes of the albuminoid tests give less than in foreign wheats. The smaller amount of water is supposed to be due to the conditions of gathering and preparing the grain for analysis. The quantity of ash is greater only in Colorado wheat, due to a rich mineral soil; while the decrease of albumen seems to be followed by a decrease of fiber. The wheats of the Atlantic coast are the most deficient in albumen, and smallest in size. The wheats of New York and Vermont are larger, but though highly cultivated, are deficient in nitrogen. The Virginia wheats are extremely light in weight, but have rather more albumen, while those of Maryland are the best of that section.

The following table gives the average percentages of albuminoids in the wheats of the world:

COUNTRIES.	Per Cent. of Nitrogen.	Per Cent. of Albumen.	Highest Albumen.	Lowest Albumen.	Weight of 100 Kernels.
Russia	3.12	19.48	24.56	10.68	.....
Russia	2.34	14.63	16.56	14.24	3.610
N. Germany	2.24	14.00	18.26	9.80	4.498
S. Germany	2.17	13.56	17.76	10.21	4.485
Germany	2.11	13.19	.....	.....	.....
Germany	2.08	13.00	.....	.....	.....
Spain	2.10	13.13	15.29	11.26	4.270
France	2.08	13.00	.....	.....	.....
Scotland	2.01	12.56	.....	.....	4.680
Australia	1.60	10.00	.....	.....	.....
Egypt	1.47	9.19	9.92	8.75	5.540
America	1.92	12.00	17.15	8.05	.....
Amer. excl. Col.	1.86	11.62	16.63	8.05	3.532
Colorado, 1881	2.14	13.40	15.94	11.19	4.833
Colorado, 1882	2.09	13.06	14.88	11.55	4.299
Minnesota	2.05	12.79	17.15	10.85	1.354
Michigan	1.92	12.00	14.47	9.13	4.116
Missouri	1.83	11.44	12.44	10.50	3.502
Oregon	1.48	9.17	10.63	8.05	4.800
Atlantic States	1.79	11.18	14.00	8.03	3.057
Pennsylvania	1.80	11.25	12.78	9.45	3.211
N. Carolina	1.67	10.46	12.43	8.93	3.782
Alabama	1.82	11.32	13.65	9.80	3.137

The averages given of nitrogen are included with the albumen, and are of practical interest simply to the chemist.

The wheats of Kentucky, Tennessee, and Missouri are larger in size and slightly better than those of the Atlantic States. The wheats of Colorado, Minnesota, and Dakota are as rich in nitrogen as could be desired. In Oregon the size of the wheat is good, but the quality of the albuminoids falls to the lowest point, and yet in yield and size of grain it nearly equals that of Colorado. The percentage of albuminoids in the latter is 14.18 against 10.63 per cent. in that of Oregon, a fact as yet unexplained.

To Cure Gapes.—An almost certain cure for gapes in chicks is the following: Place the chick in the bottom of a two-gallon jar, or some similar vessel, and cover the top tightly with a piece of coarse cloth, thin enough to permit the sifting of lime. Place a handful of air-slaked lime on the cloth, and by sharply drumming with the finger cause it to sift through upon the chick in a dense cloud. The direct effect of the lime is to cause sneezing, which act dislodges the cause of the trouble, the worms that accumulate in the throat and are so hard to get rid of. The substance coughed up must by all means be removed from all possibility of doing further harm. Bury or burn it.

This remedy is simple, harmless, and effective. There is some danger, of course, of suffocating the chicken, but a very little experience will teach one how much lime a gaping chicken will survive. Don't push horse-hairs down the little sufferer's throat and run the risk of pushing the gape-worms too, when with a little assistance nature will cure the disease and without pain.

Belgian Industry.—"The little country of Belgium," says a writer in one of our New York dailies, "has 480 persons to the square mile, or three to every four acres. That is, four acres are made to support three persons. If the United States were equally crowded the population would be 1,650,000,000, or more than the population of the whole world. One acre perfectly well cultivated can easily support one person. It is possible to produce sixty bushels of wheat on one acre, and this is equivalent to the whole support of at least two persons. It is simply a matter of cultivation and management. Belgium shows what can be done. And it is well done, for we do not hear of distress in that busy country, nor of 'assisted passages' of paupers, nor of a rush of dissatisfied Belgians crowding hither to better their condition. It shows that high farming and excellent cultivation of the soil is profitable."

English Psychologists.—Dr. W. B. Carpenter may be regarded as *primus inter pares*. From him I have gained valuable facts during my present visit. But there are other conspicuous students and writers on Psychology. The widespread interest in this department of science led to the formation of the London "Society for Psychical Research," in February, 1882. About 250 thoughtful, influential men among the literary classes, including the nobility and clergy, are members. They aim to foster the spirit of serious inquiry, and to eliminate every possible element of charlatanism from the experiments instituted, so that the interests of truth and morality may no longer suffer at the hands of unprincipled men. Secretary Bennett, 14 Dean's Yard, Westminster, London, S. W., will gladly receive books, data, or information bearing upon the whole subject of mental phenomena.

The July number of the proceedings of this Society has an elaborate report on "Thought Transference," or mind-reading, prepared by Prof. Barrett, of the Royal College of Science, Dublin, and others of a committee. Twenty-one pages are given to fac-similes of drawings by G. A. Smith, who visualized what Mr. Blackburn saw, and put it on paper with astonishing accuracy, fifty-eight times out of seventy-five trials, on one occasion. This is the mode. Smith is carefully blindfolded and furnished with paper and pencil. In another room a committee man draws a diagram and holds it before the eyes of Blackburn long enough for a vivid mental picture to be made. B. closes his eyes, to keep the figure in memory. He is led into the room where Smith and his watcher sit. Every chance at collusion is anticipated, such as touching Smith, coughing, shuffling the feet, or any auditory signs. On one occasion the ears of the writer were filled with putty, his head covered with a bolster, and then a blanket enveloped the entire head and trunk. The drawing of the half-smothered man was one of his best.

Now, how is it done? That is the conundrum. We give it up. The committee do not venture a hypothesis. They are after *facts*. They propose to sift facts. Plainly, Blackburn is honest. He has again and again come from Brighton, sixty miles, to meet the committee, without remuneration and at personal inconvenience. People who study science at their own charges are more trustworthy than paid mediums. There were no mirrors and no other visible helps, but all was conducted by an eager, watchful committee in their own room, and in the midst of perfect silence. The writer showed no tentative, hesitating movements, as one waiting for signals, but worked deliberately and continuously, as if copying what was really in his own mind. In four out of thirty-seven instances B. was allowed to touch S. In the others no contact was had, but the men were kept apart. In four cases S. saw nothing. In four, dimly. In all the rest he was successful. Further facts will be noticed in another article.

Prof. E. P. THWING, PH.D.,
of Brooklyn.

London, *August*, 1883.

A New Material for Casts and MODELS.—In the *British Medical Journal* Dr. Anthony Bowlby thus describes his process. The articles used are: Swinburne's prepared gelatine, 8 oz.; French chalk, 14 oz.; honey, 26 fl. oz.; glycerine, 6 fl. oz.; that is, the proportion of 1 part gelatine, 1¾ French chalk, 3¼ honey, ¾ glycerine. "Prepare a coloring solution; rub down half a drachm of carmine in half an ounce of water; to this add two and a half ounces of glycerine, and keep in a stoppered bottle; shake the mixture before use.

"The French chalk should be perfectly white, and the honey of as light a color as possible ('Thurber's Strained California Honey' and 'Narbonne Honey' are the best). The cost of these materials will be about 7*s*.

"The implements required are two large china pudding dishes, and two saucepans large enough to contain the same. Put all the gelatine into one of the dishes, and add plenty of cold water. Leave it to soak exactly half an hour. While the gelatine is soaking weigh out the French chalk into the other dish, and add the glycerine. Stand the pots containing the honey in some hot water till it is fluid enough to pour, then add it to the mixture of chalk and glycerine. Mix all well together, and place the dish containing the mixture in a saucepan of boiling water; let it get nearly to boiling heat, and keep on stirring it gently.

"To this mixture must now be added the coloring solution, sixty minims of which will make a good flesh color. When the gelatine has finished soaking, turn it out into a clean cloth, and wring out every drop of superfluous water; put it back in the dish, and place the latter in a saucepan of boiling water, over a fire or gas jet.

"As soon as the gelatine begins to dissolve around the edges of the dish, pour over it all the hot mixture of French chalk, etc., and keep on stirring for fifteen or twenty minutes, over the fire, till the whole is thoroughly homogeneous; then remove the dish, allow the liquid to cool to about the consistency of treacle, and pour it into the mould. It is better not to use the freshly prepared material for casts, but to pour it out into flat dishes, and, after it has set, keep it for a week or two before using, when it may be readily melted by putting the dish containing it into a pan of boiling water. Should the material have been kept very long, it may be necessary to add a very little water, to facilitate the melting. Considering that it takes some time to set at the temperature of the body, it is not advisable to use the material for taking the mould, for plaster of Paris is in every way better. Moulds made of the latter material should be well dried and oiled, after which they should be painted with spirit varnish, and again oiled, before use. The cost of the material is slight, and the time occupied in making a considerable quantity is about one hour, or rather more.

"Casts thus prepared present a very great resemblance to human flesh, both in color, texture, and translucency. They are very easily painted, and form an admirable groundwork for the depiction of skin diseases. As to their durability, I can not speak with certainty, having none which have been made more than ten months. It is very necessary to keep them in a dry place."

How Annealing Makes Metals, ETC., PLIANT.—The annealing of wire, glass, and other substances renders them soft, more ductile, and less brittle. A substance is annealed by simply heating it, and allowing it to cool gradually. Recent experiments have resulted in the conclusion that the heating results in a kind of rupturing or cracking open, and in seeking an explanation of this, it is thought that in bringing the substance—take wire for illustration—suddenly to a white heat, the air held both physically and mechanically in the wire is expanded and exploded, tearing its way out and leaving fissures and cracks all over the surface. These fissures are plainly visible, and assume the torn and ragged appearance that might come from such explosions of the contained air. The wire, before stiff, is now soft and yielding, simply because it is cracked and bends readily at every break on its surface. To illustrate this we have only to paint a sheet of paper with a gum-like dextrine or even mucilage. When the paper is stiffened draw it over a sharp edge and crack the gum, and the paper will bend freely in every direction. Here the cracks are visible, and it is easy to see that they allow the gum to bend. It may, from this, be seen that annealing is a rupturing or cracking of a substance, and that its softness and pliability result from the free play given by the cracks.

Disappearance of a Lake.—Red Fish Lake above Sawtooth City on the summit of the Sawtooth range of mountains, in the Wood River region, Idaho, has dropped through the bottom. The lake had an area of several miles, and was many fathoms in depth. It was on the summit of one of the peaks of the range, some 11,000 feet elevation above the sea, and surrounded by heavy timber, which rendered it a delightful place of resort in summer for camping, fishing, and boating parties. The lake has been there since the white man has known the country, but lately—the day of the occurrence is not known—the bottom fell out. The country formation is granite and limestone, and an immense fissure has opened, whether caused by separation or settling of the earth's surface or from volcanic action is not known. At present the bed of the lake is dry, and presents the appearance of a deep gorge or valley on the summit of the mountains. This lake has always contained millions of red fish, and been a favorite resort for bear, deer, and other game. Where the fish went to is as much a mystery as where the water went. —*Hailey Times.*

CHARLOTTE FOWLER WELLS, *Proprietor.*
H. S. DRAYTON, A.M., M.D., *Editor.*
NELSON SIZER, *Associate Editor.*

NEW YORK,
NOVEMBER, 1883.

THE "NEW" EDUCATION.

THERE is an important stirrance in educational matters. New ideas have been advanced in teachers' conventions, in school organs, with reference to methods of training, ideas so revolutionary in their nature that two parties have been formed among educators: the defenders of the old, and the advocates of the "new" education.

These "new" ideas are credited by American educators largely to Pestalozzi for their origin, and to the enterprise of the man who started the celebrated experimental school at Quincy, Massachusetts, for their trial in what may be called the scientific or natural manner. The application of these "new" ideas to State education, or in the public schools, is of course the grand object. Now, when we come to examine the characteristic differences between the old and new methods, it will be seen by the candid reader that the latter only keeps its ground by conservative sufferance. Let any one examine the system in common use, and he will soon discover that it is simply organized routine. Teachers in the several departments are required to give and hear lessons in certain text-books, and their classes are expected to advance a certain number of pages in those text-books in a certain time, and having done so and kept up to grade, the class is promoted to the next higher department. The process of teaching is a mechanical one, not more than one in a hundred of the public school teachers, as they average, feeling it to be a high and animating employment, because they are subject to restrictions which are by no means conducive to their inspiration. One who is new to the school-room may enter it with views of personal duty and responsibility, and for a time endeavor to impress his pupils with a lively interest in their studies, but ere long his ambition is suppressed by the "regulations," and he settles down to a tedious following of the old routine of manufacturing so many reciters of so many pages in history, grammar, geography, arithmetic, etc. It seems incredible that in this era of light the mediæval notion survives that the child's mind is but a sheet of white paper on which may be written what the parent or teacher wills, and survives as the fundamental principle in so important a sphere as public education.

Pestalozzi and Gall were nearly contemporary, the former being born but ten years or so before the latter, and as the principles of the great Swiss teacher set forth the importance of understanding a child's nature, and adapting the method of training to the individuality of the subject, are we not warranted in believing that a similar inspiration directed his observations as that which animated the studies of the great physiologist? Verbal teaching, Pestalozzi claimed, would be of little value unless it were implanted on

previous mental experiences, and verified by the senses. Gall insisted that the successful teacher was he who studied his pupil's organization, and learned the strong and weak points of his intellect and character, and encouraged him in the manifestation of special talent. Pestalozzi and Gall, each in his sphere was an exponent of the "new" education.

Later we have the evolution of the Kindergarten as representative of the teachings of Pestalozzi, but which we regard as scarcely broad enough in its comprehension of those teachings. Of the Gallian philosophy of mind-training we have George Combe in Scotland and Horace Mann in America, each earnestly advocating the necessity of taking into account individual capacity for the formulation of a true and scientific system of education. Such an education does not mean filling the juvenile memory with dates and names, technical terms, classical paradigms, and mathematical formulæ, but first imparting freshness and vigor to its activity by sound health, and then guiding it in the absorption of those facts and ideas from the world around it which are useful in the practical work of life.

The new education, as we understand it, aims to make a young man something more than imitator, or a passive routinist, to quicken his perception, to give him power to think for himself, to make books but the assistants of his eye and hand, and thus to store his mind with useful knowledge, not mere information or shining, yet impracticable, accomplishments. A late writer says that the old education "is devoted to the communication of accumulated knowledge. The new sets pupils to the task of rediscovery. Preceding generations have left behind vast treasures of accumulated knowledge which must be accepted as an inheritance, and not acquired by the endless toil of rediscovery; but there is also new knowledge to be acquired by original discovery; addition must be made to the capital that has been received as a legacy."

Herein we catch a suggestion of the nature of the conflict which has lately assumed a definite form, between the friends of classical study and the advocates of scientific culture; the former in their conservatism may be considered on the side of the old education, while the latter in their preference for that which has a living relation to the present may be considered supporters of the "new" education, as they would have the youth give his attention to those things which exercise his practical faculties, and thus give him some familiarity with the very objects with which in his manhood he will be required to deal.

The new education does not propose, so far as we know, to provide special training in accordance with special organization: but in the future evolution of the idea that must be included. If it make the culture of the observing faculties the basis of education, and formation of character or discipline a chief element, as is claimed, then it must associate as an indispensable requisite to success, ability on the part of the teacher to read the character of the pupil, and to apply his teaching in accordance with the laws of mental development.

We hold that the "new education" is an outcome of intellectual progress, largely due to the dissemination of phrenological doctrine, and that its introduction into popular education will bring about a much healthier condition than now exists by stimulating the teacher as well

as the pupil in studies of mutual interest, by unfolding the book of nature, with its exhaustless fund of attractive objects, rather than the text-book, with its dry detail of rules and dogmatic assertions.

ARE YOU COURAGEOUS?

WHAT a surfeit of evil exists in society! On all sides we behold it working, gnawing, festering, corrupting. In a thousand forms it presents itself; sometimes requiring a close scrutiny, and a clear, moral vision to detect its true character, so insidious can the Protean monster operate, and so attractive may be his disguise. Do you know, reader, that most of this evil is permitted to flourish because of the lack of courage on the part of its victims, and of those who are ready to cry, "How long, O Lord, how long!" to meet it and repel its advance? Yes, it is owing to phases of weakness of which the majority of men and women in the community are guilty.

You are surprised, reader, and demand indignantly, "Am I included in the black list?" At the risk of being deemed insulting we answer, "Quite likely." You may possess a good endowment of Combativeness, and may be as bold as a lion in certain cases of personal injury, but is your Combativeness so active that it can not endure the sight of wrong inflicted upon others by the brutal and strong, and generously enters the lists in their defence? Is it so strong that it helps you to be cheerful and sunny-tempered even though you are poor, and compelled to perform duties the world sneers at? Does it brace you up so that you can deliberately reject gifts and overtures which will add to the money in your pocket, or raise you in popular estimation while they mar your integrity and reproach you for dishonesty?

Does it give you the courage to say No to your friend when he asks you to do that which wisdom can not approve, even though your declination will deprive you of his future association, and many privileges which he has brought to you?

Has it given you the strength to acknowledge your ignorance when inquiries have been made of you concerning matters of which you know little; and have you been prompt to acknowledge mistakes when you have discovered them?

Have you had the courage to point out another's error when you know that by its commission he may suffer much in mind and estate; or have you turned away from him with the selfish reflection, "It is none of my business," urging its pseudo logic against the promptings of your conscientiousness?

Have you had the courage to show your respect for honesty and capability, although they might be dressed in seedy garments? and have you shown, on the other hand, your dislike for dishonesty greed, duplicity, and ignorance, by avoiding their contact although clad in broadcloth, and surrounded with the paraphernalia of wealth?

Have you been strong enough to do your duty as a neighbor, brother, husband, father, to be what you are in place and fortune?

If you have done all these things, we will say that you are strong and bold, and that the evil around you has not found an abettor in you? But if you have failed in most of them must we not accuse you of helping directly or indirectly the spread

of vice and wickedness, however powerful they may be? The element of courage is made weakness by its employment in mean and disreputable courses; the robber and bruiser may show its extreme physical side in acts of lawlessness and brutality, but they are really most weak, since their conduct is wanting altogether in the high-souled manliness that scorns wrong, and stands firmly on the vantage ground of personal integrity. Evil can not make headway against true courage, because that is the expression of an earest spirit which seeks to benefit others as well as itself, and opposes all wrong, fortified with the conviction that in developing the principles of order, knowledge, and humanity, it finds its highest and happiest growth.

SENSE OF DIRECTION IN ANIMALS.

"THE remarkable faculty which cats, dogs, pigeons, and other animals possess, of returning in a straight line to a point of departure, has awakened much curiosity on the part of naturalists. Some refer it to instinct, some to intelligence similar to that of man, some to an internal mechanism which makes the animals simply automata; but none of these attempted explanations does anything toward solving the mystery. Wallace supposes that when an animal is carried to a great distance in a basket, its flight makes it very attentive to the different odors which it encounters upon the way, and that the return of these odors, in inverse order, furnishes the needful guide. Toussenel supposes that the birds recognize the north as the cold quarter, the south as the warm, the east (in France) as the dry, and the west as the moist. Recently Viguier has published, in the *Revue Philosophique*, an original memoir upon the sense of orientation and its organs, in which he attributes the faculty to a perception of magnetic currents."

The above is quoted from an exchange, and represents different phases of late scientific speculation in an accepted power in animals. We claim of course that the perception of direction or locality is an intellectual instinct related to its proper organ in the brain, and that it is established by irrefragable proofs. In the man distinguished for his ability to travel from place to place without making mistakes; in the scout who will follow a trail through the wilderness; in the adventurer who is restless Stanley-like unless off on a voyage of discovery; in the proficient naturalist; in the alert and accurate letter-carrier, or express driver, the organ of Locality is always large, and one of the most easily determined of the frontal developments. So is it with reference to animals and birds. In the pointer the head is larger in the region of this instinct than it is in the foxhound or greyhound. In the homing or carrier pigeon a considerable bulge is noticeable at that part of the head just over the eyes, and the development is seen also in swift-flying birds generally. We never saw a good sea-captain who did not possess large Locality. A recognition of the organ and function of Locality will solve all the mystery which this faculty possesses to the naturalists, just as the acceptance of a cerebral organ for language has enabled the physiologists to find port after sailing for years hither and thither on a sea of vain and unnecessary speculation.

THE INSTITUTE.—The session of the Phrenological Institute opened auspiciously on the 2d of October, according to announcement. A full average of students occupied the body of the lecture room, and were addressed by the Vice-President, Secretary, and Prof. L. N. Fowler, and Mrs. C. F. Wells. Since the opening new admissions have been made. Before the session closes there will be a short course of public lectures delivered in Cooper Institute.

Our Mentorial Bureau.

To Our Correspondents.

QUESTIONS OF "GENERAL INTEREST" ONLY *will be answered in this department. But one question at a time, and that clearly stated, must be propounded, if a correspondent shall expect us to give him the benefit of an early consideration.*

IF AN INQUIRY FAIL TO RECEIVE ATTENTION *within two months, the correspondent should repeat it; if not then published, the inquirer may conclude that an answer is withheld, for good reasons, by the editor.*

TO OUR CONTRIBUTORS.—It will greatly *aid the editor, and facilitate the work of the printer, if our contributors generally should observe the following rules when writing articles or communications intended for publication:*

1. *Write on one side of the sheet only. It is often necessary to cut the page into "takes" for compositors, and this can not be done when both sides are written upon.*
2. *Write clearly and distinctly, being particularly careful in the matter of proper names and quotations.*
3. *Don't write in a small hand, or in pencil, as the compositor has to read it across his case, a distance of nearly two feet, and the editor often wants to make changes and additions.*
4. *Never roll your manuscript or paste the sheets together. Sheets about "Commercial note" size are the most satisfactory to editor and compositor.*
5. *Be brief. People don't like to read long stories. A two-column article is read by four times as many people as one of double that length.*
6. *Always write your full name and address plainly at the end of your letter. If you use a pseudonym or initials, write your full name and address below it.*

WE CAN NOT UNDERTAKE TO RETURN UNavailable *contributions unless the necessary postage is provided by the writers.* IN ALL CASES, *persons who communicate with us through the post-office should, if they expect a reply, inclose the return postage, or what is better, a prepaid envelope, with their full address. Personal matters will be considered by the editor if this is done. Anonymous letters will not be considered.*

STOMACH-TROUBLE.—H. H. W.—*Question:* I have seen somewhere in the JOURNAL a remedy for sick stomach. Can you tell me when it was, or can you give me any light on the subject?

Answer: What is the nature of the sickness? If it be due to dyspepsia, you may need to follow a course of treatment. If it be only nausea, or temporary disturbance following meals, you should change your diet, and study to adapt to your constitution such articles as will not disturb. You may over-eat, or eat at improper times, and so be a sufferer from your own imprudence.

MID-DAY NAP.—H. MCC.—To a person of weak organization a little sleep in the middle of the day is beneficial. If taken after dinner it should not follow the meal immediately. It were better to adopt a late dinner hour, say three o'clock, and take the nap before eating. A debilitated nervous system will generally be benefited by such a practice.

A GOOD READER.—M. P. G.—A fair intellectual development with good lungs and a good voice, will be a sufficient basis for one who desires to become skillful as a reader. Careful practice, daily, should be the rule, in accordance with the requirements of a teacher, or a well-chosen text-book.

WEARS THE TOES OFF.—P. H. F.—You say that the man has a "canting-to-the-right-and-left sort of walk," from which we infer that during the contact of the foot with the ground, he gives it a twist or grinding motion, the obvious result of which would be to wear off his boots rapidly at the parts where the most pressure is exerted. We have seen people who, in walking, give the body a quick, nervous thrust forward just about the time the foot is raised, while the toe rests upon the ground. This peculiarity tends to wear off the leather at the toe rapidly. Many people strike the point of the heel first in walking, and soon run it down through the hard leather lifts.

EYEBROWS AND SELF-ESTEEM.—*Question:* In persons in whom Self-esteem is largely developed (giving the head a high crown), the eyebrows generally slope downward at the inner ends, as poorly represented in the following drawing. Is this the physiognomical sign of Self-esteem? J. H. W.

Answer: We are not aware that such eyebrows are to be taken as indicative of self-esteem. They usually accompany a prominent development of the supraorbital ridges, the bony mar-

gin of the brain-pan overhanging the eye. If the person have very large Locality and Weight, there is a roundness or curvature imparted to the form of the parts immediately above the inner angle of the eye, and the eyebrows will be arched. In the majority of cases, with Self-esteem large, the perceptive organs are strongly developed, and the eyebrows are arched more or less, as you describe, but they accompany the development rather than indicate it. We should rather be disposed to regard eyebrows inclining to directness of outline as an indication, in themselves, of self-esteem.

AUTHORITIES ON THE CORSET.—S.—These are very numerous. You will find one or more of them in every book treating on the diseases of women. For instance, in Shepherd's "Special Physiology for Girls," Jewett's "Ways of Women," Kellogg's "Ladies' Guide," and that excellent little volume, published not long ago in the interest of reform, called "How to Dress."

SMALL SELF-ESTEEM AND THE HEAD.—C. C. A.—It does not follow that because there is a depression in the line of the head a little backward of the crown, that Self-esteem is to be considered small, as the depression may be due to the cranial structure. It not unfrequently happens that the edges of the occipital and parietal bones, which meet near there, turn inward in growing, and produce the appearance of hollowness. Yet if Self-esteem be large, and its tendency of development be toward the organs of the social nature, it will be shown by a fullness at the posterior part of the crown; and if there be a cranial depression where the occipital and parietal edges meet, there will be below this point an appearance of flatness, or a rapid dropping downward of the head outline. In the majority of cases Self-esteem large inclines toward Firmness, so that there is a marked fullness of the crown.

What They Say.

Communications are invited on any topic of interest; the writer's personal views, and facts from his experience bearing on our subjects, being preferred.

A CASE OF HYDROCEPHALUS.—There is in Pathurah Ghat Lane, on the Chitpore road, in the city of Calcutta, a respectable Hindoo family of the middle class, of the weaver caste. I may here mention that the Hindoo community is divided into classes, according to caste; *i. e.*, the profession their forefathers followed in the olden days. This family, with the governor and governess at the head, consisted of four brothers and three sisters, of whom one brother, Romesh Chunder Dutt, is subject to hydrocephalus. On his birth the parents had no suspicion of his illness, on the contrary, they were delighted by being blessed with another son; and time rolled on until he attained the age of two months, when, to their great surprise, they began to observe that the child's head was increasing in bulk day by day. It is extraordinary that, whereas in a young child the fontanels, which are cartilaginous, and from the time of birth begin to contract, and are generally completely ossified and closed between the second and third years, in this case expanded until he was nearly seven years of age; and when the progress of the increment ceased, and the middle of the upper surface of the head forward of the anterior fontanel, where the organ of Veneration is located, lost its soft or pulpy state, and became as hard as any other part of the head. It is supposed that the illness commenced from his birth, and gradually developed chiefly about the forehead. The anxiety of the parents being great to see their son free from this terrible malady, they availed themselves of the best medical aid procurable in the city; and the doctors held a consultation, the result of which was that they one and all wanted to tap the head; but as the father was told that they could not guarantee the safety of the child, and the chances were ten to one that it might sink under the operation, he would not give his consent. He was then advised to bandage the head to prevent a further increase. The doctors predicted that the boy would not survive the age of seven years, but he is now about thirty-four years, and there were never any signs of mental disturbance noticed by his parents, nor is the young man an idiot in any sense of the word.

His constitution is healthy, and he seldom complains, except of the heaviness of the head. He is of a thin and slender make, dark complexion, and of a middle size. The appearance of the eye-balls is sunken in the socket, and with a downward tendency. The parietal bones have been forced out extremely by the water, which seems to have distended the middle and the posterior lobes of the brain particularly. His limbs are weak and meager, and his gait wavering and uncertain. He does not complain of headache, and drowsiness or convulsions were never noticed. Rainy, stormy, or changeable weather has no more effect on him than on other persons.

He can walk a considerable distance provided somebody accompanies him, as he feels afraid to venture out much on account of the great number of carriages which are plying in the streets to and fro. His diet is simple, and he does due justice to his meals. He sleeps well; goes to bed at about ten o'clock P.M., and rises very early in the morning, before daybreak, and

walks up and down the lane he lives in for about an hour. He is fond of playing with children, and keeps their company. He is not married, nor has he ever expressed a wish for conjugal felicity. When people speak to him about marriage he is cheery and jocose, but shows no partiality for woman's society. He takes care of his own clothes and other things, and keeps them in order.

His father tried to educate him, and with that view engaged the services of a tutor, but great difficulty was experienced in the undertaking. The boy could learn his lessons right enough and commit to memory, but the heaviness of his head was a great drawback, and to look down on his book caused him much pain, so that he was obliged to give up study. He can not read or write, but can readily commit to memory words and sentences either in his own or a foreign language, which may be recited to him.

I measured his head, and found the circumference to be thirty-one inches, and from ear to ear round the front, thirteen and a half inches, and from the root of the nose, backward over the top of the head to the occipital spine, seventeen and a half inches. R. B. DOSS.

89 *Chumamgully, Calcutta, March* 13, 1883.

WHY NOT?—In reading the article in a late JOURNAL signed H. Reynolds, M D., in regard to placing drunkards in asylums until reformed, and thus preventing by heredity their increase, I would ask would it not be wise to set a limit to the time temperate people should be taxed to support this class of persons in asylums? Give them one, two, or ten years to reform, surround them with every influence which shall tend to elevate and refine human nature during this time. If, after all this effort and the expenditure of treasure, they return to their degrading habits, make eunuchs of every one of them. As horrible as this seems, the effects of the excessive use of alcoholic beverages upon unborn millions of innocent children, are incomparably worse

In olden times the name eunuch was a synonym for office, and such persons it would seem were more to be trusted as chamberlains in the courts of Eastern monarchs than other persons. Far be it from me to favor the revival of such an old and heathenish custom, yet, during a practice of twenty-five years in medicine, and seeing so much suffering of innocent persons and of the (perhaps) insane victims, witnessing remorse such as no language can describe when returning to sobriety, and the multitude of diseases arising from the use of intoxicating drinks, I feel that the severest measures would be justified by posterity. MRS. E. G. COOK, M.D.

A YOUNG lady writes from Lunenburg Co., N. S.: "I am a subscriber to your valuable JOURNAL, and would not give it up for all the other journals in circulation, and I am going to try and induce some of my friends to become subscribers also. I am sure no one would ever regret taking such an interesting book, and it would prove a great benefit to them, if studied in the proper light, both morally and financially.

"A. S."

PERSONAL.

MRS. GILBERT HAVEN, mother of the late Bishop Haven, has in great part recovered from a paralytic shock, notwithstanding that she is in her ninety-sixth year.

MR. HUBERT HERKOMER says that America produces the best and grandest work in colored glass, so far as depth and harmony of color are concerned. And this Mr. Herkomer as an artist highly esteemed should know.

MR. SANDWITH, the British Consul in Crete, reports that the wine produced in that island last year was very much less than usual, while the quantity exported to France, "notoriously for the purpose of being manipulated and re-exported under the name of claret," is considerably in excess of that in the previous year. Think of that, ye claret-drinkers, who pride yourselves on using only the "imported" article!

THE late Tourguénieff, the distinguished Russian author, had a very large head; and when the University of Oxford, in 1879, conferred the honorary degree of Doctor of Civil Law upon him, the whole place was searched for a cap big enough for his head, and he was finally obliged to wear a "stove-pipe," an article never before seen in Oxford in company with a Doctor's gown. We are not told the size of his head.

MRS. ELIZA F. EDDY, of Boston, bequeathed different sums of money to relations, and directed that the remainder of the estate should go to Susan B. Anthony and Lucy Stone, to further what is called the "woman's rights cause." This provision was contested by her heirs, but has been declared valid by the Supreme Judicial Court of Massachusetts. The amount to be divided between the ladies is said to be about $64,000. A snug little trust.

THE late Dante Gabriel Rossetti expressed peculiar views concerning some modern novelists. Thackeray he could hardly bear the name of; George Eliot was vulgarity personified; Balzac was melodramatic in plot, conceited, wishy-washy, and dull. The one great and supreme man, the sole descendant of Shakespeare, was Alexander Dumas. How opinions will differ among the literary doctors. What is godlike to one may be very vulgarly human to another.

WISDOM.

"Think truly, and thy thought
Shall be a fruitful seed."

WORDS may be homely, but convey beautiful truths.

HOPE the best, get ready for the worst, and take what comes cheerfully.

THERE are too many persons who do not know how to waste their time alone, and so become the scourge of busy people.

THE time spent in reading books that do not make us think is worse than useless. But one good book may furnish food for a life-time.

HE who is false to the present duty breaks a thread in the loom, and will see the effect when the weaving of a life-time is unraveled.

THE man who is in the wrong generally uses hard words and soft arguments, while the man who is in the right uses soft words and hard arguments.

IF it is your purpose in life to make your face your fortune you must consider its keeping well, or it will turn out to be your misfortune.

THE best of lessons, for a good many people, would be to listen to a keyhole. It is a pity for such that the practice is dishonorable.—MADAME SWETCHINE.

HE who has pursued business in such a way as to have neglected all just mental culture, has sacrificed the end to the means. He has gained money and lost knowledge: he has gained splendor and lost accomplishment; gained tinsel and lost gold; gained an estate and lost an empire; gained the world and lost his soul!

MIRTH.

"A little nonsense now and then
Is relished by the wisest men."

WEATHER REPORT—A clap of thunder.

A LITTLE girl heard her mother say that her father ought to take whiskey to "keep him up." "Why," said the little one, "I thought whiskey made people fall down."

"WHEN a man kums to me for advice," says Josh Billings, "I find out the kind ov advice he wants, and I giv it to him; this satisfys him that he and I are two smart men."

AN exchange says: "The man who fails in business, but continues to live in luxury, is a thief." That editor will not succeed. He's too blunt in telling the truth!

AN author, who was eulogizing his own works as containing much "food for thought," was taken aback by the remark of a friend, "They may contain food for thought, but it is wretchedly cooked."

A SACRAMENTO dealer in hair-oil, who sold on the principle of "no cure, no pay," has sued one of his bald-headed customers, and the latter demands a bald-headed jury in order that he may be tried by his peers.

MAKER of musical instruments, cheerfully rubbing his hands: "There, thank goodness, the bass fiddle is finished at last!" After a pause: "*Ach Himmel*, if I haven't gone and left the glue-pot inside!"

A FASHIONABLE lady, at Saratoga, sent the following order to her milliner: "Deer Miss X——: Please get me tow yards Irish point lace, and also get me six pares of glubs sevens and a quarters, crushed-rose-berries colour. P. S.—Don't send the Bill; he only alouse me a certain summ and I will pay it myself."

ONE night Sandy told her that he "liket her awful wee." She simply responded, "ditto." Sandy was not very sure what that meant, so next day, while at work, he said: "Father, can you tell me what 'ditto' is?" "Ou, ay, Sandy," replied the father; "dae ye see that cabbage?" "Yes." "And dae ye see that ither one, that it's jist the same?" "Yes." "Whel, that's ditto." "Gracious goodness!" exclaimed Sandy; "did she ca' me a cabbage-head! I'll na hae her."

In this department we give short reviews of such NEW BOOKS *as publishers see fit to send us. In these reviews we seek to treat author and publisher satisfactorily and justly, and also to furnish our readers with such information as shall enable them to form an opinion of the desirability of any particular volume for personal use. It is our wish to notice the better class of books issuing from the press, and we invite publishers to favor us with their recent publications, especially those related in any way to mental and physiological science. We can usually supply any of those noticed.*

MYRON HOLLY, AND WHAT HE DID FOR LIBERTY AND TRUE RELIGION. 12mo, pp. 328. Price, $1.50. Printed for the author, Mr. Elizur Wright, at Boston.

This volume is a biographical memoir of a man who was born in the last quarter of the eighteenth century, and died in 1841, living somewhat beyond his sixtieth year, and passing through a period in our nation's history replete with political and social agitation. In the outward, advancing life of the people among whom he walked, he was earnestly active. As a busi-

ness man and legislator he advocated the great project of the Erie Canal, and performed a large part of the official duty in the prolonged negotiations which antedated the beginning of the work. He was warmly interested in the progress of horticulture in his State, and urged the planting of fruit trees in abundance. He was a strong opponent of Masonry, and a spirited member of the old Liberty party, laboring in behalf of anti-slavery principles with tongue and pen. The memorial is a panegyric as a whole, but not wholly without reason, as this Holly was one of Nature's noblemen.

SWORD AND PEN; or, Ventures and Adventures of Willard Glazier. By John Algernon Owens. 12mo, pp. 516. Published by Ziegler & Co., Philadelphia.

This is a neatly bound volume, and possesses attractive reading of the kind generally relished by the average youth thirsting for distinction on the field of battle or in hunting Indians and grizzly bears. In truth, the haps and mishaps of the hero are not greater than those which generally attend the youth and manhood of any active, adventurous spirit, of which this country, particularly in its recently opened sections, possesses so many. We accept unconditionally the statement that he was a brave soldier and good writer, and honor him accordingly; but some claims are made of geographical discoveries that seem to us, to say the least, slightly surprising.

THE OVERSHADOWING POWER OF GOD. A Synopsis of a New Philosophy concerning the Nature of the Soul of Man, its union with the animal soul, and its gradual creation through successive acts of overshadowing, and the insertion of shoots to its perfection in Jesus the Christ; with illustrations of the inner meaning of the Bible from the Hebrew roots; offering to the afflicted soul the way of freedom from inharmony and disease. By Horace Bowen, M.D. Transcribed in verse by Sheridan Walt. With chart and illustrations by M. W. Fairchild. 8vo, pp. 550. Price, $3. The New Life Publishing Company, Cold Spring, New York.

This, in many respects, is a remarkable book. It is individual in its character. By that, we mean the views and the general style of their presentation are the author's own evidently. Impressed that he has something to set forth in the nature of a discovery or reformation touching great mysteries of the religious and scientific world, he has published this book. The style is verse; we will not say that the character of the metre is the best, but the author has adopted rhyming measures, thinking doubtless that what he says would be better received by the average reader. He treats of the origin of man; why races differ; the nature of the redemption; the condition of the soul after death; spiritualism, etc. His experience as a physician gave him the inspiration or impulse toward the direct lines of thought and observation which are elaborated in the measures of his treatise. His experiences in his profession, too, have strongly characterized his manner in writing the book, as the chief object seems to be the indication and illustration of methods psychological or credal which he believes have far greater potency in healing the sick than any forms of drug medicament.

The book is handsomely printed and bound, with a large lithograph representing the development of the nations from Adam—in seven ages—and certain unique features of their civilization quite original with the author.

PUBLICATIONS RECEIVED.

JACK'S HORSESHOE; or, What the Waugroo Bitters Did, by Edward S. Ellis, is No. 9 in the "Fife and Drum" series, published by the National Temperance Society. It is a story of a young man who entertains ambitious views of life; would do well, but, being led astray by strong drink, does ill for a time. He is reclaimed through a young lady's influence, who subsequently becomes his wife. Later on he has a little boy of remarkable precocity, who seems to have inherited a leaning toward that which isn't good for him, as he acquires a taste for alcohol through a physician's prescription of Waugroo Bittors. However, in time he is rescued from the brink of ruin, and all is well. Price, 10 cents.

BEYOND THE SUNRISE. Observations by Two Travelers. pp. 237. Price, in paper, 50 cents, or 20 cents in Lovell's Library Series, which is the style before us. John W. Lovell Co., New York. The topics discussed in this volume are those three interesting ones, Psychology, Clairvoyance, and Philosophy. The two writers make it certainly attractive reading. Many of their own personal experiences and investigations are related, which have elements of the romantic as well as mystic. We think the book has an honest intention, and is not published merely as a commercial experiment.

THE BAD BOY ABROAD. By Walter T. Grey. Price, 25 cents. J. S. Ogilvie & Co., New York. This bad boy is a most astonishing whelp. We wonder that he survives many of his antics; but we take it that his survival is an illustration of the well-known doctrine of "The survival of the fittest," urged by a late eminent scientist. Hence we expect something wonderful from the future of this boy—in the way of greater badness.

DRIFT, from the Shores of the Hereafter. By George Eliot, transcribed by Amaranth. Price, 25 cents. H. B. Cochrane, Philadelphia, publisher. Here we have some hypothetical communications from the late great writer, through

a spiritualistic medium. There is some likeness to the philosophy of the writer of "Middlemarch" and "Daniel Deronda" in these paragraphs, but a good deal of the matter seems to us rather thin and far-fetched when tried by rules of logic and experience.

RECENT WONDERS IN ELECTRICITY, Electric Lighting, Magnetism, Telegraphy, Telephony, etc., including articles by Dr. Siemens, F.R.S., Count du Moncel, and Prof. Thomson. Edited by Henry Grear. Illus., 8vo, pp. 168, $2. This volume is a digest of recent accomplishments in electrical investigation and experiment, and useful to those especially who are interested in the subjects detailed in the title, as a convenient book of reference. The author has given it a practical direction, as his topics are results rather than speculations. One who is not conversant with the scope of electrical investigation to-day will be impressed, in reading this book, of its wonderful possibilities in the future. There seems to be no limit to the scope of the mysterious agent in human affairs.

PROCEEDINGS OF THE AMERICAN ASSOCIATION for the Advancement of Science; 31st meeting, held at Montreal, Canada, August, 1882. Published by the Permanent Secretary, at Salem, Mass. We are indebted to the Secretary for the two bulky volumes in which the proceedings of last year's meetings are published in full. Glancing through the neatly printed pages, we are impressed by the importance of many of the papers to society at large, and are fully convinced that such meetings, where scientific men in every department of thought and study can meet and relate their latest accomplishments, have a growing value in our civilization. The section devoted to Anthropology does not cover many pages, but we are pleased to notice that there are indications of deep interest on the part of many prominent scientists in investigations related to the early history of mankind, and especially to the aboriginal history of our own country. This subject will grow—it must; and in time it will have, probably, the largest share in the consideration of annual meetings.

POPULAR SCIENCE MONTHLY, for October, contains several thought-inspiring articles, notably, Matter living and not living; Homœopathy as a science; this is an article written in the interest of the allopathic fraternity. A critic could find many points in it which might be converted to the account of the assailed school of medicine; notably, the paragraph at the bottom of page 734; a quotation, to be sure, nevertheless as forming part of the article, it is to be taken as the author's own dictum;) How the earth was peopled; The remedies of nature with regard to the alcohol habit; The colors of flowers.

HANNAH, One of the Strong Women. By Julia McNair Wright. 16mo, pp. 290. Price, $1. N. Y. National Temperance Society and Publication House. The story of a young woman who shows strength in doing and daring against that common foe to the peace of many, alcohol. She fights for the right, the true, and decent, even against the bias and prejudice of her friends; meets with success, as she ought to, in reforming some of her dearest friends. Mrs. Wright writes with her usual facility, and the argument she traces in her lively story is persuasive.

THE HOMILETIC MONTHLY for October begins the eighth volume, and with new cover and broader margins gives promise of improvement. The foreign pulpit is represented by Dr. Parker, Rev. Stopford A. Brooke and Rev. C. H. Spurgeon; while Dr. J. M. Buckley, Dr. Buttz, of Drew Seminary, Dr. Dobbs, Dr. Jeffrey and others, sustain the American pulpit.

WE are in receipt of current numbers of Harper's *Monthly* and *Weekly*, *The Century*, *Lippincott's Magazine*, *Wide Awake*, and *St. Nicholas*, each of these sustaining its high character as a representative of the advanced period in American literature and art.

NORTH AMERICAN REVIEW for September has sundry papers appropriate to the present state of thought, particularly in the line of politics; for instance: The State Regulation of Corporate Profits; Municipal Reform; Facts about the Caucus and the Primary. There is also an essay from the advanced side of free thought as represented by Mr. Mallock, entitled "Conversations of a Solitary."

THE CHAMPAGNE SONG, by Harrison Millard, price 40 cents, Spear & Dehnhoff, Publishers, is a pleasing composition so far as the music is concerned, but the words in their attempted eulogy of an intoxicating drink, we can not find acceptable.

BETTY'S BRIGHT IDEA is No. 10 of the "Fife and Drum Series," "Betty's Bright Idea, and other Stories," and written by Mrs. Harriet Beecher Stowe in an attractive style, and teaching the fundamental lesson of total abstinence and the power of Christian love as an unfailing dependence for the rescue of the victims of the drink appetite. Price, ten cents. J. N. Stearns, Publishing Agent, New York.

A PHYSICIAN'S SERMON TO YOUNG MEN, by William Pratt, Fellow of the Royal College of Surgeons, England, etc., is a valuable little treatise for our youth, instructing them with respect to their special physiology, and warning them against falling into practices destructive to body and soul. Price, 25 cts. M. L. Holbrook, New York.

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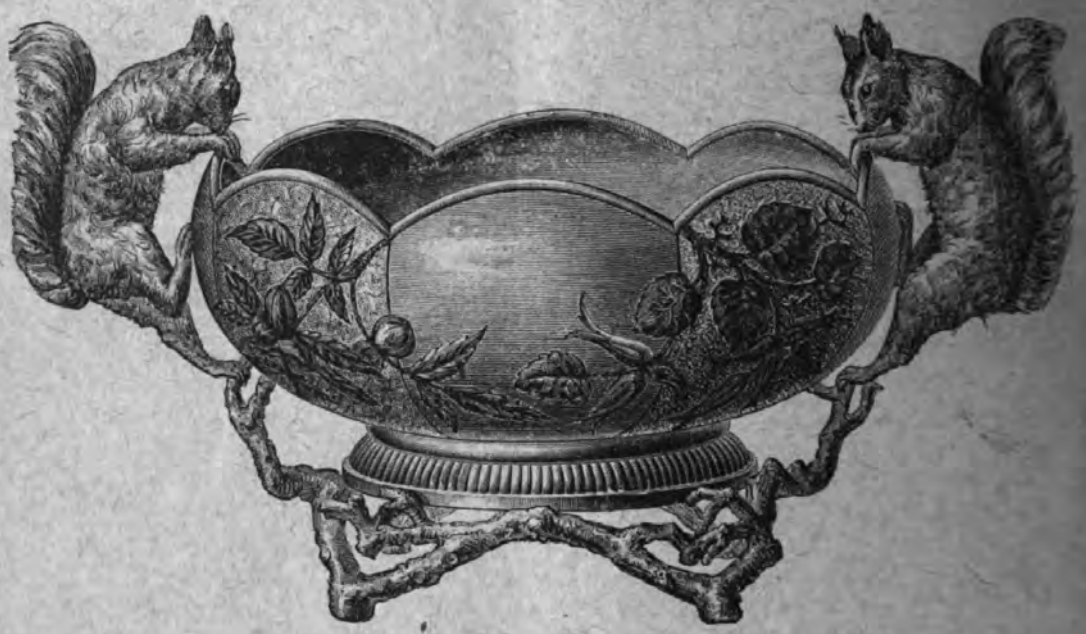

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1884

PREMIUM LIST.

1884

We present below a List of Articles offered as Premiums for Clubs to THE PHRENOLOGICAL JOURNAL AND SCIENCE OF HEALTH, and would call special attention to the very liberal offers and conditions given. The articles are all new and useful; the very best of their kind. Besides these, to each subscriber is given a splendid Premium.

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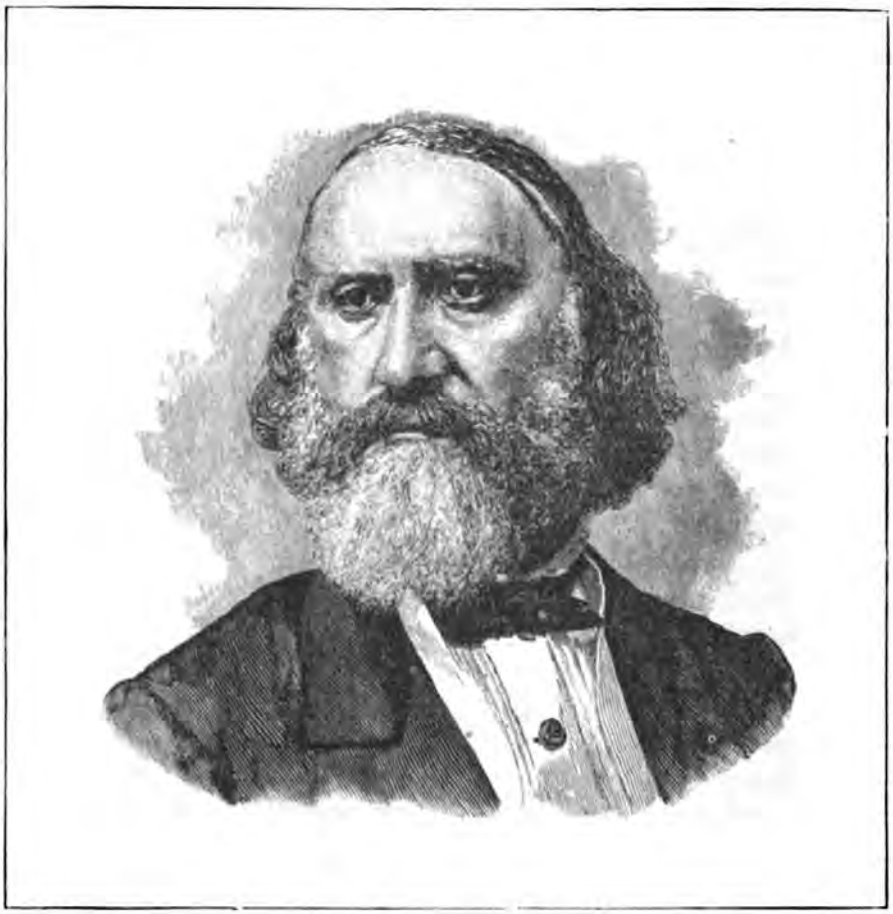

PROFESSOR NICHOLAS JOLY,

THE EMINENT FRENCH NATURALIST.

THE photograph of this gentleman indicates a high order of vital power and natural activity. He appears to have a strong hold on life, and probably came from a long-lived ancestry, possessing many very striking features of character. His own organization is so marked that it should give him such qualities of mind as would enable him to distinguish himself. He has not only great vital and

animal life, but has a strong muscular and osseous structure which favors power of endurance, tenacity of mind, and the kind of solidity which will bear testing. His nervous temperament being of a high order, indicates great activity of mind, giving him more susceptibility and intensity of mental action than spirit.

The perceptive faculties being large, give him a great range of observation, ability to acquire knowledge, a disposition to see things as they are, a fondness for facts and all classes of positive information.

He has about an equally developed power for literature or science. His scientific abilities are such as to give him unusual facilities for gathering knowledge by travel, observation, experiment, and experience; and he seldom forgets what he sees. He is particularly capable in analysis.

He has an intuitive cast of mind; is inclined to study metaphysics. He is not satisfied with hearsay, but prefers to see and hear for himself.

He has great power to reason by analogy, to criticise, discriminate, and to produce more complete affinities in chemical experiments than ordinary; but the tendency of his intellect is to reason, to reduce to practice, to apply knowledge, and to give instruction to others.

He has method, can organize and systematize. His remarks are sharp and to the point, personal and direct, and he can be witty and sarcastic. He is copious in speech, can tell what he knows in a clear, distinct manner. He has a very favorable faculty for a speaker and lecturer. His head being very high indicates sentiment, emotion, sympathy, tenderness of feeling, and general elevation of thought. He is quite free from those lower grades of mental action which most men possess.

He would not be at all satisfied to gratify his impulses merely, but he early learned to sympathize with others or with some kinds of study or labor that would benefit mankind.

He is respectful to superiors; gives each man his place, and should be inclined to a reverential if not worshipful life. He is inclined to be liberal in his theology, not sectarian in his beliefs. He is satisfied to keep his religion to himself and to let others think for themselves.

He should be known for having great force and energy of character, for taking hold resolutely, for persevering energetically, and he will not stop until his task is done.

If he should give way to temper, he would show it in an executive manner, for he is excitable, somewhat impulsive, and easily roused to action. He may have studied self-government, and have got control over himself, so that his better feelings have the ascendency in his mind; if so, he is decidedly genial, ardent and earnest in his nature, and capable of captivating others with whom he is in sympathy. He is naturally open and frank in disposition, and prefers to speak right out what he thinks and feels. He generally acts promptly. He is not wanting in some of the selfish feelings, but he looks upon property as a means of enjoyment, and prefers to enjoy with others rather than all alone, at the expense of others.

He is not timid or irresolute. His propelling powers are naturally stronger than the restraining qualities, hence he may sometimes be over-prompt in promising and thus get too much work on his hands.

When with friends he is capable of being social and companionable, as well as entertaining, but his natural inclinations lead him to study and investigation. He is thoroughly a child of nature, a worshiper of nature and of Nature's God. No class of knowledge comes amiss to him. He has power to apply information and to use it as the occasion requires.

Such a temperament, with such an ardent, earnest, industrious tone of mind, joined to such an available intellect, with such a sagacious memory, could not help but come forward in the front ranks in some sphere of life. L. N. FOWLER.

WHILE spending the summer of 1882 in the south of France, I met among other celebrities the eminent Prof. Joly. "There are some natures," says George Sand, "that develop of their own accord, wherever it chances fate to place them." No thought could better characterize the man of whom I am about to write. No noble titles or heraldic distinctions awaited him; on every hand honest labor and poverty marked his surroundings.

He was born July 11, 1812, at Toul in the department of the Meurthe. The hundred days of Napoleon in Paris, the defeat of Waterloo, and all the agitations of these eventful times, passed over the head of the infant without obscuring his intellect. The invasion of the Russians was at their gates; they took possession of the paternal house, and condemned the father to the knout; but the wife begged for mercy, and secured her husband's safety.

The child grew up in freedom, in the worship of nature, to which his poetical temperament responded. At a great sacrifice to themselves, his parents placed him in the town school, where he was educated with many of the distinguished men of to-day. "One of the most vivid remembrances of my childhood," says Dr. Joly, "was the sublime devotion of my mother's love. I had entered the College of Toul at a time of the year when my school companions were all greatly in advance of me. They knew the first elements of the Latin grammar sufficiently well to be able to translate short French phrases into Latin, while I, poor boy, hardly knew how to decline *dominus* or *rosa*. Nevertheless I was obliged to perform each day the exercise that our professor gave us for the next day. The labor involved was painful and profitless, for besides being ignorant of the most simple rules of Latin syntax, I did not know how to look out the words in my French and Latin dictionary. Daily witness of my perplexity and despair, my poor mother, who knew no more than I of the Latin language, took on herself the task of helping me look up the words. But however thorough and protracted the search, our success was haphazard. Together we often turned over all the leaves from A to Z, and considered it a wonderful chance when we found the word searched for. This slow process continued ofttimes until the rustic clock struck three in the morning, when having found perhaps a dozen words, we would go to bed to gain that needed rest, disturbed with fears of the reproaches and punishments the professor would be sure to inflict for my seeming negligence and stupidity. Alas! the cruel teacher was far from suspecting the arduous labor that the small results had cost us, nor did he dream of my mother's devotion in trying to aid me in presenting an exercise less incomplete.

"At last the professor threatened to expel me from the college as a scholar incapable of keeping up with the class, but my generous parents imposed new privations on themselves in order to give me a private instructor so as to save me from this mortification. I profited so well by the lessons of the new master that at the end of three months I had outstripped all my companions, and received the prize of excellence at the end of the year."

Having no ambition for wealth, and no

particular attraction to any other profession, Nicholas Joly entered the Lycée at Grenoble as a tutor. Here he had leisure to prepare for his degree in letters. Owing to the richness in vegetation and minerals of all kinds about Grenoble, he had abundant opportunities for the study of natural history. He soon found himself irresistibly drawn to the natural sciences, and so great was his enthusiasm that he inspired all his pupils with a like love of nature. He spent much time in explorations in the Alps, where he slept on the rocks and ate the black bread of the shepherds.

During the revolution of 1830, the whole school organization was changed. Young Joly's superior was promoted to Montpellier, and as his assistant, at the age of eighteen, he was called to his side. He now decided to devote himself to science. He had much, however, to hinder his rapid progress in the attainment of degrees as, besides his regular classes, he taught grammar, rhetoric, and history to the candidates for the military school of Saint Cyr. But he had the advantage of being surrounded by some of the best scientists in France. He often took part at Montpellier in the discussions of Lordat, Dugès, Dunal, Lallemand, and Delpech. One of the disciples of young Joly at Montpellier was Louis Figuier, editor of the scientific department of the *Presse*, and one of the most charming writers in popularized science. He speaks in most enthusiastic terms in his "History of Plants" of the young professor at Montpellier, under whom he received his first lessons in botany.

Nicholas Joly was not satisfied to remain a simple instructor; he desired a wider scope for his attainments, but to attain this it was necessary for him to enter the lists and measure his powers with the strongest. The red color of salt marshes was just then under discussion in the scientific world. Some savants held that the cause of the phenomena was due to vegetable matter; others that it was due to the presence of a crustacean. The young teacher studied the subject carefully and presented his Thesis for his doctor's degree upon this theme. He agreed with neither side, but propounded a new theory that the coloration was due to innumerable myriads of infusorial animalculæ, brilliant in their vermilion envelopes.

But at this time a single thesis for the degree of doctorate was not sufficient to attain a position in the faculties of the French University; the degree of "agrégation" (the most difficult in the University) was necessary. To prepare for this examination, he repaired to Paris, and applied himself without recreation to his work. He stood first in the examination, and soon after was called to the Faculty of Toulouse, where his success was soon assured.

In 1841 an amusing event occurred in his scientific career. Dutrochet explained the movements of camphor upon the surface of water as a new kind of electricity; but Professor Joly, after studying the subject and making his experiments carefully, presented the results of his observations to the French Institute. It appears that the true explanation of Dutrochet's wonderful errors was that his hands and utensils were dirty. Dutrochet was indeed, like many other savants, very untidy in his person, and we can well imagine that this served to sharpen the ridicule of his brother scientists. Soon after this, by carefully conducted observations of a prawn found in the canal at Toulouse, Dr. Joly was able to settle the disputes among scientists upon the development and metamorphosis of the decapodous crustacea.

In 1844, in connection with Lavocat, he made his researches in regard to the giraffe. Isidore Geoffroy Saint Hilaire and others place this work among the very best of its kind in science.

In the troubled times before 1848 he entered somewhat into politics, always on the liberal side, but soon returned to private life and gave himself wholly to his studies. In 1851 he spoke before the Faculty of Medicine at Paris in support of the adage, "Omne vivum ex-

dem alimento nutriter in ovo." This brought down on him no end of clever caricatures, in one of which Prof. Joly and all the rest of the world are represented as issuing from eggs. This thesis was the prelude to his work on milk, which was crowned by the Royal Academy of Belgium. Later, in connection with Lavocat, he made a study of the philosophic anatomy of the foot and hand of man, and the extremities of the mammifers. He refuted, by careful experiments, the opinion of Blanchard, that the color of the cocoon can be determined by the food of the silk-worm. I have seen at his house some of the cocoons on which he made his experiments. Over the question of heterogeny the whole world was aroused. The church denounced it as by implication denying the existence of a God. The Academy refused to entertain the question. Public opinion became the judge. Mr. Pouchet, of Rouen, who precipitated the discussion, found in Professor Joly and Musset two favorable interpreters, who did so much and so well, that the public received with favor their supreme ideas.

This trinity of savants found facts quite contrary to Pasteur. We find them not long after in the amphitheater of the Medical School at Paris. And on a grand occasion Professor Joly was chosen to address the audience. He was invited to answer a speech made by Pasteur a few days before at the Sorbonne. Admirers and detractors, in breathless silence, awaited the appearance of Prof. Joly. With difficulty he made his way through the crowd to his seat. No wonder he looked pale, for not often is one called on to face such an audience. Bravos rang out on every side. "*Je vous remercie,*" he said, "*de ces applaudissements chaleureux qui s'adressent, je n'en saurais douter, non au défenseur inconnu d'une cause proscrite, mais à la cause elle-même qu'il vient défendre.*"* For more than an hour he held his immense audience speechless. His explanation of his position was rare in its precision and clearness.

Two thousand persons who could not gain admittance awaited his exit to salute him. The approbation was gracious and most opportune after all he had suffered. The press of Paris, too, was very complimentary. He was refused the Sorbonne on this occasion, but the Minister of Public Instruction gave him the Medical School. When he returned to Toulouse, his arrival was attended with *éclat*. The students from the University crowded to the station to show homage to their honored citizen.

In 1864 he was made member of the Legion of Honor, and not long after, corresponding member of the French Institute. As a professor of Zoology in the Faculty of Sciences at Toulouse, he was in the front rank; as a lecturer and teacher, always simple, clear, logical, going right to the point. His elocution was charming, his voice sonorous.

He is an accomplished linguist, understanding German, English, Spanish, and Sanskrit, and has written a German grammar, in which he propounds a new law, reducing to a single principle all the rules of German syntax. He speaks Italian so well, and looks so much like Garibaldi, that once in Switzerland he was taken for the great soldier.

On March 25th, 1871, the troubles which had just bathed Paris in blood, found a fatal echo at Toulouse. The Commune was proclaimed. M. de Kératry, who had been named Prefect of the Haute-Garonne by the Government of Versailles, found himself obliged to dispute his office with M. Duportal, who then occupied the post. Cannon charged with grape-shot were directed according to the orders of Kératry against the Hôtel de Ville (City Hall), where the rebels had taken their position and fortified all the outlets. Already the first two warnings had been given by the new Prefect. The first President, de Saint-Gresse, accompanied by many members of the court of appeals, had not succeeded in their at-

* "I thank you," he said, "for this warm applause which is addressed, as I have no doubt, not to the unknown defender of a proscribed cause, but to the cause itself which he defends."—ED.

tempts at conciliation with M. de Kératry and departed from him, sorrowful and discouraged. The third warning was imminent and without doubt blood was soon to flow, when Professor Joly, impelled by his ardent desire to prevent violence, calmly advanced, amid the guns and cannon about to make their voices heard, and begged the Prefect to delay a few moments the execution of orders that would involve so much misery. After an earnest and prolonged interview, in which Professor Joly touched every chord in the human heart, it was agreed that the troops surrounding the square of the Capitol and adjacent streets should retire first of all, and that the protection of the Town Hall and the public peace should be committed partly to the National Guards, and partly to the partisans of the Commune. But no one supposed that the rebels could be easily persuaded to accept such pacific measures. However, Professor Joly, alone and unarmed, courageously assumed the responsibility of conveying the message of peace and conciliation. But hardly had he entered the door of the Capitol, when numerous menacing bayonets were pointed at his breast. He was at once lifted from his feet and carried by the mob into the chamber which he had occupied as Adjutant of the Mayor, after the revolution of 1848. Impressed with the gravity of the occasion, he exhorted the revolutionists with such wisdom, earnestness, firmness, and evident emotion, that he had the happiness to see the mob completely swayed by his feelings, and appeased by his words. Men a few moments before blind and furious with passion, were now controlled by reason, became sympathetic and respectful, and were convinced by calm arguments that there was a better way than violence to attain the end they proposed.

In his study of the exact sciences, and the inexorable laws of Nature, he saw there was no room for a special Providence. On several occasions he thus expressed himself, and was more than once arraigned before the Cardinal for heresy, and but for the growing liberality of France would have lost his position in society as well as in the Faculty. While we were spending several months in the Couvent de la Sagesse, in Toulouse, Professor Joly and other savants often called upon us. We usually received them in the garden, where, surrounded by stately forest trees, fountains, and flowers, we discussed many social problems. Returning these visits, we found our philosopher in a modest two-story house, rich in rare books, autographs, pictures, and mementoes of appreciative friends. The great flood in Toulouse, some ten years ago, occasioned by the sudden melting of heavy snows in the Pyrenees, washed away part of his house and many of his valuable collections. The garden, in which he labors with his own hands a few hours each day, shows the naturalist in his love of minerals, birds, and flowers. It was in this lovely garden we were invited to celebrate his seventieth birthday. The company was composed entirely of ladies, chiefly his own daughters and granddaughters. It was a lovely day in July; a delicious breakfast was tastefully spread in the summer-house. The guests came laden with flowers, which were gracefully presented to our host, who seemed as jovial and radiant as if he were celebrating his seventeenth anniversary. Aside from an old and faithful servant he has no one at home to share the solitude of declining years, save a blind dog and cat, to which unfortunate quadrupeds he is fondly attached; closely observing all peculiar manifestations occasioned by the deprivation of one sense, he has much pleasure in their companionship.

His freshness and earnestness in the studies he has pursued with unflagging interest through a long life, proves that the scientist and the scholar may enjoy a perennial youth; that there is no old age for those who think.

Having presented him with a copy of the "History of Woman Suffrage," he became deeply interested in the question, and wrote a most complimentary review of the work in three different numbers of

one of the city journals, stoutly defending the rights of French women to higher consideration than that conceded by the statute laws comprised in the code of Napoleon. As one of the champions of the new movement in France, Professor Jolly will prove of inestimable value.

In looking back to my visit in France, I shall always feel that one of my chief pleasures was making the acquaintance of this distinguished scholar and polished gentleman.

ELIZABETH CADY STANTON.

LONDON, *October*, 1883.

FOOT-PRINTS IN THE ANCIENT SANDSTONE.

A ROCKY MOUNTAIN DISCOVERY.

IN 1882 a discovery was made in the quarry yard of the Nevada State Prison at Carson which awakened the interest of the scientific world, especially those engaged in archæological research. The removal of certain strata by the quarrymen exposed to view several groups or series of tracks evidently belonging to large animals, such as the elephant, horse, deer, and also to some kind of bird, and among them were prints which suggested the possibility of their having been made by man, although their great size involved the necessity of imputing to the ancient man, who might have strode across the sandy beach of what was in his time an extensive lake or the bank of a large river, a form of gigantic size. These enduring impressions have been examined by several gentlemen of eminence in science, among them Prof. Joseph Le Conte, Dr. H. W. Hackers, Messrs. C. D. Gibbes, J. R. Scupham and others of the California Academy of Science, who visited the prison and prepared carefully written papers descriptive of their characteristics. From an account which was published in the *Mining and Scientific Press* we obtain the following interesting particulars:

The Nevada State Prison is situated on the plains of Carson, three or four miles from the Sierras. The main building has been placed at the base of a low rounded hill, sloping to the plain on all sides except to the south, where it abuts against a neighboring ridge of much older rocks. The hill consists of regular strata, nearly level to the eye, but really dipping 2° or 3° to the west, and it is evidently a remnant left by erosion, of a much more extensive deposit. It has been cut into on one side (the northern) down to the level of the plain, in such wise as to form a nearly level quadrangle about 100 yards square, surrounded on three sides by vertical cliffs, 10 to 30 feet high, on which the nearly level strata are well exposed. (See illustrations, 1, 2, 3, 4.) In front is placed the prison building, forming the fourth side of the quadrangle, and the cleared space forms its yard. The stone thus removed has been used in the construction of the prison and other public buildings of Carson.

The strata exposed in this quarry, says Prof. Le Conte, consists of heavy-bedded grayish and creamy sandstones, separated by thin layers of shale. The sandstones, in many places, especially in the eastern cliff, are strongly affected with cross lamination, indicating deposit by rapid, shifting, overloaded currents—in other words, *river flood deposits*. We have here therefore probably the mouth of an ancient stream. The stone has been removed down to an even shale stratum, or rather to two shale strata, about two feet apart, which form the floor of the prison yard. These shale strata are the track-layers. The upper track-layer forms the floor of the upper or eastern part of the yard; then there is a drop of about two feet to the lower track-layer, which forms the floor of the rest of the yard. The whole area thus cleared is literally covered

with tracks of many species of birds and mammals. The area had been cleared, and the tracks exposed and trampled over by men and horses for 8 or 10 years, without attracting any special attention. Their importance was first recognized by the intelligent warden, Major Garrard. To the stony hardness of the strata alone, do we owe the fact that they have been preserved at all.

wind and water from the Sierra. This point was chosen with a view to utilizing the labor of the convicts in quarrying stone for building purposes. As a result of this quarrying, the stone has been removed from an area of about one and three-quarters acres, and to a depth varying from 15 to 32 feet, showing the hill to be composed of layers of sandstone alternating with seams of clay.

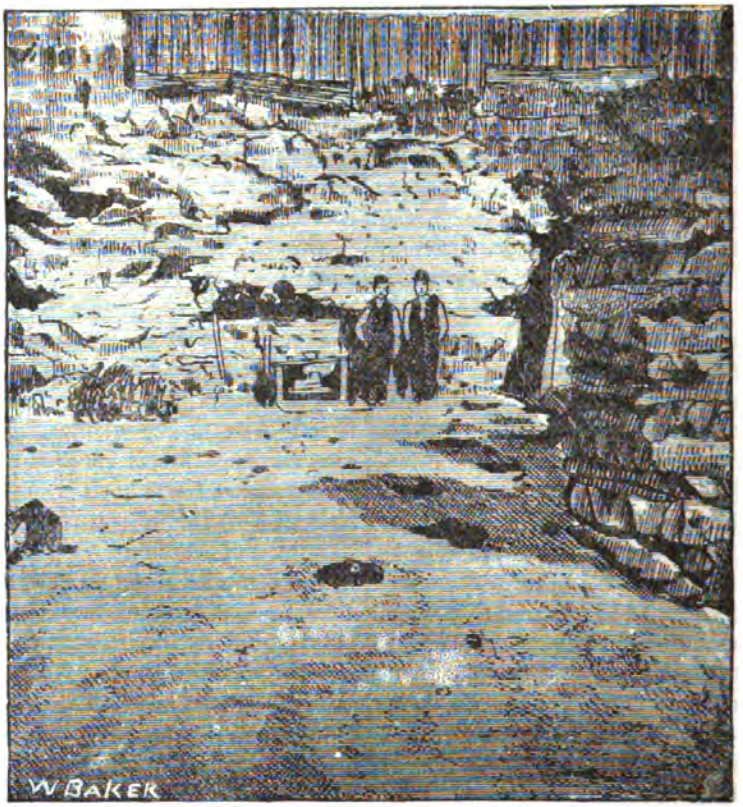

Fig. 1.—Mammoth and other Tracks.

Without going into the details which have been developed concerning these tracks, we quote a few extracts from the papers read before the academy, and which will be sufficient to place the reader in possession of the essential facts of the matter. Dr. Harkness says:

"The prison was built about 20 years since, on the extreme point of a hill having an elevation of about 60 feet. This hill is formed of sandstone which had its origin in the detritus brought by

"It was known that animal remains had been discovered in the quarry, but no special attention seems to have been called to the fact until the appointment of the present warden, Wm. Garrard, by whose intelligent energy a systematic effort has been made to collect and preserve these fossils. And not only this, he, together with Mr. Hanks, the sheriff of Storey County, determined to have the situation carefully examined, and to this end they opened correspondence with the

curator of the San Francisco Geological Museum, Mr. C. D. Gibbes. At one of the meetings of the California Academy, Mr. Gibbes read the correspondence, which so impressed the members that it was determined at once to make a systematic examination of the relics. The formation, to which allusion has been made, is called by Clarence King in his geological survey of the fortieth parallel, the 'Lower Quaternary.' Referring to this region, he says it is composed of sandstones and clays worn down from the adjacent high mountains and deposited in the water and on the shores of a lake of many hundred miles in area, that at one time extended along the eastern base of the Sierras and to Central Nevada, and having an elevation of 4,388 feet above the sea level. Pyramid, Winnemucca, and Walker Lakes, and the sinks of the Carson and Humboldt are now the lower points of this prehistoric lake, which spread its waters in the pliocene age, and which Mr. King has called Lake Lahontan.

"It also gives evidence of having been at one time the shore of some lake, or perhaps pond, local and isolated, as its level was above that of Lake Lahontan. Presumably we stand on the shore of this ancient pond or lake, and as we look about us we see the foot-prints of a variety of animals, among which we recognize those of the mammoth, the deer, the wolf, of many birds, of a horse, and most important of all, the imprints of the sandaled foot of man. There are six series of the tracks of man (?) each being represented by a number of foot-prints (from 8 to 17), in regular order, and each showing more or less plainly the imprint of a sandal. Besides this, in one of the series the form of the

Fig. 2.—Supposed Human Foot-prints. Series No. 1.

sandal differs markedly from the others. The first of these series which we examined is to be seen emerging, as it were, from the eastern side of the yard, where the cliff is 15 feet in height above the tracks. This series consists of 12 tracks, to which number four were subsequently added by tunneling into the rock. These tracks were evidently made in a layer of sediment of perhaps two inches in depth, for below this layer we find the compact sandstone. In each instance the mud had been raised by the pressure of the foot into a ridge which entirely surrounded it. Each of the imprints furnishes us with evidence, as we believe, that the feet of the one making the tracks was protected by sandals. In no single impression do we find conclusive evidence of this fact, but when we study them as a whole we find that which is wanting in one is furnished by others which follow.

"In nearly all the toe portion is well shown, it being as smooth as the work of a mason, for the distance of two or three inches. Backward from the toe we generally find the imprint of the outer portion of the bottom of it. When studied as a whole we can determine with a good deal of exactness the actual length and breadth of the sandal, which we find to be 18½ inches in length, eight inches at the ball of the foot, while the heel is six inches in breadth. In its outline the impression follows clearly the shape of the human foot. From the great toe outward there is a really graceful curve, which draws in toward the heel; while from the great toe inward the line is drawn toward the instep and thence in an outward curve to the heel. In one series this curve is deeper, showing a slightly different form of sandal. The average length of the stride is two feet three inches. The dis-

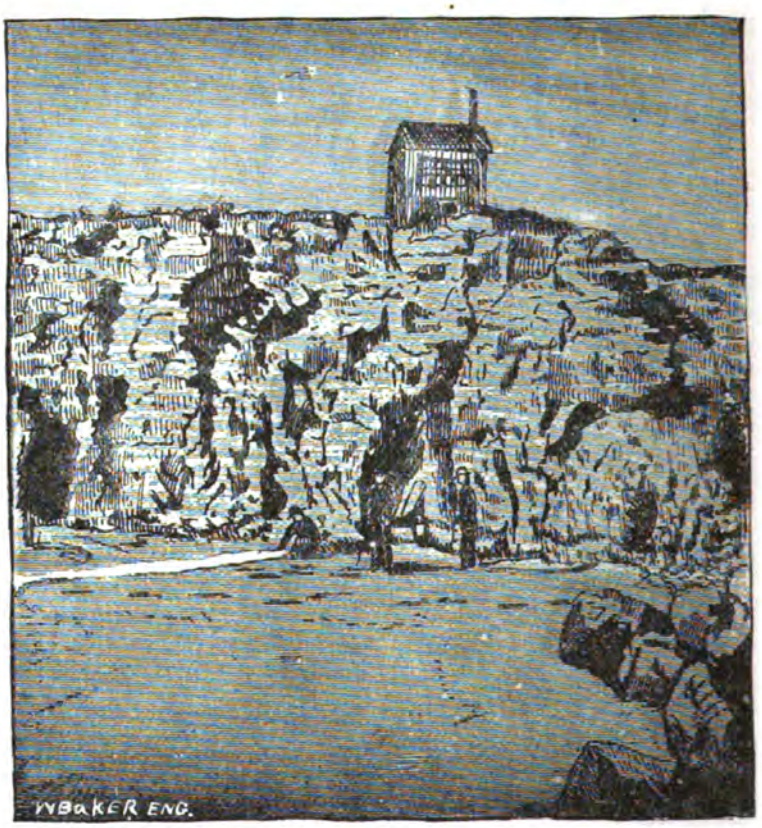

Fig. 3.—Several Groups of Tracks.

tance between the feet or the straddle is 18 inches, as measured from the center of the sandal of one foot to the center of the corresponding one.

"As before stated, these mammoth foot-prints were of an average depth of five inches, and had been made in a layer of sediment which is now so firmly consolidated as to retain a tolerably distinct external outline of the foot of the animal, but owing to the irregular formation of the calcareous deposit referred to, no distinct imprint of the bottom of the foot can be traced."

In the prison yard at Carson besides the above-described tracks, those of birds are found in abundance. Most of these tracks show but three toes; in some instances, however, there are distinct impressions of four. The extreme length of the longest toe in any one of these bird tracks is five inches, and the stride measures a little more than two feet. Several very distinct tracks of a deer are to be seen, as well as those of a horse, the imprint of which is the same as that of the horse of to-day. Still other tracks, resembling those of a wolf, may be traced for 20 feet or more, when they also are lost in the cliff; and near the western limit of the quarry there are indications of a large animal having wallowed in the mud.

Fig. 4.—Other Foot-prints Human?

From Mr. C. D. Gibbes' paper we derive the following notes of interest: "Besides the tracks above mentioned, there are numerous others of wading birds, some having but three toes. Length of middle toe from heel, five inches. The transverse diameter of the expanse of the foot, from the extremity of the inner toe, to that of the outer one, seven and a half inches. Step 23 to 24 inches. Another track has a rudimentary toe one and a half inches long, middle toe five and a half inches

long, the expanse of the foot eight and a half inches. Step about the same. A round track, five inches in diameter, made apparently by some animal of the feline species, is seen going south, and across the human tracks. They are 16 in number. There are also three or four small tracks, made by a wolf or some such animal, and a few deer tracks. All of the above-mentioned tracks are found on the first or upper floor, at the east side of the quarry; and many of them are shown in diagram No. 1.

"Series No. 2 consists of 13 human foot-prints, 21 inches long and seven inches wide, going in a southwesterly direction until lost in the sandstone bluff at the south wall, which is 22 feet high at this point. This man had a very peculiar shaped foot, and may be said to have toed the mark, he walked as straight as a surveyor running a line. The quarry is now being worked at this bluff, and more foot-prints will probably be found. There are several other groups of tracks which have a resemblance to those which might be made by a sandaled or moccasined foot in a yielding stratum of drift. Of the large round tracks there is no doubt that they were made by an elephant, since a fossil jaw of one has been found, and fossil teeth of the horse have also been found."

Prof. Le Conte differs from Mr. Gibbes in opinion, thinking that the supposed human tracks are not sufficiently defined to warrant the inference that they were made by man—he says: "The one strong argument for the bi-pedal theory is the apparent singleness of the tracks and the absence of the toe marks, while the one strong argument for the quadrupedal theory is the wide space between the right and left series of tracks. To this may perhaps be added also the *size and shape*. It seems to me that inductive caution requires that the judicious mind should hold itself in suspense awaiting more evidence. Meanwhile, however, my own mind inclines strongly to the latter theory. Since writing the above I find that Prof. Cope, in *American Naturalist*, vol. 16, p. 195, and Prof. Marsh, in a letter to me, regard the strata of Carson Quarry as belonging to the *Equus Beds*. The age of these beds is still doubtful, some regarding them as upper Pliocene, others as early Quaternary. They are uppermost Pliocene. The Carson strata, therefore, are possibly deposits from King's Lake Shoshone, and not Lake Lahontan. From deposits of this age three species of gigantic ground sloths are known, viz.: Two species of *Morotherium* and one species of *Mylodon*. It is not at all improbable, as suggested by Marsh in his letter, that the supposed human tracks were made by one of these. The size, the stride, the curve, and the straddle all agree with this supposition."

EDITOR.

THE TRANCE A SUBJECTIVE PHENOMENON.

OLD-TIME mesmerists claimed that they directly produced certain phenomena by means of some mysterious efflux of their own persons, a magnetic fluid or some other invisible vital force generated within themselves. Modern psychologists seek another solution of the problem. Facts are admitted, but theories explanatory of them are various and conflicting. No intelligent and candid observer denies the fact of the somnambulistic sleep or trance, any more than he does that of ordinary slumber. The waking trance, the acted dream, is also a fact, as patent as any hallucination of the intoxicated or insane person.

There is no more reason or sense in the charge of collusion in the former case than in the latter. If the grotesque actions of the entranced are but the fruits of "shamming," then the delusions of the inebriate may be deliberate attempts to impose upon spectators.

Assuming the genuineness of the phenomena, we argue that the cause lies in the individual who manifests them. Cir-

cumstances, like a panic, may be the occasion to develop the latent conditions into activity, but the originating cause is in the natural temperament of the individual. Religious ecstasy has developed the trance and so has continued fasting. Any sudden and enrapturing emotion does the same. A man of penetrating personality and commanding will may at once take captive such a consenting soul, by securing its attention now by a swift, abrupt, and resistless assault that leaves no time to question or to repel his power; or, at another time, by slow and seductive approaches that disarm by successive indirections and insinuations and that bind a willing will in silken fetters that are as strong as steel. Whether by the introduction of human speech and manipulations, or by the excitation of hysterical conditions through outward circumstances of fear or joy, the trance state must be, primarily, a subjective phenomenon. There is no need of clothing oneself with the air of mystery—says Dr. Newberry, President of the New York Academy of Sciences—as though the operator originated the conditions and was therefore a man of marvelous personality. School-boys have performed substantially the same experiments among themselves as those which men of science are studying. Itinerant showmen of less than average education, and not of more than ordinary intelligence, by years of practice have acquired an assurance which commands belief and creates confidence. Their reputation prepares the way for success, but no power of theirs can change the congenital nature of the subjects presented for them to experiment with. Some are foreordained to trance, and some will probably remain recalcitrant forever.

Dr. W. B. Carpenter, of London, gave the writer several instances confirmatory of this view, in the course of an hour's interview at his residence last July. Not long ago, at a social gathering in that neighborhood, a well-known vocalist was present, Mr. S., who had become somewhat widely known among his acquaintances as a successful experimenter in hypnotism. He was introduced to the strangers present. Among them was a lady who, a few moments after introduction, and while at some distance from him, fell into a trance. No ordinary appliances could restore consciousness and Mr. S. was called. He was wholly innocent of any design in, or of any knowledge, even, of the matter. However, he complied with the request of her friends, spoke to the stranger and bade her wake. She did so immediately. Naturally enough there were some questions put on his part, and in answer to them the lady cleared up the mystery by saying, "Mr. S., my friends have told me of your wonderful power; that you have been able to make people sleep, by simply looking at them. I caught your eye just now and at once became unconscious." Her sleep was clearly a subjective phenomenon. Mr. S. had no more to do with it than the man in the moon. The cause lay in herself. She believed her friends, and in the alleged power of Mr .S. "As a man thinketh so is he," the Bible says. Thus a mental impression produces physical results. A medical missionary from the East, now a New York pastor, also gives a similar instance where the trance-state was really self-induced, though his suggestion or promise of an electric shock was a preliminary step. The cause was the sensitive and responsive condition of the individual. In that condition the origin of the phenomenon is found. Various circumstances may induce the trance where this condition of receptivity exists.

But, it may be asked, "Why is the trance a comparatively infrequent phenomenon if so many are likely at any time to enter into such a state?" Simply from lack of exciting agencies. Not every strong will has learned the art of persuasion. A man may have a vigorous body and a masterful will in overcoming ordinary obstacles, yet be destitute of that subtle influence of character called "magnetism," which sets in operation in others certain causes or conditions which

man surely did not create, but which he may utilize and control.

"But may not the electrical conditions of certain persons explain the changes which are wrought, in some instances?" Some men, doubtless, are highly charged with electricity. The sensations they awaken in persons they touch can not be ascribed to mere imagination. Curative effects may be admitted, and yet these psychical facts remain unimpeached which we have cited in reference to the origin of the trance. The process is of a higher and more delicate character than that of frictional or animal electricity.

"Can any guide be given as to who are most likely to be operators, and who good subjects?" Nothing yet has been found that is trustworthy. Exceptions to all rules are very numerous. The light-haired and blue-eyed are supposed to be most impressible, the young rather than the mature, the female rather than the male; while the vigorous and dark-haired are supposed to be better fitted to control. These suppositions are sometimes contradicted in every particular. Nor can we say what proportion of a given number of persons are likely to be influenced. There are more persons who could induce this state if they chose to than is supposed. That is all we affirm.

What is its chief use? It is beneficial in many nervous diseases, and has in many cases taken the place of chloroform in surgery. Dr. Carpenter gives instances where severe operations were performed while the patient was asleep. Before the discovery of ether it was continually in use as an anesthetic. The writer has repeatedly aided in operations where this "beneficent influence"—as the President of the New York Academy of Sciences properly calls it—was the only anodyne. That it may be perverted is apparent, but this is an additional reason for the serious study of the subject, and for divesting its phenomena of mystery, deception, and fraud.

DR. E. P. THWING.

MONSIGNOR T. J. CAPEL, D.D.

AMONG the many foreigners of distinction who have visited the United States this year, is the Rev. Dr. Thomas J. Capel, or as he is entitled in the language of the Church to which he belongs, Monsignor Capel, which signifies that his position is an elevated one in the priesthood and allied in privilege to the nobility of European society.

As appears in the engraving, he has a good share of vital stamina, a strong frame supplemented by an excellent functional condition, in most respects. He possesses a large brain, the development of which is strong in the basilar region, indicating that close co-ordination with the organs of the physical nature, which is conducive to firm health and longevity. The breadth of the head shows the man of force and action, of ability to carry his plans into practical operation. He is a courageous man, stimulated by opposition to the fullest exercise of his intellectual powers. We might term him an intellectual athlete, so little does he fear to defend a cause he has once espoused, publicly or privately. As an observer and thinker, he is broad-viewed, with readiness of impression and prompt judgment. His mind is of the type that absorbs information as the sponge absorbs water, and takes in material of all sorts, storing it away for use on occasion. He is a superior reasoner, not perhaps in the close special sense of the metaphysical critic, although he is by no means wanting in tact and art, but in the scientific sense, the *a posteriori* manner. He would have made a name in some department of physical science, especially that which relates to nature in her larger constructions: like geology or astronomy.

The expression of the eye shows mental sprightliness and keenness of apprehension, while it also indicates readiness in the use of language. We would say

that he is a clear, smooth, persuasive speaker, not exuberant and rich in the use of words like Mr. Beecher, but select, neat, nice; the *suaviter in modo* winning attention and influencing the judgment.

Monsignor Capel is of Irish parentage, but born in England, October 28, 1836. He was educated for the Roman Catholic Church, and ordained to the priesthood by Cardinal Wiseman. An early leaning toward teaching was encouraged by a connection with the school-work of his Church, and in 1864 he was appointed Vice-Principal of St. Mary's Normal College, at Hammersmith, which institution, however, he had done most toward organizing. He threw himself into this work with great energy, prompted largely, it is said, with the motive to found a Roman Catholic University in England, but was at length compelled to withdraw from the College by failure of health. Going to Pau, in the South of France, he found restoration, and some exercise in his professional character as a priest. Returning to London, he soon made a marked impression by his preaching, his adroitness as a defender of the tenets of his Church, and by his success in making conversions. Pope Pius IX. appointed him Private Chamberlain, with the title of Monsignor, in 1868, and Domestic Prelate in 1873. In the following year he was unanimously appointed Rector of the College of Higher Studies, of Kensington; an institution owing its existence to the energy of Monsignor Capel. But in his zeal and confidence he had incurred heavy financial obligations, which embarrassed him so much at last, that he was compelled to apply to the Bankruptcy Court for relief.

MONSIGNOR T. J. CAPEL, D. D.

As a writer he is known for a few publications only, chief among which is a Reply to Mr. Gladstone's Political Expostulation. In the novel of "Lothair," published by Lord Beaconsfield, the character drawn of Catesby, the polished and fascinating priest, is imputed to Dr. Capel by general consent. This is not his first visit to this country, as he came sixteen years ago.

GRANDMOTHERS.

BLESSED is the household at whose fireside a saintly grandmother is enshrined! Her benign influence pervades the whole family circle. The children are taught reverence for old age, and, learning to anticipate grandmother's wants, and to minister to them with tender thoughtfulness, they carry this important lesson of *service*, and consideration for others, beyond the fireside. The little ones know instinctively that they can pour their childish griefs into grandmother's ear, sure of sympathy and wise counsel. Not unfrequently does she have opportunity in some crisis to say the word which shall determine the future of a young life.

There are grandmothers,—alas, that it is so!—who are not pleasant household inmates. Querulous, selfish, and exacting, they have lived only for the world or themselves, and now life has turned to dust and ashes in their nerveless grasp. They sowed thistles in youth, and expect in old age to reap figs. They neglected to store up sunshine, and now grumble that they are compelled to sit in darkness. I will not speak further of them. I am filled with compassion as I look into their care-worn, frown-furrowed faces. Had they put away self and lived for others, seeking ever the things which are above, they would not have been left desolate in old age. Instead, they would have realized with a smile of triumph, that "at evening time it shall be light."

There arises before my mental vision a picture which has often delighted my eyes, that of a bright young girl reading to her aged grandmother. The child was restless, and was spoken of as hard to govern, yet she would sit and read by the hour from the Bible, from devotional books, or from magazines, oftentimes the subject matter being such as could have little interest to her; yet she read gladly, because grandmother's old eyes could scarcely distinguish a word of the coarsest print. The discipline of this self-imposed task, the words of kindly instruction or admonition, the reminiscences from the lips of the gentle, sweet-voiced old saint, could but influence for good the maturer years of the child at her knee.

Grandma L——'s hands are too feeble to knit, and she sits silently waiting and watching, listening, I can but think, for the messenger which shall come some day, and summon her to join the husband who for fifty years walked with her upon the earth. She has brought up a family of ten children; has lived to see them all settled in life, honored and respected, two of her sons being in the ministry. Her children "rise up and call her blessed." There is generous strife among them as to which shall have the pleasure of ministering to her declining years, and never was an aged mother more cherished and honored. Her earthly reward is in this, but what shall be her crown hereafter? She sometimes wonders why she is left when her "work is done," but although she knows it not, every day among us is a sermon and a blessing.

Another aged lady whom I knew well, was left without money or family friends. One by one those nearest and dearest to her had been released from earth. In the days of her prosperity she had been an angel of mercy to the poor, the sick, and the sorrowing; widely known and as widely loved. In her reverses and weakness, she was not forgotten or neglected. Twenty homes were open to her, and she was supplied with all the comforts heart could wish. Our Lord called her one day to the place He had prepared for her. Tender love smoothed her dying pillow, and she was missed and mourned universally. In the chancel of the church she loved most, "for a memorial of her," has been placed, by voluntary offerings, a richly wrought stained window. Its artistic design and harmonious coloring fitly keep in remembrance dear Grandma E., the influence of whose holy life will be felt for generations.

Adversity, care, and ill-health only served to brighten the faith of Grandma J——. On the day before her death, she expressed her trust in Him who doeth all things well in the following lines, penned very legibly. Her daughter repeated them to me, and at my request prepared a written copy:

"I will say of the Lord, He is my refuge, and my God in whom will I trust."

"Oh! Thou who in my darkest hour
From deep despair my soul hast won,
As turns the pale and drooping flower
For life and vigor to the sun:
So turns my weary soul to Thee,
My faithful and unerring guide;
Oh! let me to my refuge flee,
And in His shadow safe abide.
The storms of life are gathering near,
And night is chasing back the day,
If Thou art mine, why should I fear?
Thou art the life, the truth, the way.
The rosy light of life has waned,
As sunlight from the southern seas;
The chain is broke, the chalice drained,
And nothing left me but the lees.
I murmur not, I know that Thou
In righteousness hast worked Thy will:
Beneath Thy chastening hand I bow,
And trust Thee as my refuge still."

After a long absence, Grandma C——, a dear old saint, feeble and trembling in body, but strong as a Samson in the faith, was privileged to come into our missionary meeting. "Privileged!" That was the word *she* used; but we, especially a few of us who lingered after the exercises were over, and drew her into conversation, felt her company the greater privilege. She said: "I used to talk and feel that God was *leading* me wherever I went, as He would lead a little child; now these later years, He takes me in His arms and *carries* me. He lifts me tenderly over the hard places, relieves me of all my burdens. He has borne me through trials worse than death, and I ask myself why He should be so kind to me. I feel myself to be dust and ashes in His sight. I want to tell you of a dream I had the other night. Of course it was only a dream, but I have thought about it so much. I thought I was standing by an old log-house. The walls were crumbling to decay. At first sight there was nothing attractive in it. But I came closer, and right in the center was a great bed of lilies, a bed five or six feet square. I could smell them, and oh! how fragrant they were, and how beautiful! They were not only white, but a pure crystalline white, unlike those grown in earthly gardens. I wanted to gather some, but a voice said no, and then I awoke. I said to myself, that old log-house which is not worth anything is this worn-out tenement of clay which is called my body, and that beautiful bed of lilies is the righteousness of Christ. I feel that this old body is going soon to decay. I am not anything myself—His glory is all. But oh! those beautiful lilies—the righteousness of Christ—how much it has been to me! I think about it sometimes until I am lost in wonder and praise. 'As the hart panteth after the water-brooks, so panteth my soul after thee.' There is no hope only in Christ. I can not describe to you the surety of that 'sure foundation.'"

Grandmother C—— is now fast nearing the "silent river," and in the Paradise of God, clad in the glad garments of immortality, no voice will stay her hand from gathering the beautiful lilies, and she shall be "satisfied."

These are not fancy sketches, but from life, and the originals will be recognized by some of your readers.

H. L. MANNING.

THE KEY TO SUCCESS.—What a bustle in the busy world!—the busy world where one purpose seems to stir the energies of man, viz., that of meeting with success. Some among the throng have, in a measure, reached the goal, and a pardonable curiosity leads us to inquire about their preceding steps. So let them pass in review.

Only a few will tell about extraordinarily favorable chances that gained for them the prize prematurely or without exertion. But only with doubtful relish do we enjoy those good things that fall to our lot without due labor.

With a fair conscience of our own we would listen with disgust to the accounts given of those who climbed the ladder to worldly thrift by craft or foul means; and thus acquired, is it safe to trust the solidity of Fortune?

Happily the majority of cases that speak of victory in the sharp chase after success present a worthier eye-mark for emulation; for we learn that the levers the honorable citizen handled in its pursuit were, as ever will be, the sister virtues: patience, probity, and pains-taking.

SIEBERT.

THE OLD TUNE.

Mothers out of the mother heart
Fashion a song both sweet and low—
Always the same dear mother art,
Rocking the Baby to and fro—
Always a lazy—loving crone—
Humm'd in a sleepy undertone.

Down the Baby snuggles to sleep,
Winking as long as wink he may:—
Now with a kick he tries to keep
The tricksy god from his eyes away—
We wa—we wa,* long, long ago,
The Indian mother chanted low.

Weeng† she said on the Baby's brow
Softly struck with his wee war club—
Astride of his nose he playeth low
With his little fist, a rub-a-dub—
We wa—we wa—steady and slow
Rocketh the Baby to and fro.

Mothers too with the snowy skin
Bye lo—bye lo—droningly sing—
And tell of the Dustman coming in,
Into the Baby's eyes to fling
Atoms of dust to make him wink
And into Dream-land softly sink.

We wa—we wa—bye lo—bye lo—
Dusky or white the mother that sings,
'Tis the same old tune of the long ago,
Calling for fold of downy wings
To shut the eyes of Baby to rest—
Hushed to sleep on the mother's breast.

Mothers out of the mother heart
Fashion a song both sweet and low—
Always the same dear mother art—
Rocking the Baby to and fro:
Always a lazy—loving crone—
Humm'd in a sleepy undertone.

ELIZABETH OAKES SMITH.

Patchogue, N. Y.

* We wa, was the lullaby of Indian mothers. The *a* in wa, sounded broad, is very soft and musical.

† Weeng, the Indian's god of sleep.

A FAMOUS GREEK WOMAN.

ARTEMISIA, THE WARRIOR-QUEEN.

ARTEMISIA, one of the most interesting of royal rulers, and the most famous Greek woman who ever possessed sovereignty, with the single exception of Cleopatra, was a native of Halicarnassus, in Asia Minor, where she was born presumably about the year 525 B.C. She was the daughter of Lygdamus the Dorian, dynast or king of Caria. The moderate policy of this monarch secured the prosperity of his kingdom. While the other Greek colonies of Asia resisted the Persians, Halicarnassus and its king paid ready obedience to Darius. The great king was not unmindful of this favor, and he rewarded the prudence of Lygdamus by enlarging the bounds of his kingdom. The three neighboring islands of Cos, Calydna, and Nysirus were added to the Carian sovereignty, and the crafty Dorian became one of the powerful satraps of the Persian empire. He allowed his people to enjoy their own laws and institutions; he fostered commerce and founded a powerful navy; he built cities and reared costly and stately works of art, and in every respect ruled like a sovereign monarch, save that he paid a tribute to

the Persian king and furnished such contingent of men and ships as the exigencies of the empire demanded.

Prosperous and powerful, and high in favor as was Lygdamus with Darius, his fame paled before that of Artemisia, his only child. Born of a Cretan woman and educated in the political school of her father, Artemisia developed at an early age a faculty for government that had no parallel in that age. All the force, all the energy, all the ambition, all the shrewd, pliant cunning and political skill of her brilliant Greek race seemed combined in the character of the Halicarnassian princess. To the Greek intelligence and adroitness she united the gravity and the grace of the Asiatic. Even in her youth she shamed the wisest graybeards in her father's council chamber, and when her own dark locks were silvery none of the other advisers of Xerxes spoke so wisely as she. In her schemes of aggrandizement no other Greek save Polycrates ever equaled her. As a builder, she well-nigh eclipsed Nebuchadnezzar himself, or the royal chiefs of Achaemenes. And to crown all, to her grace as a woman, her prudence as a legislator, her energy as a ruler, she added a masculine intrepidity and bravery that made her a gallant general in the field. In an age when female rulers were an exception, an anomaly, Greece and the world beheld a woman who not only surpassed every other sovereign of her time in her capacity for governing, but who also rivaled Pisistratus in her patronage of wise men and scholars and architects, and who in military skill and heroism equaled any of the Greek heroes of her own or former times.

Artemisia was ruler of Caria for more than thirty years, and during that time she made herself both feared and respected by all the surrounding monarchs. Wise in the council chamber and able in the field, she preserved the bounds of her own kingdom intact, while her fostering of letters and art made Halicarnassus, her capital, one of the magnificent cities of the world. Greece looked on in wonder at this spectacle of a woman, who at the early age of twenty-five was bereft of father and husband, and who, triumphing over the weakness of her sex, grasped the scepter with the vigor of an old warrior. But there was lion's blood in her veins. Her Dorian race gave to women a greater liberty than any of the other Greeks; and unhampered by the institutions of Lycurgus, this Dorian princess under the Asiatic skies of her native land, developed an independence and a strength that were the marvel of that age.

When Xerxes made his mighty preparations for the subversion of Greece, Artemisia was summoned with others to provide her portion of ships, men, and money. She was then forty-five years of age, and her sagacity and cunning were at their zenith, nor had she suffered a diminution of energy and of martial enthusiasm. She had no desire to drag her country into a protracted war, and to draft all her fighting men into such a crusade was to sap her prosperous kingdom of its very life. Fifty war-galleys were at anchor in the harbor of Halicarnassus, but of them she armed only five for Xerxes. In order to remove all suspicion of being wanting in zeal, however, she herself took command of her little fleet. Xerxes was flattered by her adroitness, while the Greeks were alarmed at the thought of so renowned a captain fighting on the side of the invaders. To counteract this fear the Athenians offered a reward of ten thousand drachmas to whoever should take her alive.

Among the myriads of the great king none showed themselves so brave in the field, none so wise in council as this warrior-queen. In the sea fight off Euboea, she showed herself a practical sailor, and her valor was so apparent that Xerxes from that moment regarded her as his ablest captain. She strongly opposed the naval engagement at Salamis, for she had learned that the Persian fleet was far inferior in the skill of its sailors to that of the Greeks. Xerxes was greatly pleased with the wisdom of her counsel, but he

followed the opinion of the majority of his chiefs and risked the engagement.

In that fatal battle Artemisia displayed the most extraordinary intrepidity and skill. If all the Persians had fought as she did, Greek independence must have found its grave that day. Xerxes, even in the rage and mortification of his defeat, found time to notice the valor of the Halicarnassian queen. 'All my men," he cried, from his golden throne, "have become women, and my women alone fight like men." In the confusion of the rout Artemisia did not lose either her courage or her cunning. The efforts of the Athenians had been especially directed toward this remarkable woman, and in the pursuit the queen found herself followed closely by one of the Athenian captains. In order to escape, Artemisia had recourse to a sudden and extraordinary artifice. Directly before her was one of the Persian vessels commanded by a Calyndrian prince, with whom she had once been embroiled. Accordingly, in order to mislead the Athenian captain, she, without the least hesitation, bore down upon the Calyndrian vessel and sunk it, taking care that none of the crew should escape to betray her. Was this not truly a feminine stratagem in which she at once deceived a public enemy and gratified a private vengeance? She accomplished her object. The Athenian seeing the vessel he had pursued thus attack a barbarian, conceived he had mistaken a friendly vessel for a foe, and turned his attention to another object of assault.

Xerxes, who witnessed this last feat of Artemisia's, of course thought that it was a hostile ship she had sunken, and felt his admiration for the heroine still further increased. His confidence in her superior wisdom was such that he summoned her alone to give advice as to the policy of his returning at once to Susa, and when she counseled him to depart he delivered to her care his young sons who had accompanied him to Greece.

Artemisia's warrior achievements ended at Salamis. The remainder of her reign was devoted to the internal improvement of her kingdom. In that corner of the Greek world men saw the popular factions so rampant in Ionia and the mother land, in complete subjection to a woman. Nothing could daunt her, and her will was inflexible. Her watchful eye detected every revolutionary conspiracy before it was ripe, and at last men feared to plot against the stern old princess. When she had no longer to guard against revolutions, she directed her surplus energies to the ornamentation of her capital.

Sailors coming in from sea saw the haughty city growing into tenfold greater beauty on its commanding eminence. The old queen lavished wealth and genius upon her royal seat. In all the Greek world Halicarnassus beheld no rival save in Athens and in Syracuse. Cymon in Athens and Hiero of Syracuse beheld themselves rivaled by a woman, whose history was as romantic as that of an ancient hero.

In her latter days Artemisia relinquished the scepter in favor of her son Pisendelis, but she gave up none of the real power. Her strong, masculine spirit still clutched at sovereignty, and with all the executive capacity of a Catherine de Medici, she possessed a still greater power. She held it to the last, dying at the age of nearly eighty. Her memory as a queen was long revered in Caria, and her name was repeated a hundred years later in the wife of Mausolus, who built the costliest of monuments over the tomb of her dead husband.

No other Greek woman ever showed the capacity for government that Artemisia did. Perhaps none ever really possessed the power. Cleopatra was a puppet in the hands of Cæsar and Antony, and though she possessed much greater culture, did not have one tithe of the abilities of the Halicarnassian queen. Olympia, the mother of Alexander, had no power of her own. She ruled simply as a regent for her husband or her son, and had none of the warrior courage of Artemisia. Her namesake, the second Artemisia, stands dwarfed beside the stern, reliant Amazon

who fought for Xerxes. The history of Greek warrior women ends with her. Women after her were to reign in the temple of Apollo, and not on the throne of Zeus. As the graceful Parthenon was to succeed the temple of the Olympian Zeus, so Aspasia succeeded Artemisia.

FRED. MYRON COLBY.

KING CETEWAYO.*

IN this somewhat familiarly known representative of savage man we have a higher type of organization than is shown by the rank and file of his people, the Zulus. This South African king produced not a little sensation a year ago during his stay in England, whither he had been taken after the collapse of his long contest with the British authorities, his submission, however, having been obtained only at the cost of much blood and treasure. It will be remembered that it was during the Zulu war that the "Prince Imperial" of France was killed.

KING CETEWAYO.

Cetewayo was restored to his throne in September, 1882, on the condition of remaining heartily friendly to the British Government, and not reorganizing his army. Under the settlement of Sir Henry Bulwer, Zibebu was confirmed in his position as an independent chief, and a considerable district in Northern Zululand was permanently placed under his authority. Hamu, on the other hand, was transferred to the jurisdiction of Cetewayo, who is his half-brother; and thus in waging war he was guilty of rebellion. Zibebu, too, had been fighting Cetewayo, who, because it was thought he did not wish to incur the ill-will of the English

* We are indebted to Messrs. Harper & Brothers for the engraving used with this sketch.

by engaging in hostilities so soon after his restoration, was at first worsted, making comparatively feeble resistance. Zibebu invaded Cetewayo's territory and burnt several kraals near Ulundi, the chief Zulu town, and formed an alliance with Hamu, the forces of both being well armed. So bold did they become that Cetewayo was forced to meet them with full strength.

In July it was reported that Zibebu had defeated Cetewayo, and had burned Ulundi. On the next day the first part of this dispatch was confirmed, but it was stated that Cetewayo, who lost an immense number of men in this battle, had escaped.

Next it was announced that he and his wives and many of his chiefs had been killed, but this was not confirmed by later reports, as the Zulu leader is alive and active. The savage king is a man of fine physique and impressive manner—dignified and commanding. The portrait given is from life, and shows a well-proportioned face and head; the eyes are stern and cruel, but the other features are by no means repulsive.

INVESTMENTS WHICH PAY.

A VERY considerable part of the talk of the world is about investments. You take up a newspaper, be it secular or be it religious, and you do not glance through many of its columns before you come to a well-displayed article in which the movements on 'Change are discussed, and the fluctuations of stocks and bonds given in tables, so that they can be easily noted by the interested reader. You get into a horse-car any morning about the time business men are on their way down-town, and you will hear them talking about this one losing thousands, or that one making a lucky strike on 'Change, and conjectures frankly offered as to the rise of this security or the "tumble" of that. You attend an evening company, and if it happens that half a dozen of the "solid" men who are there get into a corner by themselves, which they are very likely to do, you will notice that their talk gravitates toward business and the prospects of the season for "trade," and reasons will be promptly forthcoming for the dullness in one line of goods and the activity in another.

I do not confess to much wisdom on the subject of finance, for I know that it is a very complicated matter, as the frequent disturbances in its center, and the almost daily failure of some leading business house show. If men who have grown gray in the calculating of chances and counting dollars make grave mistakes and ruin themselves, fall from affluence to poverty in a single day through a single operation, it does not bring a blush to my face to say that I have not resolved the mysteries of financial success. Nevertheless, I think that I have studied the subject of "investments" in some lights and from some points of view which have not been without practical results—and some of these results it is the purpose of this brief article to set before the reader.

First, I would remark that shrewd manipulators of money will tell us that the best securities, the stocks and bonds which one can depend upon, do not, as a rule, pay a high rate of interest, and it is best for people who have money and wish to invest it in something safe to avoid those things which are much puffed and advertised, and offer high rates. Aside from the financial, however, there are safe and permanent investments which one may make and which will yield a large return—a high percentage.

Some of these investments every one can make no matter what his circumstances, be he a clerk in a store or office, or a hand in a machine shop or on a railroad, and be his wages four dollars or forty a week.

For instance, he can invest the quali-

ties of industry and steadiness in his work. By being punctually in his place when the clock strikes and quick to set about his duties, he will form habits of order and precision which will tell upon his work in time, and tell upon the amount of his earnings. He may not be a very clever workman, but application and regularity will make up wonderfully for skill, and in the final outcome yield even better pay than brilliant performance, especially when that is unsteady and unsubstantial.

Then, he can invest his leisure, be it an hour or a minute, in reading useful books, and gradually store his mind with information which some day or other will add much to his savings in the Trust Company, and that perhaps quite unexpectedly, as in the case of the cartman who devoted a great deal of his spare time to the study of foreign languages, and one day received an invitation to take a very respectable place as teacher in a large institution.

But, aside from the possible pecuniary result, such an investment will pay in the acquirements themselves, through the ability they confer to mingle with cultured and learned people on an even footing, and thus enlarge the sense of manhood.

The young man, too, can invest some of his leisure in good, wholesome society, and experience great benefit from its effects upon his disposition and manners. He can invest in kindness and politeness at all times, at home and abroad, and find their returns unfailingly of benefit to him. The little sacrifices of personal convenience which he may sometimes be required to make in order to be accommodating, will be more than compensated in some way. A simple passing act of good manners has been the first step to fortune of many men. I remember the case of a boy who obtained a clerkship in a rich merchant's store, over a hundred applicants, simply because when called into the counting-room he gently closed the door and then stood modestly with cap in hand until he was called to the merchant's desk. Many of the other applicants were better educated and "smarter" than he, but they weren't as mannerly.

Investments in the habits of drinking intoxicating liquor and smoking cigars are wasteful of time and money, and in the end terribly ruinous to body and mind. The account they show is all on the debtor side, with the prospect of total bankruptcy.

Investments, too, made in late hours at entertainments, the theater, and in a round of pleasure which may be according to the license of fashionable life, are likely to prove mistakes in which one will lose much of the capital of health and time bestowed upon them.

Another mode of investment which will be sure to be profitable to him who makes the venture, is in using one's opportunities for purposes of self-examination and self-improvement. I read with much interest the speeches of the students who attended the last session (1882) of the Institute of Phrenology, and noted that the statement of each one was substantially that the time and money spent in the course had secured him the richest returns, and he could not help being grateful for the information and instruction he had received. And I have noted in the PHRENOLOGICAL JOURNAL from time to time statements made by persons of character and influence to the effect that their study of Phrenology had helped them more in their life-work than any other thing, and its value could not be estimated in dollars. In the July Number a correspondent relates an interview with a gentleman who stated that through a comparatively slight knowledge of practical Phrenology he had become a "transformed man," and it had proved to him "an inspiration and a guide."

Those investments which conduce to one's upbuilding in character and nobility of soul are certainly the best; in the long run they pay well, and the pay is not altogether of a "spiritual" sort, for the earnest, honest, thorough-going man is needed by the world of business as

much as by the world of morals, and his services will always be in demand and obtain substantial remuneration.

Let it not be supposed that because I have used the term "man" in the foregoing adversions that they are limited to the sex that term is thought to signify. No, they have an equal application to *woman*, for she has become a factor in every department of active life, and has an equal interest in investments which pay.

M. E.

SOME GENERAL OBSERVATIONS ON AMATIVENESS.—NO. 3.

THE well of truth is not so deep, or its waters so difficult of access as the majority imagine. To desire really to know the truth, to prefer it to any falsehood, however pleasing, is a first step. The next is to fix the attention on some fundamental law or class of facts. To illustrate: Suppose I had never decided whether phrenology is a science. Suppose I had become possessed with an ardent wish to determine upon its truth. What would be a direct course? For fifty cents, for twenty-five, and even for ten cents, I could buy a book or pamphlet that would put me on the straight route of investigation. It would be well for me to invest more, to purchase also larger works, especially if already somewhat of a scientist. Yet a very little would place me where, by my own personal observation, I could understandingly conclude as to the merits of this central science. Why do not a greater number take this obvious way? The answer must be, that many are restrained by some fear, or they do not much care for the truth of the matter.

A well-to-do friend, supposing I smoke, has sent me a box of Havana cigars. He writes me that they are unadulterated, and manufactured from the best tobacco. Shall I smoke them? I am in good health, have not the least need of medicine, neat in my habits, I think, of a considerate turn of mind, and not likely to go to excess in anything. Moreover, I love the fragrance of the cigar, and would be fond of a quiet smoke, especially in company with a much-respected, beloved friend. How nicely they are put up and labeled! How many smoke! Some indulge their love of tobacco in great secrecy. Again, what shall *I* do? Were my lips formed for that purpose? That is the point.

I have heard it said that tobacco contains nicotine, and that is "eminently poisonous." From the publishing house already referred to, I can get for a small sum an exhaustive treatise on tobacco. Shall I send for it, read, ponder, observe for myself too, establish a sound basis, and try to live up to its requirements, or listlessly float along as it may happen?

A similar line of thought and remark dawns before us in respect to intoxicating drinks. Do they all contain alcohol, and is that a poison? The question up now is not a medical one. We are not discussing charity to drinkers, or how to save drunkards, or prohibition, or moderation, or compromise, or the eminent virtues and gifts of some not strictly temperate, or what might be justified in an exceptional case, or the long delays in the temperance cause, or the weakness of human nature, the greatness of the temptation to stimulate—none of these. The inquiry simply is, were the organs of digestion and assimilation constituted so as to be benefited or injured by the habit of imbibing alcohol?

"Though I look old, yet I am strong and lusty:
For in my youth I never did apply
Hot and rebellious liquors to my blood."

Now, where are we? I am old enough to remember the Graham agitation. Dr. Sylvester Graham was a learned and able man. He wrote and talked radical things, not only about diet, but also in respect to the relation of the sexes. I have on my writing-table a circular from

Fowler & Wells, describing a book entitled "The Science of a New Life." Its recommendations are from high sources, including the name of William Lloyd Garrison. I wish to insert three or four for the purposes of my own writing.

The Rev. O. B. Frothingham says: "I have read with care 'The Science of a New Life.' If a million of the married and unmarried would do the same, they would learn many things of deepest import to their welfare. Not that I am prepared to give it my unqualified praise; but the substance of the book is excellent, its purpose high, its counsel noble, its spirit earnest, humane, and pure. I trust it will have a very wide circulation."

The late Judge J. W. Edmonds said: "I have read the work, 'The Science of a New Life,' by Dr. John Cowan, and I ought not to withhold from you the expression of my approbation of it. I would have given a good deal for the knowledge it contains in my boy days—some sixty years ago—and I rejoice greatly that it has at length been put in a form accessible to all."

Mr. F. E. Abbott, editor of the *Index*, writes: "Dr. John Cowan's 'Science of a New Life' is a work devoted to all that relates to marriage, and written in a style and spirit that command our unqualified approbation. It is plain, direct, and practical, yet permeated with so deep a reverence for the marriage relation, and so utter an abhorrence of what we are ashamed to call fashionable abominations, that pruriency will be rebuked, and the love of purity heightened by its perusal. There can be no question that physiological knowledge of this character is sorely needed by thousands and thousands of people, whose innocent offspring must pay the penalty of their parents' ignorance or vice. To those who would put a really unexceptionable book on these subjects in the hands of young persons approaching maturity, we can conscientiously recommend this as one that will enlighten without debasing."

In each notice there is some new idea. Carlyle says: "The most interesting thing in a newspaper is the advertisements." Let that be a comfort to us. Among other things, we have here before us an example of the freedom of style with which subjects once beyond remark are openly commented upon by the best of men and women. Let that encourage us.

If we could follow in the circulation of the able books commended, what should we hear? The attractiveness of the general subject, the interesting treatment of many points would be admitted. There would be ready concession to not a few important statements. But we should find, particularly if we are "mind readers," a widespread demurrer. One position, to many, would seem over-strict. It would appear gloomy, offensive. "Why do we have such propensities, if they are no more to be gratified? The virtue, if you call it so, is impossible. It were not desirable, if possible. What is the inducement to form a matrimonial alliance and live mainly like a Shaker after all?"

I would remind my thoughtful reader that in this case, as in others, the matter must have its cardinal point or points, not very difficult to find, if we truly seek. There are inquiries, such as the origin of man, the precise condition of a spirit unclothed of the body, and others, that strain our powers and almost elude all our searchings. Darwin always theorized with the modesty so becoming to the uncertainty of the far-reaching problems he debated. We only have here to pass upon what is a portion of every-day life, of present indices. For what was amativeness and the materialities directly relative thereto primarily bestowed? What do the analogies of the animal world teach? Can there be but one clear, clean, scientific answer? If, then, I employ the instincts and endowments designed for the perpetuation of the species in wantonness, prematurely, excessively, to foil or to mock, or if there be parentage not of wisdom, then are we like one who should take opium for food, or sprinkle strychnine as a condiment. We have thus departed from the institutes of nature.

Music is an end of itself. We may resort to it as we like. So is laughter complete in itself. A story, or even a sermon, may be the better for a grain of humor in some part of itself. The humor begins and ends there its natural history. Form, ideality, Platonic love, some phases of amativeness, are complete within themselves. Wisdom and use are universal umpires, to be sure. Still, they will allow there is some utility in seasonable playfulness, such a thing as rational ornamentation.

Boys and men too are liable to be despairing if limited as to their enjoyments. Melancholy, however, is always foolish. The true friend of man endeavors to augment the actual happiness of the race. If I keep my boy in out of the storm, I purpose his welfare by the confinement. To rebel against a divine decree is more than impious—it is disastrous. To eat, to drink what is not constitutional aliment, to absorb nicotine, no matter with how much pleasure, can not be promotive of human happiness.

"Kings may be blest, but Tam was glorious,
O'er a' the ills o' life victorious."

Next he must get home from his midnight revelry. Well the poet moralizes:

"But pleasures are like poppies spread,
You seize the flow'r, its bloom is shed;
Or like the snow-falls in the river,
A moment white, then melts forever;
Or like the Borealis race,
That flit ere you can point their place;
Or like the rainbow's lovely form,
Vanishing amid the storm.
No man can tether time or tide;
The hour approaches Tam maun ride."

When I am content with nature's beverage, I am in the right frame of mind to admire the abundant provision for water and its beneficent uses. I may extemporize a hundred simple drinks, of which water is the basis, if I choose, providing I mix in nothing deleterious.

To my mind, amativeness is capable of bestowing an unknown amount of delight upon man. Just as he becomes enlightened, self-controlled, obedient, sexual facts and sexual relations get clothed with a new, a varied, an imperishable interest. In the most advanced portions of human society to-day, the boy and the girl are nearest together, the best mates, the young man and damsel on the best terms, the man and woman the greatest friends.

We have, in our age, knowledge enough, accessible information, as we have seen, to lay the foundation for all reasonable certainty as to the true relation of the sexes. Let each one observe, read, reflect. Nothing shall be arbitrary. We will not allow any one to impose his or her ideas without a reason. We stand or fall with our own master. The law may restrain our conduct; it can not reach our thoughts or affections. We want to know the ordinance of nature, we hearken for the voice of the Lord. If the highest life, if the ultimate, if the absolute is that material passion should be reserved for perfect parentage, let it so be taught. How can we in candor and nobleness say less?

For one, I have great confidence in the power of just primary ideas. They are in the mind, with legislative, judicial, and executive function. They may not at first secure perfect government. A sweet will is to be won, the feelings educated, habits renovated, customs changed. Here is a long work, embracing infinite detail. In the long while, the ideal is becoming actual. Let there be patience, let there be charity.

I have mentioned the name of Garrison. In my library I have a book of his writings, presented to me by his own hand, which had written his name and respects upon the fly-leaf. None goeth before me in honoring his great name. Yet at times I fear he was too caustic, and I doubt whether the North did all it could to remove slavery without bloodshed. "Madame le Vert, in one of her charming pictures of Cuban life, says the women there have a noble trait of character: they never speak ill of each other, but always find some palliation for the errors of their own sex." How beautiful! How worthy of imitation by all!

Love will never die. We want to give it the widest dominion possible. We

want, moreover, to grant to passion all we possibly can and remain faithful to our entire well-being. We are careful about stinting its expression. The following notice we cut from an excellent paper:

"In Miss Wheeler's 'Poems of Passion' we have the efforts of a female Bunthorne to impose upon the public a series of gushing compositions born of the flesh and dedicated solely to the animal nature. It is difficult to find poetry in such stuff, unless we are willing to acknowledge that the divine afflatus may be degraded to the level of the inspiration of the midnight cat. Emotional intensity dominated by passion, and the sexual passion at that, can not be ranked as a virtue. In Miss Wheeler's case it has leaped the bounds of reason, and goes off in a whirlwind of ecstasy which, though set forth in feet and verses, is not poetry. We doubt whether any father of daughters would care to have the book lying habitually on his parlor table."

We are in danger of making this number too long, and will close it by adding, that I have not seen Miss Wheeler's work, but would not be surprised to find it had, after all, a legitimate place in legitimate literature. IMPERSONAL.

COMUS:

A MASK. — BY JOHN MILTON.—(*Continued.*)

The attendant Spirit, habited like a shepherd.

THAT halloo I should know, what are you? speak;
Come not too near, you fall on iron stakes else.

Spi. What voice is that? my young Lord? speak again.

Y. Bro. O Brother, 'tis my father's shepherd, sure.

E. Bro. Thyrsis? whose artful strains have oft delay'd
The huddling brook to hear his madrigal,
And sweeten'd every musk-rose of the dale.
How cam'st thou here, good Swain? hath any ram
Slipt from the fold, or young kid lost his dam,
Or straggling wether the pent flock forsook?
How could'st thou find this dark sequester'd nook?

Spi. O my loved master's heir, and his next joy,
I came not here on such a trivial toy
As a stray'd ewe, or to pursue the stealth
Of pilfering wolf; not all the fleecy wealth
That doth enrich these downs is worth a thought
To this my errand, and the care it brought.
But, O my virgin Lady, where is she?
How chance she is not in your company?

E. Bro. To tell thee sadly, Shepherd, without blame,
Or our neglect, we lost her as we came.

Spi. Aye me unhappy! then my fears are true.

E. Bro. What fears, good Thyrsis? Prithee briefly shew.

Spi. I'll tell ye; 'tis not vain or fabulous
(Though so esteem'd by shallow ignorance)
What the sage poets, taught by th' heav'nly Muse,
Story'd of old in high immortal verse,
Of dire chimeras and enchanted isles,
And rifted rocks whose entrance leads to Hell;
For such there be, but unbelief is blind.
Within the navel of this hideous wood,
Immured in cypress shades a sorcerer dwells,
Of Bacchus and of Circe born, great Comus;
Deep skill'd in all his mother's witcheries,
And here to every thirsty wanderer
By sly enticement gives his baneful cup,

With many murmurs mix'd, whose pleasing poison
The visage quite transforms of him that drinks,
And the inglorious likeness of a beast
Fixes instead, unmoulding Reason's mintage
Character'd in the face; this have I learnt
Tending my flocks hard by i' th' hilly crofts,
That brow this bottom glade, whence night by night
Of knot-grass dew-besprent, and were in fold
I sat me down to watch upon a bank
With ivy canopied, and interwove
With flaunting honey-suckle, and began,
Wrapt in a pleasing fit of melancholy,
To meditate my rural minstrelsy,
Till Fancy had her fill; but ere a close,
The wonted roar was up amidst the woods,
And fill'd the air with barbarous dissonance;

Circe and Her Victims.

He and his monstrous rout are heard to howl
Like stabled wolves, or tigers at their prey,
Doing abhorred rites to Hecate
In their obscured haunts of inmost bowers.
Yet have they many baits, and guileful spells,
To' inveigle and invite th' unwary sense
Of them that pass unweeting by the way.
This evening late, by then the chewing flocks
Had ta'en their supper on the savoury herb
At which I ceased, and listen'd them a while,
Till an unusual stop of sudden silence
Gave respite to the drowsy flighted steeds,
That draw the litter of close-curtain'd Sleep;
At last a soft and solemn breathing sound
Rose like a steam of rich distill'd perfumes,
And stole upon the air, that even Silence
Was took, ere she was 'ware, and wish'd she might
Deny her nature, and be never more
Still to be so displaced. I was all ear,

And took in strains that might create a soul
Under the ribs of Death: but O, ere long,
Too well I did perceive it was the voice
Of my most honoured Lady, your dear sister.
Amazed I stood, harrow'd with grief and fear,
And O poor hapless nightingale, thought I,
How sweet thou sing'st, how near the deadly snare!
Then down the lawns I ran with headlong haste,
Through paths and turnings often trod by day,
Till guided by mine ear I found the place,
Where that damn'd wizard hid in sly disguise
(For so by certain signs I knew) had met
Already, ere my best speed could prevent,
The aidless innocent Lady, his wish'd prey,
Who gently ask'd if he had seen such two,
Supposing him some neighbour villager.
Longer I durst not stay, but soon I guess'd
Ye were the two she meant; with that I sprung
Into swift flight, till I had found you here;
But further know I not.[31]

(*To be continued*).

[31] It might be asked by a critic, why the Spirit, possessing an immortal frame, and also conscious of being sustained by higher power than Comus, should fear to cope with the sorcerer then and there, when occasion seemed so imminently to call for interference, and rescue the Lady at once. But it must be remembered that his mission was not to forestall trial, but to watch and guard it according to the need of the sufferer.

THE FIRST GUN FOR PEACE.

BATTERY "H" was the last battery raised by Rhode Island during the war. It was sent to the front at a most trying time—when the nation began to realize what war really was—in the dark hours when the call was made for the "second 300,000."

In October, 1862, Battery "H" was mustered into the United States service. Only a full history of this battery could properly explain how it was that it escaped actual combat until the last campaign. The battery saw much trying service, but it somehow happened, although it was with the Army of the Potomac for nearly three years, and at the "Wilderness" and "Spottsylvania," that not until the last few months of the war did it have the opportunity to fire a gun in battle.

The first captain and organizer of this light artillery company was Jeffery Hazard. After serving with it about a year he resigned, and it was then commanded by Captain Crawford Allen. From the time of its organization till March, 1865, it was armed with "three-inch rifle guns." A few weeks before the attack upon the Confederate strongholds, from Richmond to Petersburg, these guns were exchanged for what are known as "light twelve-pounders." This placed the battery under very unfavorable conditions. It had become accustomed to a certain kind of gun, and now, when it was to go into close and severe action, those guns were exchanged for another and heavier kind. It was rather an awkward thing for the men to handle guns they had not been accustomed to; nevertheless, they did noble service with them.

On the 2d of April, 1865, before daybreak, the lines to the south of Petersburg were carried by the engineers and infantry. Battery "H" soon followed, and actually fired its first guns, before it was yet full day, within the outer Confederate lines. The inner, stronger line lay beyond, and, from daylight till nearly dark, Battery "H" contested with that strong inner line; and for full half a day fought the enemy far in advance of the pickets, on a field as open and exposed as was seen in Virginia during the war.

There were three or four large and well-manned forts, one field battery, and infantry doing their very best to drive the battery from its position. Because Battery "H" had so long been kept in the background, it was a little doubtful how the men would behave under such an ordeal; but they stood the test bravely. How the battery was permitted to stand in such exposed places, driving the enemy's light battery back from point to point, even forcing it to seek shelter behind breastworks, and to continue the unequal contest against forts, batteries, and small arms (including sharpshooters), without being demolished in less time than it takes to read this, is one of the marvelous incidents of the war.

When we know that Battery "H" did this, there is a satisfaction in thinking that it earned, partially at least, the right to fire the first gun for peace. At the end of the war, when returning home, we met some of the members of the Confederates with whom we were engaged on that memorable day. By various questions from both sides, they and we learned the above facts. After being well satisfied with our identity, one of the Confederates asked us if we "were drunk or crazy" that we should have ventured into such a place? The reply was, "Neither; we had no liquor, nor the opportunity to get any; and as for being *crazy*, the gentlemen had a chance now to see us and to judge for themselves."

This action was on the 2d of April, 1865. It was not until late in the afternoon of that day that infantry was sent to our support, and then the noble Vermont brigade of the First Division, Sixth Army Corps, came and formed in line of battle in our front. The next morning Battery "H" started with the army in pursuit of Lee, and from this time was in the immediate front, and was the only battery in the battle of "Little Sailor's Run," the last real engagement of the grand old Army of the Potomac. The roads, owing to the rains and the hasty tramp of armies, were about as bad as had been seen in Virginia during the war. The ruts were so deep that the hubs of the wheels made their tracks as well as the felloes. During the last four or five days of this retreat it was daily and almost hourly reported that "Lee will surrender to-day." But the days passed on, and they seemed like weeks; yet there was a feeling of victory, and that the surrender, at the farthest, was a question of only a short time.

This made a great difference with the *morale* of the army, and caused the report to be treated lightly while all was so favorable. The morning of the ninth of April came—as fine a spring day as ever dawned. The usual movements were the order of the day, including halts, consultations of generals, etc.

The report "Lee will surrender to-day," as on previous days, passed from division to division, but we had become so accustomed to it that we scarcely heeded it. We were patiently waiting for it to occur, yet expecting more battles ere it was consummated. But with the 9th of April the surrender came. Battery "H" was still in the front. We had turned the angle of a road and been ordered into a field. Captain Allen being well acquainted with General Weeden, who commanded the first division of the Sixth Army Corps, rode to the front with him. The hours passed quietly away. After a while, as we cast our eyes up the road, we saw Captain Allen coming at break-neck speed, as fast as the "Captain's mare" would carry him, and the "mare" was good for speed and endurance. Onward he came. We instinctively sprang to our feet and stood ready for whatever order should be given. What would it be? Another battle—another fight—seemed to be the prophecy of that rapid pace. There was great commotion in the camp as we watched the near and nearer approach of that little squad rapidly coming on, led by the "Captain's mare." On it came. The Captain turned into the field. Nearly breathless he ejaculated in fierce, impatient, and broken sentences, "Get this battery ready for action! Fire a salute! for peace! Lee has surrendered!

Hurry, let Battery 'H' fire the first gun!" These may not be the exact words of the Captain, but in general they represent the orders given on that occasion.

Lieut. Knight now took command. "Hurry!" "Hurry!" was the word, but the men did not require to be hurried with words; they were as earnest on the occasion as the officers.

A most provoking delay occurred, which was beyond all prevention. As before stated, Battery "H" had at a late day been forced to change its guns. In the old battery of three-inch rifles the ammunition was separate from the projectiles, so it could be used separately. But for these "light 12-pounders," the ammunition was attached to the projectiles, in order to save time in close action. The separation of projectile and ammunition necessitated the delay. The other batteries saw our commotion, and not many minutes elapsed before it became known what was about to be done. Battery "H," however, lost no time, and soon got across the road in an open and unoccupied field where no damage could occur from any accidental firing. "Boom," "boom," "boom," went the guns. The commander of the artillery brigade of the corps, Major Cowan, came over in person to see what was the cause of all this firing. He soon learned.

"Captain Allen, by what authority do you fire this salute?" he asked.

"By the authority of General Weeden."

"The order therefore should have gone through the commander of the artillery brigade," he retorted.

We knew not the Captain's exact reply—if he replied at all. His actions, though, seemed to say that he knew the law; but this was a grand occasion when "red tape" could be dispensed with. The Major, however, took a sensible view of the situation, and immediately ordered the rest of the brigade to follow our example, and in less time than it takes to tell this, the guns of the whole artillery of the Sixth Corps were booming forth their harsh, yet now, to our ears, jubilant notes in honor of victory and peace. That was a most joyful occasion. The infantry rent the heavens with their hurrahs, caps were flung in the air, all were happy, the long-looked-for peace had come at last, and we there at the front were the first to celebrate it. Congratulations to Battery "H" were the order of the hour.

This would seem to be honor enough for one battery, yet in addition to the trying circumstances from April 2d to April 9th, firing its first guns within the Confederate lines, participating in the close pursuit of Lee, and in the last regular battle of the Army of the Potomac, at the very front when the surrender took place, and firing the first gun for peace—the battery was again ordered to continue hostilities in an entirely new and unlooked-for direction.

As all knew, an army under Johnston still held the field, refused to surrender, and continued its retreat through North Carolina toward Virginia. The Sixth Corps, or a part of it, was ordered on a hurried march to Danville, Virginia, to intercept their retreat and close up the war without further delay. Battery "H" formed a part of this force. The delayed surrender of Johnston, however, took place before the arrival of this effective corps of the Army of the Potomac. But from the heights surrounding Danville, Battery "H," in company with the rest of the artillery of the corps, had the honor to participate in another national salute for peace. This seemed to be our mission to Danville.

The war now ended, the battery was ordered to return to Washington. It marched by the way of Richmond. While there it was ordered to "turn in" its ammunition and chests for transportation by water. So from Richmond to Washington it practically marched unarmed across the late hostile country to the capital city of the nation, where, after participating in the grand review of the Sixth Corps, June 9, 1865, it delivered up its guns to the Central Government from which it had derived the right to use them.

"No. 3," on the third piece, I. P. N——.

Washington, D. C.

SLAVES TO FASHION.

CAPTAIN COOK, in the account of his voyages to the Pacific Islands, gives interesting descriptions of the manners and customs of their inhabitants. "In Australia," he says, "the principal ornament of the men is a bone which they thrust through the cartilage that divides the nostrils from each other. . . . As this bone is as thick as a man's finger, and between five and six inches long, it reaches quite across the face, and so effectually stops up both the nostrils that they are forced to keep their mouths wide open for breath, and snuffle so when they attempt to speak that they are scarcely intelligible even to each other." Bancroft tells us of the Chinook mothers, who, with unflinching hand, compress between boards the tender heads of their infants until these assume a shape compatible with their ideas of the beautiful.

Men who blacken and color their teeth then file them into points, or zig-zag, until they are useless as instruments of mastication; men who tattoo their whole bodies, who train their hair into towers and minarets, who split and twist the horns of their cattle, who cut off their fingers as signs of mourning for dead friends, who wound and gash themselves because it conveys the idea of bravery; women who pull out their eyebrows and teeth, and shave their heads after marriage according to custom, and women who bind their daughters' feet, in spite of their agonizing cries and tears, to distort them to a degree of smallness considered beautiful, we call "Slaves to Fashion"!

But in this part of the globe, and in this nineteenth century, does there not exist a more civilized and enlightened people? Is it possible to find Fashion's slaves among us? Would it not be an insult to apply such an epithet to the high-born lady who supplicates for the presence of Mlle. Sarah Bernhardt and son at her select "At Home," but who turns with a shudder from the poor country-girl whose trust has been betrayed? Yet why this distinction? Fashion bows before the noted actress, but spurns the obscure sinner, and its slaves must do the same.

Ask some fond English mother of daughters if she approves the Indian woman's manner of compressing her baby's head. Her indignation would be extreme. "Poor, dark, savage mind!" she would exclaim, "what a dreadful custom!" Why is it so dreadful? It does not seem to hinder the child's healthy growth. "But," expostulates the lady, "he will be so hideous, and it is such a perversion of nature. Nothing can be more beautiful than the human form unchanged and unadorned."

Ah, my dear madam, if that is what you think, why do you deform the bodies of your own children with those *immoral* inventions known as stays? Surely they do not make your daughters beautiful or

healthy. On the contrary, they are the cause of more female diseases than anything else known to the medical world. They undoubtedly pervert nature, and are quite as dreadful as the compressing of a savage skull.

Fashion is a conventional code of laws that has grown along with the world. We try to conform to the copies it sets us, not because we always think them beautiful, but because, by conforming, we do what is comfortable, and are made less conspicuous than if we set up for ourselves a new code of laws.

Conformity is good because it is peaceful, and peace is happiness. But peace can also be ignoble. All *blind* obedience—be it to parent, priest, pope, or king—is slavery. The free man knows no master save himself, and obeys *never* when his *reason* disapproves. All slavery is degrading. It takes from man his highest attribute—free thought and action—and likens him to the dull beast of burden, the imitative ape, the conventional sheep. Doubly degrading is slavery which one gladly submits to. Better war than conformity which brings disease and death! There may be some excuse for slavishness in body; there is none for slavishness in mind. The negro doing his master's bidding from fear of the lash deserves our pity; the woman destroying her body from fear of social gossip deserves our contempt.

Fashion's ideas of the beautiful and the good often arise from some accident (as the scrofulous neck), or are moulded by the most ignorant and idle of men and women—by actresses, princesses, and dressmakers. Look at the conventional men and women of fashion. Are they remarkable for their breadth of mind, their habits of careful study, their intellectual culture, their philanthropic ideas?

When we accept fashions to the injury of ourselves or our race, we are, in plain words, *criminals*. The Chinese woman killing her new-born babe we call immoral; but the Christian woman bearing a weakly child we do not condemn—though this weakness be due to false habits and false dress—to the mother's fashionable life! Think for a moment how much there is in the life of each of us that is ruled by fashion. In education we study what is considered the most beautiful and accomplished, not what will be most useful. We are laughed at if we mispronounce a name, but not thought the worse of for any want of knowledge as to the formation of the eye or ear. In dress, we do not consider the hygienic effects of what we wear, but simply the conventional standard of beauty. Low heels and square toes do less harm than the commonly worn French styles, but such a consideration has little weight in the mind of a nineteenth century beauty. We may, indeed, think the pointed toe and high heel beautiful, but is our judgment sound? We must remember that certain American Indians despise a head not flattened like a pancake; and to the Australian there is no ornament more beautiful than the nose-peg. Let us not be sure that our ideas of the beautiful are correct until we have carefully considered and tested them. Let us remember that nothing can be beautiful that is harmful, and that it is a good rule never to conform when conforming can hurt us morally, mentally, or physically. Our duties of self-preservation and the preservation of the race stand higher than our duties to any fashionable society.

Dr. William Flower says: "In admiring such distorted forms as the constricted waist and symmetrically pointed foot we are opposing our judgment to that of the Maker of our bodies; we are neglecting the criterion afforded by nature; we are departing from the highest standard of classical antiquity; we are simply putting ourselves on a level in point of taste with the Australians, Botocudas, and negroes. We are taking fashion and nothing better, higher, or truer for our guide, and after the various examples that have been brought forward may we not well ask with Shakespeare—

"'Seest thou not what a deformed thief
This fashion is?'"

L. M. P.

GENESIS OF ALCOHOL.—No. II.

IT should be stated that alcohol, like water, has always prescisely the same constitution; hence always the same properties and characteristics. Each atom of water is always constituted of two atoms of hydrogen and one atom of oxygen combined in the same peculiar way, and can be constituted in no other way. This is pure water. Impure water is so named not because the water itself is impure, but because other substances are dissolved or mixed through it. They, good or bad, are never combined with the water without producing a new substance, in which the characteristics of water are not perceived. Alcohol, as before said, is constituted always of $O H_6 C_2$. There is no such thing as weak alcohol, strictly speaking. Each atom of alcohol has always the same degree of strength. Of course, two atoms of alcohol can produce more effect than one can. Water mixed with alcohol is said to weaken it. That, as is now seen, is not a precisely true statement. Water or other articles mixed with alcohol merely reduces the quantity of it in a given space and thus reduces its effects, but does not modify its characteristics nor its tendencies. It should also be remembered that each simple element—for example, carbon or oxygen, etc.—is always the same thing, having the same characteristics—nor more, nor less, nor otherwise.

But some substances that have the same name, on account of which we should at first suppose that they have the same constitution, are differently constituted, either in respect to the proportions of the constituting elements, or because they are in some way combined differently. The starch from corn and the starch from potatoes have the same proportions of carbon, hydrogen, and oxygen, but they are put together in some way slightly different in the two cases; at least, the glucose made in the same way from each will be slightly different, since the glucose from potato starch is a little sweeter than that from corn. The starch from artichokes, dahlias, etc., is named inulin, yet it looks and works in clothes like starch from corn and potatoes. But worked in the same manner as they are into glucose, it is exceedingly sweet, and is named levulose. It gives the sweetness to honey, yet it has the same elementary composition as glucose and the same food value, and so has cane sugar, which is intermediate in sweetness between levulose and glucose. Glucose and levulose are produced from their respective starches in the same manner, namely: The starch has a certain proportion of water added to it, and is then brought up to a certain temperature. A proper proportion of sulphuric acid is added to a much larger quantity of water, and brought to the same temperature as the starch and water. Then the two are mixed, the acid compelling the starch to take up some of the water, and then to change into glucose in one case, or into levulose in case of the inulin starch being used. Carbonate of lime is used to neutralize the acid, and the sulphate of lime settles, and is drawn off while more or less of the water is evaporated, and the syrup glucose or levulose is complete.

Indeed, different specimens of common cane sugar, and apparently refined to the same degree, differ in sweetness on account of some subtle difference in the putting together of the elements of which the specimens are constituted. In the various foods that we buy under the same name, and having the same general appearance, there is a great difference, not in flavor only, but in food values and in wholesomeness. An egg to some people is an egg, whether large or small not only, but whether fresh or stale; whether the yolk is a deep red or a very pale color. Yet there is a great difference in the constitution of eggs, whether the fowl that laid them was fed upon one diet or upon another; and so it is not a matter of small importance. "But to return to our mutton. "Alcohol is not only the like thing wherever and whenever found, but it has

only one parentage—glucose—and the process of making it is always exactly the same, as has been said.

The glucose is also one way or another produced from the starch—its antecedent—and which is one step, and the first one, on the way which the plant takes toward the production of glucose. The malster germinates by means of moisture and a moderate heat his barley, in doing which there is produced a substance named *diastase*, that, exerting an influence upon the starch of the barley, causes it to change into glucose that becomes caloriñc food for the fungus yeast-cell that eliminates or urinates one of the waste substances in the form of alcohol, and breathes off the heat-producing part as carbonic acid. When a man or an animal takes starch as heat-producing food, it finds in the saliva a peculiar substance named Ptyalin in relatively very small quantity, which has the influence upon each atom of the starch to make it take up an atom of water, and then compels it to change into two atoms of glucose. This is ready to enter the blood and become a part of it, glucose being one of the three wholesome substances that can enter the blood, namely: 1, glucose; 2, peptone; 3, emulsified fat. How the glucose, after it has entered the blood, is broken up and used in producing heat or fat in the body, no one as yet certainly knows. But no alcohol is or can be produced, since there is not and can not be any yeast-cells in the blood.

It follows evidently from our premises that alcohol can not, if taken into the blood, legitimately serve in producing heat or fat, since the method of producing heat by the use of glucose and fat, and by exercise, are the only methods prevailing in all animals, and of course the same mechanism that can use glucose for the production of heat or of fat, can not in the nature of the case produce heat or fat by the consumption of alcohol, which is but a part of the glucose.

Some tribes of men get alcohol from the glucose formed from the starch that they chew in their mouths and throw out, naming it Ava. This is subjected to the action of yeast, and it, as usual, produces alcohol, and upon that the king of the tribe gets drunk. Noah did this same thing by drinking the fermented wine of the grape, in which starch is produced in the process of growth, and also a form of *diastase* named *pectase*. This is also produced in other fruits. The pectase, like diastase, induces a change of some of the starch into glucose, and this, submitted to the action of the yeast-cell, exhibits alcohol as one of the results. If there is more glucose than will form fifteen per cent. of alcohol, it will in that proportion kill the yeast-cells, and the wine will be sweet. If the glucose forms less than fifteen per cent. of alcohol, the wine will be acid. Wine always, however, contains some acid, whether obtained from grapes or other fruits, and is thus distinguished from the beers produced from the starch of the acidless grain. Apple cider has its distinctive name, yet is a wine. That of pears is named Perry. In all cases the alcohol is the same, and is produced in the same way. The rums are produced from molasses, another form of glucose, by fermentation, namely, by the action of the yeast-cell; and, as in case of whiskey, brandy, etc., by distilling the alcohol from the menstrum in which the alcohol has been produced, distilled liquors are obtained; more or less of the water and other flavoring ingredients of the menstrum coming over in the still with the more volatile alcohol. The distilled spirits of wine are named brandies. Those distilled from beers are named whiskies. Those distilled from fermented sugars or molasses are named rums. If the wine has in it a carbonic acid, as well as the alcohol thrown off by the yeast-cell, it is named champagne. If juniper extract is added to distilled liquors, they are named gins. Among uncivilized nations many kinds of alcoholic liquors under as many names are found, stronger or weaker, as the case may be. But ever is the alcohol, its origin, and the effects of it when drunk, the same as it ever has been and shall be, world without end. T. S. LAMBERT, M.D.

THE DIET OF THE CHINESE.

EXCLUDING beef and dairy products, Chinamen eat everything that is edible, horse and ass flesh, snakes, rats, mice, dogs, grasshoppers, spiders, worms, cocoons, sea-cucumbers, swallows' nests, and so on, says a writer in the St. Petersburg *Messenger*. Once, while living in a villa near Peking, I saw a very strange scene. There appeared a cloud of grasshoppers. Suddenly the field was covered with Chinamen, who ran frantically hither and thither, gathering them in. They filled large sacks and bags with the insects. They carried portable stoves on which they roasted their curious game. Other Chinamen greedily devoured the grasshoppers, paying a penny for ten.

At the head of all meats, Chinamen put, of course, pork. In their opinion, to the hog belongs the first place in the list of domestic animals. If you ask a Chinaman why, he will tell you proudly: "Because it was the hog from whom the Chinaman descended!" Don't you see, the Celestials have beaten Darwin on the theory of the descent of man. It is only natural, then, that among Chinamen hogs should enjoy full rights of citizenship. Like dogs, they wander wherever they please. A Chinese street without a number of hogs is an impossibility.

Are there many hogs in China? I should think so. On a single holiday, in memory of their ancestors — not the original ancestors, the hogs, but merely human ancestors—the Celestials eat fully 650,000. I must admit that Chinese pork is superior to any found elsewhere on the globe. Poor Chinamen who can not afford to buy pork, eat meat of dogs, asses, horses, rats, mice, rabbits, hares, goats, and sheep. But I never saw them eating cats. Of birds, the Chinese eat silver pheasants, ducks, geese, chickens, jackdaws, crows, and many others. Curiously enough, the so-called Cochin-China fowls are very rarely seen here. Salt eggs are in great use here.

Among the choice delicacies of the Chinese must be mentioned the fins of sharks and the nests of sea-swallows. Under the latter is understood not the whole nest, but only the mucilaginous inner coating of the nests. It is believed that the swallows who build their nests on the sea rocks cover their nests and glue them to the rocks with the juice of sea-cane, which, on being dried, looks like mucilaginous membrane. On the market these nests are found in the shape of a hemisphere of the size of a half orange peel. The nests are sold here at fifteen to twenty-five dollars per pound. They are used principally for making broth, to which they give a peculiar aroma and taste, much valued by gastronomers. Rice stands, of course, at the head of vegetable foods. Without rice-gruel no meal is served here. "Fan" means both "to have a meal" and "to eat rice gruel." The brown rice, which is common rice, but heated and musty, is much liked. There is also a red variety of rice.

Honey is much used here, but chiefly as a cosmetic. After being mixed with flour, it is used by the women in their hair dressing. With their hair saturated, sticky, and shining with honey, they must be indeed sweet. As everybody knows, the Chinese are passionately fond of tea, which they cultivate for the rest of the world. They drink it at every meal, at home and out, when idle and at work, in shops and in offices—in short, everywhere, and at any time of day or night. The red, black, and green sorts of tea they prepare only for export, while they themselves use exclusively yellow tea. They take tea in small cups, and without sugar.

Though in China there are excellent sorts of grapes, yet no wine is prepared there. The Chinese make two kinds of whiskey, of sago and of rice, and drink a good deal of it. Women also drink and smoke here. A tin gill of the shape of an hour-glass is used for whiskey drinking. They had no glass works here until

recently, when an American gentleman taught some Celestials to make glass. During my thirty years' residence here I have never seen a single drunken Chinaman on the street. No coffee or chocolate is used here.

CONSIDERATIONS WHICH SHOULD ENTER INTO THE MARRIAGE CONTRACT.—With the lawgiver, the contract of marriage—the most important of all contracts—may be supposed to rest upon the gravest considerations, and give rise to the most serious deliberations. He may well inquire:

1. What relations must be prohibited from marrying each other?

2. At how early an age may marriage be permitted, and what relations must be called upon to assent to the marriage of minors?

3. Ought the insane who have lucid intervals to be permitted to marry?

4. Are there any diseases — such as leprosy, elephantiasis, scrofula, or others —which ought to prevent the marriage of such diseased persons?

5. Ought marriage with inveterate drunkards to be prohibited?

6. Are there any crimes which ought to be considered as a bar to the marriage of the criminal?

7. Assuming, according to the prejudices of the largest number, that the white is the superior race, ought laws to be passed prohibiting marriage between white persons and Indians, negroes, Australians, or Chinese?

What will be the effect of such marriages on the welfare of the State? Will they drag down the assumed superior race, while they tend to build up the other race? Will such marriages offend the race prejudices alike of the black and white race? Or will such marriages be pleasing to the one race and displeasing to the other? Will not the violation of race prejudices by such marriages occasion unhappiness, and is there any advantage to the State to compensate the misery? What has been the result of the marriages of white women with negro men on the happiness of the wives and their offspring?

Such questions as these, it may be assumed, are in the mind and province of the Legislatures when marriage laws are framed; and who shall say that such grounds ought not to be considered? When we bear in mind how difficult it is to pass laws through Congress, and how difficult it is to adopt uniform laws which do not operate harshly on some portion of our immense country, we may well question the advisability of amending the Constitution of the United States in order to put the subject of the marriage relation under the control of Congress. How many years has the Parliament of England been wrestling with the deceased-wife's-sister question? — *Popular Science Monthly.*

PERILS OF INFANCY.

IS it not singular that of the young of all created beings the young of the human species suffers the most sickness and the highest rate of mortality? The young of all other animals come into the world in a healthy condition, eat their food, and generally continue uninterruptedly in health until they attain their growth. The young of the human species generally enters the world in a healthy condition, but numerous perils at once beset its growth. In England, according to the "English Life Table," of one million children born 46,503 die the first month, 17,155 die the second month, 12,178 the third month, and so on decreasing gradually, so that 6,518 die the twelfth month. During the first year, 149,493 of the one million, or nearly one in seven, dies. Dr. Charles West, of England, the well-

known author of a work, on "The Diseases of Children," used to say to his class of medical students: "Children will form, at least, a third of all your patients; and so serious are their diseases, that one child in five dies within a year after birth, and one in three before the completion of the fifth year." In Massachusetts about one child in ten dies within the first year after birth, and one in four within five years. In Austria one child in four dies within the first year after birth, and more than one in three within the first five years.

Why should so high a rate of mortality attend the early years of the infant? Infants are endowed with exceedingly delicate sensibility, and are susceptible to injury from many and slight causes. The young of no other animal is so tender and so susceptible to injury as the child. It is the most delicate of all creatures, and requires the most careful attention and appropriate nursing. It must be shielded from exposure to cold, must be properly fed, and provided with pure air to breathe. Statistics of the causes of death among children show that diseases of the digestive organs cause more than one-quarter of the deaths under five years in Massachusetts; diseases of the brain and nervous system, one-seventh; and disturbances of the lungs and respiratory organs, one-fifth. These statistics show that diseases of the digestive organs occupy a prominent place in the causation of death among young children. This fact indicates the importance of attention to the diet of children, as most of their diseases are due to errors in feeding them. Most of the infants are fed too much. So general is the practice of overfeeding, that nurses will tell you when a child spits up its milk or the stomach runs over, that all healthy children do that, regarding it as the natural condition of children to be so full of food that some of it will frequently be thrown off from the stomach. The practice of overfeeding is as ancient as Shakespeare's "mewling and puking" representation of babyhood would seem to indicate. Very little regularity is observed in feeding infants. Whenever a child is fretful or cries it is nursed to quiet it. The cause of the fretfulness and crying may be that it has already eaten too much or is sick; yet more food is offered as the panacea for all its woes. When the stomach becomes so full of food that it can hold no more, relief is found by rejecting its contents; but as soon as the child can be induced to take more food, more is given. This system of overfeeding is not only continued during the day, but is also kept up through the night whenever the child is sufficiently awake to take food. Is it any wonder that diseases of the digestive organs cause the death of about one-fourth of the children who die within five years of their birth? In an article on Infant Mortality in the Boston *Journal of Chemistry*, Dr. C. E. Page says: "During the first year children, as a rule, are *stuffed* early and late; hence the greatest mortality is at that age. After this they are allowed more time between meals; hence a less proportion die." Dr. Page adds: "With right care as to feeding, clothing, and cleanliness (but chiefly the feeding) the death of a healthy born infant before two years of age would be so rare as to be a cause for wonder and comment; in fact, would be regarded as a strange phenomenon. Cholera infantum would be unknown, 'teething sickness' a thing of the past, or so slight as to cause no anxiety, and the infants would be in a condition to combat successfully the various infantile diseases."* The common practice of feeding infants with food other than milk before they have a mouthful of teeth is productive of much injury and should not be practiced.

The lives of infants are imperiled by exposure to the cold. The child requires more clothing to keep it warm than the adult, and yet many of them have much less clothing than their mothers; and the arms and neck, and sometimes the legs too, are left bare, presenting a sensitive

* Dr. Page has recently published a book of much value to mothers, entitled, "How to Feed the Baby."

surface for the cold to act upon. Many of the deaths from diseases of the lungs and respiratory organs are induced by such exposure. Impure air is another peril to which the lives of infants are exposed. The air for them to breathe should be pure, but not cold. By properly feeding and clothing the infants, and providing pure air for them to breathe, the rate of mortality might be greatly diminished.

HENRY REYNOLDS, M.D.

DR. ABERNETHY ON RIGHT LIVING *vs.* DRUGS.—An extract from the biography of the late General John A. Dix, which has been issued recently, gives an account of an interview with the eminent Abernethy, whom the General had consulted for professional advice. It is gratifying to note that the common-sense advice of the illustrious physician was taken in a common-sense way by the distinguished patient, and that the result was a ripe and robust old age (80 years), of which the dyspeptic youth of the General scarcely gave promise. After hearing a few words of his patient's story, Abernethy cut him short as follows: "Sir, you are pretty far gone, and the wonder is you are not gone entirely. If you had consulted common-sense instead of the medical faculty, you would probably have been well years ago. I can say nothing to you excepting this: You must take regular exercise, as much as you can bear without fatigue, as little medicine as possible, of the simplest kind, and this only when absolutely necessary, and a modest quantity of plain food, of the quality which you find by experience best to agree with you. No man, not even a physician, can prescribe diet for another. 'A stomach is a stomach,' and it is impossible for any one to reason with safety from his own to that of any other person. There are a few general rules which any man of common-sense may learn in a week, such as this: That rich food, high seasoning, etc., are injurious. I can say no more to you, sir; you must go and cure yourself."

NOTES IN SCIENCE AND AGRICULTURE.

Studies in the Phenomena of HYDROPHOBIA.—M. Paul Bert gives the results of certain experiments made by him in 1878–79. He found that a complete mutual interchange by transfusion between the blood of a healthy dog and that of a dog in the height of hydrophobia did not communicate the disease to the healthy animal; at least it remained unaffected for a twelvemonth, during which it was kept under observation. The rabid animal, however, was benefited by the operation, for it appeared to have gained thereby about two days longer of life. While searching as to which constituent of the saliva it was that contained the poison of hydrophobia, M. Bert inoculated a series of dogs with the mucus taken from the bronchi, and another series with the fluid expressed from the different salivary glands of dogs which had died rabid. The latter series did not contract the disease, but the others, namely, those inoculated with the mucus from the respiratory passages, were all attacked with hydrophobia. These results go far to explain the peculiarities in the action of the saliva of rabid dogs. M. Bert has likewise noticed that although the salivary secretions proper do not communicate hydrophobia, they often cause grave local ailments and large cutaneous sloughs. This condition of things, indeed, prevented him from pursuing these experiments, for in fifteen inoculations there were seven cases of suppuration, in four of which death ensued. It would appear from this that the tissues of rabid animals have septic properties independent altogether of hydrophobia itself. If the buccal contents of a rabid dog be filtered they become inoffensive, but the portion left in the filter communicates the disease, a fact which points to the great likelihood of a microbe as the cause of hydrophobia. The saliva of a rabid dog transforms starch into glucose, exactly as the saliva of a healthy dog would do.

Nickel.—We all know what nickels are, in the plural, for we are continually handling the five-cents coin known by this name, and our five senses may all take note of it; but as to nickel in the singular, it is a singular fact that most people know very little about it. It is only of late that it has come into general use, the Swiss Government being the first to use it for coinage, some thirty years ago. Its recent discovery is, however, a re-discovery.

Dr. Flight, of the British Museum, in London, found three whitish coins there which had the appearance of silver. But he had his

doubts as to their genuineness, and subjected them to tests, when they confessed themselves to be but nickel. As these coins bore date two hundred years before the Christian era, the learned doctor put to flight all idea of the discovery of nickel in modern times.

It is a curious circumstance that the name "nickel" was originally a *nick*-name.

The workmen in a German copper-mine found a reddish ore which was of no use to them, and which they, therefore, imagined was put there by that mythical personage, supposed to live in German mountains, called "Old Nick," in order to deceive or hinder them. They, therefore, gave the ore the name of Kupfer-nickel, or copper-nickel. When the metal came into use the miner's nickname was adopted, and even for scientific purposes turned into the Latin from *nicolum*.

The same is the case with the ore from which cobalt is made, and which is often found in conjunction with nickel and copper. It was called cobalt from its supposed production by the elves, who, according to German legend, guard the treasures of the mines, and who are known as Cobolds.

Nickel is valuable chiefly on account of its hardness, and its freedom from liability to rust. In many cases it takes the place of silver, and when brightly polished looks almost as well. In its common form it is mixed with a large proportion of copper. It is highly magnetic, and serves for the needles of compasses, but for other needles the verdict is, "not sew well."

What Bacteria Are.—Dr. Rollin R. Grigg, of Buffalo, N. Y., after a series of experiments to ascertain the nature and characteristics of bacteria, bacilli and other creatures, whose existence is relied upon by advocates of the "germs theory of disease" as opposed to the disease theory of germs, has given the following as results and their explanation: By boiling a quantity of healthy blood he obtained all the forms of bacteria. Then, with some pure fibrine, obtained from a washed clot of blood and boiling it, proving it was the threads of fibrine broken up into pieces and granules that gave the bacteria, the same results were obtained. Next some blood was obtained and rotted under warmth, and closely watched for two months, and here again all the forms were obtained that the fresh-boiled blood gave. From these experiments Dr. Grigg concludes that all the bacteria of disease are forms of fibrine, and for the general good requests all investigators to repeat the experimental work and report to the public the results of such investigations.

Dr. Kedzie, of the Michigan Agricultural College, writes the N. Y. *Tribune*: "Some inquiring friends have been experimenting with coal tar for 'revamping' old roofs that begin to leak, and extending their usefulness. The difficulty, so far, is to find a cheap and effective 'dryer,' as the tar does not 'set' between the shingles and in cracks, drips from eaves under a hot sun, and during rains washes to cisterns, injuring the water for stock. One correspondent says: 'I don't think "body" in paint of this sort and use is of any great account; saturating the shingles with the tar so as to be measurably impervious to water, thus causing the water to run off readily and leave the roof dry, is the idea. The material promising best results in such a case is water lime. It can be used combined with coal tar as a paint, or it can be thoroughly dusted over the surface after the coal tar is applied. I think the best results will be secured by combining both uses as follows: Thin the coal tar by adding common benzine, one part of benzine to twelve of coal tar, then stir in good water lime (entirely freed from lumps by sifting) until you have the consistency of a strong paint, and paint this on the leaky roof, covering every part and filling all cracks. Apply at once a good dusting of water lime to this painted surface before it dries. The water lime retards the running of the tar, forms a hard coating by the action of water, and conceals the very disagreeable color of the coal tar. Of course fire must be kept from this paint lest the inflammable benzine should start a combustion difficult to control. The benzine reduces the stickiness of the tar, enables it to combine or mix more easily with the water lime, makes it easier to spread on the shingles, and it soon evaporates, leaving a firm and even covering. The paint can be applied by a mop if it is moderately warm when applied.'"

A Prodigious Family.—An old man ninety-three years of age, a native of Spain, has just returned from this country, where he has been living many years, to his mother country from the United States. There is nothing remarkable about this, but the family which accompanied him back was certainly remarkable. It consisted of sixteen daughters, twenty-three sons, thirty-four granddaughters, forty-seven grandsons, forty-five great-granddaughters, thirty-nine great-grandsons, three great-great-granddaughters, and seventy-two sons-in-law and daughters-in-law, making in all two hundred and seventy-nine persons. The old man has been three times married, and his oldest son is now seventy years of age. The ship upon which he and his astonishing family colony went to Europe belongs to him, and is commanded by one of his numerous grandsons. Notwithstanding his age the old gentleman enjoys excellent health. Every day he takes two hours gymnastic exercise, walks for two hours, and directs the education of his great-grandchildren. He has never used spirituous liquors in any form, and does not smoke.

Extremes of Heat and Cold.—A comment on these variable points by a writer in the *Pacific Medical Journal* runs thus: "When Fahrenheit discovered the intense degree of cold produced by mixing salt with snow or pounded ice, he concluded that he had

reached the point of entire absence of caloric, and therefore designated that point as *Zero*, or nothing. How would the old philosopher open his eyes if he could resume his earthly investments, and dropping in at Vakutsk in Siberia, observe the thermometer standing at 78 degrees below Zero; or at Werkhogansk, in the same country, at 81 degrees below! These are said to be the coldest places on the globe inhabited by man. The extreme of heat is not so easily measured. One account mentions an interior desert of Australia, where a thermometer graduated to 127 degrees Fahrenheit, burst with the heat. It was hung in a tree and protected from the sun and wind. No one acquainted with the subject would think of protecting the thermometer from the *wind*. The idea is absurd and tends to throw doubt on the statement. We often hear of 120 degrees as a degree of heat attained in California, but it is doubtful if ever that temperature is attained by the atmosphere where there is no solar heat direct or reflected. We think 112 degrees may be set down as the maximum on this coast, that point being attained on rare occasions. In a residence of thirty-three years in San Francisco, the extreme heat has been 98 degrees, which occurred in September, 1852, on two consecutive days. Next to this comes the paroxysm of heat which occurred at the termination of the first week in June, 1883, when 95 degrees was the maximum. In July, 1876, it was 94 degrees. With these exceptions the mercury has rarely reached 90 degrees in San Francisco and the ocean climate. In the interior, however, the temperature is much higher. One account published in a newspaper in the interior announced that there had not yet been any hot weather, as the mercury had not risen much above 90 degrees."

How to Paper a Room.—An experienced workman in this line thus advises: "Don't try to paper with a carpet down. Make paste, cut bordering and the paper, the day before. If the wall has been whitewashed, it must be washed in vinegar to neutralize the alkali in the lime. If papered before and you wish the paper removed, soak with water and it will peel off.

"If convenient provide a long board as wide as the paper, though a table or two will do. The paper must be measured, placed right side down on the board, then with a brush proceed to lay on the paste, not too thickly, but over every part, and be careful that the edges receive their share. When completed, double within three inches of the top, the paste sides being together; carry to the wall, mount your chair, and stick your three inches pasted paper on the wall at the top. That holds it; now strip down the other, and see that it fits just right; if not, peel down, make right, then press to the wall from the center right and left. Leave no air under, or when warm it will expand, bursting the paper.

"Of course the paper must be matched; it will not do to measure by line unless the walls are perfectly plumb. Small figures make less waste, and a small room looks the larger. Stripes make a low room look higher, and if there are no figures between, or in the stripe to match, there is no waste, and no trouble in putting on. If a narrow border is the style, let it be bright, if the paper be neutral; but if that be bright, the border had better be dark and neutral.

"If the paste be made too thick, the paper will be apt to crack and peel off; if too thin, it will saturate the paper too quickly and make it tender in putting on. A counter-duster (Brussels brush) is nice to brush the paper to the wall. White clean cloths will do, but it will not do to rub the paper with them; being damp the paint or color rubs off the paper. The tables must be dried each time after pasting, for the same reason. Paste under paper must not freeze, neither dry too quickly. If whitewashing is done after papering, place a shingle next to the border, or better, tack double strips of newspaper wider than the border all around the room."

Relative Longevity in Various Occupations.—An exhibit of the mortality in the different walks of life is furnished by the "General Register" in report on the death rate of the population of England in 1851. From this it appears that out of every thousand persons between the ages of twenty-five and fifty-five, forty died on an average. Classified according to the most favorable mortality, and increasing downward, we have the following tables:

Below the Average.	*Above the Average.*
1. Merchants.	7. Miners.
2. Weavers.	8. Tailors.
3. Cobblers.	9. Bakers.
4. Carpenters.	10. Butchers.
5. Blacksmiths.	11. Liquor dealers.
6. Laborers.	

The mortality of the eleventh class is so great that in good companies they are only admitted with great caution, and on short endowment or term policies. Mariners, also, are considered poor risks, as 35 per cent. of the deaths among them are attributable to accidents. Among miners 25 per cent., among machinists 15 per cent., and among painters, well-diggers, and glaziers, 10 per cent. die in consequence of casualties. The callings of brewer, type-setter, tinsmith, lithographer, and stone-cutter are also in a measure detrimental to a prolonged duration of life.

An Authority on Kant and Hegel, and perhaps the best-grounded woman in philosophy in America, Mrs. Amelia J. Hatheway, died lately at Little Prairie Ronde, Michigan. In reference to her paper on Schopenhauer, read at the Concord School last summer, the critics were amiable enough to say that she was the only woman whose thought was on a level with that of man.

CHARLOTTE FOWLER WELLS, *Proprietor.*
H. S. DRAYTON, A.M., M.D., *Editor.*
NELSON SIZER, *Associate Editor.*

NEW YORK,
DECEMBER, 1883.

WHAT MONEY CAN NOT BUY.

OH, if I were only rich, I could have everything I wanted. No, my friend, you greatly mistake in this. Your eyes are dazzled by the glitter and show of the trappings with which the rich surround themselves in their endeavor to purchase happiness. You look upon their silks and laces, their gold and silver, their palaces of brown-stone and marble, their luxurious furniture, their horses and carriages, as so many instrumentalities contributing to their joy and pleasure, and you see not behind them the care, anxiety, invidiousness, rivalry, labor, and weariness which are almost inseparable from the possession of such things in this day of frivolous pretension. Wealth is good, if one possess the culture, the elevation of soul, the *self-denial* necessary to its proper use; but in the very great majority of cases with the getting of wealth there comes to the possessor the "woe" of riches, hardness of heart, avarice, or self-indulgence, arrogance, selfishness. It is extremely hard for the rich to keep the heart warm and tender, and without a kind, open, frank spirit, man or woman can not be happy in the true sense of the term.

The mind grows by what it feeds upon. The more the wants of the sensuous nature are supplied, the more they grow, and the result is increased discontent. The fundamental principle of happiness is contentment, and this principle all the wealth of the Indies can not purchase. If it exists in the spirit of a man it matters not where he lives, he can enjoy life.

Wealth can not purchase a single want of the soul, and in its gratification man finds his best enjoyments. For instance, the healthy soul longs for sympathy and affection—can wealth purchase them? No, for we find them best exemplified in the humble cottage. It may purchase their semblance, but in the hour of need the counterfeit is painfully revealed; like butterflies, "false friends bask in the sunshine but avoid the shower"; in the sheen of a man's wealth there are seen many a parasite who fawns upon him, professing most ardent attachment and willingness to do anything in his power to serve the favored son of fortune, but when reverses come and the riches melt away, the blatant sycophant is not found to offer a single word of sympathy or hope to the unfortunate. The trust of a true friend can not be weighed in a balance against money. The love of a mother, of a sister, of a brother, it seems a sacrilege to speak of comparing them with dollars—they can never be bought in that way.

> "Better than gold is a peaceful home
> Where all the fireside characters come,
> The shrine of love, the heaven of life,
> Hallowed by mother, or sister, or wife.
> However humble the home may be,
> Or tried with sorrow by heaven's decree,
> The blessings that never were bought or sold
> And center there, are better than gold."

Then there is wisdom, which the Hebrew sage declares "above rubies." Money

may help toward its attainment, but only laborious endeavor, patient application will secure it. We look over the community and we single out the most learned and accomplished, not among the rich and proud, but among the humble dependents upon an income which the rich man would regard with contempt.

Wealth can not purchase refinement of character, or gentility, or modesty, or courtesy; these are graces which must be cultivated through self-repression, and the training of faculties. Neither will all the riches of "Golconda" or of the auriferous strata of California buy health and strength, when they have been lost in a career of extravagance and self-indulgence. Wealth is most powerful to destroy manhood, but impotent to restore. We knew a very rich man, who in his toil and strain to amass a fortune ruined his health, and converted a once robust body into trembling, paralytic decrepitude How often did he murmur, "I would gladly part with every dollar of my gains if I could only be well." True, he could have carriages to transport him from place to place and servants to execute his bidding, but these were insignificant things when he could not find comfort in eating or sleeping for the pain which racked his almost helpless frame. Like King Solomon in his surfeit of worldly pomp and pleasure, this man realized the vanity of selfish gratification, and saw when it was too late that he had made a very great mistake.

Money is a good thing when used as an instrument for the furtherance of love, affection, justice, benevolence, honor, and taste; in other words, when it is made subservient to the motives of the highest and best sentiments; and the economical and practical elements of the man are exercised only to the extent of its proper obtaining and discreet using. It has a large purchasing power when employed in combination with the warm and generous impulses of the moral nature, in the direction which leads to mental harmony and satisfaction, but aside from that it exerts a vain and empty power.

SEEING, BUT UNABLE TO READ.

AN interesting case of Aphasia was reported not long since in the *Gazette Medicale* of Paris. A business man between thirty and forty years of age was suddenly seized, while hunting, with paralysis of the right side, and for a few minutes lost consciousness. His speech was impaired, but with improvement in the paralysis came restoration of the ability to talk, until one day when he was writing he found himself unable to read a letter which he had written in part a few days previously. Later it was discovered that he could not read printed matter. Meanwhile in talking he misplaced words only occasionally. Dr. Charcot, the eminent specialist in nervous diseases, examined the man and detected no important organic defect as the result of the hemiplegic seizure, besides semi-blindness of the right eye, this defect being indicated by the fact that in attempting to play billiards the patient saw the ball as but half a sphere, yet the half seen was normally distinct. The singularity of the case consists in the fact that he could see the letters of print or writing, but could not read them. He could write even a long letter without making a mistake of importance, but could not read what he had written except by the employment of a slow process in which

the motor sense was made to convey impressions to the intellectual brain centers. For instance, in order to decipher a word he slowly formed each letter with the tip of his right forefinger, and thus obtained impressions which appeared to aid the weak and insufficient perception of the visual nerves. Dr. Charcot utilized in his method of treating the case, the help thus afforded by the muscular sense, and was making good progress in the man's re-education.

Here we have an illustration of the part performed in the intellectual life by the nerves of muscular sense, and their close relation to the psychic or *idea* sense. Speech is the result of the action of certain mechanical organs operated upon by forces which are transmitted from the ideal center of the brain, but there is essential a metamorphosis or translation of the idea, in which certain delicate nervous filaments co-ordinate with the action of the psychic centers. The language or expression of a thought or feeling by bodily movement is produced in this manner. The experiments on the brains of living animals, in which electrical excitation produces definite movements according to the part of the brain excited, contribute to the conclusion that the convolutions are not only pervaded by the nerves of sensation and motion, but that there is an intermediate nervous organism of exceedingly delicate constitution which performs the office of converting the insubstantial idea or thought into a form of material efficiency so that its impressions may be communicated in physical form and with a force appropriate to their value in the tangible life of a person.

Several years ago the writer was unexpectedly attacked by a nervous fever, and for eight days lay in a state of semi-coma; when the stage of convalescence fairly began, some matters of importance were submitted to him for advice. In attempting to dictate to an amanuensis he was surprised to find his power of utterance greatly wanting. Thoughts were clear enough. Interiorly he could pursue a long-continued train of reasoning as coherently as he ever could, but to vocalize an impression or an opinion was strangely difficult. He was at a loss to give formal expression to the words which were sharply enough designed before his mental eye, and stumbled laboriously through the few sentences he was able to give before exhaustion compelled a complete suspension of the effort. Here was, we think, a case similar to that above noted. The physical word centers, the motor impulses, were lacking in function or power of free co-ordination with the ideal function.

WHAT IS SHE?

THE versatile Governor of Massachusetts has lately appeared in a new phase, and disappointed a large circle of people hitherto much disposed to admire him, because of his apparent zeal as an official, in behalf of the oppressed and persecuted. His appointment of a man to a vacancy which did not exist, but which he claimed to exist, because the place was retained by a woman, and that woman could not fill it competently, because she was a *woman*, and he had been informed by the Attorney-General that a woman was not legally a "person," and of course the office was vacant, unless there was a "person" in it, whose responsibility could be recognized. Now it happens that this woman has a place in the State Board of Health, Lunacy, and Char-

ity, a place of importance, for the duties of which she has shown herself capable by education and special experience; and furthermore, her capability was recognized by her fellow-members of the Board refusing to consider the versatile Governor's nomination.

The motive for this action we shall not analyze, although it savors of meanness at the first glance, but simply consider the alleged reason for so marked a display of official energy.

A woman is *not* a person *legally*. The received definition of common terms rule in courts of law, as well as in other departments of civil society. Were this not the case, all forensic disputation would be mere muddlement. A "person," according to the lexicographers, is a living human being, a moral agent, "a thinking, intelligent being that has reason and reflection, and can consider itself as itself, the same thinking thing in different times and places," according to Locke.

How far the versatile Governor can respond to Locke's definition of the word it might be difficult to determine, as some of his political acts seem to evince a differential character, a transitional nature, a disposition to be not "the same thinking thing in different times and places."

We had supposed that a legal personality was essential to that recognition in business affairs which woman everywhere possesses, and which is established by legislative enactments, so that she can sue and be sued whether married or single. What man in his senses would think of bringing a suit for damages or recovery of property against a nobody!

Furthermore, the authorities of township, city, county, and State do not have any misgivings on this "person" subject when they issue tax-bills; they are just as prompt to take the money of a woman as of a man, just as quick to say Mrs. Thompson owns such and such property, and must pay tax on it, as to say Mr. Stevens is responsible for that house and lot before the law.

There are some married women, and we know a few, whom careful men, well versed in legal technicalities, would rather deal with than with their husbands, because, fosooth, their *personality* is higher in the community, while the husbands—well, they are the nobodies. Who does not know such? Strange too it is that women are found in all the occupations known to every-day life, commanding respect, as physicians, lawyers, ministers, as well as earning their living as farmers, shoemakers, and grocers, and yet the versatile Governor of Massachusetts insists that they are not persons. Evidently the man has forgotten his mother.

LOSS OF BEAUTY.—The world affects to commiserate the wounds of the heart, and to disregard those of vanity. What a division of ideas is here produced by two phrases, that are in reality synonymous. With what superficial frivolity the loss of beauty is treated by authors of great merit in other respects, and also in those gossiping conversations in actual life which mean nothing, and yet to the individual how immense is that loss—what consequences it involves! Often glory, honor, respect, consideration, esteem, power, love, extinction of influence, either for good or evil; it strikes at all the moral parts of our being, and if these are not wounds of the heart, what are? Circumstances or dispositions sometimes render beauty a thing indifferent to its possessor; but often it is so identified with being, as to make the destiny of the individual, and its destruction unhinges the whole order of life, bringing more piercing ills to the heart of sensibility than perfidy, calumny, or even penury. —*Ex.*

Our Mentorial Bureau.

To Our Correspondents.

QUESTIONS OF "GENERAL INTEREST" ONLY *will be answered in this department. But one question at a time, and that clearly stated, must be propounded, if a correspondent shall expect us to give him the benefit of an early consideration.*

IF AN INQUIRY FAIL TO RECEIVE ATTENTION *within two months, the correspondent should repeat it; if not then published, the inquirer may conclude that an answer is withheld, for good reasons, by the editor.*

TO OUR CONTRIBUTORS.—It will greatly *aid the editor, and facilitate the work of the printer, if our contributors generally should observe the following rules when writing articles or communications intended for publication:*

1. *Write on one side of the sheet only. It is often necessary to cut the page into "takes" for compositors, and this can not be done when both sides are written upon.*
2. *Write clearly and distinctly, being particularly careful in the matter of proper names and quotations.*
3. *Don't write in a small hand, or in pencil, as the compositor has to read it across his case, a distance of nearly two feet, and the editor often wants to make changes and additions.*
4. *Never roll your manuscript or paste the sheets together. Sheets about "Commercial note" size are the most satisfactory to editor and compositor.*
5. *Be brief. People don't like to read long stories. A two-column article is read by four times as many people as one of double that length.*
6. *Always write your full name and address plainly at the end of your letter. If you use a pseudonym or initials, write your full name and address below it.*

WE CAN NOT UNDERTAKE TO RETURN UNavailable contributions *unless the necessary postage is provided by the writers.* IN ALL CASES, *persons who communicate with us through the post-office should, if they expect a reply, inclose the return postage, or what is better, a prepaid envelope, with their full address. Personal matters will be considered by the editor if this is done. Anonymous letters will not be considered.*

HOPE AND VENERATION.—A SUB.—You should mingle in such society as is cheerful and good-natured, and avoid people who are dull and given to forebodings, doubts, and talking of unpleasant contingencies. As a rule, cheerfulness should be your motto, or you should make a very earnest resolution to live as much as possible in the sunshine of life. If you live out of doors a good deal, and be in the physical sunshine, that will be helpful in buoying you up. In your reading, select the books which are hearty, happy, and playful; with no tragic incidents, nothing of "blood and thunder" in them. As for Veneration, similar associations and a similar line of thinking, as we have indicated, with the addition of an earnest sense of an overruling Providence in human affairs, and the disposition to adore and worship, mingling, for that purpose, with church people, as well as attending the services of the sanctuary regularly, will aid in its development.

EYES ASLANT.—J. W.—Physiognomists generally ascribe favorable qualities to those who possess eyes that slant downward from the nose. For instance, they specify good-nature, cleverness, wit, discernment, and so on, in such. But the appearance of this form of eye is due largely to the surrounding tissues. It is noticeable that most people in middle life have eyes slanting downward, because the membranes above have lost in great part their elasticity and firmness, and droop upon the eyeball. The condition, too, is found in many whose occupation confines them much to the desk, in writing and reading, the downward look persisted in for many years having this effect upon the surrounding membranes. We do not altogether like the eye which has an upward inclination at the outer angle; it is a kindred to the "Celestial" eye; and we have the impression that most people who possess such eyes have characteristics in their disposition which are not of the better sort peculiar to the Mongolian.

INVENTOR OF THE BICYCLE.—H.—According to a writer in one of our exchanges, the modern bicycle owes its origin to a Mr. Gavin Dalzell, a merchant of Lesmahagow, Scotland, who died about twenty-six years ago. He had much talent in the way of mechanical contrivance, and invented his "two-wheeled horse" for his own use, exciting no little wonder among the people of his town when he rode upon it.

FOOD FOR DYSPEPSIA.—O. G.—It is a difficult thing to answer a question sent by a correspondent on the subject of disease, for the reason that it is impossible for a physician to understand the disease without a careful personal examination. No two cases are alike, and the symptoms are innumerable. We could best refer you to some good work on the subject; and you will find in our catalogue two or three treatises. As a rule, the food which one should select is that which will confer the most nutrition, with the least possible difficulty in its digestion. Food which occasions pain and distress, generally, should be avoided, because it increases the gastric trouble. You have specified flesh food of several kinds; we would merely mention that dyspeptics find the least trouble in assimilating fresh, lean mutton, roasted or boiled, not stewed or fried. Among the fruits it is best to use those which contain very little acid in the active form; mellow, bland apples and pears are good If the stomach is very sensitive to acids, the fruit should be stewed or baked. The farina-

ceous foods in the simplest forms are of course the best; but one must try several kinds in different forms of preparations, in order to ascertain which suits the case best.

PALMISTRY.— INQUIRER.— The hands have a relation to the mind, and therefore have a relation to phrenology; but as for their indications taking a rank superior to that of phrenology in the opinion of scientific men, is simply absurd; and we think only a charlatan or mountebank could publish such a statement. The hands have their physiognomy, and they indicate, to a considerable extent, and plainly enough to be read by most people, the temperaments and employments of persons. Everybody knows, for instance, that a soft, flaccid hand has little muscular power, and belongs to a person who isn't much given to active life, and, inferentially, possesses a not very sharp, energetic mind. Hard, muscular hands indicate, on the other hand, a disposition to vigorous, practical work. A hard, bony hand belongs to the Motive Temperament, and the man of action and force. A soft, plump hand may be pretty, but generally belongs to the person who isn't so fond of action, and rather loves his ease, and the softer enjoyments of society. We might associate with this disposition, by logical inference, a tendency to indulge the imagination, to read marvelous and sensational literature. In this way the mind has a formative influence upon the most of the body; but the relation isn't always strictly sustained.

What They Say.

Communications are invited on any topic of interest: the writer's personal views, and facts from his experience bearing on our subjects, being preferred.

THE RESPONSIBILITY OF BELIEF.— *Editors* JOURNAL: Under the title "To Believe, or Not To Believe," your correspondent is pretty severe upon those who are so weak as to "believe without evidence anything and everything." He says: "Whatever a man believes, he believes it because it appears to him to be true; and it appears true to him, because he has what he considers evidence for it. That which appears false, he believes false on the evidence which causes it to appear false; hence a man's belief depends upon evidence, or should depend upon it. If the evidence is at fault, the man is not at fault, because he did not make the evidence."

That this is so worded that in some cases it may be true, there is no doubt. And yet, a general acceptance of this theory may easily mislead, for, although we may not be at fault because of the nature of the evidence submitted to us while our beliefs are being formed, yet, as we are responsible for our beliefs, just as we are for our actions—because our actions are the fruits or results of belief—yet we may be censured for not having been diligent enough in collecting, sifting, and weighing that evidence! And while it is also a fact that our beliefs are largely a matter of association, cultivation, and circumstance, *e. g.*, we could not expect the same opinions in two men even of the same natural abilities at birth, one of whom was raised and educated amid all the culture and refinements of modern civilization, and the other among the wild and rude influence of the wilderness. And yet who can say that the former, who has at his command all the lights of philosophy, science and revelation; and who has the history of the past, with its record and examples of so many great and good men, and who also has at his command the knowledge and experiences of the present, that are brought and laid at his very feet, from the remotest bowels of the earth; by those wonderful factors of progress, steam, electricity, and printer's ink, and who has the revelation of Phrenology, the youngest, and yet the most important of all the sciences, and which throws such floods of light upon the operations of the human mind; and above all, who has the Bible, that Book of books, whose teachings are so complete that it is the guide to eternal life; and yet so simple that "the wayfaring man though a fool shall not err therein." Who can say that such an one will not be held accountable for what he believes, and also for his actions growing out of such belief. In fact, the mass of mankind do believe this, and our courts of justice and the principles of law are founded upon this fact, that man is a *free agent*, and an accountable being.

He also says: "If the Atheist or Agnostic can not see the evidence for God and immortality, that is not a fault, but a misfortune." Perhaps so far as his fellow-man is concerned it is a misfortune, and yet viewed in the light of Bible-teaching, and judged by God's word, it is a fault. Proverbs xii. 8: "A man shall be commended according to his wisdom; but he that is of a perverse heart shall be despised." And also the condemnation of Psalm liii. 1: "The fool hath said in his heart there is no God." These sweeping passages prove that belief is not a *merit*, but a *duty*, and that disbelief is not a misfortune, but a *fault*. It is not a merit to do well—that is what we were created for, and the end of our being. God expects man to believe and to do His will, and to aid him in so doing has given him a mind which under favorable circumstances—by which we mean, one of good quality, well balanced, harmoniously developed, and properly cultivated, and in a normal state as to health

and exercise—will naturally and spontaneously worship its Creator, and do good to its fellow-men, which Christ has declared to be the "law and the prophets."

There is a great deal of stress laid upon manly courage; and infidels and agnostics take great credit to themselves, and pride themselves on being honest, and your correspondent criticises somewhat sharply thus: "What a poor creature must be that man who expects to be rewarded for what he believes, so much faith for so much pay." What gross misrepresentation of the Christian's faith Is this *honesty?* "One of that kind is far away from the kingdom of heaven. Let heaven open and let honest men in, no matter what they believe." Let us see what the word of God says on this line. Christ says in John x. 1: "Verily, verily, I say unto you, he that entereth not by the door into the sheepfold, but climbeth up some other way, the same is a thief and a robber"; and vers. 9: "I am the door; by me if any man enter in, he shall be saved, and shall go in and out, and find pasture." And C. A. says further: "Honesty ought to win immortality for those who have the manly courage to act out their belief or unbelief; if honesty is not a passport to immortality, then unfurl the banner of hypocrisy, and give a premium to the highest bigot who can believe, without evidence, anything and everything."

Now with all deference to the opinions of your correspondent, I ask why he would "unfurl the banner of hypocrisy"? Holy writ declares that repentance and faith, and the exercise of love to God and man, are necessary to obtain eternal life. Now is it an indication of "manly courage" or "honesty" to term one who believes this Scripture a bigot? If that is bigotry, most of the best and wisest men, those who have done the most good, and left the brightest names, certainly belong to this class.

H. R. D.

A TRUE FATHER.—The little article bearing this title on page 196 of your last issue pleased me; it cheered my heart to find that *one* man had learned the miseries of tenement-houses, and wisely determined to live by himself, though at some expense of time.

Some years ago you published an article of mine upon these same tenement-houses, in which I gave them "their dues." Hopeless as it seemed at the time that they would ever cease to deface the earth, or that the laboring classes would come to avoid them, yet as the years hasten on, I see signs of a "good time coming." In one region, not beyond sight from our windows, pretty cottages are going up every day, new roads are cut across the fields and hills as far as we can see, and workers are investing their earnings in homes of their own, instead of paying them out to landlords for what under existing conditions can never prove homes to their families.

All this rejoices my heart, which I believe has the welfare of my fellow-man ever uppermost in it. So thoroughly convinced am I of the demoralizing effect upon families of this herding together under one roof, that for years I have used tongue and pen in advocating workingmen investing their earning in homes of their own, no matter how small, how cheap. These would be theirs alone, and in every respect a gain to their families.

I should like to take the hand of that "gentleman in overalls"; like to beg him to try and inspire his shopmates with his views, to spread the light he has attained. And I am almost certain, could I drop into his little home, I should find no ordinary woman presiding in it.

Worcester. COUSIN CONSTANCE.

CONSCIENCE INNATE—A REPLY.—Mr. J. E. Sutton sent a communication to your JOURNAL which appeared in your September Number, in reply to one of mine which was published in the June issue. Mr. S. thinks that I have misunderstood Mr. B. F. Underwood's position in regard to an "Innate Conscience." If I have misunderstood him he is to blame in using words not conveying fully his meaning. Mr. Underwood, in his address at Chicago, distinctly stated, that man has no innate conscience only as it is the result of experience. Phrenology says man has conscience, or the faculty of Conscientiousness. Mr. Underwood, Mr. Sutton, and the school of evolutionists to which they belong deny this proposition, and say, Conscience is the product of man's environments or experience. The issue between Phrenology on one side, and these evolutionists on the other, is, in our opinion, fairly joined, and there should be no misunderstanding of the points of difference. The question for solution is, how has mind originated? We hold that mind has originated from mind and not from matter—the now can not be solved.

"The forces of nature," says Mr. Sutton—"such as solar heat, light, chemical affinity, magnetism, etc.—operate upon matter, and vegetable and animal life is the result."

Again, he says, "Mind is a property of matter, just as music is a property of a piano, mental qualities are a production of the brain when played upon by the forces of nature operating upon the five senses."

The forces of nature then, according to Mr. S., produce mind, and man's experience produces the "Feeling" called Conscience. Will Mr. S. please inform us how solar heat, light, chemical affinity, etc., can produce in man's mind a "Feeling" called Conscience, they being entirely devoid of that feeling? Do the forces

of nature reason? Has solar heat a sense of justice? Has chemical affinity, benevolence? Has oxygen any veneration, hydrogen any spirituality, or nitrogen hope? Have these put wisdom in the inward parts, or given understanding to the head, they having in themselves none of these qualities? In all seriousness, is it not the climax of absurdity to suppose that these forces of nature can produce intellectual faculties or moral sentiments? We differ with Mr. S., not so much as to what is the *function* of Conscience, but as to whether it is innate in man, and as to who or what is its Creator. We hold that Conscience, or a sense of justice, has been breathed—if you please—along with the other moral powers and intellectual faculties into the soul of man by a Creator, in whom dwells all wisdom and love. We hold that it is impossible for thoughtless matter to create a thoughtful mind; that that which has no moral feeling can not possibly produce a moral sentiment, and that a Conscience can not be evolved from chemical affinity or the forces of nature.

We ask to not be misunderstood—we do not hold that all men have propensities, faculties, or sentiments in like degree, but we do hold that all men, in all ages, have had, and man as such will forever continue to have these "innate" powers and sentiments; that the principle of Conscience is in every man, to a greater or lesser degree, developed or restrained by his environments; that the *germ* principle is not and can not be *created* by the forces of nature, but is the offspring of a God of justice. We do not hold that Conscience in and of itself is a safe guide, but only as it is directed by an enlightened intellect.

Mr. Sutton contends that the "general welfare" is the ultimate standard of judging whether an action is right or wrong; we contend that an enlightened intellect, with well-developed moral sentiments, is the only true standard of right or wrong. Mr. Sutton says that George Combe in his "Moral Philosophy" says that "Man is a creature of circumstances."

I am not aware that Mr. Combe ever made such a sweeping statement; if he did, it was in a qualified sense. Will Mr. S. please to give us the chapter and page where such words occur?

Mr. Sutton asks what sort of mind there would be if there were no sight, no hearing, no taste, no smell, no sense of touch. Let me ask Mr. S., what is it that sees, hears, tastes, smells, or has the sense of touch? A corpse has all of these organs, but do the dead see, hear, smell, or have the sense of touch? 'Tis the soul within us which sees and hears. The eye does not see, or the ear hear, 'tis the Me which resides in the brain which hears and sees—the eye and ear being the organs conveying impressions to the brain. The senses are agents to the principle.

I thank Phrenology for teaching and demonstrating the fact to me that all men have innate powers and faculties of mind, among which is the sentiment of Conscience; and I am glad that common-sense shows to me the absurd proposition that solar heat, oxygen, nitrogen, electricity, or any mere force of nature could ever create a moral code for man. I do recognize an intelligent moral Power presiding over nature. Without it, I am at sea without a pilot or rudder, and if there is a science which helps me to look from nature up to nature's God, 'tis the much-neglected but noble science of Phrenology.

WM. D. FIFE.

PERSONAL.

THE first two women to secure medical and surgical degrees from an English university are Mrs. Mary Ann Dacomb Scharlieb, who is to go to Madras, and Miss Edith Shore, who has been given the medical charge of the women working in the General Post-office.

LORD LORNE, late Governor-General of Canada, said that the absolute prohibition of the sale of intoxicating liquors throughout the Northwest territories had secured perfect peace and order to those infant territories. Good! Prohibition seems to put down disorder.

PROF. RUDOLPH VIRCHOW, one of the most eminent surgeons in Germany, got a box of pills from an apothecary, was cured of his sickness, and wrote a note stating the fact. Thereupon his medical society censured him. He has published a card saying he can no longer "belong to a society that arrogates to itself the right of an arbitrary and offensive criticism."

A FEW months before his death, Lord Beaconsfield said to Lord Ronald Gower: "Life is an *ennui*, or an anxiety. For the self-made man, life is full of troubles and anxieties from fear of losing the position or wealth he has obtained; for those born with these advantages, there is nothing to strive for, and life then becomes a mere bore, an *ennui*, and a burden." Not much satisfaction in greatness, hey?

WISDOM.

"Think truly, and thy thought
Shall be a fruitful seed."

HE who freely praises what he means to purchase, and he who enumerates the faults of what he means to sell, may set up a partnership with honesty.—LAVATER.

IT is well to remember that progress implies something to be left behind and given up. This

done cheerfully, the healthy progress and growth gives freshness, vigor, and delight to the world.

It is a special trick of low cunning to squeeze out knowledge from a modest man, who is eminent in any science, and then to use it as legally acquired, and pass the source in total silence.—Horace Walpole.

Anthony Trollope, just before he laid down his pen, never to take it up again, wrote these words: "Amusement is good, truth is still better, and love best of all. Love gives itself, and is not bought; but all true love is founded on esteem."

MIRTH.

"A little nonsense now and then
Is relished by the wisest men."

A woman woke her husband during a storm, and said, "I do wish you would stop snoring, for I want to hear it thunder."

Mr. William Doodle—"Yes, Miss Frost, I always wear gloves at night; they make one's hands so nice and soft." Miss Frost—"Ah! and do you sleep with your hat on?"

Don't strain your voice scolding your children. It's altogether vain. The little wretches won't appreciate your sacrifice.

A bookbinder said to his wife at their wedding: "It seems that now we are bound together, two volumes in one, with clasps." "Yes," observed one of the guests, "one side highly ornamental turkey morocco, and the other plain calf."

A St. Louis Barber's Advertisement.—"W—— H——, professor of crinicultural abscission and craniological tripsis, tonsorial artist, physiognical hairdresser, facial operator, cranium manipulator, and capillary abridger."

Library.

In this department we give short reviews of such New Books *as publishers see fit to send us. In these reviews we seek to treat author and publisher satisfactorily and justly, and also to furnish our readers with such information as shall enable them to form an opinion of the desirability of any particular volume for personal use. It is our wish to notice the better class of books issuing from the press, and we invite publishers to favor us with their recent publications, especially those related in any way to mental and physiological science. We can usually supply any of those noticed.*

Health in the Household; or, Hygienic Cookery. By Susanna W. Dodds, M.D. 12mo, pp. 601. Price, $2. Published by Fowler & Wells, New York.

More than usual attention has been given by authors and publishers during the past ten years to books on cookery. Within the present year we could readily count up a dozen books of the sort which have found their way from the press-room. Some are mere running collections of recipes, which have been selected, we may assume, from the newspaper and magazine, and thrown together with but little regard for their positive merits. Some indicate care on the part of the compiler; and others, that are very few in number, show in the character of their make-up some definite purpose or motive on the part of the compiler to offer to the public a collection of recipes which embodies accuracy of detail and perfection of method. The book, however, is rare which shows that the compiler has made it a point of honor to put nothing into it which has not been carefully tested. And that book is particularly rare which represents an interest in the health of the community, the recipes being intended to direct how to prepare what is nutritious, and will not tax the strength and integrity of the digestive powers. To this last class belongs the book under notice at the present time. The author is evidently enthusiastic in her work; she desires to teach her housekeeping reader the principles of good diet, and to that end furnishes much more than a mere collection of details and ingredients for making articles in common use. She sets forth the why and wherefore of cookery, and devotes a larger portion of the work to those articles which the hygienic reformer advocates as essential to good blood, strong bodies, and vigorous minds. Dr. Dodds says for herself that "the object of the work is to enable health-seekers to furnish their tables with food that is wholesome, and at the same time palatable. . . . The food products of the earth, properly grown and prepared, should be not only healthful, but to the unperverted palate relishable in the highest degree; foods as ordinarily cooked are robbed of their own luscious flavors and rich juices by all manner of wasteful and injudicious processes,—by soaking, by parboiling, by evaporation, by under-cooking, and by burning—after which one tries in vain to compensate for these defects by adding butter, pepper, sugar, salt, and other seasonings, *ad infinitum*.

The book is divided into three parts designated respectively, "The Reason Why," "Hygienic Dietary," and the "Compromise," which titles explain themselves. In the first department the author sets forth the scientific evidences in favor of a pure hygienic dietary, quoting liberally from authorities recognized in the world of physiological science. In part second are recipes made up in accordance with these views. The "Compromise Diet" is a medium course between the strictly physiological and the common methods in vogue among people at large. Other writers have attempted the same thing, but not carried it out so extensively as our author, as this de-

partment covers over 800 pages, and its recipes relate to about every conceivable article known to the market. Here the book will prove most useful to the great majority of people. As a comprehensive work on the subject of healthful cookery, there is no other in print which is superior, and there is no other which brings the subject so clearly and squarely to the understanding of an average housekeeper. The recipes as well as the information, general directions, etc., are given in explicit, simple language so that no one can mistake them.

SAVE THE BOYS; or, A. B. C., S. T. B. By Margaret E. Winston, author of "The Secret of Victory," etc. 16mo, pp. 379. Price, $1.25. Published by the National Temperance Society of New York.

Another volume which gets into a department a little out of the common run of publications issued by this enterprising society. It not only decries, in a story which will please young people, the alcoholic beverages, but it makes excellent points against smoking and chewing tobacco. The motive of the author appears to be the making tobacco odious to her young readers; and we welcome the book on this account. Reformers are strong in their attacks upon the stronghold of gin, but there has been scarcely enough effort made in the way of juvenile story to uproot the bias and temptation of tobacco. We have seen so-called temperance books designed for young people in which the careless or indifferent author inculcated tobacco-using as a virtue.

THE FACE AS INDICATIVE OF CHARACTER. Illustrated by upwards of 120 portraits and cuts. Edited by Alfred T. Story, author of a "Manual of Phrenology," etc. Published by L. N. Fowler, London; Fowler & Wells, New York.

This book of ninety-five pages has the merit of comprehensiveness. It is no labored attempt in the description of the signs of character, but such a work as the reading community can appreciate because concise and clear in its descriptions. It is profusely illustrated, as every work of a physiognomical sort should be; pictures when properly made and printed tell their own story. Of course a discussion of the philosophical side of the subject would involve more of detail, but the author has aimed to make a practical book, and has done his work well; and we think it, although a small one, fully equal in useful features to most of the bulky works which have been brought out within a year or so by ambitious writers.

HORSES: THEIR FEED AND THEIR FEET: A Manual of Horse Hygiene. Invaluable for the veteran or the novice. By C. E. Page, M.D., author of "Natural Cure of Consumption," etc. With Treatise and Notes on Shoeing, by Sir George Cox and Colonel M. C. Weld. 12mo, pp. 149. Price 50 cts. Fowler & Wells, Publishers, New York.

A book on a live subject by a physician who has proved himself much more than a mere routinist *secundum artem*, by his well-known "How to Feed the Baby" and "Natural Cure of Consumption." Dr. Page comes once more before the public as a student of nature and an advocate of nature's laws with respect to a subject which at first sight appears a little outside of his province; but when it is considered that every physician with a good practice owns at least one horse, and a good part of each day sits behind the faithful beast, we can not but conclude that next to his human patients, the horse properly comes in for a share of his attention. The work shows itself to be the result of close observation. The physiology and habits of horses have been scrutinized, and the methods of treating and caring for them in common vogue have been scrutinized with reference to their bearing upon diseases common among horses, and the views of horsemen have been considered with care. The results attained by the author are given in a clear, compact style, thoroughly intelligible to all who keep horses. What "feed" has to do with "colds," distemper, scrofula, "glanders," and the condition of the animal generally, is, of course, the main topic of the book, and it must be only ignorance, or worse prejudice, that will not derive much valuable information in this regard from Dr. Page's counsel.

Sir George W. Cox, in Part II., discusses the common practice of shoeing from the point of view of the objector, and makes a good argument; and Col. M. C. Weld follows with a second argument in the same line, insisting with much force that shoeing, as commonly done, is unnatural and injurious.

PUBLICATIONS RECEIVED.

STALL'S LUTHERAN YEAR-BOOK for 1884, published by the Rev. Sylvanus Stall. 96 pages. Price 25 cents. This annual represents all branches of the Lutheran Church in the New and Old World, and is the fullest exhibit of Lutheran statistics ever published in this country. Its tables present the home and foreign missionary work, the various boards, societies, institutions of that church; the names and addresses of all the Lutheran ministers in the United States, Canada, etc. Valuable statistics of other denominations, Sunday-schools, religions of the world, are included; and, taken altogether, it is a very comprehensive pamphlet on the present state of Christianity.

THE special illustrated edition of *Building* for October should prove a powerful agent for the publishers of that excellent architectural

monthly. The numerous full-page views of notable foreign and home structures are beautiful specimens of the printer's art, which must commend themselves to every refined taste, as well as be of peculiar value to the architect and practical mechanic. Price 50 cents. W. T. Comstock, publisher, New York.

THE NORTH AMERICAN REVIEW discusses the principles of limited suffrage in Rhode Island, setting forth very practical reasons for the policy which obtains in that little State, and the outcome of which is seen in its prosperity; also Relation of the Government to the Telegraph; Solar Physics; Modern Explosives; and Dr. Hammond's estimate of Women. In the latter, three or four prominent ladies cross pens with that medicus in regard to woman's intellectual capabilities.

THE POPULAR SCIENCE MONTHLY for November has a dozen or more topics very interesting to the general reader; such, for instance, as Ischia and its Earthquakes; Remedies of Nature; the Alcoholic Habit; Some Unsolved Problems in Geology; A Home-made Telescope; Chemistry of Cookery; and so on.

HUMAN PROPORTION IN ART AND ANTHROPOMETRY; a lecture delivered at the National Museum, Washington, D. C., by Robert Fletcher, M.R.C.S.E., etc. We are pleased to acknowledge this pamphlet from Dr. Fletcher. It is a valuable one in many respects, especially as it contains in a condensed form results of extensive researches concerning the organization of man. The Doctor in his pamphlet especially considers the standard of proportion as observed by ancient artists and physicians, and shows the important bearings which such standards of measurement have upon ethnology.

THE ECLECTIC MAGAZINE of Foreign Literature for November sustains the old reputation which it obtained during the editorship of our friend the late Dr. Bidwell. The tone of the selections is high as a general rule, yet the editor endeavors to offer such a variety as shall please the majority of cultured people in it. In "After the Coronation" we have some notes on the motives and plans of the Nihilists; there are also Memories of Ischia, which contributes information with regard to that beautiful but lately seriously damaged isle of the Mediterranean. The solid article for religious readers is "The Gods of Canaan." "Study in Relation to Literature" is suggestive, especially to those young persons who have a bias in that direction.

PRISON LABOR. Some considerations in favor of maintaining the present system. This bulky pamphlet contains the financial statements of Sing Sing, Auburn, and Clinton State prisons, taken from the reports made by the Comptroller to the Legislature; a letter to the editor on prison labor in New Jersey; the opinion of Dr. Wayland on prison labor; an argument on the same subject made before the Senate committee, and also the Assembly committee of New York in March of last year by John S. Perry; the object of all of which is to show that prison labor as generally performed is by no means the brutal and inhuman thing which some inconsiderate persons have declared it, and that the amount of work which prisoners have done in one department, to wit: that of moulding and casting stove iron, falls very much below the average of citizen mechanics.

HARPERS' NEW MONTHLY MAGAZINE for November is richly illustrated; particularly is this the case with the sketch of a Vacation in Vermont, in which the scenes of mountain and woodland are most admirable specimens of the graver's art; and, too, the portraits in "Some Glimpses of Artistical London" are beautiful. Appropriate for the month is the article on "Evacuation of New York," in which we have some views of the buildings, which graced the old-time city, and some glimpses of the prominent men and women of a hundred years ago.

A VACCINATION DISASTER REPORT, comprising particulars of more than 400 cases from 1855 to 1883, by T. Baker, Esq., Barrister-at-Law for the Inner Temple, Member of the General Board of Health from 1849 to 1854, and Secretary to the Royal Commission on the Sanitary State of the Army in India, 1859 to 1863; an author of numerous books on public health, sanitation and so on. This pamphlet furnishes some ugly statistics bearing upon vaccination. It comes from the London Society for the Abolition of Compulsory Vaccination *via* Montreal and Dr. Alexander Ross.

LIPPINCOTT'S MAGAZINE for November has a sketch of Henry Irving, the English actor, who has recently come to this country for the purpose of obtaining a share of the favors social and pecuniary of the American art-loving public; also "Curiosities of Instinct," "Housekeeping in Normandy," "Art in Baltimore," and other titles which deserve the attention of magazine readers. J. B. Lippincott, Phila.

A NOTORIOUS quack advertiser sends us two or three of his pamphlets, perhaps with the sanguine expectation that some notice shall be given them in our columns. His enterprise and persistence are certainly admirable, but we signally detest their motive and spirit, and are sorry that his ability to issue such things indicates that he finds some favor among the ignorant public.

Publishers' Department.

NOTICE.—The Phrenological and Publishing Business, which has been conducted by S. R. WELLS & Co., is continued under the firm name of FOWLER & WELLS. Correspondents, Agents, and others, when communicating on business matters connected with this office, should address their orders to FOWLER & WELLS, 753 BROADWAY, NEW YORK, and not to any PERSON connected with the office. Postage-stamps received for fractional parts of a dollar. Do not tear them apart, and do not stick them to your letter. Prepay all letters in full with 3-cent stamps. Give name and full address every time you write.

Editor's Mention.—Owing to the length of the article on "A True Basis for the Science of Mind," the essay on "Woman in the Industrial Arts," and the sketch of the Yellowstone Country must be reserved for the August Number. The reader will be pleased, we think, with the "True Basis," as it sets in strong although compendious array, the arguments and evidences of the phrenological system. Current topics find their representation in "Modern Drama" and "Contagious Diseases in Paris," which will doubtless secure a good share of the reader's attention, the latter especially, as it deals with a subject of high importance to a large circle in our population.

In our next Number—August—besides the articles necessarily omitted, as above mentioned, we expect to publish "What is Insanity?" by Dr. J. Ordronaux. The character and management of Horses, from notes furnished by an eminent horse-trainer. Another installment in the series in Language, which will describe the Invention of Printing, and we may also introduce the first part of a celebrated poem of Milton, with illustrations and notes, phrenological and psychological.

Important: A New Premium.—We desire to call the attention of our readers to our new and seasonable premium offer as stated in another column. We can assure you that no person who is at all exposed to the sun, even if only occasionally, and for a short time, can afford to be without one of these patent head protectors. The price is only 30 cents, by mail, postage paid; but believing that the offering of it as a premium would result in largely increasing our subscription list, we have arranged with the manufacturers for a large quantity for distribution on the following terms. It will be sent as a premium to new subscribers to the JOURNAL for six months, from July to December, and to place it within reach of present subscribers it is offered to any person now a subscriber who will send one new six months' subscription as above. We must receive with each order for a protector as a premium five cents extra to defray the cost of the case for sending and the postage.

The Natural Cure.—This work, the publication of which was so long delayed, is being well received by its readers, and we are already receiving words of commendation for it. It is undoubtedly one of the best health manuals yet published, and should have an extended, yes, indeed an almost universal circulation. Will be sent by mail, postage paid, on receipt of one dollar.

Price Reduced.—We have just published a revised edition of Dr. Trall's popular and useful work called "Water-Cure for the Million"; some unimportant matter has been omitted so as to enable us to reduce the price to 15 cents a copy. We do this knowing that the circulation of this will do much good, and hoping that at this price many may be induced to aid in its circulation by acting as missionaries, as it were, by sending for this and circulating it among their friends. We can show something of the value and importance of this little work by giving the contents. HYGIENIC AND DRUG MEDICATION CONTRASTED.—**Bathing.** Wet-Sheet Packing, Half-Pack, Half-Bath, Hip or Sitz Bath, Foot-Bath, Wet and Cold Foot-Bath, Rubbing Wet-Sheet, Pail Douche, Stream-Douche, Towel or Sponge Bath, Affusion-Bath, The Plunge-Bath, Drop-Bath, The Sweating-Pack, Head-Bath, The Pouring Head-Bath, Fountain or Spray Bath, The Shower-Bath; Nasal, Mouth, and Eye Baths; Arm and Leg Baths, Vapor-Baths, Air-Baths, Bandages and Compresses, The Wet-Girdle, The Chest-Wrapper; Fomentations, Refrigerations, Wet-Dress Bath, Electro-Chemical Bath, Injections, General Bathing, Rules, Duration of Baths. CRISES, ABRADED AND ULCERATED SURFACES, TEMPERATURE, WATER-DRINKING.—**Food.** Dietetic Rules, Times of Eating, Preparation of Food, Bread Rolls, Batter Bread, Wheat-Meal Crisps, Wheat-Meal Crackers, Loaf-Bread, Rye-Bread Rolls, Corn Cake, Oat-Meal Cakes, Oat-Meal Crisps, Pumpkin Bread, Fruit Bread, Snow Bread, Griddle-Cakes, Squash-Cakes, Pastry, Puddings, Mushes, Gruels, Porridges, Soups, Boiled Grains, Apple-Dumplings, Rice Apple-Pudding without Milk, Boiled Indian Pudding, Apple Jonathan, Rich Apple Pudding, Crisped Potatoes, Potato Shortening, Animal Foods. EXERCISE, VENTILATION, LIGHT, CLOTHING, SLEEP, BEDS AND BEDDING, BODILY POSITIONS, NIGHT WATCHING, FRICTION, ELECTRICITY, GALVANISM, MAGNETISM, CLEANLINESS.—**Practical Hints for Home Treatment.** Simple Fevers, Eruptive Fevers, Visceral Inflammations, Influenza, Asthma, Catarrh, Bowel Complaints, Spasmodic Diseases, Gout and Rheumatism, Consumption, Cachexies, Hemorrhage, Apoplexy, Palsy, Dyspepsia, Liver Complaint, Jaundice, Nervous Debility, Spinal Irritation, Neuralgia, Worms, Rashes and Eruptions, Burns and Scalds, Coughs and Colds, Dropsies, Asphyxia, Mismenstruation, Leucorrhea, Spermatorrhea, Venereal Diseases, Poisons. POPULAR OBJECTIONS ANSWERED.

Head Protectors.—One of the greatest causes of discomfort from the heat of the sun, is its effect on the head. From this comes sun-stroke, congestion of the brain, etc. To prevent this we have resorted to various means: peculiarly constructed hats, ventilators, shades, etc., which have had more or less of a beneficial effect. In this connection we wish to call attention to what is known as "Snow's Patent Head Protector." This is a very ingenious arrangement which can be instantly adjusted so as to fit any hat, which enables the wearer, by following a few simple directions given, to protect his head from the effects of the direct rays of the sun, as the air in the hat is kept cool. Believing this to be an article which would prove of great service to farmers, mechanics, drivers, and all who are exposed to the sun, we have made arrangements for supplying it to our readers on favorable terms. It will be sent by mail, post-paid, on receipt of price, 30 cents, which may be sent in postage-stamps, or one will be given as a premium in connection with a six months' subscription to the PHRENOLOGICAL JOURNAL, and as an inducement to present subscribers we will send one of the "Head Protectors" to any person sending us a new subscriber for six months, and will also send a protector to the subscriber. We must receive five cents for each protector ordered as premium, to pay the cost of case in which it is sent and the postage. This offer is only good during the summer months, and will expire August 1st. It is hoped that during this time many of our subscribers will take advantage of this offer and so materially increase our subscription list.

Agents Wanted.—We desire the service of experienced canvassing agents to work for some of our special books, and to such we offer paying inducements. A new edition of "New Physiognomy, or Signs of Character" is now printing on extra fine paper, and will be bound in a new and attractive style which will certainly do much to add to the popularity of this already popular book, and for this we desire agents. A subscription book showing the contents, styles of binding, etc., we will send to agents on receipt of one dollar. We can also send prospectus book of the "Family Physician" at the same price. Dr. Cowan's "Science of a New Life" is meeting with extended sales and is one of the most popular books ever introduced by agents. The subscription book, with terms, etc., will be sent to any address on receipt of 75 cents. One of the most useful of our recent publications is "For Girls," a work which should be placed in the hands of every growing girl; as the price of this book is only one dollar, we have not thought it worth while to prepare a prospectus book, as agents will do better with a sample copy. Special terms and circulars of any of the above works will be sent by mail, postage paid. Upon application we will also send our general terms to agents, and premium list, to persons willing to act as local agents whereby they will have an opportunity of doing good and being paid for it.

Removal.—Our readers will see from the change of address in the advertisement that Chas. H. Hoyt's Son has removed to Broadway, where he is more centrally located, and has a large stock of Hygienic Foods. He has also opened a Dairy Restaurant, where the cereals are served in a wholesome manner.

Now is the Time to Subscribe.—A new volume of the PHRENOLOGICAL JOURNAL, the 77th, commences with this Number, therefore the present is a favorable time to subscribe, and our great premium offers to yearly subscribers are continued, and we would also call especial attention to the premium offers made to six months' subscribers. All subscriptions received now are dated from the July Number unless ordered otherwise; but back Numbers from January can be supplied when desired.

Silos and Ensilage.—The new methods of preserving forage plants for cattle is attracting increased attention. Those who have experimented with it have met with most encouraging results; and in this connection we wish to call attention to what is undoubtedly one of the best methods of construction. We refer to the Gravel Wall, or Concrete Mode of Building, as explained in our Manual, called "Homes for All," or the "Gravel Wall Method of Building." In this work will be found special directions for selection of material for the proper composition of it, and methods of using; and we would say there are but few farms which do not contain all that is needed except a small proportion of lime. A correspondent who has had a good deal of experience says: "The Building of Silos is steadily on the increase, and I think the Concrete Gravel Wall is by far the best and most economical method of construction, especially when building above ground, as many have to. I expect to build another Silo this summer, and would not think I could build in any other way."

Mr. John M. Bailey, proprietor of "Winning Farm," and the author of "The Book of Ensilage," also recommends the concrete method of building as being the cheapest and best. "Homes for All" also contains full instructions for the building of houses, barns, and other outbuildings of the same material, with plans, etc. Price $1.25, by mail, post-paid.

How to be Weather-wise (price 25c.)—This is a little work now meeting with a wide circulation, and attracting a great deal of attention among the thinking class of people. The *Washington Star* says: "Those who have access to the daily papers in which the Signal Office reports and probabilities are published do not have much need for becoming weather-wise from personal study of atmospheric phenomena; but, realizing that there are many persons who have not that advantage, and are obliged to look out for themselves, Mr. Isaac P. Noyes has prepared, and Messrs. Fowler & Wells have published, a little pamphlet in which is shown how the data are to be obtained for these official indications, and how simple a matter it is to observe weather signs, etc., when the principle involved in weather movements is understood."

The Phrenological Cabinet is a great Museum containing hundreds of busts, casts, portraits, and sketches of men and women, living and dead, noted and notorious from all classes, including statesmen, soldiers, lawyers, divines, inventors, philanthropists, etc., with murderers, pirates, and others from the lower walks of life, with many recent additions, and a large collection of Human and Animal Crania. All catalogued and free to the inspection of visitors daily.

The Speechless Shoe-maker.—The following from "McComber's Tracks for 1883," is worth reading: "There is probably no human being on earth so utterly dumb as the shoe-maker. The vocabulary of his trade is limited to about a half-dozen articulate sounds. Inasmuch as no skill enters into his avocation, so no need exists for the power to illustrate and explain it. He says nothing, because he has absolutely nothing to say. He cannot give a reason for the faith that is in him, for his dreadful trade has destroyed reason and faith alike. His work demands no invention, no reflection, no study, no brains. The only faculty employed is that of imitation. All that he does by way of fastening pieces of leather together could be done equally well by his immediate ancestor, the anthropoid ape. Why am I so severe in my condemnation of the shoe-maker? Why do I not give him credit for honesty and good intentions? Because he is not honest, and his intentions are not good. He is not compelled to lead the vicious life which now engages him. He could dig cellars or sweep streets, or do good in a thousand ways, if he would. He deliberately chooses to continue in his barbarous occupation. For a little money he consents to torture and distort his fellow-beings. With no thought save that of gain, he touches only to destroy. His hand is against every man, woman, and child who comes within his baleful influence, and the time will come when all mankind will detest him as the author of the direst of human ills.

"He pretends to fabricate desirable clothing for the beautiful human foot. The very assumption is a fabrication. He knows no more about the human foot and its needs than he knows about the foot of the megatherium, the ornithorynchus, or any other extinct animal. He is the blind, dumb, heartless master of a brainless slave. This slave is the last-maker, the shaper of that nondescript block of wood upon which the shoe-maker models the thing of leather which he calls a shoe. This last-maker may be dismissed with few words. He knows nothing, cares for nothing, is nothing. He spoils valuable timber by converting it into shapes which it would be no sin to worship, since they bear no resemblance to anything in the heavens above, the earth beneath, or the waters under the earth. Having wrought his fell purpose upon the unoffending wood, and converted it into an instrument of torture, he hands it over to the wretched shoe-maker, who covers it with leather, and subsequently forces some human foot into the dreadful leather shell thus provided. The last-maker chips and chisels away at his turning-lathe, and thinks no more of the anatomy of the foot, the foundation for the clothing of which he is forming, than he does of the moons of Saturn. That sensible persons should consent to painfully follow in the wake of this blind leader of the blind is marvelous; they will not, however, long so continue as intelligence increases. The stupid shoe-maker does not know how to instruct the last-maker to produce a last founded upon correct principles, so that shoes formed upon it shall be at once beautiful, and free from the power to distort, cripple, and destroy.

"With the dire stupidity of the shoe-maker no one is more familiar than I. For years I made my patent last for him, and vainly endeavored to educate him up to its proper use. I explained to him its principles and convinced him of its excellences. He was ready to admit its beauty and comfort, and I for a time was encouraged to hope that there was sense enough left in him to make its use general. Vain delusion! Not one of the multitude whom I supplied with my patent last continued to employ it in its perfect form. Every shoe-maker to whom I intrusted it proceeded to pare it down, and whittle it away, and ruin it. Every shoe-maker to whose honesty I so far trusted as to license him to make shoes upon my patent last, violated his agreement by substituting for it the old foot-destroying nondescript block, or by hewing it away or patching it with leather, until its character was destroyed, under the absurd pretense of improving it. As he knows nothing, and can not be taught, I give him up. I will not spend another hour in attempts to beat knowledge into his beclouded brain. His business is to be destroyed by the education of the people to a higher standard, by the publicity which I shall give to the monstrous enormities practiced by him. He may be forced to study and acquire such scientific knowledge as his calling demands. Only force, however, will influence him.

"It would be amusing, if it were not so painfully absurd, to witness the gravity with which the custom shoe-maker goes through the motions of marking the shape of the foot on paper, measuring it with tape, and examining it with an appearance of almost human understanding, preparatory to applying to it his merciless machine of torture. To view him at the moment, one would almost be led to believe that he did really know something about the duty devolving upon him, that he was acting upon principles and governed by knowledge. If his subsequent operations could be observed, that delusion would speedily be dispelled. The diagram on paper is exactly as valuable to him as it was before pencil touched it. The measures signifying length and girth simply mean that a hole surrounded by leather is to be formed, the length and circumference of which shall be a given number of inches, 'only this and nothing more.' Into this hole the tender foot is thrust, and then the misery begins. It is now a painful struggle between tender tissues and strong, unfeeling leather, and in the contest there is nothing but destruction and death for the victim. A single pair of strong shoes worn in childhood has crippled many a poor child for life. The barbarity of the system of clothing the feet has made ten thousandfold more cripples than all the wars of all the centuries. All other arts, all other trades have improved, have remedied errors, have cast off effete and harmful methods; the miserable shoe-maker continues to produce and reproduce the vile things which have brought misery to the race ever since sandals were replaced by shoes. I seek to explain all this, and to show how sensible people may have their feet clothed as beautifully, as comfortably, as their hands, or any portion of their body; how distortion may be relieved, and corns cured; how symmetry may supersede deformity and ugliness; how pleasure in exercise, dignity of motion, and grace of attitude may be secured, in my various publications for which I ask a careful perusal."

Mr. McComber is a practical and reformatory shoe-maker, as we have found from a somewhat extended experience in the wearing of his boots and shoes, and knows what he is talking about. The work from which the above is copied is a publication of nearly 100 pages, a copy of which will be sent to every reader of the PHRENOLOGICAL JOURNAL who will send address to Joel McComber, 52 East 10th St., New York, and ask for McComber's Tracks for 1883, and we say send for it.

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The American Institute of Phrenology.—This Institution opens its Fall Session for instruction, in the afternoon of the 1st Tuesday in Oct. of each year. Its charter was granted by the Legislature of the State of New York in 1866, and, since that time, an annual course of instruction has been given. This consists of one hundred or more lectures, covering a period of about six weeks; embracing the theory of Phrenological Science, together with its practical applications, and special instruction in making of examinations; lectures on Physiology, Hygiene, Insanity, Idiocy, etc., by competent professors and experts in these respective specialities. This course of instruction has been found to be exceedingly pleasant and profitable to many persons who have not taken it with the intention of making a professional use of the instruction received. Whatever will add to our knowledge of ourselves or others should be taken advantage of. For full particulars as to terms, etc., send for Institute circular. Address this office.

The Combination Fruit Press.—This is one of the most useful inventions to which we have had our attention called for a long time, and it is an article which is especially useful at this season of the year. It is undoubtedly the best Fruit Press ever made, very simple in principle, and very easy to work. In one operation it extracts the entire juicy substance from any kind of small fruits, grapes, and berries, the solid portion being discharged uniformly dry. We will send one of these presses as a premium to any person procuring for us four subscribers for the JOURNAL for one year; or will send it by express to any address on receipt of price, $3.50.

The Head Protector.—This useful, practical little article is meeting with an extended sale among our readers, and is being found exceedingly useful; and now that we are in the midst of the heated term, we find a full chance for its thorough appreciation. The time for which it was offered as a premium expires on the 1st of August, but we have decided to continue this offer for another month, and therefore it is offered to each person who will send us one new subscriber for six months, and one also to the six months' subscriber as a premium. This certainly places it within the reach of all, and we also send it by mail, post-paid, on receipt of price, 30 cents. Agents, whether man or woman, boy or girl, who wish something to sell in hot dull weather, should try this. We offer most liberal rates by the dozen. Send for sample and terms and get to work at once.

Now Ready. Fourth Edition, Revised and Enlarged.

How to Feed the Baby to make it Healthy and Happy.—This is not simply a special record of Dr. Page's experience with his own child, though this adds largely to the interest of the book.

For the first time since children have been born upon this earth, we have here a work that probes to the bottom this foul sore, this blot upon our civilization—the unnatural death-rate among infants and young children.

"Why should healthy-born infants die? Why, indeed, should they sicken?" asks the author, and then says, "Four hundred in every thousand die under ten years, and three-fourths of these, under twelve months! This is unnatural—shameful, indeed—and no good reason exists for it. Three-fourths of these deaths are easily preventable—leaving one hundred, or ten per cent., to the credit of adverse hereditary influences—making the normal death-rate ten instead of forty per cent., under ten years."

For several years Dr. Page has devoted his attention almost entirely to this question, regardless of sacrifices in every direction. He may be truly called the pioneer in this field. He has accomplished what has been scarcely attempted before. The whole thing has been allowed to go on, upon the principle that "babies must die of course," and also, "of course," "everybody can't be mistaken." Hence, generation after generation, the same practices, the same sufferings, the same premature dying, the same groanings over the little ones lost.

This book, "How to Feed the Baby," tells us why all this has been: and why it should, and how it may, be prevented. The title gives scarcely a hint of the full scope of the work. It leaves nothing out, but takes in everything, from the statistics of the principal cities of the different nations, death-rates, nominal causes of death, etc., to the real causes—the relation of food, air, clothing, etc., etc., to health and disease.

All mothers of young children, and prospective mothers should send for this book. Price only 50 cents by mail, post paid.

Examinations by Portraits.—Many persons in city or country desire to get a phrenological opinion respecting freinds who may not find it convenient to visit our office, and they may be glad to know that we can do it from likenesses if properly taken. Please send for a circular called the "Mirror of the Mind" which will give particulars about likenesses and measurement, temperament, complexion, etc. Address Fowler & Wells, 753 Broadway, New York.

Our Books in India.—We are very glad to know of the awakening of an interest in our publications among the English-speaking people of India. We have received a number of orders from various parties, with hearty words of encouragement. Messrs. Kalla-am Bros., of 67 Mullah St., Madras, India, have ordered quite largely, and propose to carry a full stock of our publications for sale, that they may be prepared to fill large orders.

The Natural Cure.—This book is now fairly before the people, and being most favorably received. It does for adults what "How to Feed the Baby" has done, and is doing, for infants and young children. Greater praise than this could not be given it.

The questions of "Malaria," "Disease Germs," "Tubercle Parasites" (of Dr. Koch and others), "Disease Waves," "Contagion," etc., etc., are handled in a somewhat unique fashion, and many of the supposed chief causes of sickness are shown to be of comparatively little influence, while the real causes are pointed out and shown to be constantly operative in the daily practices that are well-nigh universal. We print below a few of the

NOTICES OF THE PRESS.

"There is a large proportion of good sense and practical wisdom in the rules laid down by Dr. Page for healthful living, and if they were more generally followed, it can not be doubted that the doctors would be less actively employed."—*The North American*, Phila.

"The volume is full of suggestions backed by examples of practice, and it belongs to a class of books which is doing good by calling attention to bad habits, and stimulating people to live so as to prevent disease. A nudge of the elbow may keep a person from being run over, when the highest skill may be unable to save his life afterward."—*New York Star*, New York.

"Will commend itself to the good sense of thoughtful people who . . . . are averse to the continual dosing which the sick and their friends insist upon, even when the family physician's better judgment deems it unnecessary."—*Syracuse Journal*, Syracuse, N. Y.

"The book is written from a radical standpoint, but relates mainly to a disease whose treatment, judged by the mortality reports, has been radically wrong; and if, as we are led to hope, we have here a treatment that is *radically right*, a grand advance will have been made. The work, as a whole, will well repay a careful perusal, even as a *text-book* for *physicians* of all schools, the most intelligent of whom are coming more and more to realize the importance of hygiene as an aid to, if not as the principal treatment of, all disorders."—*New Jerusalem Messenger*, New York City.

"This book also treats of constipation, Bright's disease, croup, diphtheria, insomnia, insanity, rheumatism, fatty degeneration, biliousness, hay fever, neuralgia, dyspepsia, scrofula, and, in fact, almost all the ills that flesh is heir to. There is a valuable chapter on air-baths. Numerous authors are cited, and the book is thoughtful and well considered."—*National Tribune*, Washington, D.C.

"Dr. Page's 'Natural Cure' is, in brief, the substitution of an active, outdoor, free life, for unnatural modes of living, and the application of Nature's own preventives and cures, instead of physic and foolery. This principle he has elaborated and applied specifically to each of the diseases mentioned in the title, and to kindred ailments."—*Washington World*, Washington, D.C.

"The moral is that medicine is to be avoided, and our main reliance placed on air, sun-light, the proper amount and quality of food, and, upon occasion, on fasting. We have no doubt but this advice is useful and much preferable to overdosing."—*Evening Telegram*, New York.

"From a careful review of this work, it would seem that we have, at last, a 'bed-rock' health book, written by one who had devoted his life to the study of the prevention as well as the cure of sickness, through a rational interpretation of natural laws."—*Church Union*, New York City.

"Contains much invaluable advice."—*Indianapolis Journal*.

Sent by mail, post-paid, on receipt of price, $1.00. Address this office.

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Last Inside Page	150.00
Fourth Page of Cover	Special Rates.
Business Cards	75 cts. a line.
Business (Reading Matter)	$1.00 a line.

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A Trial Trip.—The publishers of different periodicals resort to different methods of introducing their publications, advertising in the newspapers, the distribution of circulars and prospectuses, the employment of agents, etc. We have found from experience that the old saying, the "proof of the pudding," etc., holds good in regard to the PHRENOLOGICAL JOURNAL, and therefore that the best means of securing subscribers, is to have the JOURNAL examined and read. To accomplish this purpose we have decided to offer the JOURNAL for the last three months of this year "on trial," at half the usual subscription price, making it only 25 cents for three months' subscription. This will certainly enable all to try the JOURNAL, and it will, we know, result in our receiving many yearly subscriptions. It is hoped our present readers will each call the attention of their friends to this offer, and so help to extend the circulation of the JOURNAL. $1 will pay for four subscriptions for three months. Let every reader try to send at least $1. This is a good chance to do a little missionary work.

Lectures on Phrenology.—As we go to press with this Number of the JOURNAL, we receive word from London, that Mr. L. N. Fowler will sail for New York the latter part of the month of August, for the purpose of making a lecture tour through this country. We would say that during Mr. Fowler's absence of nearly twenty-five years, he has lectured in almost every city of Great Britain, and has also traveled in many parts of the continent and in the East. Naturally an interesting speaker, his long experience has made him an accomplished lecturer, and wherever he speaks the people may feel assured that they will be amply paid for the trouble and expense in connection with attending his course of lectures. He will respond to invitations to give lectures before societies, etc., in such localities as time and circumstances will permit. For terms, dates, subjects, etc., letters may be addressed to this office.

Strawberry Plants.—We have received from Mr. J. T. Lovett, of Little Silver, N. J., his Autumn Catalogue for 1883. This contains instructions for the cultivation of strawberries, description of new varieties, price lists, etc. All who are interested in this—and what owner of a garden is not?—should send for it, which will be sent free to our readers. Address as above.

The American Institute of Phrenology opens its annual course the first Tuesday in October. For circular explaining everything about it, please address FOWLER & WELLS, 753 Broadway.

A Phrenological Society.—We have received from Mr. John L. Shawver, of Bellefontaine, Ohio, particulars in regard to the Phrenological Society with which he is connected. He says:

"The society is known as the Springfield Phrenological Society, and was organized about five years ago, for the purpose of extending a knowledge of the sciences of Phrenology and Physiognomy. It consists of some twenty-five active members, with quite a number of honorary members. Among those connected with the society are found some of the best educated and most highly cultured of our citizens, including Prof. J. W. Van Sickle, A.M., M.D., Principal of Van Sickle's Business College, and an author of some distinction and much ability; Mrs. Prof. Van Sickle; Prof. Tibbets, an artist; Mr. Crawl, of the *Farm and Fireside*, and many others. Since it was organized, the society has met once each week, on Friday evenings. The following is the order of exercises: The calling of the roll, reading of the minutes, proposals for membership, election of members, election of officers, delineation of characters (of visitors and persons seeking knowledge of their ability, who are always welcomed to our meetings), discussion of the evening (on some subject in Phrenology or Physiognomy, chosen at a previous meeting); adjournment (followed by a sociable, consisting of conversation, music, etc.) The work is interesting and instructive, several members having become quite proficient as practical phrenologists. Large numbers of strangers and students connected with the colleges and seminary attend for the purpose of learning their proper vocation in life. The society serves to call attention to the subject in a practical way, that will lead many to still further investigations."

This letter shows what can be done by a little well-directed effort. Every neighborhood should have its phrenological society, which would result in the promotion of the knowledge and influence of its members. The above letter may serve as an outline for the organization of similar societies.

Health Institution For Sale.—In this number of the JOURNAL the Drs. Heald offer their celebrated Hygeian Home, at Wilmington, Del., for sale, on favorable terms. While this building is well adapted for other purposes, we certainly hope that it will be purchased by some practical, enterprising Hygienist, who will continue the work so well established by its present proprietors.

Photography.—Recent scientific discoveries and the efforts of practical scientific men have done much to promote the art of photography; the instantaneous process and the use of electric light, are recent innovations. We wish to call the attention of the public to Mr. George G. Rockwood's popular rooms, cor. of 17th St. and Union Square. Mr. Rockwood gives his personal attention to the posing and sitting of his subjects, and has been among the first to test and introduce the recent improvements. He has been specially successful in the taking of children's pictures; his ability to take them "as quick as wink," overcomes many obstacles in the way of securing pictures of the little folks. He also copies and enlarges most successfully, old pictures, and makes a specialty of outdoor work, views, scenery, etc. Mr. Rockwood charges reasonable prices for excellent work, and we recommend him to our readers.

W. L. Thurston, of Bangor, Maine, writing to the Health Food Co., says:

"The good work still goes on. 162¼ lbs. solid flesh 'hangs o'er me' each day. I am a walking, living, and striking example of the value of your good foods. I have been using my brain rather too much in arranging for settling my business, so have not accomplished as much walking as I ought, but from the first, have not had a serious pull-back, and all through the strain gained flesh with a moderate appetite. I think it may be the results of muscle hardening. My nerves have not been so well for ten years, and my future course now looks clear and easy. Yours, W. L. T."

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Our Premium Book for 1884.—The giving of premiums to our subscribers has become so much of an established fact that it is, we presume, expected. We are proud of the volumes already presented to our readers in this way. Beginning with the PHRENOLOGICAL BUST, which all have prized very highly, and which is still offered to new subscribers, and to others who prefer it; we followed this with "THE TEMPERAMENTS," the only work now in the market on this subject, and only supplied now at the regular price, $1.50. The next year we presented our readers with Dr. Capen's great work, REMINISCENCES OF SPURZHEIM and of GEORGE COMBE, a work giving the history of the early introduction of Phrenology in this country, which we can still supply for a limited time as a premium. Following this we offered "HOW TO EDUCATE THE FEELINGS AND AFFECTIONS," a work of interest to parents and teachers, and those seeking self-improvement. "THE PHRENOLOGICAL MISCELLANY," a work which has been eagerly sought for, following this (these two are only sold now at $1.50 each), and last year Sir Charles Bell's "ANATOMY OF EXPRESSION" was given. In looking over our list we see a large ground has been covered, and decided that a HEALTH BOOK would perhaps be more acceptable than anything else which could be supplied, and therefore have decided to offer as a PREMIUM FOR 1884, Dr. Benjamin Ward Richardson's great work on

THE DISEASES OF MODERN LIFE.

The author is well known as one of the leading members of his profession in England, and this volume consists of 320 12mo pages, devoted to the avoidable causes of disease, and not to prescriptions and remedies, except so far as avoiding the cause as a means of cure. Therefore, it is in the strictest sense a Hygienic work.

A large proportion of diseases to which men are subject are produced by avoidable causes, and the result of ignorance in relation to the laws of health. A large edition of this work has been published in good-sized type on tinted paper, and we feel confident that every reader who receives it will feel amply repaid for the amount invested in a year's subscription to the PHRENOLOGICAL JOURNAL. To show the value of the work more fully than we could in any other way, we print in this number a summary of the table of contents, to which we refer all of our readers.

The books are now ready for delivery, and will be sent promptly to every subscriber on receipt of a renewal for the coming year, and to new subscribers who prefer this to the PHRENOLOGICAL BUST. In all cases, when the book is sent, we must receive 25 cents extra for the payment of postage for this and the JOURNAL, making the terms for the JOURNAL and the PREMIUM BOOK, both post-paid, $2.25.

A Manual on Horse Hygiene.—HORSES: Their Feed and their Feet, is the title of a new work now in press, prepared by Dr. C. E. Page, the author of "How to Feed the Baby," "Natural Cure of Consumption," etc. The most of the works published on the horse have given comparatively little attention to his Hygienic management, but are devoted rather to the cure of his diseases than their prevention. Dr. Page has taken different grounds in his book, and writes from the stand-point of the Hygienist, and discusses the question of feeding, for the purpose of increasing life and service, showing how horses may best be put in good condition; the quantity of feed and the best kind of feed, for road horses and for work horses.

Reports of how the fine stock of Mr. Bonner and others are cared for, that they may be always in condition, and the matters of ventilation, blanketing, blinders, etc., are considered.

Part second contains Sir George Cox's valuable treatise on caring for the feet of horses. Also, Col. M. C. Weld's experience with barefoot horses, showing that in many cases horses will do better service without shoeing than with it. Containing also an illustrated article on the "SIGNS OF CHARACTER" in horses, and their training.

There is not a single owner of a horse who can afford to be without this book. Price in paper, fifty cents; cloth binding, seventy-five cents. Ready about September 15th.

Who will Put One Up?—We have printed a handsome sheet prospectus, suitable to hang up in any public place, where it can be seen and read, and so call attention to the JOURNAL. We shall be glad to have them put up in every post-office, country store, hotel, depot, reading-room, grist-mill, blacksmith shop, factory, steam boat, school-house, hall, etc., in all parts of the country. Who will have one? We will send to any one who will agree to put it up carefully, and we believe good can be done by calling attention to the JOURNAL in this way.

How to Teach; or, Phrenology in the School and Family.

In speaking of this work by Mr. Sizer the *West Branch Star* says: "This work is a complete handbook for teachers and parents, showing them how to understand the talents, dispositions, and constitutional temperaments, and how to successfully guide, control, and educate those committed to their care. It discusses the principles of mental development, culture, and training, and shows how the bodily conditions may be regulated so as to secure health, happiness, success, and long life; in short, it shows how to make the most of every human being, both in body and mind.

Railroad Travel.—Passengers over the New York, Lake Erie, and Western R. R. secure for themselves many advantages. The cars are commodious and well equipped, including all the modern improvements that are in the interest of the traveling public; and the ride from New York to Niagara Falls is one of unsurpassing interest, and especially so in the autumn, when nature adds to the beauty of the picturesqueness found at other seasons on this beautiful route. A new route to the West over this road has been opened via. Salamanca, connecting with Chicago and Atlantic Railway, where Pullman trains are run between New York and Chicago without change, and it is, without doubt, one of the most popular routes to and from the West. The Chicago and Grand Trunk Railway of Canada, with its connections, has come to be a great thoroughfare, extending from Chicago in the West with terminus points on the Atlantic Coast, from Halifax to Philadelphia. The cars are well equipped, with the best of attention from employés in all departments.

The Albert Lea Route.—This is the name of a well-known and popular railroad route from Chicago to the Northwest, composed of the Chicago, Rock Island, and Pacific Railway, from Chicago to West Liberty; the Burlington, Cedar Rapids and Northern Railway to Albert Lea; the Minneapolis and St. Louis Railway to Minneapolis, running through cars from Chicago to Minneapolis, and traversing one of the finest farming regions of Illinois, Iowa, and Minnesota, and passing some of the finest views to be seen in these States. Connection is made at Minneapolis with the Northern Pacific to Manitoba and the Northwest. The Chicago and Rock Island road also makes connections for the West via. Council Bluffs, and the Union Pacific via. Kansas City and the Southern Pacific. For full particulars our readers are referred to Mr. E. St. John, General Ticket and Passenger Agent, Chicago.

The Chicago and Alton Railroads, making connections from Chicago to St. Louis and to Kansas City, is well equipped in every respect, and runs through what might well be considered one of the richest parts of the State of Illinois. All first-class cars on this road are furnished with what are known as palace reclining chairs, to which passengers are entitled without extra charge. Here will also be found the celebrated dining cars. These cars are used exclusively for cooking and eating, and one simply goes from one car to another at meal-times, the same as would be done at a first-class hotel.

Flowers.—Our readers must not forget that there are many kinds of flowers that can only be obtained by Fall planting. This is the case of some of the annuals and perennials, and especially true of the Holland Bulbs, such as Hyacinths, Crocuses, Narcissus, Jonquils, etc. We are reminded of this by receiving the beautiful autumn catalogue of Peter Henderson & Co., 35 Cortlandt St., New York. This catalogue gives descriptions, prices, etc., and will be sent free to our readers who will send as above.

The Health Food Co., whose advertisement has become familiar to some of our old readers, continues to educate the people in the knowledge of the fact that *Food is better than Medicine.* While this is true, it must not be forgotten that very much that is eaten is not food in the true sense. The foods advertised are among the best, and our readers should send to them for their free pamphlets. See advertisement.

BOOK NOTES.

OUR NEW PUBLICATIONS.

We wish to call the special attention of our readers to the following announcements of new books, some of which are ready, and others nearly ready or to be published during the present season.

HEALTH IN THE HOUSEHOLD; or, Hygienic Cookery. By Mrs. Susanna W. Dodds, M.D. 12mo, cloth, price $2.00. *Ready Oct. 15th.*

This will undoubtedly be the most complete and extensive work on the subject of the healthful preparation of food ever published. The author writes from a large experience and is thoroughly competent for the work. It will be a volume of about 600 pages, handsomely bound, and sold at $2.00. Agents can do well with it.

A BACHELOR'S TALKS ABOUT MARRIED LIFE, and things adjacent. By Rev. William Aikman, D.D., the well-known author of "Life at Home," or the family and its members, a handsome vol., price $1.50. *Ready in November.*

In this new volume Dr. Aikman writes in a pleasant and chatty manner in the form of sketches, noting his observations from a bachelor's stand-point. The work will be heartily enjoyed and appreciated, and should be in the hands of all classes.

THE MOVEMENT CURE, embacing the history and philosophy of this system of medical treatment, with examples of single movement, the principles and processes of massage and directions for their use in various forms of chronic diseases, forming a complete manual of exercises, together with a summary of the principles of general hygiene. By G. H. Taylor, M.D. New and enlarged edition, price $1.50. *Ready in October.*

The work on the "Movement Cure" having been out of print for some time, and there still being an active demand for information on the subject, we have induced the author to add about 100 pages of new matter, and now publish the new and enlarged edition. The work is amply illustrated with nearly 100 useful engravings. Thousands of people are testifying to the usefulness of the movement cure in all forms of low chronic disorders.

MASSAGE.—An explanation of its principles and directions for its application in all forms of chronic diseases, by the same author. Price $1.50. *Ready in November.*

Dr. Taylor is the pioneer of the movement cure as a system of medical treatment, and he has also thoroughly systematized the principles of massage and their application. This method of treatment is attracting the attention of all intelligent physicians; there is a demand for masseurs (persons skilled in making manipulations), and this new work explains the new method so fully as to bring the matter within easy comprehension of all intelligent persons.

HORSES: THEIR FEED AND THEIR FEET.—A complete manual of Horse Hygiene. Price in paper 50 cents, cloth, 75 cents. *Now ready.*

We have in this little volume a work that has long been needed, calling attention to better methods of feeding and caring for this most valuable of all domestic animals. The author has investigated the subject, and his suggestions are based upon his own experiences and observations, and that of others. The work should be in the hands of every owner of an ani-

mal, no matter how poor or how good, and we believe the suggestions will be found new to nearly every one, and worthy the fullest investigations.

DISEASES OF MODERN LIFE. By Benjamin Ward Richardson, M.D., F.R.S., etc. 520 pages, extra cloth, price $1.50. *Now ready.*

This is on that most important of all subjects, the avoidable causes of diseases. The author is a widely-known English physician, and has given to the people a work which must prove most useful. We publish this new edition, a volume of upwards of 500 pages, as a special premium book for 1884, but will fill cash orders.

THE INDICATIONS OF CHARACTER as manifested in the general shape of the head and the form of the face. By H. S. Drayton. New edition, paper, 25 cents. *Now ready.*

A new and enlarged edition of this practical and suggestive little manual has been published. Its unexpected sale has led the author to prepare additional matter on the same subject, and it will be found a most useful and suggestive book to teachers and parents and to all who wish to read the "signs of character" in the people they may meet.

TEA AND COFFEE: Its physical, intellectual, and moral effect on the human system. By Dr. Alcott. With notes and additions by Nelson Sizer. Paper, 25 cents. *Ready in October.*

Dr. Alcott's work on tea and coffee, which has been out of print for some time, has had a wide circulation. Believing its usefulness would be greatly increased by some additional matter presenting the more recent phases of the subject, notes and additions have been made by Mr. Nelson Sizer whose observations have been very extended. The new edition now in preparation will contain much additional matter, and will be sold at 25 cents. The author's work on tobacco has run through one large edition in a few months, and a second edition is now ready. This work points out the effects of tobacco on the system, and the means of curing the habit.

A CATECHISM OF PHRENOLOGY, illustrating the Principles of the Science, by means of short conversational questions and answers, thus adapting it alike to young and old. Paper, price 25 cts. *Ready in Nov.* We have here a very valuable little work, presenting the subject in a familiar manner by questions and answers, adapting it for home study, and for use of teachers who wish to place it in the hands of their scholars for class study.

THE HEALTH MISCELLANY. A series of papers on Health topics. Price 10 cents. *Ready in October.*

We have collected together a number of papers on important subjects relating to health, including the Hygienic Principles of Medication, by Dr. Trall. His articles on Catarrh; Rheumatism; Baneful Habits affecting health; How to Get Well and Keep Well; Wheat Meal *vs.* Fine Flour; Malaria; The Use of Alcohol, etc., might be worth more than the price.

THE STUDY OF CHARACTER.—It is proposed to revise and enlarge the papers published in the JOURNAL on the True Basis of the Science of Mind and Character, and republish them in book form.

B. K. Bliss & Son's Autumn Catalogue of Bulbs, Small Fruits, and Garden Requisites has been received, and is very beautiful and attractive, with colored plate of Lilies. Will be sent free to any of our readers. Address 34 Barclay St., New York.

All Interesting. — The following pleasant letter speaks for itself, and shows an appreciation of the merits of the JOURNAL.

KENTUCKY MILITARY INSTITUTE.

FARMDALE, KY., *April* 28, 1883.

Messrs. FOWLER & WELLS.

Gentlemen: I receive the JOURNAL regularly every month, and am delighted with it. Every subject it touches seems to be just the one to interest and improve me; and on such subjects that, it seems to me, it would be the same with other people.

There is, to me, not an uninteresting department in it. I enjoy particularly the character-reading or analysis of character, that, with the accompanying portrait, is the first thing each month. Next to this the editorials engage my attention. They are always sensible, clear, interesting, and consider important and every-day subjects of thought. In short, the whole JOURNAL seems to me to be written by those who know the truth of what they write, and feel the importance of it too.

I hope soon to become better versed in the science of Phrenology, and then I shall read with still more appreciation.

Very truly yours,

JAMES CUMMINGS.

Prof. of Commercial Science, and Instructor in Languages at K. M. I.

Publishers' Department.

NOTICE.—The Phrenological and Publishing Business, which has been conducted by S. R. WELLS & Co., is continued under the firm name of FOWLER & WELLS. Correspondents, Agents, and others, when communicating on business matters connected with this office, should address their orders to FOWLER & WELLS, 753 BROADWAY, NEW YORK, and not to any PERSON connected with the office. Postage-stamps received for fractional parts of a dollar. Do not tear them apart, and do not stick them to your letter. Prepay all letters in full with 3-cent stamps. Give name and full address every time you write.

1884.—One Number more of the PHRENOLOGICAL JOURNAL AND SCIENCE OF HEALTH, and the volumes for 1883 will be closed and past. The December Number will soon go to our subscribers, and a new volume of the new year will be entered upon. We trust our readers have already made up their minds to continue with us for another season, and that we may receive promptly their renewals. Before sending out the January Number of the JOURNAL we revise our list of names, and those that have not been renewed are erased, and it can readily be seen that it would save much trouble and some delays which might occur, if subscriptions are renewed before this revision takes place. We desire to extend our thanks to our good friends everywhere for their past interest in the JOURNAL, and bespeak a continuance of their co-operation, with the hope thereby that the circulation will largely increase during the coming year. This is of interest to present readers as well as to the publishers, for it is our purpose to increase the attractiveness of the JOURNAL as the circulation and the means received therefrom will justify. Therefore the larger the circulation the better the JOURNAL.

Our Terms for 1883.—The price of the JOURNAL will remain the same, namely, $2.00, and with the premium, $2.25. The offer of the phrenological bust as a premium to new subscribers, and to those who have not already secured it, is continued; and it is undoubtedly one of the most valuable premiums which could be offered. It is, in fact, an almost indispensable supplement to the JOURNAL itself. Handsomely made from the best of plaster of Paris, it is both ornamental and useful. It shows the exact location of each of the phrenological organs, and also their grouping. The choice from two sizes is offered: the largest, nearly life-size, can only be sent by express, and is forwarded at the expense of the subscriber. Number 2, the smaller size, is sent to any address in the United States, by mail, post-paid. To those who are already supplied with the bust, and others who prefer them, we offer choice book premiums, continuing to give Bell's "Anatomy of Expression," Dr. Capen's "Reminiscences of Spurzheim," or Dr. Richardson's great work, "Diseases of Modern Life." This is one of the largest, and in some respects the best book premium we have ever given. It is a handsomely published volume of 520 pages, devoted to the avoidable causes of disease. The whole question is discussed carefully and practically, and many errors in our usual methods of life are pointed out. Until the publication of this edition, the work was sold by the publishers at $2.50. Our premium edition contains all that was published in the former edition, and the same-sized type, and is strongly and handsomely bound. Copies will be sent to any address on receipt of price, $1.50, and it will be given to annual subscribers, new or old. It should be remembered that in all cases we must receive 25 cents in addition to the subscription price, $2.00, when the premiums are sent. Should a subscriber desire either of the book premiums in addition to the bust, it will be sent on receipt of $1.00 extra. This offer is made to subscribers only, but such may take advantage of it at the time of subscribing or afterward.

Our Annual for 1884.—For a number of years we have published an annual publication devoted to phrenology, health, and kindred subjects. This has, of necessity, been somewhat like a number of the JOURNAL, being devoted to the same class of subjects, therefore we have decided to make a change in this, and will issue a very beautiful Chromolithographic Calendar for 1884. This will be printed in colors, in the very highest style of the art. And in addition to the monthly calendar, giving the days of the week and the month, the main body of the calendar represents a picture of a home scene, in which is grouped the figures, also portraits and busts representing some of the workers in Phrenology, so arranged that in, and of itself, it is a beautiful picture. There is also a Chart or Phrenological Head, showing the location of each of the faculties, the principles of Phrenology, etc. It will be one of the handsomest calendars ever made, of a suitable size, and all ready to hang up.

One of these beautiful calendars will be sent by mail, post-paid, to any address, on receipt of five cents in stamps, or three for ten cents. Will send free to all who renew for the JOURNAL for 1884 before the 1st of January, and send 2 cents for cost of postage and packing. To be ready December 15th. Address this office.

BOOK NOTES.

OUR NEW PUBLICATIONS.

We would call attention to the following announcements in regard to our new books:

HEALTH IN THE HOUSEHOLD; or, Hygienic Cookery.—The proofs of this magnificent work by Dr. Dodds have been read, and the book is now printing, and will certainly be ready to mail to our subscribers on or before the first of November. The examination of the book in proof-sheets has more than confirmed our opinion of it in the manuscript form, and we do not hesitate to say that it is one of the most important works ever published, in relation to the food and health question. The author writes from a practical standpoint, and is able to give a reason for her opinions. It is a handsome volume of more than 600 large 12mo pages, to be bound in extra fine cloth, and also a special edition to be bound in oil-cloth, which will not soil easily, and can also be washed without injury, adapting it for use in the kitchen. The price is $2.00, giving a choice of either style of binding.

A BACHELOR'S TALKS ABOUT MARRIED LIFE.—Dr. Aikman's new book on home life is likely to supersede in popularity his Life at Home, which has in a certain sense become a standard work on the home relations. The new volume will be handsomely published, and at the same time, and uniform with it, will be published the new edition of "Life at Home." Price $1.50 each. Ready in November.

THE SCIENCE OF A NEW LIFE.—This is the title of a work written by John Cowan, M.D. The work is written from a physiological and phrenological standpoint, and it is undoubtedly the best work on the subject of the marriage relations yet published. On another page will be found a brief summary of the table of contents. The work has been approved by representative and thinking people, and almost unanimously by the press. We have arranged for a large edition of the work, and are prepared to fill all orders, both wholesale and retail. Agents are doing well. Our special terms for the book in quantities will be sent on application. To place it more readily within the reach of our readers, we will offer it to all who renew their subscriptions, or are at present subscribers for 1884, for $2.50; although the work, which is a large octavo volume, handsomely bound, is very cheap at $3.00. This special offer is only given to the first of January. A large descriptive circular, giving table of contents, notices of the press, and letters from the people, will be sent free on application.

HORSES.—Our new book on the feeding and care of horses, which is now in the hands of the public, marks a new era in the care of this noble animal. In speaking of Dr. Page's views, the New York *Tribune* does not hesitate to say that he has contributed much that is of great importance on this subject. While we are well aware that many of the suggestions will be new to the readers, we are also thoroughly satisfied that the reasons given are sufficient to make his views practical and useful. It will, of course, be understood by our readers, that this is not a book written to recommend some powders or spavin cure, but that it is designed to point out better methods of treatment and care for horses that are well, as well as those that are sick.

FOR GIRLS.—The fourth edition of this admirable little book is now ready, and orders which were waiting for this have been filled. Unexpected demands for the work caused us to be out of it for a few days, but we expect to be able to fill all orders promptly in the future. The reception which this book has met with is somewhat exceptionable; it has received words of praise and commendation from every direction. Parents and teachers are awakening to the fact that it contains information that their girls should understand, and it is being introduced in schools most profitably.

Mrs. M. J. Telford, of Denver, Col., writes as follows: "That beautiful philanthropist and philosopher, Miss Frances E. Willard, in the first Congregational Church of Denver, took occasion to speak in high terms of Mrs. Shepherd's book 'For Girls.' Both the subject matter of the book and Mrs. Shepherd's candid way of treating it, won her warm commendation, which she concluded by wishing that every one might read it. The publishers and the author could not ask higher praise than was given it by this wise, true, broad-minded lecturer." Agents are meeting with success in selling this book; one writes of having taken 50 orders in a few hours spent in three different days. We make special terms, which will be sent on application. Where there are no agents now canvassing, we will send the book by mail, post-paid, to any address, on receipt of price, $1.00.

THE MOVEMENT CURE.—This system of medical treatment is deservedly attracting attention. As an evidence of this, we have had continual and repeated demands for Dr. Taylor's work, which has been out of print for some time. We are now publishing a new edition including the applications of massage. The price of the new volume will be $1.50, and it will be ready about the first of November.

MASSAGE.—Dr. Taylor has also prepared a special volume on this subject. It includes the principles as well as the practice, and will be found useful to all who are seeking the best means of retaining as well as acquiring health, and of special interest to physicians and nurses, including all who have in any way the care of the sick. The price will be $1.50, to be ready about Dec. 1.

HOW TO KEEP A STORE.—This work is now in its sixth large edition and in active demand. It is being purchased and appreciated not only by merchants, but by business men of all classes and also by young and enterprising farmers, and is, in fact, of interest to all who have anything to sell or who have to buy. Could be used very profitable in our schools as a reading book for advanced scholars. Price $1.50, by mail, post-paid.

THE HEALTH MISCELLANY.—This is the title of a pamphlet publication containing some of the best articles on health topics, which appeared a few years since in the magazine called the SCIENCE OF HEALTH, and some others. Believing these papers worthy of more permanent preservation and a wider circulation, we publish in this form, price 25 cents. The pamphlet contains nearly one hundred octavo pages, and among others the following articles:

"The External Senses," 5 illustrations; "The Back-Ache," 8 illustrations; "Water Treatment of Fevers"; "Chronic Catarrh," its causes and cure; "Chapter on Ethnology," 8 illustrations; "Bodily Position and Dress" in relation to health and form, 14 illustrations; "Three Classes of American Girls," with illustrations; "The Bath in Small-Pox"; "The Teeth," their use and care, 7 illustrations; "Who are the Healthy Women among us?" "Wheat, the True Way to Use it"; "Con-

fessions and Observations of Sir Edward Lytton Bulwer"; "Twin Curatives, Nature and Water"; "Hygienic Agriculture"; "Hygienic Dwellings"; "Trichina Spiralis"; "Getting used to it"; "Causes of Malarial Diseases"; "Fat Folks and Lean Folks"; "Rheumatism"; "Medical Electricity"; "Position on Horse-Back."

As will be seen above, this contains many very important articles, many of which are worth alone, to those who are interested in the subject, much more than the price asked for all. The articles on catarrh and rheumatism were among the last written by the late R. T. Trall, M.D., and have proved of great benefit to many people. The pamphlet contains a complete list of our publications, is bound in paper cover, and will be sent to any address on receipt of 25 cents, or we will send 5 copies to the same or a different address for $1.00.

The History of Woman Suffrage.—In reply to inquiries we would say, the third volume of this great work is not yet published. Mrs. Stanton and Miss Anthony have been abroad during the past season, giving attention to the subject, and gathering material for the third volume, which will complete the work. The first two volumes are ready, and sold separately. These are royal volumes; royal in more senses than one, for they are royal octavo in size, and filled with the most intensely interesting matter. Besides, each volume is illustrated with twelve or more finely-engraved steel portraits of the representative women of the times. Copies will be sent by mail, post-paid, on receipt of price, $5.00 for the cloth edition, or $6.50 in leather binding. Agents wanted, to whom liberal terms are given.

CLUBBING FOR 1884.

For the accommodation of our readers and friends we have made arrangements for the combining of other publications with our popular and useful magazine as follows: The subscription price of the PHRENOLOGICAL JOURNAL AND SCIENCE OF HEALTH is $2; and any of the following may be included at the prices given:

Names sent for the JOURNAL, with either of these, will count on Premium List, and to Agents the same as though sent singly.

Our Continent	$3 25	Literary News	75
Eclectic Magazine	4 25	Dio Lewis' Monthly	1 60
Atlantic Monthly	3 40	The Pansy	70
Lippincott's Mag.	2 50	Baby Land	40
Harper's Monthly	3 25	Peterson's Lady's Mag	1 60
" Weekly	3 50	North Am. Review	4 25
" Bazar	3 50	Tribune, Weekly	1 10
" Young People	1 30	" Semi-Weekly	2 25
The Century Magazine	3 60	Times, Weekly	90
St. Nicholas	2 70	Sun, "	90
Popular Sci. Monthly	4 20	World, "	90
Godey's Lady's Book	1 60	Country Gentleman	2 15
Arthur's Home Mag.	1 60	Herald, Weekly	90
Rural New Yorker	1 85	Prairie Farmer	1 50
Scientific American	2 75	Illus. Christ'n Weekly	2 20
" Supplement.	4 20	The Pulpit Treasury	2 10
Demorest's Magazine.	1 60	Weekly Witness	90
Home Journal	1 60	Poultry World	90
American Agriculturist	1 10	Gardeners' Monthly	1 50
Wide Awake	2 10	Herald of Health	80
Our Little Men and Women	75	N. E. Jour. Educa.	2 40
Our Little Ones	1 15	The School Journal	1 60
Good Literature	1 30	Plymouth Pulpit	1 75
		Modern Age	1 40

The only condition for obtaining the above reduction is that the person ordering shall subscribe for or be a subscriber to the PHRENOLOGICAL JOURNAL AND SCIENCE OF HEALTH, then any number of the above publications may be ordered. Book and Bust Premiums are offered to subscribers to the JOURNAL as above. Make up your list and send on the amount, saving time, money, risk, and trouble. Agents can often offer the above combination to advantage. Address all orders to FOWLER & WELLS, Publishers, 753 Broadway, N. Y.

The New Postal Notes.—Our Government continues to multiply the conveniences which it affords to the public, and the latest step in this direction is the new postal notes, issued by all postmasters, for any sum less than $5.00, and at the low cost of three cents. This will prove a special convenience to publishers and their customers, as it does away with the necessity of sending fractional parts of a dollar, either in silver or postage-stamps, and it is a convenient way of remitting all small amounts, as it does not make the letter heavy, and so show the presence of money. We trust our readers will take advantage of this, and make remittances more frequently than they would otherwise have done.

The New Postal Rates.—Another advantage afforded by the Government to the people is the reduction of the postage from three cents to two cents. While this amount is small on individual letters, it is very large in the aggregate, and is of importance to all persons, though their correspondence may not be large. Many will now feel that they can afford to inclose their inquiries in sealed letters, containing stamp for return postage, instead of writing on a postal-card, and in this way make the reduction a benefit to the publisher as well as to the public.

Postage-Stamps.—The reduction in the price of postage has rendered the use of three-cent stamps less, and we therefore ask our readers to send either one or two-cent stamps when possible, instead of three's, or send in the larger denominations, which we can use in mailing our books. But it is better, when as convenient, to use the new postal notes. Stamps of any and all denominations are accepted, but they must not be stuck fast to the letters, and should not be torn apart, but send them in sheets.

Phrenology in India.—We have received from Mr. R. B. Doss, the manager, a catalogue of books, busts, casts, etc., on exhibition and for sale by the Phrenological Institute located at 89 Chun-Gully, Calcutta, India. This is a very interesting little pamphlet, containing a complete list of our publications with others published in England, and a history of phrenology in Calcutta. Mr. Doss is very enterprising, and we trust will be amply repaid for the efforts he is making to introduce the science among the English-speaking people of India.

Mr. L. N. Fowler, who arrived promptly in this country as per announcement already made, is now in the lecture field, and will respond to invitations wherever his time and appointments in the same direction will enable him to go. Mr. Fowler will receive subscriptions for the PHRENOLOGICAL JOURNAL, and take orders for any of our publications in connection with his lectures, and we bespeak for him a hearty reception by our readers who are living where he may deliver lectures.

Reed & Barton.—These names have already become familiar to our readers, and we do not know that we can say anything which will add to their reputation. We have for many years offered their celebrated silver-ware as premiums in connection with subscriptions to the PHRENOLOGICAL JOURNAL, and they have in every case given most perfect satisfaction. Our readers who are in want of fine table-ware, etc., should write to Messrs. Reed & Barton for prices, etc. See advertisement on the last page of the cover.

Perfect Foot-Clothing —The proper clothing of the feet bears a greater relation to health, comfort, and happiness, than that of any other part of the body; and in this connection we wish to call the attention of our readers to the advertisement of Mr. Joel McComber in this Number of the JOURNAL, and we can not do better than to copy the following from his announcement for 1884:

"I am glad to announce that I am able to take a long step forward in my business of supplying *perfect Foot-Clothing for all.* For many years I have been planning, experimenting, and exercising my best talent in devising methods whereby I might keep a great variety of my patent boots and shoes ready-made and always on hand, to fit the feet of a large majority of those who should call upon me, of all, indeed, except the most seriously distorted, or such as are able to pay the highest price for the very choicest goods. At length I have achieved perfect success in my efforts. The step herein announced enables me to fit at a moment's notice, a very large proportion of all the men, women and children who may call upon me for my patent boots and shoes. Within the reach of all, except the abject poor, I have always intended that my regular and high-priced goods should be the best and most durable in the world. I speak now only of the excellence of the material, and the superiority of the workmanship; when I add to this the advantages of comfort, elegance, freedom from power to distort, efficiency in remedying the distortions and deformities induced by shoes made by all others, I can claim, with no fear of contradiction, that I have no rival anywhere. In my new article, the people's hand-sewed boots and shoes, I shall provide foot-clothing of which *all may* be proud."

Mr. McComber's new track for 1884, giving price lists and full particulars, will be sent free to every reader of the PHRENOLOGICAL JOURNAL who will send for it. Address 52 East 10th Street, New York.

"Fire on the Hearth." — These words carry with them the thoughts of much comfort and happiness, and *usually* something of the past, but we are glad to know that they mean now something more. This is the name given to a kind of heating apparatus that combines all the advantages of a stove, avoiding the disadvantages of a grate, and introducing much that is new in principle and in practice. It secures a complete warming, and at the same time circulation of the air and ventilation of the rooms in which it is used. See advertisement and send for circular, which will be sent free to every reader of the PHRENOLOGICAL JOURNAL.

Knit Underwear.—The attention of our readers is called to the advertisement of the Bickford Knitting Company, who make a specialty of Knit Underwear, and we can say from experience that more comfort can be obtained from this than from any other kind of goods we have ever used. Made seamless, they are at once soft, warm, and comfortable, and being made of the best material they will last enough longer to more than make up for their increased first cost. All who suffer from exposure on account of weak lungs, rheumatism, neuralgia, etc., will be greatly benefited by using these goods, which are now strongly recommended by physicians in this city and elsewhere.

Trees and Plants.—We have received Lovett's illustrated autumn catalogue of trees and plants for 1883. This is a handsomely illustrated publication, giving descriptions of the new varieties, price lists, directions for culture, etc. Mr. Lovett makes a specialty of choice small fruits, and has acquired an enviable reputation in this department. His catalogue will be sent to any of our readers, on application to J. T. Lovett, Little Silver, New Jersey.

Hygienic Under-garments.—The importance of dress in relation to health and happiness can not well be overestimated, and we are very glad to know the fact that increased attention is being given to this subject by the women of this country, and we believe that much of this interest is due to the efforts of Mrs. Fletcher, of this city, who has done so much to make known and introduce her hygienic under garments. In this Number of the JOURNAL she advertises a new waist called the Equipoise, for which many advantages are claimed. It will take the place entirely of the objectionable corsets, and fully avoid their objectionable features. To every lady reader of the PHRENOLOGICAL JOURNAL, Mrs. Fletcher will send her new, illustrated, and descriptive catalogue free. Address Mrs. A. Fletcher, No. 6 East 14th St., New York.

D. Lothrop & Co., of Boston, advertise in this Number their popular periodicals and some of their holiday books, to which we would call the attention of our readers. "Wide Awake," for the young folks, and "Little Men and Women," for the children, supply the juveniles of the family with a year's most healthful and attractive reading matter. Both of these magazines are offered at a reduced price on our clubbing list.

The Modern Age.—This is the title of a literary magazine which has, in a short time, achieved a large circulation and good standing with the public. The prospectus and announcement will be found in this Number of the JOURNAL.

The United States Lyceum Bureau, located near us, at 737 Broadway, are the agents and managers for a number of very popular lecturers, public readers, etc., including Miss Helen Potter, Dr. Dio Lewis, Miss Emily Faithfull, James E. Murdock, Col. Higginson, Charles Roberts, Jr., and others. Church and lyceum committees will do well to correspond with them, as they are sure to be suited.

RATES FOR ADVERTISING.

One Full Page	$75.00
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Less than Half Page. .50 cts. a line, agate measure.	
Second or Third Page of Cover, or First and Last Page of Inset	$150.00
Last Inside Page	150.00
Fourth Page of Cover	Special Rates.
Business Cards	75 cts. a line.
Business (Reading Matter)	$1.00 a line.

Advertisements must be sent in by the first of the month, to be in time for the month following. No extra charge for inserting cuts. No objectionable advertisements accepted at any price.

Publishers' Department.

NOTICE.—The Phrenological and Publishing Business, which has been conducted by S. R. WELLS & Co., is continued under the firm name of FOWLER & WELLS. Correspondents, Agents, and others, when communicating on business matters connected with this office, should address their orders to FOWLER & WELLS, 753 BROADWAY, NEW YORK, and not to any PERSON connected with the office. Postage-stamps received for fractional parts of a dollar. Do not tear them apart, and do not stick them to your letter. Prepay all letters in full with 3-cent stamps. Give name and full address every time you write.

Renew at Once.—It is hoped that every subscriber whose time expires with this Number will renew promptly for 1884. It insures regularity in the reception of the JOURNAL, and saves trouble to the publishers in the arranging of the books for another year. The merits of the JOURNAL are, we think, such as to secure its continuance; and in addition, we can but call attention to the great premium offers which we make.

Our Calendar for 1884, as stated in the last Number of the JOURNAL, is printing. The publication of the Phrenological Annual has been suspended, and in its place we shall publish a handsome chromo-lithographic calendar. This will be printed in several colors, in the very highest style of art, representing a picture of a home scene, with portraits, busts, etc., representing some of the Phrenological workers, including also a chart of a Phrenological head, showing the location, and giving the names of each of the faculties; of a suitable size for hanging on the desk or wall. It will be both ornamental and useful; will be sent to any address by mail, post-paid, on receipt of five cents, or three copies for ten cents. Free to all who renew their subscriptions for 1884, before the first of January, including two cents extra for postage. To be ready about December 15th.

The Lesson Commentary on the International Sunday-school Lessons for 1884, by Rev. John H. Vincent, D.D., and Rev. J. L. Hurlbert, D.D. Boston: Ira Bradley & Co., publishers.

The study of the International Series of Sunday-school Lessons has become so general throughout Protestant Christendom, that there is a large demand for helps for Sunday-school teachers and scholars. Prominent among the publications of this class is the non-sectarian volume bearing the above title. It is broad in its scope, and thoroughly eclectic in its character, besides being geographical and historical, including several maps and other illustrations. There are pointed and practical comments on the portions of Scripture under consideration, selected from more than 200 named sources, and so arranged as to form consecutive notes, and it would seem as though it would be impossible for a better help than this to be furnished.

The New York Observer Calendar.—We have received the *Observer* calendar for 1884. A very tasty chromo-lithograph card, representing the seven ages of man, with a pad calendar for each month in the year.—We have also received the beautiful calendar of the *Youth's Companion*.

Interesting Testimony.— Mr. A. Pearce, of Albany, Oregon, an old subscriber to the PHRENOLOGICAL JOURNAL, called recently, and in renewing his subscription gave cheering testimony relative to the value of our works on Phrenology, to himself and family as well as to the community where he went as a pioneer many years ago, and still resides. The works of Combe, the Fowlers, and the PHRENOLOGICAL JOURNAL had uplifted and improved the people, had refined and cultivated their intellects and broadened their lives, had proved a blessing to many, were, in fact, the fundamental basis upon which they had builded all that is best in their lives.

Another.—Mr. H. Coyne, of Danbury, Ct., a subscriber of a few years, said recently in our office, that the JOURNAL had been the means of improving his health largely; by following its advice he had changed his diet, with marked success, both physically and mentally; he had a clearer and more vigorous mind and stronger body, and had learned, through the teachings of this mental science, how to strengthen his weaker faculties, and how to restrain the stronger ones. He used to be very nervous and sensitive; but now he is so changed, that his friends who have not seen him for years, remark, "how much more healthful and cheerful he looks, how much brighter and clearer his eyes, more intelligent and happy he seems to them," and all this, he adds, he owes to the study of Phrenology and reading of the PHRENOLOGICAL JOURNAL.

These words of encouragement were more than acceptable to us, and are received as an evidence that the JOURNAL is doing a good work.

Our New Premium List for 1884.—Our large illustrated and descriptive premium list for 1884 is now ready, and will be sent on application to any of our readers. This contains illustrated descriptions of watches, silverware, microscopes, magnetic machines, telegraphic instruments, pens, pencils, rubber goods, scroll-saws, etc., together with descriptions and contents of many of the books offered to agents; and we feel safe in saying, no better goods were ever offered as premiums, and that our terms are more liberal than ever before. We want our friends to work for the circulation of the JOURNAL, and we are willing to pay them for it.

The Health Miscellany.—On another page will be found the table of contents of this useful pamphlet, just published. There was a little delay in the getting out of the first edition, but we are now ready to fill all orders promptly.

NOTES ON OUR PUBLICATIONS.

BOOKS FOR THE HOLIDAYS.

Among the various articles used as holiday presents there are none so universally used and so very generally acceptable as books. A good reason for this is the fact that the giver has a wide range for selection, and can well adapt the article given to the tastes or needs of the receiver. And what can be more appropriate than a good book? Its influence is far-reaching, and it will be found, in many cases, hard to measure. It is not necessary, in order that the book shall be appropriate and acceptable as a holiday present, that it shall be specially illustrated or elegantly bound. The merit of the book must be measured by the character and quality of its contents, as well as the quality of its binding. While we do not publish books that are specially gotten up for holiday trade, many of our books are used in this way, and most acceptably.

One of the most appropriate books for a general holiday present, is "TRAITS OF REPRESENTATIVE MEN," which is illustrated with portraits of nearly forty eminent men, and consists of brightly written sketches of some of the most noted men of the times, by George W. Bungay, whose name should be a sufficient guarantee for the character of the literary work. It is handsomely published in fine, super-calendered and tinted paper, and bound in extra muslin, with ink and gilt stamps, and the price is only $1.50.

LIFE AT HOME is one of our standard works, and is specially appropriate as a present to young people and those who are newly married. It is so full of good advice, so aptly and kindly offered, as to make it very acceptable. Price $1.50, full gilt $2.00. The author, Dr. Aikman, has also recently written another work on the family relations, which is just ready, called:

A BACHELOR'S TALKS ABOUT MARRIED LIFE AND THINGS ADJACENT.—This is one of the most pleasant and chatty works on social life ever published. The following from a few of the chapter headings will give you something of an idea of the character of the work: My Brother's Parlor; A Home not Like Heaven; Frank Holman's New Home; Mrs. Frank Holman's Housekeeping; Mrs. Holman's Baby; Obedient Babies; About the Baby Gone; After the Honeymoon; A Young Wife's Troubles; Politeness in the Home; Justice to Children; Mr. Frownell's Boys; In the Country with the Boys; Saying "No," to Children; Children's Elues; Bossing It; The Youngest Boy; Teasing; Family Birthdays; Grandparents; Little Courtesies; The Golden Wedding, etc. This book will be very handsomely published, specially adapted to holiday trade. Price, extra cloth, $1.50; full gilt, $2.00.

WEAVER'S WORDS FOR THE YOUNG, comprising Hopes and Helps, Aims and Aids, and Ways of Life, is a most admirable book, and should be in the hands of every young person who is aiming to make life a success. It is handsomely published, and sold at $2.50.—One of the grandest books we have ever published, and one that is interesting to every one that can read, is,

"NEW PHYSIOGNOMY; or, Signs of Character." This is really a cyclopædia of portraits and biographies, and it might well be called an illustrated album, containing, as it does, more than a thousand portraits and other illustrations. The price is $5.00 bound in heavy muslin; $6.00 bound in full gilt; $8.00 bound in calf, marble edges; or $10.00 bound in full morocco, gilt edges.

CHOICE OF PURSUITS describes the different trades and professions, and the different temperaments and talent required for each, with portraits and biographies of many successful thinkers and workers. A useful work to all young men. Price $1.75.

HOW TO TEACH should be in the hands of parents and teachers, who should make the most of the capabilities of children. Price $1.50.

FORTY YEARS IN PHRENOLOGY will be interesting to every reader of the JOURNAL, and all who are interested in the subject. Price $1.50. These three books are from the pen of Nelson Sizer.

BRAIN AND MIND should be read by all who wish to acquire a technical knowledge of Phrenology. Price $1.50.

WEDLOCK, OR THE RIGHT RELATIONS OF THE SEXES, should be given to young people who are contemplating marriage. Price $1.50, full gilt $2.00.

THE EMPHATIC DIAGLOTT will be found useful to clergymen, Sunday-school superintendents and teachers, and all Bible societies. Price, in cloth, $4.00; library binding, $5.00.

ORATORY, Sacred and Secular, or the Extemporaneous Speaker, should be interesting to the same class. Price $1.25.

Another class of books which should be acceptable, and even sought for, are those relating to Health and Hygiene. One of the most recent works, and one of the most important on this subject, is

HEALTH IN THE HOUSEHOLD, or Hygienic Cookery, by Mrs. Susanna W. Dodds, M.D. This is a large 12mo volume of 600 pages, containing the fullest possible information in regard to the healthful preparation of food, including recipes for cooking, etc. It is bound in extra cloth, and also an extra edition, in oil-cloth binding, which will bear much handling, and can be easily cleaned. The price in either style of binding is $2.00.

HOW TO GROW HANDSOME, or Hints Toward Physical Perfection, will be interesting to the ladies, especially the young ladies; and useful to the mothers. Price $1.00.

THE TEMPERAMENTS, or Varieties of Physical Constitution in Man, is by Dr. Jacques, the author of the above; this volume contains 150 portraits, and other illustrations, and is the only work on the subject. $1.50.

All girls and young men should have placed in their hands a copy of that admirable little book, by Mrs. Shepherd, called, "FOR GIRLS"; this work is meeting with almost universal approval, and has received the highest praise from the highest sources. Price only $1.00.

Give to young mothers "HOW TO FEED THE BABY," price in paper, 50 cents, cloth 75 cents; also the Mother's Hygienic Handbook, price $1.00.

All seekers for health should read Dr. Page's "NATURAL CURE," price $1.00; Dr. Fairchild's How to be Well, price $1.00; Dr. Graham's Science of Life, price $3.00; Dr. Trall's Encyclopædia, price $4.00; and Dr. Shew's Family Physician, price $3.00.

Boys and men who own horses, would be pleased with a copy of Dr. Page's new book on Horses, price in paper 50 cents; in cloth, 75 cents. For special purposes, other special books will be found in our catalogue, to which we refer our readers. These books may be ordered through any bookseller, or we will send them by mail post-paid on receipt of price.

Our Manual of Horse Hygiene.—Dr. Page's new book on Horses, their Feed and their Feet, is meeting with hearty approval. The first edition is already exhausted, and the second edition is now printing. This will contain a few pages of additional matter, together with a number of portraits of famous horses, including a picture of the famous "Jay-Eye-See," which will add much to the attractiveness of the work. To show something of what is thought of the book, we print below a few notices of the press:

"Is a practical manual for the care of this noble animal, including the treatment of his various maladies. It makes a strong plea for a more rational system of medicine, and advocates many reforms in feeding and in the use of shoes."—*Home Journal*, Boston, Mass.

"An acceptable book of instruction to all concerned in stable management. We may recommend Dr. Page's manual on the grounds of his professional reputation as a physician, and the fact that a proficient in human physiology is not necessarily disqualified from effective study and knowledge of the physiology and habits of the horse. On the contrary, it must be conceded that he possesses qualifications in that walk not ordinarily attained by the ordinary veterinarian."—*Star*, N. Y.

"Invaluable to all who have anything to do with the noblest of all animals, and especially those who have to do with thoroughbreds. It is the work of C. E. Page, M.D., and needs no other recommendation than this. It treats shoeing very extensively, and touches on the thousand and one ailments of the equine race, giving many hints, which if carried out promptly will save many valuable animals."—*Truth*.

"Every horse master, and all who favor the humane and intelligent treatment of this useful quadruped, should be grateful to Messrs. Fowler & Wells for this valuable manual of horse hygiene."—*Sunday Herald*, Baltimore, Md.

"Is a useful little book, written in a lively vein, which forms pleasant reading not only for those who have the care of horses, but for all persons interested in the welfare of animals."—*Morning Journal*.

"This work will be invaluable for the veteran or novice, and is a novelty in the way of 'horse books,' because it puffs no particular remedy."—*City and Country*.

"The suggestions given are likely to attract a good deal of attention, and prove of value to all owners of horses."—*New England Farmer*.

Agents can do well selling this book; every horse owner will buy it. Special terms will be sent on application. Sample copies by mail, post-paid, on receipt of price. Address this office.

Health by Exercise.—Dr. Taylor's work, "Movement Cure," has been out of print for some time, but repeated calls for information on this subject has led to the revising and enlarging of this work, and the publication of a new edition. It embraces the history and philosophy of this system of medical treatment, with examples of single movements; the processes of massage, and directions for their use in various forms of chronic disease; forming a complete manual of exercises, together with a summary of the principles of general hygiene. While this work is adapted to the wants of physicians, it is at the same time popular in its character, and easily understood by all intelligent readers. To show more fully the scope and character of the work, there will be found on another page a brief summary of the table of contents. It will be sent by mail, post-paid, on receipt of price, $1.50.

A Blank.—In this Number of the JOURNAL will be found a blank for names of subscribers. This is for the convenience of our old subscribers in renewing their subscriptions, and we hope our present subscribers will make an effort to obtain additional names and fill up this blank. A little effort on the part of our readers would result in the sending of many new names. The premiums offered to subscribers should make the securing of names comparatively an easy matter, and the premiums which we offer to agents should enable you to make it pay; besides, those who take an interest in this matter may rest assured that they are bestowing a favor upon those who they may induce to become subscribers to the PHRENOLOGICAL JOURNAL AND SCIENCE OF HEALTH.

Bound Volumes and Covers.—Within a few days after the publication of this Number of the JOURNAL, the bound volume for 1883 will be ready for delivery. This is bound in heavy cloth, in imitation of morocco, and will be sent by mail post-paid for $3.00. We also have the covers properly lettered and ready for using, which can be put on by any binder. These are sent for 50 cents each, or if the Numbers are returned to us in good condition, we will bind and return them by mail post-paid for $1.00.

For the Children.—OUR LITTLE ONES AND THE NURSERY is a most beautiful and attractive Magazine for the youngest readers. It is so excellent, that it only needs to be seen to be appreciated; and to prove its excellence its publishers offer to send a specimen Number free. See advertisement, and send for it.

Our New Premium Book.—Among the premium books distributed to the subscribers of the PHRENOLOGICAL JOURNAL, no more important one has ever been given than Dr. Richardson's "DISEASES OF MODERN LIFE," offered in connection with the JOURNAL for 1884. This is not a medical book, but discusses in a popular manner the avoidable causes of disease, and points out the road to health and happiness. The phenomena of disease are considered, with the external and other causes. The author also considers the diseases resulting from alcohol, tobacco, and narcotics, and the relation of food and occupations to health. A partial table of contents will be found on another page. Our large edition will enable us to send the book promptly to all subscribers.

Mr. L. N. Fowler has arranged for a course of lectures to be given at Syracuse, Auburn, Geneva, Rochester, and other places, in Central New York, before the holiday season. Persons desiring to arrange for his lectures, may address this office.

Health Food Company.—"You are at liberty to use my name as an earnest advocate of the scientific foods of the Health Food Company, 74 Fourth Avenue, New York, as important adjuncts to all remedial measures in every form of disease. I use them in my family, prescribe them daily in my practice, and advise their daily use by all classes and conditions of men, women, and children. The world would be a far happier and healthier world if these admirable foods were used in all families.—T. H. DEWEY, M.D., Boston.

Our New Premium List for 1884, an illustrated pamphlet of 32 pages, containing full descriptions of our premiums, terms to agents for the books, etc., and full instructions to agents, will be sent on application. Address this office.

About Right.—The *Agents' Herald* of Philadelphia says: "'Pay pour postage.' To communicate with a friend by mail, it is necessary to have either a postal card or the requisites for a letter, each of which costs but a trifle; yet those who make use of either, are generally aware that to obtain them requires a certain outlay of money, however small. No one would presume to beg these articles from their postmaster or merchant; they expect, and are willing to pay for what they get. And yet, these same persons, perhaps thoughtlessly, write postals or letters of inquiry on subjects of interest only to themselves, and impose on their friends and even strangers, not only the task of answering their inquiries, but of likewise paying the postage. This is unjust, and where done from principles of economy amounts to absolute meanness, of which no one, having proper self-respect, will be guilty. It is a breach of etiquette that needs to be severely denounced." A word to the wise, etc.

RATES FOR ADVERTISING.

One Full Page	$75.00
One Half Page	40.00
Less than Half Page.	.50 cts. a line, agate measure
Second or Third Page of Cover, or First and Last Page of Inset	$150.00
Last Inside Page	150.00
Fourth Page of Cover	Special Rates.
Business Cards	75 cts. a line.
Business (Reading Matter)	$1.00 a line.

Advertisements must be sent in by the first of the month, to be in time for the month following. No extra charge for inserting cuts. No objectionable advertisements accepted at any price.

BUSINESS CARDS.

The Hammam, a Family Hotel, with Turkish Baths, 81 and 83 Columbia Heights, Brooklyn, N. Y. Three minutes' walk from Fulton Ferry.

Hygienic and Turkish Bath Institute and Hotel, 13 & 15 Laight St., New York. M. L. Holbrook, M.D., Proprietor. Circular free.

Healds' Hygeian Home, Wilmington, Delaware. See advertisement. Send for circular. Pusey and Mary H. Heald, Physicians.

Kilbourn Hygienic Institute. Quiet Home and Skilful Treatment. Kilbourn City, Wis. Drs. McElroy. Send for circular.

The New York Medical College and Hospital for Women, and Homeopathic Dispensary for Women and Children. 213 West 54th Street, New York.

Agents Wanted to sell our "Good Books for All." Special terms given. Now is the time for agents to work. Send for Premium List. Address FOWLER & WELLS, 753 Broadway, New York.

Printer and Stereotyper.—Edward O. Jenkins, Steam Book and Job Printer, and Stereotyper, No 20 North William Street, New York

Annie Smith, M.D., 154 E. 49th St., City.

PHRENOLOGICAL JOURNAL

PREMIUMS FOR 1884.

YOUR CHOICE FROM FOUR.

FIRST.

The Phrenological Bust. This has for many years been manufactured and sold, as being the very best possible aid to the proper understanding of the exact location of the Phrenological organs. Price large size, $1.00; No. 2, 50 cents.

The organs being alike on both sides of the head, it is so lettered as to show them separately on one side of the bust; and on the other, the different groups of organs—Moral, Intellectual, Executive, and Social—are shown, properly classified. The Bust is handsomely made in white plaster, and very ornamental wherever it is placed, being well adapted to the parlor mantel, the center-table, the library, the study, or the office.

AN ILLUSTRATED KEY accompanies each Bust, fully explaining and giving such directions as will enable the reader to understand its use, including the names and the functions of each of the faculties.

When sent, 25 cents extra for boxing and packing each Bust must be received. The large size will be sent by express at the expense of the subscriber; or No. 2, small size, will be sent by mail, post-paid.

SECOND.

The Diseases of Modern Life. A work on the avoidable causes of Disease. By Benjamin W. Richardson. 12mo, extra cloth, 520 pages. $1.50.

One of the most important Health Books ever published. We have secured a large edition, handsomely published, for distribution among our subscribers for 1884. It treats most fully of prevention of disease, by pointing out in a simple and practical manner the avoidable causes.

THIRD.

Expression: Its Anatomy and Philosophy. By Sir Charles Bell, K.H. With numerous Notes, and upwards of Seventy-five Illustrations. Price $1.50. We continue the offer of this great work as a premium to subscribers to THE PHRENOLOGICAL JOURNAL for 1884. The work considers Expression in all its details as affected both by anatomy and by mental characteristics. The following from the Table of Contents will show something of its scope:

The Theory of Beauty in the Countenance; The Form and Proportions of the Head and Face; Beauty and its sources; Campar's Facial Line; The Changes from Infancy to Age; Characteristic Organs of Man; The Form of the Lower Animals; Theories of Ideal Beauty; The National Peculiarities in the Form of the Head; Expression in the Countenance; The Influence of the Mind upon the Features; Bodily Conditions and Mental Operations; Blushing; Muscles of the Face; The Forehead and Eyebrows; The Nostrils; The Lips and the Cheeks; The Eye; The Expression of Pain in Man and in Animals; The Expression of the Human Countenance in Laughter, Weeping, Grief, Pain, Convulsions, Fear, Terror, Despair, Admiration, Joy, Jealousy, Rage, Madness, Demoniacs, Death; Expression in Reference to the Body; What are Emotions? The Emotions Modified by Controlling Expression.

FOURTH.

Reminiscences of Spurzheim and of George Combe. And a Review of the Science of Phrenology from the period of its discovery by Dr. Gall to the time of the visit of George Combe to the United States in 1840. By Hon. Nahum Capen. With Portraits. One volume, 12mo, extra cloth, price $1.50.

The author of this work was very intimately associated with Dr. Spurzheim, being his confidential assistant and adviser during his visit to this country; and his correspondence and personal matters all passed through Mr. Capen's hands; and in offering it as a premium to subscribers to the PHRENOLOGICAL JOURNAL we feel confident that we are giving to them that which will prove of the utmost interest to old-time readers, as a review of the subject, and to the younger readers as a historical work.

TERMS.—The JOURNAL is now published at **$2.00** a year (having been reduced from $3.00), single Numbers 20 cents. Twenty-five cents extra must be received with each subscription, to pay the expense of boxing and packing the Bust, which is sent by express at expense of subscribers, or for postage on the Premium Book and JOURNAL, which is now sent to all subscribers, prepaid. Amount may be sent by P. O. O., P. N, or Registered Letter. Postage-stamps received. Address

FOWLER & WELLS, Publishers, 753 Broadway, New York.

THE PHRENOLOGICAL JOURNAL

PREMIUM BOOK FOR 1884.

A VALUABLE WORK

ON THE

Avoidable Causes of Disease.

There is no question but what a large proportion of the diseases to which men are subject, are produced by avoidable causes, and are the result of ignorance in relation to the Laws of Health. One of the best works ever written on this subject is

THE DISEASES OF MODERN LIFE.

By BENJAMIN WARD RICHARDSON, M.D., M.A., F.R.S. 12mo, 520 pages, extra cloth, price $1.50.

This great work is offered as our Premium Book for 1884, and a copy will be sent to every subscriber to the PHRENOLOGICAL JOURNAL who remits in addition to $2.00, the subscription price, 25 cents extra, to cover the cost of postage on the Premium Book and the JOURNAL.

To show something of the scope of the volume, we copy the following from the Contents:

Part First.—Considers the Phenomena of Disease, incidental and general; Classification and Distribution; Names of Disease; Disease in Relation to Historic Times; Disease in Relation to Race; Disease Antecedent to Birth; The Hereditary Proclivities.—**External Causes of Disease:** Disease from Causes External and Uncontrollable; The Effects of Seasons on Life and Disease, Consumption, Bronchitis, Pneumonia, Influenza, Asthma, Quinsy, Catarrh, Rheumatism, Diphtheria, Scarlet Fever; The Effects of Electrified Air, or Ozone; Effects of Atmospheric Temperature and Pressure; The Effects of Moisture, Winds, and Atmospheric Chemical Changes; Effects of Lightning-Stroke and Sun-Stroke; Diseases from Causes External and Contagious; The Poisons of Communicable Diseases; Origin of Poisonous Particles; The Phenomena of Diseases produced by Organic Poisons; Diseases Incident to Old Age, Failure of the Heart, Congestion, Failure of Digestive Power.

Part Second.—Considers the Phenomena of Disease, induced and special; Definition and Classification; Disease from Worry and Mental Strain; Broken Heart, Subjects of Failure of the Heart, Symptoms of Failure of the Heart; Failure of Brain and Mental Power, Dementia, Paralysis, Diabetes, Hysterical Disease, Disease induced from Physical Strain; Details of Injuries from Physical Over-work, Aneurism, Heart Disease; Disease from a combination of Physical with Mental Strain; Disease Influenced by the Passions; Effects of Avarice, of Anger, of Hatred, of Fear, and of Grief; The Reel of the Passions.

Disease from Alcohol.—Effects of Alcohol on Vital Functions; Vascular Nervous Excitement; Physiological Changes from Alcohol; Physiological Deductions; Alcoholic Dyspepsia; Sensory Disturbance from Alcohol; Vascular Changes in the Skin; Alcoholic Thirst; Symptoms of Systematic Failure; **Organic Disease from Alcohol;** Disease of the Heart, of the Blood Vessels, of the Lungs, of the Liver, of the Kidneys, of the Eye; Alcoholic Insomnia or Sleeplessness; Diabetes, Nervous Diseases, Epilepsy, Paralysis, Mental Alienation, Dipsomania, Delirium Tremens, Transmission of Alcoholic Diseases. **Action of Alcohol** on the Blood, Bowels, Heart, Membranes, Muscles Muscular Fibers, Urine, Vital Functions; Effects of Alcohol on Speech an Memory.

[OVER.]

Diseases from Tobacco.—Composition of Tobacco Smoke, Learning to Smoke; Effects of Tobacco Smoke on the Body; Tobacco Causing Diseases of the Blood, the Heart, the Liver, the Digestive Organs, Salivary Secretions, the Throat, the Tongue, the Gums, the Teeth; Causing Consumption, Cancer, etc. **Nervous Disease from Tobacco;** Effects on the Organs of Sense—the Eye, the Ear, of Smell; Effects on the Brain—Apoplexy, Insanity, etc.; on the Mental Faculties; on the Organic Nerves, on the Glands.

Disease from the Use of Narcotics.—Disease from Opium; from Chloral-Hydrate; from Chloroform, Ether, and Chlorodyne; from Absinthe; **Disease from Foods**—Eruptive Disease; Choleraic Disease; Septinous Disease; Parasitic Disease; Scurvy; Tetanoid Fever; Functional Nervous Derangements; Acidity from Food; Indigestible Food; Improperly Selected Food; Imperfect Food Substances; Disease from Gluttony; Effects of Tea Drinking; Effects of Coffee; **Disease from Impurity of Air**—from Respiration and Excretion, from Sewer Emanations, from Heated Stoves, from Damp, from Diseased Animal Bodies, from Organic Poisons, from Deterioration; Metallic Poisons and Dust; The Effects of Respiration; The Air of large Towns and Country Air; **Disease Incident to some Occupations**—The Professional Classes, Writers, Clergymen, Lawyers, Physicians, Artists, Poets, Actors, Musicians, and Singers; Commercial Occupations; Agriculturists; Mechanics; Diseases from Idleness; Disease from Late Hours and Broken Sleep; Effects on the Young, Middle-Life, and Old Age; Disease from Errors in Dress, from Change in Dress, in the Coloring of Dress Goods; from Uncleanliness of Dress; Disease from Imitation and Moral Contagion, caused by sympathy, etc.; The Automatic Disease and Hypochondriasis; The Intermarriage of Disease.

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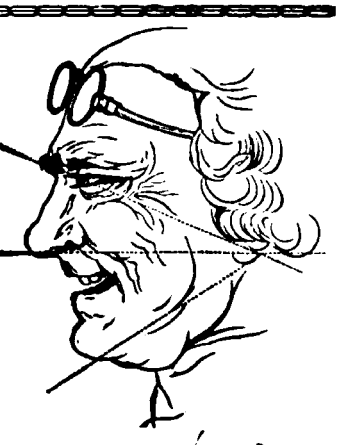

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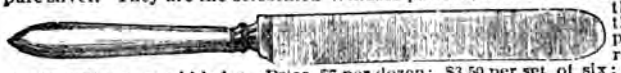

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1st. We offer $1.00 worth of subscriptions for the PHRENOLOGICAL JOURNAL **as a present** for every **$2.00** worth of plated ware which shall be ordered from the above list. For instance, any person ordering a Child's Set at $2.00, will be entitled to six months' subscription to the JOURNAL, which may be mailed to himself or to any one else; $12.00 for a set of Table Forks also pays for three copies of the JOURNAL one year **as a present;** etc. We not only offer the very best goods at a low price, but we give every purchaser an opportunity to get back one-half of the money he pays, by asking his friends to subscribe for the JOURNAL, and sending us their addresses and keeping the money which he collects. On receipt of the amount required, the plated ware in every case will be sent by mail or express (all charges prepaid). All goods designed for **Holiday Presents** should be ordered as early as possible.

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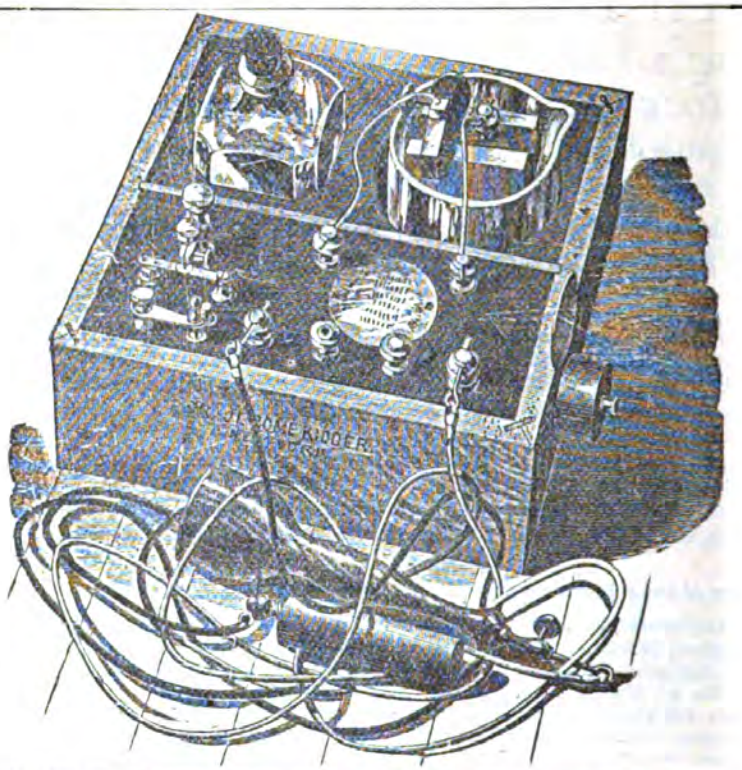

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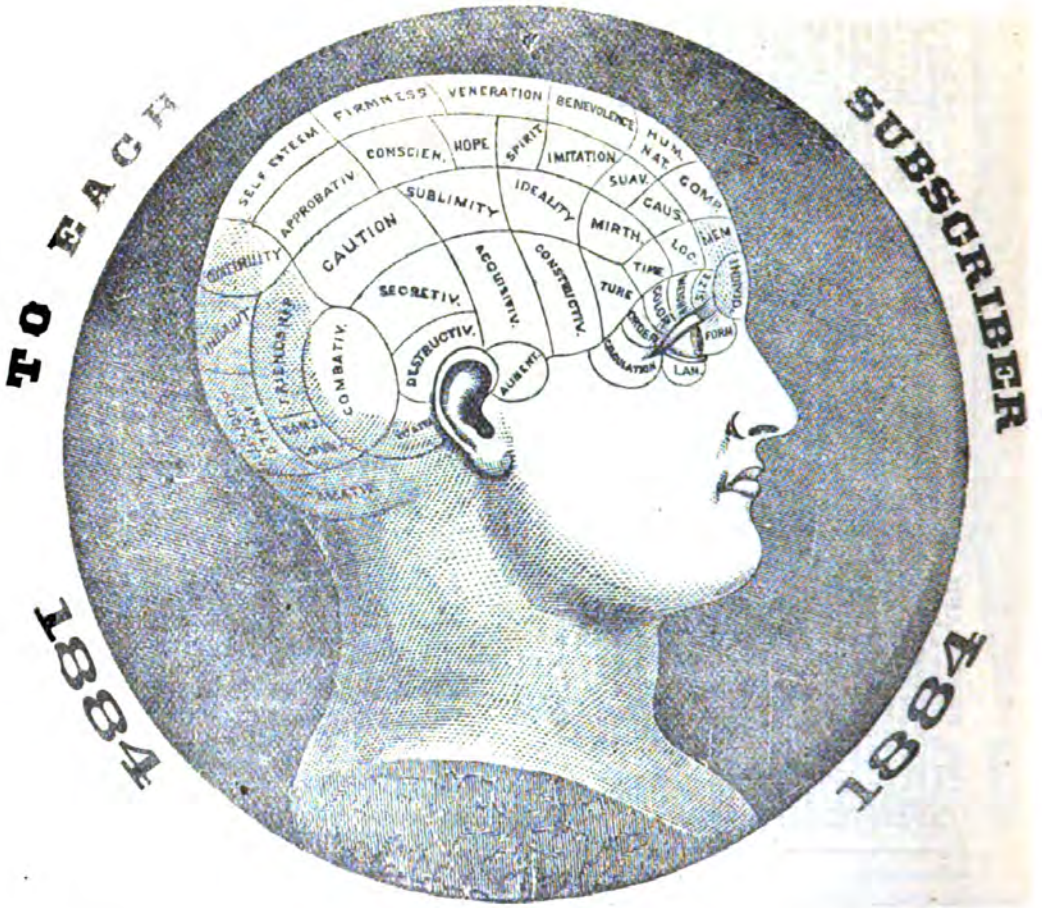

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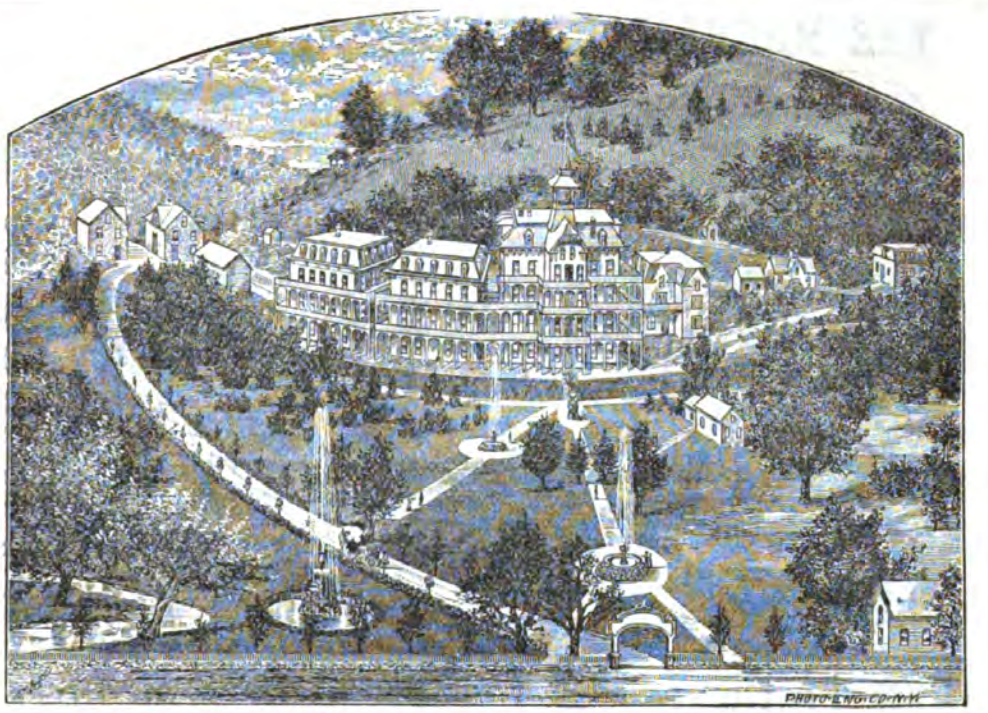

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