THE

# PHRENOLOGICAL JOURNAL

AND

# LIFE ILLUSTRATED.

A REPOSITORY OF

## Science, Literature, and General Intelligence,

DEVOTED TO

ETHNOLOGY, PHYSIOLOGY, PHRENOLOGY, PHYSIOGNOMY, SOCIOLOGY, PSYCHOLOGY, EDUCATION MECHANISM, AGRICULTURE, NATURAL HISTORY, AND TO ALL THOSE PROGRESSIVE MEASURES WHICH ARE CALCULATED TO REFORM, ELEVATE, AND IMPROVE MANKIND, SPIRITUALLY, INTELLECTUALLY, AND SOCIALLY.

Embellished with Numerous Portraits from Life, and other Engravings.

VOL. LXVI. OLD SERIES.—VOL. XVII. NEW SERIES.
JANUARY TO JUNE, 1878.

H. S. DRAYTON, A.M., AND N. SIZER, EDITORS.

NEW YORK:
S. R. WELLS & CO., PUBLISHERS, 737 BROADWAY.
1878.

"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 perfectionnera jamais la physiologie du cerveau."—GALL.

"I regard Phrenology as the only system of mental philosophy which can be said to indicate, with anything like clearness and precision, man's mixed moral and intellectual nature, and as the only guide short of revelation for educating him in harmony with his faculties, as a being of power; with his wants, as a creature of necessity; and with his duties, as an agent responsible to his Maker and amenable to the laws declared by the all-wise Providence."—

JOHN BELL, M.D.

"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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# PRESS OPINION.

In their notices of the PHRENOLOGICAL JOURNAL certain of our contemporaries use the following commendatory language:

"It is a sprightly magazine, of pure moral and religious tone, and cheerful and bracing in the spirit of its essays."—*Christian Standard, Cincinnati, O.*

"We have read it for twelve years, and among all the monthlies have never found its equal as a magazine of useful knowledge."—*Tiffin, O., Tribune.*

"THE PHRENOLOGICAL JOURNAL should not be forgotten by our readers in making out their list of papers and periodicals for 1888. There are others larger and more showy, but there is not one more valuable to the general reader."—*Newark, N. J., Courier.*

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"The last number of THE PHRENOLOGICAL JOURNAL is freighted with good things as usual, and it is not apparent that this magazine of Human Nature has lost anything of interest on account of the reduction in price from $3 to $2 a year."—*Detroit Commercial Advertiser.*

THE PHRENOLOGICAL JOURNAL AND LIFE ILLUSTRATED.

VOL. 66. 1878.

NUMBER 1.] *January, 1878.* [WHOLE No. 469.

## OLIVER P. MORTON,

LATE SENATOR OF THE UNITED STATES.

THE body and head of the late Senator Morton indicate magnitude and power. Solidity, rather than elegance or style, is the idea that will strike every good, general

observer, on looking at his portrait. He was a man remarkably solid and stocky, inheriting a grand constitution for vitality and strength; but he inherited, unfortunately, with his strong constitution, a tendency to paralysis. That broad, deep chest, as well as that broad head and broad, strong face, show vitality and constitutional endurance as well as a powerful character. There is a massive forehead, the upper part of which is large, indicating intellectual force, breadth of thought and purpose, and ability to comprehend matters of extended and weighty character. His large Constructiveness, shown by the width in the region of the temples, enabled him to manage complicated affairs, to hold in hand a great many different matters, and to attend to each in its time and turn without confusion and without seeming waste or worriment. The width of the head farther back, just where it unites with the hair, indicates large Acquisitiveness; and he ought to have been a man of sound financial ideas, especially those relating to the handling and management of property. The breadth of the head above the ears shows large Destructivencss and Combativeness, qualities which gave him courage, thoroughness, and executiveness, and ability to clear the track wherever his line of duty lay.

The height of the head, from the root of the nose upward and where the front part of the hair covers it, shows large Benevolence, indicating a man of liberal spirit, kindly motives, a desire to do good, and that generous breadth of character which made for him friends even among those who could not agree with him in political views. He had Firmness almost to a fault, with Conscientiousness to back it up, and enable him, with his great executive energy, to push his spirit of uprightness in such a way as to infuse justice into the whole realm of his efforts.

We judge that he had his mother's features and intellect, and his father's force of character, besides the latter's prodigious development of chest and strong natural appetite. He would be a good liver (perhaps large liver would be a better term); and if he lived as high as the appearance of the constitution would warrant, that fact might have shortened his days twenty years. Our great men would be as much benefited as others by a better knowledge of physiological law, and especially the law of hygiene.

The tremendous exertions which Senator Morton put forth during the war, because of his intense appreciation of the needs of the hour, had much to do with hastening the paralytic attack; but as a general rule, men of the build of Senator Morton, with such a short neck and depth of chest, should avoid coffee, tobacco, and all excesses in the way of food, because having so much vitality they can digest three times as much food as is sufficient to give them adequate nourishment; and excess of nourishment produces plethora and a tendency to paralysis or apoplexy. We could count scores of great men who have died before the proper time—right in the midst of their usefulness and power—simply because they ate unwisely and took twice as much nourishment as they needed. To say nothing of what are called "intemperate habits," excess at the table kills its hundreds.

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Some men are born to greatness, under whatever circumstances and conditions, and achieve place, power, and influence by virtue of the nature, or what we might denominate the divinity within them. The heroes of this planet of ours, who have impressed themselves upon their times, and transmitted their thought and purpose to the

ages succeeding them, were generally the men thus great, despite obstacles, making their opportunity, and full of the life of their time. The Carpenter of Galilee, "knowing letters which He had never learned," embodied in Himself the ideas of the age in which He lived, and His discourses brought to the popular ear the choicest wisdom of Talmud and Testament, rabbi and prophet. The great Christian apostle, whose light and fire glow to the present time, comprehended in his teachings the choicest wisdom of magian and mystic, sage and philosopher, all which in turn he made subordinate to the *parousia*, or presence of his Lord. The ascetic in the cave of Hira, with but a woman who loved him and a boy whom he had reared, for disciples, yet heard and uttered the interior speech of his time, and his words are still heard and reverenced. Wicklif, Huss, and Luther; Hampden, Cromwell, and Milton; Samuel Adams, Alexander Hamilton, and Abraham Lincoln formulated the ideas which made revolution in the minds of men, and engrafted freedom of thought and conscience upon religious and political institutions. The world breathes more freely, is wiser and happier, because these men lived. Contemporaries may not always recognize their heroes, and may even burn and crucify them, but the truth which they enunciate never perishes.

In our own country there is a great disposition to protest that we have few great men or statesmen. We overlook the fact that we have passed through a civil war, the greatest ever known; and that, with all the errors and defects incident to its adjustment, the Government of no country in history ever terminated such a struggle so successfully. Statesmanship, superior to that displayed in and after that contest, is seldom equalled in this or any country. We do not marvel that it is disputed; but time and future history will embalm the memory of such men as Abraham Lincoln and his ministers, and of the leading men of the States and Congress, as no way inferior to the statesmen of former days of the Republic and other countries of the world.

One niche in our Temple of Fame will be worthily filled by the lately deceased Senator from Indiana, Oliver Perry Morton. Himself a son of the people, he always bore manfully the standard of popular rights. Loving his country with great ardor and fidelity, he was found in its hour of peril at the post of duty, aiding the President with a hundred regiments, caring for the soldier in the field and his family at home, preserving not only his own State to her allegiance, but virtually holding Kentucky in a loyal attitude to the Republic; and everywhere, by counsel, efficient measures, and untiring zeal, contributing to the success of our policy as well as of our arms. Everything which he attempted was done well, and generally succeeded.

Oliver P. Morton was born at Saulsbury, Wayne County, Indiana, August 4, 1823. Losing his mother in infancy, he was placed under the care of his grandmother, in Glendale, near Cincinnati. She dying in 1837, he returned to Indiana and became an apprentice to his half-brother, a hatter, and lived with two maiden aunts. But this arrangement did not work. In a little while he entered the Wayne County Seminary at Centreville, then in charge of the venerable Samuel P. Honshowe; and after the usual preparatory studies, became a student of Miami University at Oxford, Ohio. He did not, however, complete the course, but returned to Centreville and engaged in the study of law in the office of the Hon. J. S. Newman and Jesse R. Liddall. In 1846 he was admitted to practice, and speedily rose to a high rank in the profession. A vacancy occurring, he was appointed Judge of the Wayne Judicial Circuit in 1852, when only twenty-nine years of age.

Judge Morton had always been a member of the Democratic party. But on the repeal of the Missouri Compromise in 1854, he severed that connection. He was a delegate to the Convention at Pittsburg in February, 1856, which gave a national organization to the Republicans. The same year he became the candidate of the new party for Governor of Indiana, and according to Western custom, made the joint canvass of

that State with his competitor, the Hon. A. P. Willard. The Republicans were defeated. In 1860 he was elected Lieutenant-Governor, and after two days of service, the Hon. Henry S. Lane, the Governor, was elected to the Senate of the United States, and Mr. Morton succeeded him in the office of Governor. He was now in the place where he had the opportunity, and he filled it nobly.

The war-cloud was looming up in the South. Cabinet ministers and other public men believed that the attitude of South Carolina constituted only a menace. "Coercion" was scouted everywhere. There were men at Washington (Republicans) who believed that Jefferson Davis and John C. Breckinridge were patriotic at heart and devoted to the perpetuity of the American Union. Governor Morton entertained no such views. At a meeting held at Indianapolis just after the presidential election of 1860, he declared war inevitable and necessary. "I would rather," said he, "come out of a struggle at the end of a seven years' war, defeated in arms and conceding independence to successful revolution, than purchase peace by the concession of a principle that must inevitably explode the nation into small and dishonored fragments. But of the result of such a struggle I will entertain the utmost hope and confidence."

The approval which this bold utterance elicited, evinced to the country that no compromise of the controversy would be sanctioned. A few months afterward, when Mr. Lincoln passed through Indianapolis on his way to Washington, he replied to Governor Morton's address of welcome, making his first specific declaration in favor of "coercion" to preserve intact the union of the States.

Upon the breaking out of hostilities in April, 1861, the Legislature was convened, and the State placed on a war footing. Oliver P. Morton, at that time and onward, took rank at the head of all the loyal Governors, by his patriotism, energy, and promptitude. The following letter from Secretary Chase was a deserved tribute to his exertions:

"WASHINGTON, *Nov.* 10, 1866.

"MY DEAR GOVERNOR: I think it is the right of men who have ably and faithfully served their country to know that their labors are appreciated as they merit. So I will not deny myself the pleasure of telling you that Secretary Stanton was with me last evening, and we naturally turning over our minds to the past, fell to talking of you. We agreed that no Governor rendered such services or displayed such courage in the necessary assumption of just responsibilities, or more ability in administration; and we agreed that your recent services were most meritorious of all, because rendered under circumstances of greater personal risk to health and life, and which would have been by almost any man regarded, and by all men accepted, as good reason for total inaction.

"I have seldom heard Stanton express himself so earnestly.

"I hope you will derive some satisfaction from this little relation. The talk gave much to me.

"Cordially your friend,

"S. P. CHASE.

"TO GOVERNOR MORTON."

Governor Magoffin, of Kentucky, sympathizing with the Southern Confederacy, not only refused to answer the call of the President for troops, but actually invited a conference of Governors of the border States at Cincinnati to arrange to act as mediators between the general Government and the seceded States. But Governor Morton replied to his invitation with an emphatic negative:

"There is no ground in the Constitution," he declared, "midway between the Government and the rebellious State, upon which another State can stand, holding both in check. A State must take her stand upon one side or the other; and I invoke the State of Kentucky, by all the sacred ties that bind us together, to take her stand with Indiana, promptly and efficiently on the side of the Union."

After this time, Governor Morton became virtually the Governor of Kentucky. He judged it prudent to defend Indiana upon

the soil of that State. The effectual measures which he employed to repel the invasion by Zollicoffer and Buckner, and afterwards by Bragg, are thus acknowledged by the Louisville *Journal*:

"He has been emphatically Kentucky's guardian spirit from the commencement of the dangers that now darkly threaten her very existence. Kentucky and the whole country owe him a large debt of gratitude. Oh, that all the public functionaries of the country were as vigilant, as clear-sighted, as energetic, as fearless, as chivalric as he is!"

In his care of the soldiers, Governor Morton rendered a signal example. He had promised every volunteer that they and their families should not be neglected; and he kept his word. Local societies were organized, and agents accompanied every regiment. After a little, surgeons and nurses from Indiana came first to the aid of the sick and wounded.

The withdrawal of nearly a hundred thousand voters to the seat of war resulted in a political defeat in 1862. The new Legislature of Indiana was opposed to the further prosecution of the war. It refused to receive the Governor's Message, but adopted instead that of Governor Seymour, of New York; attempted to enact an unconstitutional bill to place the military power of the State in the hands of four Democratic State officers, who proved to be members of the Secret Order of "Knights of the Golden Circle," and passed no appropriation bills. Governor Morton was, however, equal to the exigency. He appealed to the loyal counties, railroad and banking companies, and private capitalists for loans and contributions. They responded, furnishing all the money required; the banking house of Winslow, Lanier & Co., of this city, advancing enough to pay the interest on the public debt. In 1864 a Legislature was elected which promptly relieved him and provided the necessary money for the wants of the Treasury.

Governor Morton was renominated in 1864, and canvassed the State with his competitor, the Hon. Joseph E. McDonald. President Lincoln waited anxiously for news of their debate. On reading the first speech, he exclaimed, joyfully: "That settles the Presidential contest! Morton's arguments are unanswerable." It probably did settle the contest; and Governor Morton received a majority of twenty thousand, the largest ever given any man in the State.

He continued his active exertions for the prosecution of the war. The contributions of Indiana exceeded two hundred thousand men. The Governor not only procured the organization of aid societies, but had established a State arsenal, at which the wives and children of soldiers were employed in preparing material for the army. This answered the double purpose of securing employment for them and a clear profit of $100,000 to the State.

In 1865 he was attacked with a partial paralysis, a disorder which appears to have been hereditary in his family. He accordingly visited Europe, and returned after several months, his health greatly improved. In 1867 he was elected to the Senate of the United States. His prestige accompanied him; and on taking his seat he was at once accepted as a leader. His speech upon "Reconstruction" assured the success of the bill before Congress, and created a profound sensation. His investigations of the Ku-Klux organizations of the South led to their disbandment.

With his peculiar, rare faculty of prescience, he predicted in 1871 the course which the Democrats would be certain to adopt, which consisted in the "new departure" of Mr. Vallandigham and the subsequent nomination of Mr. Greeley for President. In 1873 he was again elected to the Senate. About this time, however, the difference of opinion in the Republican party began to affect his influence as a political leader. He was as earnest as ever in favor of vigorous measures to enforce the laws at the South. On the subject of finance, he favored what has been denominated "the Inflation Policy." The time had not come, he evidently believed, for setting aside the financial agencies which had carried the nation safely through the

war. The endeavor would, and indeed did, result in panic and disaster. Many public men seem to believe that a currency based upon the actual value of property in the country is better adapted to its wants and needs than one dependent on the precious metals. The latter will move hither and thither as foreign markets will direct; whereas a currency based entirely on property inside of a country will always retain a merely uniform value. A cheap Government bond will secure the required elasticity, and keep the market from being overstocked with paper. These views differ widely from those entertained by eminent financiers; but they are more plausible than their adversaries are willing to acknowledge. Perhaps in a country having all varieties of climate the policy might be successful.

Mr. Morton continued to suffer more or less from the effects of paralysis, although his mind appeared to be unaffected until his death. His father died a few years ago, having the same complaint; and an aunt was also similarly afflicted.

Senator Morton has, as will be seen, acted an important part in the history of his country. He had the requisite courage, ability, and foresight; and he brought to the work the devotion of the patriot with the talent and resources of the statesman.

A. WILDER.

## THE OLD AND NEW YEAR.

### THE OLD YEAR.

The old year is dying. The night winds are sighing
And chanting farewell;
Sweet psalms of their singing are lingeringly clinging
To mountain and dell;
They mournfully echo a bated farewell,
Farewell, farewell.

Chill moonlight is falling 'round his couch, appalling
The watchers with fear;
Afar the stars glimmer, grow fainter and dimmer,
As slow breathes the year.
Clouds pitiful veil them while shedding a tear—
Farewell, farewell.

The sun's face is hidden, his great palms unbidden
Uprise with his grief.
It is dark, it is cold; there's no flower on the wold
To whisper relief;
The ragged fringed grass sighs, in half unbelief,
Farewell, farewell.

The birds have forsaken the northland, and taken
The warmth on their wings,
The song and the gladness; left silence and sadness
That voiceless night brings.
A dirge on the pine-tree's Æolian strings,
Farewell, farewell.

His friends all departed, he dies broken-hearted,
The year we have blessed.
No warmth to restore him, no bloom to strew o'er him,
He pants for his rest;
A fluttering struggle! There's peace in his breast,
Farewell, farewell.

Farewell, moans the ocean, with trembling emotion,
Forever, Farewell.
Fond human caresses cling to his white tresses,
As low tolls the knell.
Tried, lost friend of mankind, we weep thy farewell.
Farewell, farewell.

### THE NEW YEAR.

The new, new year is born, is born!
The midnight lea breaks into morn.
Joy, with her train of downy glow,
Spreads the reception-room with snow;
Carpet of ermine soft and fair,
Mystical sprites have flitted there.

The new, new year is born, is born!
His castle walls with pearls adorn!
Each niche uncouth obscure from sight
By imagery of chrysolite.
Call here a choir of warblers free,
That he may give of song the key.

The new, new year is born, is born!
Waken, daffodil, blow your horn!
Waken, hyacinth, blushing sweet!
Blue-bell, come from your brown retreat,
To ring, and ring the gladsome news
Into the heart of rosy dews.

The new, new year is born, is born
To goodly heritage this morn!
The amber-land, translucent seas,
The fierce north wind, the velvet breeze,

The spangled sky, the silver mist,
Bow low to him, and wait his wist.

The new, new year is born, is born!
The regal king of vine and corn.

He wakes in realm of eider down;
The sun will drop a golden crown
Upon his floating, crinkled hair;
Crown him monarch of everywhere.

S. L. OBERHOLTZER.

## MOULDS--THEIR GROWTH AND CHARACTERISTICS.

IT is one of the charms of our mortal existence that we live in a world full of enigmas, a world so builded that we find our steps continually involved in labyrinths of mystery, and which lead us from wonder to wonder, only to find that questions yet more perplexing lie beyond unanswered, and, as far as we yet know, unanswerable.

FIG. 1.—PROFILE OF THE MYCELIUM.

The attention not only of scientists, but of the whole world, has been of late directed to those lower forms of life which have through the ages remained a baffling hieroglyph, either all unread, or read by such imperfect light that its true meaning remained as much a mystery as ever. What man could have ventured to predict one hundred years ago what vast and important questions in science and in theology would be involved in the right understanding of the nature and modes of existence of forms of life so minute as to be invisible without the aid of the microscope? The line which divides vegetable from animal life is so delicate and has hitherto been so ill-defined that it has not been an unusual occurrence in the history of the simpler organisms to be placed at one time on one side of this line, and at another upon the opposite, being accounted now as belonging to the vegetable, now to the animal kingdom. Among these delicate organisms none play a more important part, either theoretically or practically, than the moulds. They are minute fungi, familiar in their commoner forms to all, yet eluding by the strange transformations of their ephemeral existence the most diligent observation of patient microscopists. Yet upon these minute forms of fungi many of the most important interests of man depend. The preservation of health, the propagation of disease, the prosperity or destruction of the commercial interests of whole communities, aye, and beyond this, the moral interests of a very considerable portion of the human race.

Fig. 2.

FIG. 3.

The latter position sounds in this connection rather startling, but it will hardly be disputed when it is remembered that the history of intemperance runs parallel with that of the knowledge of fermentation, and that fermentation—it has been successfully demonstrated—depends upon the existence

of the most minute fungus known to science—the tonila, or yeast-plant. No more striking instance could be offered of the dependence of the greater upon the less, in the intricate complications of the divine plan than the contrasts between the seeming insignificance of the cause and the vast importance of the result. This tiny plant

FIG. 4.—CELLS ACCUMULATED.

exists in infinite numbers, and is found in every possible situation to which the air of heaven has access. In size it ranges from the one-three-thousandth to the one-seven-thousandth of an inch in diameter, and presents the simplest form of life. It consists of a single cell filled with that mysterious substance which is the material representative of that still greater mystery, life—which is now called *protoplasm*, a term the use of which is very generally attributed to Professor Huxley, but he disclaims the honor, and relegates it to Hugo Von Mohl, an eminent German botanist. The word was not very long ago held to be a kind of cabalistic one, not safe for Christian people to use, but the Christian world is ceasing to be afraid of truth; it is learning the great lesson, after centuries of blind and ignorant dread, of Science—the twin-sister of Religion—that all truth is God's, and if truly followed, will lead back to Him as surely as to trace back the path of a ray of light will lead us to the sun.

Protoplasm is now proved to be the visible vital force of all living organisms; as the cell is the type of form, so protoplasm is the type of life in both the animal and vegetable kingdoms To change the figure, the cell is the nursery of the germ, to which protoplasm is the kindly nurse, supplying every need as it arises. It builds the walls which shelter it; it furnishes the nourishment most suitable to its wants; and when fully developed and prepared, it opens the door and sets it free.

The discovery of the yeast-plant and the thorough study which has been made of it, has opened important issues. Its life history is simple and brief enough even for these pages. Wherever one of these nomadic plants comes in contact with congenial conditions for its propagation, it creates a commotion hardly proportionate to its size. The nidus most favorable to its growth is some liquid containing sugar and the succulent juice of fruit. If such a liquid be exposed to the air in warm weather, we know that it will very soon begin to ferment—that is, the minute yeast-plants which have found their way to such inviting soil will begin to grow, and in the act of growing to decompose the liquid and change its nature entirely; the result being a new liquid containing several products of the process—the principal ones being carbonic acid and alcohol. It is by the agency of this plant that beer, wine, and all intoxicating liquors are produced. It has been

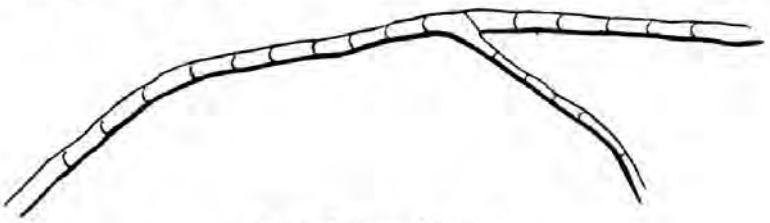

FIG. 5.—SHOWING SEGMENTS.

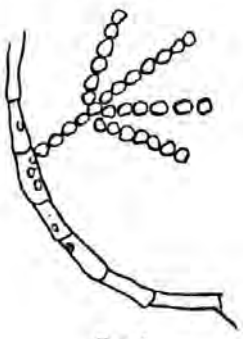

FIG. 6.

found that it is subject to all the usual laws of vegetable life, grows rapidly with the aid of light and heat, and dies when subjected to a very high temperature. It is now satisfactorily demonstrated that if a liquid be completely protected from the admission of this plant, *it can not ferment*, even though the air should be admitted, so that any intervening substance acting as a screen, such as cotton-wool, will effectually protect it from fermentation, and the plants themselves will be found lodged within its network. It will readily be seen that the processes of fermentation and decomposition, which have hitherto been attributed to atmospheric influence, is really owing to a very different cause. Every bread-maker who uses ferments knows the importance of temperature to the proper lightness of her bread, and that if it be either too high or too low the "rising" is arrested and the bread spoiled, the meaning of which is the same, as that the geranium in her window, if placed too close to a glowing stove or set outside the pane upon a frosty night, will die.

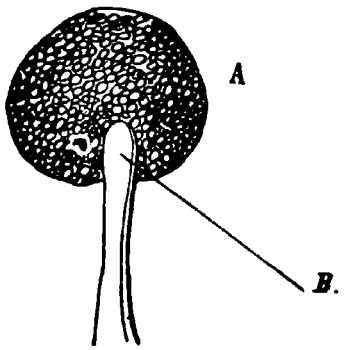


FIG. 7.—BRANCH OF MYCELIUM, ENLARGED.

We have only hinted at the importance of this little plant in the relation which it bears to other forms of fungi; they are as yet guessed at, rather than understood, but they are believed to be highly important.

The fungus which has been described is invisible to the naked eye, but there are a thousand analogous forms which are perfectly familiar, and which appear with such magical celerity wherever heat and moisture, the soil upon which they grow, exist to yield the nutriment they require. Each one differs from the others, many displaying great beauty of form and color, and all possessing some general characteristics in common. Striking examples are the pink mould of starch, all shades of carmine, and the green mould which forms over currant jelly, or any preserved fruit, which under a strong magnifying glass is seen to be branched with great elegance. Another, more common than any of the others, is the *Mucor*, a light, cloud-like film which looks as though it had grown by moonlight, so exquisitely delicate is this phantom plant, beside which the lines of the spider's web seem heavy and coarse. When we come to examine this ethereal creation by the searching eyes of the microscope, we are filled with admiration. Behold the cloudy film resolved into a growing vine-like plant, with branches which seem to bear clusters of fruit, both plant and fruit being quite colorless and transparent as blown glass. As in all the moulds, the mycelium, which forms the nutritive element, is first formed. It performs the office of roots and leaves drawing up and preparing the nutriment of the fructifying organs.

The mycelium consists of slender tubes, which are wholly irregular in arrangement, branching in all directions and interlacing with each other like the branches in a hedge, forming an intricate network, of the arrangement of which some idea is given in the profile figure, No. 1.

The branches or tubes are of two kinds. One is called "sporangia bearers;" they produce the sporangias, or round, fruit-like

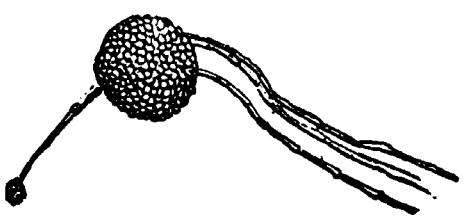

FIG. 8.—PERFECT SPORANGE.

bodies which appear in the profile. There are also tubes which are unlike these in structure, and the use of which is not apparent. The sporangia bearers are tubes composed of long, slender cells, giving them the appearance of joints, being divided at short distances by a septum which gives them the appearance of being jointed like

sugar cane. Within these tubes, at different points, we shall perceive, if we look closely, innumerable minute granules, sometimes scattered through the compartment, in which they appear in small numbers, sometimes aggregated in masses. Where the latter is the case, there is perceived a swelling of the tube, at the end of the branch, forming a spherical enlargement, as shown in Figure 2 (in its incipient stage). In Figure 3 we see a branch of mycelium, with cells adhering to the sides. These are probably cells which have escaped from their envelopes and become accidentally attached to the mycelium. In Fig. 4 we see an aggregation of cells crowding one upon another, enveloping and nearly concealing the mycelium upon which they are clustered. This is one of those appearances likely to mislead the observer, as it has the appearance of being inclosed in an envelope, and forming part of the normal growth. There are several kinds of mucor, but they resemble each other in general characteristics; that from which we give a drawing from the microscope is *Mucor Micheli*, common upon paste or decayed fruit. Its manner of growth is curious and interesting. Within the table-like mycelium, which is composed of elongated, slender cells, there are formed small cells, which can at first be seen through its transparent wall, adhering to the sides in minute clusters, or singly and scattered. They increase in number rapidly, and press toward one or other end of the tube, according to the direction of growth. From these are thrown up filaments or stems, several from one point. The mycelium, it will be seen, is "septare" or divided into segments, as will be seen in Fig. 5, but the stems are not so divided. The terminal cell at the top of the stem enlarges, forming a globular vesicle, which is soon divided from the stem by the formation of a septum. Innumerable smaller cells are formed within this vesicle or capsule (which is the sporange or fruit of the plant). While it is becoming filled, the septum at the base pushes up and becomes tense, forming a kind of core, which presses outward and crowds together the cells inclosed, until the outward envelope bursts and sets free the mass of cells which it imprisoned. The manner in which this last act is performed is typical.

It is sometimes effected by separating in a circular slit around the base of the columella, leaving a ragged fringe, or the capsule having burst above, the spores escape, and the columella collapses and falls over the top of the stem or pedicle like a cap. The cells have the power of multiplying themselves by subdivision, always according to a mathematical law, and the spores will be found attached together in rows, like strings of beads, all having the power of reproducing the mycelium, Fig. 6.

The branches of mycelium sometimes appear under the microscope in the manner shown in Fig. 7. These cells contain protoplasma, the principle of life, and it is by this subtle agency that new cells are formed by a kind of budding process. The limits of this paper do not admit of the detailed description, which might be found interesting, but enough has been said to show the nature of these curious growths, which, insignificant as they may appear, affect so materially the vital interest of man.

Fig. 8 is from the object, and gives a view of a perfect sporange, and one in the act of forming. They do not appear in profile, as it is extremely difficult not to disturb the arrangement of filaments finer than gossamer; but though slightly bent, the illustration gives a very clear idea of the figure.

The fungus we have described is but one of many as common, which have long puzzled the scientists, and whose life history is only beginning to be at all understood; but the fact that they attach themselves not to vegetable tissues only, but to living organisms, and under various forms give rise to many of the most serious types of disease; that they destroy crops by blight; cause the destruction of valuable animals, causing heavy losses, and even destroy human life, the importance of the thorough study of the subject can hardly be overestimated. Half a century ago nothing comparatively was known of the cryptogamous plants, but today they find themselves in the focus of scientific observation, and every individual spore must tremble with a sense of newly-acquired self-importance.

## HENRY MEIGGS,

### THE FAMOUS RAILROAD BUILDER.

THIS organization was remarkable for power. He weighed about 225 pounds, and is said to have had the largest head in South America. It was doubtless twenty-four inches in circumference, and with his wonderful vitality indicated by his great weight, his very large chest, the largeness of his neck, and the immense depth and strength of the base of his brain, gave him the ability to wield power in a very high degree. If the reader will note the distance

from the opening of the ear to the forehead above the root of the nose, he will see that it is extraordinary, and that the lower part of the forehead is very massive and long from the center of the brain, showing un-

common perceptive power, ability to gather facts, and appreciate qualities and values; while the reasoning intellect is sufficient to supply the capacity to look ahead and calculate chances. But Mr. Meiggs' ability consisted largely in the practical power with which he could accomplish purposes and utilize the means within his grasp. He could take into account all the particulars and facts, all the values and facilities. He could utilize men, and control their efforts, and he was able to take in the scientific facts pertaining to affairs. There are few men in any age who could estimate property, who could control forces, and combine, organize, and push to completion business enterprises in a manner equal to the achievements of this man. Those who call to memory the portrait of P. T. Barnum will find a very similarly shaped head, and the world knows that he stands alone in his ability to manage the business to which he has devoted himself. He can gather up a museum or a menagerie from all parts of the world, and control it with all the assistants required, running his own cars from one end of the country to the other, attracting public attention, and making it pay handsome dividends; while Mr. Meiggs could take the lead in business, could push his enterprises, enlisting public interest, taking contracts, and accomplishing work for less money than other men could, and, indeed, making everything which he touched respond to his demands. The base of his brain above and about the ears was large; hence his immense force of character.

He had strong social development; hence he could win friends and coördinate men through sympathy and friendship, and thus become a leader and controller of vast resources in men and means. He was a sharp calculator, and by managing vast enterprises, was able to make several princely fortunes. His ambition was great; hence he was fond of display, anxious to win the applause of men, and this constituted his chief weakness. He had active sympathy; was liberal, genial, generous; was capable of reading character and forming decisions with intuitive sagacity, and of making combinations with great facility and certainty. If he had been devoted to statesmanship he might have taken the first rank as an administrator of public affairs. He would have excelled in science, in literature, politics, and in statesmanship. He had an amiable and affectionate character, and there was less of hardness and severity in him than is common with so much talent and power; and amid associations of a high, refining, restraining sort, he would, doubtless, have gained a position which would have rendered him memorable.

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HENRY MEIGGS, who died at Lima, Peru, on the 29th of September last, was a remarkable man. In fact, a whole generation of men can show very few such men for energy and power of physical achievement. The story of his life reads like an Oriental romance. His enterprises were out of the usual order, and his accomplishments greatly exceeded those of men who take good rank as projectors and constructors.

He was born in Catskill, N. Y., July 7, 1811, and seems almost from the first to have followed the bent of his organization. He commenced young to transact business, was a contractor for the purchase and sale of building supplies, and had made a fortune in the lumber trade before he was twenty-five. In the panic of 1837 he became a bankrupt; but disaster did not dampen his ardor, and before those troublous times had been adjusted, he was again engaged in extensive operations, and deriving enormous profits.

Art possessed an irresistible attraction for him; he expended large sums of money to procure its gratification; founded the "American Musical Institute" in New

York, which for a time had a brilliant success, but was discontinued shortly after he had withdrawn from its management.

The discovery of gold in California met his desire for adventure, and in 1849 he loaded a ship with lumber, and sailed for California, by way of Cape Horn. Arriving at San Francisco, he sold his lumber at once, making a profit of $50,000. There foreseeing the probable growth of the country, he started a saw-mill, and employed five hundred or more men, in cutting and transporting logs to his mill, for the product of which he found a ready market, and reaped magnificent gains, and soon became a prominent feature in California life. In 1854, the financial pressure which paralyzed the Gold Coast ruined Mr. Meiggs. His large operations involved so many interests and persons that he found it impossible to adjust affairs to his satisfaction, and in his extremity he resolved to leave San Francisco, and did so on a small vessel, taking his family and household effects. His departure created immense excitement. The report that he committed forgeries in his struggle against embarrassment is emphatically denied by his friends.

Meiggs was next heard of as a railroad builder in Chili. There among other undertakings he proffered his services for the completion of a railroad which had become the despair of the Chilian Government, offering to build eighty-four miles of it, which involved engineering difficulties of a stupendous character, for six millions of dollars, while other engineers had estimated that it would cost over twenty-seven millions, if it could be built at all. Mr. Meiggs obtained the contract and went to work. Instead of employing European laborers he utilized the Chilians, making them, with the aid of able American overseers, skilled workmen, at the cost of only thirteen cents a day each. He tunneled into the mountains, excavated mines and discharged with powerful explosives, and made such rapid progress, that his operations were the wonder of all Chili and South America. He completed the road in two years, instead of three, as he had promised, and derived a considerable profit on his contract, besides a Government bonus of $120,000 which was awarded him. Santiago became his residence and he lived there until 1867 in princely style.

Peru was in need of a railroad. Mr. Meiggs made an offer to build a road from Mollendo to Arequipa, a distance of 114 miles. He had made some progress in this work when the great earthquake of August 13 and 14, 1868, took place, and destroyed a vast deal of his constructions; but in spite of these great losses, Mr. Meiggs subscribed $100,000 for the aid of the people who had suffered by the convulsion, and then went on with his railroad building. As an instance of his profuse generosity, he had $300,000 worth of gold medals and $10,000 worth of silver medals struck, which he distributed on the completion of this railroad. He also gave a magnificent entertainment at Mollendo, and a grand festival at Arequipa, in commemoration of his successful work; both entertainments cost him $200,000. It may be said, however, that the profits of his contract were very large.

He resided in Lima from that time, conducting his household affairs on a scale unprecedented for magnificence and hospitality. His dinners were always prepared with reference to the presence of guests, and often twenty-five or more of them would "drop in." Another operation of Mr. Meiggs' was an undertaking to clear away an old and dilapidated adobe wall, and a vast accumulation of refuse which surrounded the city, in consideration of receiving a part of the land which would be redeemed. This work he carried into effect, and created a magnificent park where the old wall and refuse had been, and obtained for his own purposes hundreds of valuable building lots.

Mr. Meiggs found it expedient to take part in the politics of Peru. For the successful completion of his great railroad and other schemes it was necessary to plan for the suppression of the revolutionary cabals, which kept the Government and country in a state of constant agitation, and embarrassed the treasury. He even paid the ringleaders of the revolutionists to keep them quiet.

Some railroads which Meiggs built proved failures financially, both to himself and to the Government; they were constructed mainly as outlets and conveniences for mining operations, and so traversed regions of country which in themselves contributed nothing scarcely toward their maintenance. His contracts covered in all about a thousand miles of road, and of these only two or three can be said to have proved entirely successful. The chief occasion of his failure in health a year or two ago was due to unsuccess in negotiating some large loans in London, on account of the "Oroya and Cerro de Pasco Railroad," Mr. Meiggs having projected a plan of continuing this road through the Andes to the famous mines of "Cerro de Pasco." These old and famous mines he proposed to drain by tunnels. The breaking down of his scheme in this respect, broke down his health. He had previously sustained two strokes of paralysis, and a third terminated his life.

Mr. Meiggs was in some respects quite unscrupulous in the prosecution of his undertakings, and hesitated not to bribe officers of state to secure the aid which he required. Yet as cabals and corruption characterized the Southern American Governments when he went among them, his political maneuvering is said to have wrought some change for the better. He was extravagantly generous, as we have seen, and on that account was called the "Monte Christo" of the western coast of South America. He was a man of imposing appearance, about 5 feet 8 inches in height, broad-shouldered, muscular, and weighing in health about 225 pounds. He had what was called the largest head in South America; was a great mathematician, and so remarkably quick at figures that the Chilians and Peruvians are fond of telling about his wonderful arithmetical performances. It should, perhaps, be said in his behalf that most of the people in San Francisco who had claims upon him after his collapse and flight from California were fully paid, and after many years the Legislature of California passed a special act, relieving him from the consequences of any illegal acts.

## INDIVIDUAL PROGRESS.

IN tracing backward the record of the race, we can not but be struck by the resemblance existing between the career of the individual and that of his race; and from the study of the individual we may derive some knowledge of the future of the race. From the full and clear conceptions and remembrances of manhood, we pass to the indistinct and emotional ideas of youth, then to the distorted recollections of childhood until all finally ends in the blank of infancy. The individual stands as the epitome of the race; the representative molecule from which we may determine the composition and the structure of the mass. And in his growth we will find the surest index to the growth of society. In the early age of man, as in the earlier stages of society, only the simplest and the most fundamental principles of life are carried on. Nutrition, involving continued existence, is the basic function of life, alike in the individual and in the race. Thought, imagination, and fancy find there no place in the record, for the simple reason there are none to record. There is no retention of infantile experience in the mind, for there is none to record, and no memory to retain it if there were.

The mind of the infant, while it is a blank, is not the blank page of Locke, ready to receive any impression, but rather like a page written over with invisible ink, blank now, but to be rendered legible by time. The growth of the mental faculties, like the progression observed in tracing the nervous system up through the chain of animal life, is a continuous gradual advance of the higher organism. Imagination is one of the earliest developed, and in the race record we see its effects in the many myths and poetic fancies scattered so abundantly through ancient history. Then as the higher faculties are developed, reason more and more asserts its sway, the age of fable

passes away, and we begin to get a true record of events; but man yet is essentially selfish and cruel, and the long list of crimes that stain the pages of history is but the natural expression of the age, and of the development to which man had attained. It is not until we reach a very high stage of mental growth that the altruistic faculties are developed; and pity, generosity, and justice, are apparent in the thought and actions of men. And in the individual the growth is the same; it is only when manhood is attained, and not even then among all men, that these faculties are apparent; and the race, even among the most civilized nations, has not yet attained to the point when abstract justice can be said to be a potent factor in general dealing. These conceptions come sometimes to the race as a vision of the possibility and the hope of the future, when the weaker members shall have been raised to the plane now held by the most developed.

It is a common observation, that the children of to-day are more intellectual than were their parents. A little too strong a statement, although if we institute a comparison with the children of two or three generations ago we might see a marked advance; and the reason is obvious, in the increased mass of brain tissue and consequently of mental capacity. It would seem that based upon such a foundation as this, the doctrine of necessity were well founded, in that man is the product, and subject of the forces that operate the world; and that he can neither alter nor make himself, but can only develop that with which, at birth, he is endowed, and must go forward upon the line laid down for him. And along a certain definite course of progression the race must go until it comes to the goal, if goal there be. The hand of man can neither retard nor change, though he may assist the advancement. Here the apparent fatality ends, and in individual hands is left the choice for good or evil. He who develops to the utmost the talents or the capacity he possesses, transmits to his descendants the tendency to mental growth increased just so much, and so adds to the race his quota of good.

To the Hebrew of old, the aspirations of his mind found vent in the dream of immortality through the perpetuation of his family, and in their preferment, and rested his faith on the God-given promise, "As the sands of the sea, so shall thy seed be." But to-day, man, prone as ever to wander in the ideal, seeks in coming time the realization of his hopes and the fulfillment of his dreams, and so each flight of fancy, each dream of good is a step to the betterment of the race.

In the *Popular Science Monthly* for 1875 there is an article treating of "Mental mysteries associated with peculiar states of disease, and especially with low, nervous disease, which discover unexpected powers of the mind, and which illustrate some of the conditions on which human life depends, and the laws that govern its continuance. Among these are certain enlargements of the perceptive faculties and a singular power which the mind seems to possess of acting independently of its organs." In one case quoted: "I understand my condition perfectly; my reason does not seem to be impaired, but I can think of two things at the same time. . . . . Since I have been in this condition I seem to have very vivid impressions of what happens to my children who are away from home, and I am often startled to learn that these impressions are correct. I seem to have also a certain power of anticipating what one is about to say, and to read the motives of others."

Another writer has said: "Abnormal and unsound conditions of the bodily organs sometimes give us glimpses of mental powers and possibilities far exceeding anything of which the ordinary health is capable. The phenomena of some nervous disorders are positive revelations, and most startling ones, of what the human intellect, disengaged from matter, or under favorable material conditions, might achieve and learn."

Have we not in these exaltations of the mental powers, excited or called into being by the stimulus of disease, a hint of what the future may bring to man and to the race—a ray of light from the ever brightening coming day, when we shall attain to the full perfection of our mentality, and even omniscience be the possession of man?

B. F. UNDERWOOD, M.D.


## ABOUT MINDING OUR OWN BUSINESS.

FAMILY LETTERS. NO. VI.

DID it never occur to you, my dear friends, how slack we draw the line between those things in the affairs of our neighbors, with which we have no right to intermeddle, and those which, in behalf of the wronged and defenseless, we are bound, for conscience' sake, to take action in?

Now, when I sat down to the dictation of this letter, I had very vividly in mind the case of Sister Busybody, to whom I thought to address my whole discourse, not omitting to administer such stern and cutting reproofs as certain offenses on her part seemed unmistakably to merit; but with the first impulse to judgment, there arose the disturbing question as to whether the fault I was about to attack in Sister Busybody is not, after all, in a greater or lesser degree, a fault inherent in the whole human family?

Then, too, when I began to argue against the vice, as often happens on such occasions, the negative side of the case presented itself for consideration, and I fell to reasoning whether, on the whole, this element of meddlesomeness in society is not, perhaps, a necessary and wise provision for the restraint of wrong and for the suppression of evil appearance when wrong is not intended; and while the office of inspector and supervisor of other people's affairs is, by no means, an enviable or an elevated one in the social body, whether it does not serve a use in that economy which entitles it to our respect, or which, at least, appeals to us for the exercise of a tolerant and forbearing spirit.

But when all has been said, and due credit has been given to the worth of a service to which, at the best, very little honor attaches, there yet remains a large percentage of business, prosecuted in the interest of individuals and of the community in general, from which no benefit can by any possibility accrue, and which must unavoidably result in harm to those who, from choice or habit, deal in it. For, conceive what must be the mental and moral state of that person who finds congenial and satisfying occupation and recreation in maliciously or even curiously spying out the stains on other lives, hunting with the fine scent of a sleuth-hound after secrets which may be used as capital in trade to drag forth still more strange and startling matters of mystery and darkness for the wonder and amusement or for the horror and condemnation of the world!

Think what a barren waste must be the soul that leaves its own soil untilled, its own resources undeveloped, to search out the weeds, the brambles, the sloughs, the pitfalls, and the tangled places in other grounds, making them the occasion of more severe comment and criticism than is even in thought directed to the neglected garden at home!

Consider what the same labor, care, and attention bestowed on foreign objects would accomplish if devoted to affairs of personal concern; what the keen observation, the quick sense of wrong, the swift sweep of judgment so freely exercised in the case of other moral offenders might effect if restricted to the sphere of the individual possessing such remarkable faculties; what, in short, would be the marvelous and happy result if the fine discriminating powers, clear intuitive perceptions, and strong retributive impulses if the critical soul were turned inward on itself! Should we not straightway have a community with rapidly improving spiritual conditions, and a world

swiftly opening up to the light of the millennial day? Should we not have a brotherhood grand, powerful, and generous enough to bear with the follies of the weak, and to carry their burdens without too close and curious a scrutiny into their sensitively-concealed mysteries?

It is sad to think of the wounds, the stings, the pains, the heart-burnings, the strifes, the discords, and the host of nameless evil things which come of this miserable, profane business of spying, and prying, and intermeddling, and gossipping, and grasping with open-mouthed greed at the sins or indiscretions of fellow mortals; for in general there seems no motive or purpose for such indelicate intrusion into the affairs of another except to communicate the astonishing matter discovered to the next friend, and the next friend passes the sweet morsel, with some additional flavor, to the right-hand neighbor, and so the poor folly or failing "evolves" at length into something so strange and monstrous that the most unhappy perpetrator and possessor fails to recognize it, and adds to the foregone offense the unpardonable guilt of absolute denial.

It is altogether wonderful—did you never mark it?—how much more shocking to the sense is the blemish of character or the error of conduct disclosed by our hitherto unsuspected brother or sister than the same or greater imperfection of nature or vice of habit in ourselves. We know the conditions, temptations, and all the extenuating circumstances in our own case, and our transgressions, qualified by such insight into our motives or impelling principles, seem to us trifling and venial compared with those of the stranger, or even of the inmate of our household, whose governing forces we do not understand, and whose peculiar temptations we do not even care to know, before passing our righteous judgment upon the offender. Did we give but half the thought to reasons that we give to results; did we pursue our study and analysis of the causes of evil as persistently and with the same interest and ardor that we pursue our investigation of the evils themselves, we should undoubtedly arrive at wiser estimates of the unlucky sinners whom we now condemn without mercy, and learn withal a charity which would exert a no less ennobling and exalting influence on ourselves than on those toward whom we should exercise it.

And just here, I think, we may trace the determining line between the things which really concern us and those with which we have no right or business to intermeddle. In whatever lies at the foundation of the wrongs and follies which we see in society and in the individual, we have an interest that should urge us to unceasing work—an interest broad as humanity, whose woes, and pains, and sorrows have a tender claim on us; whose faults, weaknesses, and sins appeal to us for that calm consideration which one who understands their often-hidden source will never fail to give. But when we carefully or obstinately close our eyes to causes and deal solely with effects, making the mere surface of life the ground of our judgments; when we let go the benign purpose which should govern all our inquiries into the affairs of our fellows, and qualify our otherwise impertinent and inexcusable officiousness, we transgress the limit of our duty and privilege, and descend from the high sphere of principles to low personalities. I do not say that there are not occasions where individual liberty of action has to be restricted by force of law or by private interference, but the wisdom that comes of divine guidance in our own sad human experiences, and the pity born of a consciousness of our own human weaknesses, should teach us a way by which that end may be accomplished without destroying the self-respect and supplanting the will and conscience of the offender by an outside force wholly unsympathetic and vindictive in its character.

Only a soul alive and thrilling with love for all humanity, with no taint of malice, envy, enmity, or spite toward any fellow-being can be trusted with the delicate and difficult duty of intrusion into, and supervision over, another's personal affairs, where such intrusion and supervision may be accounted necessary to the general good.

In short, we have no capacity for minding our neighbors' business until we have learned how wisely to mind our own.

ANNIE L. MUZZEY.

# LIGHT IN DARK PLACES.

"This mournful truth is everywhere confessed,
Slow rises worth by poverty depressed."—SAMUEL JOHNSON.

## CHAPTER XIV.—GIVING A LIFT.

SADIE was at home that evening at her usual time, and with her Betty.

"Mother," said the young girl, "I told Betty about Norton, and about your being so much hurried with the work you have, and she insisted on coming home with me to give you some help."

"Now, ma'am, yer musn't say one word aginst my helpin', for I know yer need the 'sistance, and I kin do up some of them long back seams in a jiffy."

"My good girl, you are certainly most kind to come here after your hard day's work, when you so need the rest and change."

"Oh, ma'am, that's nothin', many's the hull night I've worked to finish a job when I tuk sewin' at hum, an' it's harder, I know, than bindery work, fur you're kept at it a sittin' and sittin' all the time, an' with nobody nor nothin' round to make a little variety. I was tellin' her that you'd be wantin' to go down to the station-house an' see yerself how Norton wuz a gittin' along, an' if I wuz a workin' while yer wuz gone, t'wouldn't 'pear like all lost time."

"You are very considerate, Betty. There must be a good deal of the mother element in your composition to appreciate so well a mother's feeling. Yes, I wish very much to see my dear boy, and now that you are here to be company for Sadie, I shall use the opportunity."

"And, mother, if you will permit me, I'll finish that front you have in hand," said Sadie.

"Yes, my dear, but don't be too hurried about it; good work, you know, doesn't need to be done over, and care saves time. Come, let us have supper. I must leave the clearing of the table to you, as I want to get down to Norton while it is light."

At the table Betty expressed her delight with the rolls, and on being told that they had been made by Sadie that morning, asked for the recipe. Sadie replied:

"It's very simple, Betty; only this: I take the flour and mix it with cold water—mother says that nearly everybody uses hot water."

"Yes, of course, everybody I knows of scalds the flour."

"Mother says that hot water injures the substance of the flour by forcing some chemical change in it. I stir the flour gradually into the water until it is of the right consistency, until it will drop clearly from the spoon; not like batter, but thick enough to hold together and drop in the lump. Come in some morning and I will show you how it looks when right. Then I take small bits of the mixture, and with a little common flour to prevent them from sticking to the board, mold them into little loaves about four inches long and an inch or so thick. As soon as I have made a panful they are placed in the stove. You must be sure that the oven is hot, for then they will rise and bake beautifully like these."

"They do beat everything I've ever saw," said Betty; "and they're so light! How kin yer git 'em so light without 'eest?"

"The air which is stirred into the mixture," replied Mrs. Camp, "expands during the baking and gives the roll the rounded, symmetrical shape it has; and then, too, as there is nothing of a deleterious nature put into it, when thoroughly baked it will remain sweet and palatable a long time. I have kept some in an earthen jar for a month, and then by moistening them a little in cold water and immediately after exposing them to the heat of our oven for two or three minutes, rendered them almost as crisp and agreeable to the taste as fresh ones."

"It's wonderful, indeed, ma'am. Sure, but I must learn to make them. But this isn't wat they calls Graham flour, fur I don't see no specks or little scraps in it."

"No, this is what miller's call seconds flour. Norton gets it for me at the mill over in Cherry Street, and sometimes over in

Brooklyn, where there are two or three mills. It costs less than Graham flour, and is more nutritious than the mixture they sell for 'Graham' at many of the stores."

"Us poor people don't know the cheapest ways of eatin' yet," said Betty; "and them that's rich don't know the best. It seems to me, Missus Camp, really sens I've kum to know yer that the cheapest ways is the best."

"The simplest ways, Betty, are usually the best; and, of course, simple methods are comparatively inexpensive. But the best part of a simple life is its relations to health and happiness. People who are given to artificial and intricate ways of living are, as a rule, less robust and contented than they who pursue an even, simple course."

Mrs. Camp then rose; and, donning her bonnet and shawl, was soon in the street and on her way to the place where Norton was confined. What occurred there between mother and son will be left to the imagination of the reader. During her absence Betty and Sadie gave themselves to the task of bringing up the much interrupted work of Mrs. Camp, and such was their diligence that on the return of the lady she expressed her pleasure at the extent of the "lift" they had given her. Betty was no half-way sewer for wages or affection, and despite Mrs. Camp's assurance that her lost time had been more than made up, and that she would now be able, it was altogether likely, to complete her engagement, insisted upon continuing to sew until bedtime.

"Yer see, ma'am," she reasoned, "yer mind is so much taken up with the boy's trouble that yer can't work as usual; then, again, to-morrer yer may be called to go to that station-house, or do somethin' that'll take pretty considerable of yer day, so I'll stay if ye'll let me a while longer."

Nine o'clock found the three still plying the needle, but with the last sounds of the bell Mrs. Camp gently drew the garment Betty had been employed upon from her hand; and the generous-hearted woman, knowing the punctual habits of the Camp household, hastily gathered up her round hat and mantilla; and, with a cheery good-night, departed for her own abode.

## CHAPTER XV.

### THE TRIAL—A POINT IN SCIENCE.

ON the way back to his store Mr. Stanley stopped at the fruit-seller's, a Mr. Jebson, and had an interview with that worthy. He found him inclined to be obdurate in the matter of his complaint against Norton and Tim. A small-eyed, round-headed, thick-set man, he viewed mankind as made up chiefly of two classes, the industrious and honest, and the lazy and shiftless; the latter getting their living by sponging on, or borrowing or stealing from, the former. In reply to Mr. Stanley's representation of the character of Norton, he bluntly said:

"I'm bound to make an example. I've been plagued and injured long enough by these boys. A lot of 'em has been hanging round my place, and stealing my things till I'm tired of't. Now I've caught some of 'em I'll give 'em a taste of the law. Besides, I don't see how you're a-goin' to let one loose without the other."

Finding expostulation vain, Mr. Stanley left the man and awaited the trial of the following morning with some impatience. Being the active member of the firm of Taylor & Stanley, he had occasion, now and then, to attend the courts to assist in the prosecution of suits which were instituted against delinquent customers, and thus he had obtained considerable information with reference to the conduct of trials. The fruit-vender had not seen the act which overthrew his stand, and the complaint on which he had procured the boys' arrest was altogether circumstantial. So the self-constituted advocate deemed his case a pretty strong one.

The police justice opened his court early, and it was barely ten o'clock when his clerk called the names of Tim Lenigan and Norton Camp; and they arose in their places. Mr. Jebson, the complainant, was at hand, and in response to the Judge's demand came forward from the throng of spectators and auditors to make his accusation. At the same time Mr. Stanley arose from a chair near the platform, and remarked after the legal manner:

"If your honor please, I am here in behalf of the younger of the accused."

"Very well, sir; we'll see what the complaint is."

Mr. Jebson then testified that for a long time he had been annoyed by big and little boys who stole his fruit and nuts, knocked down his stand, and ridiculed his efforts to catch and punish them; that the day before hearing the crash of his stand he had instantly rushed out of his store and found there two boys "fighting" on the sidewalk; and seeing an officer down the street he "hallooed" to him and told him to arrest them for knocking down his fruit boxes; that by the fall a good many oranges and apples had been scattered over the sidewalk and some of them had been "grabbed up by the rest of the gang," and were lost.

"May I ask a question or two, your Honor?" asked Mr. Stanley.

"Certainly," said the Judge, who did not very frequently have a case before him which was conducted in the formal ways of professional litigation.

"I would ask the complainant if he ever saw the younger of these boys; if he recognizes him as one in the habit of loitering near his store?"

"No; can't say that I know him. The other fellow," said Mr. Jebson, "I know well enough by sight. He's one of the gang."

"Did you see the stand knocked over?"

"No, sir, but the little fellow said they did it."

"Oh," rejoined Mr. Stanley, "the younger one told you that. Did he tell you how it was done?"

"He told me his side of it," snappishly replied the accuser.

"Yet you come here into court and testify to an occurrence the facts of which you have obtained from one of the accused. I submit to your Honor, that aside from the statement of Norton Camp, the complainant's case is a supposititious one, and has no other basis. Further, he has not given us that statement as he received it, but dressed it to suit the purpose of this accusation. That he has suffered annoyances and loss from the pilferings of lawless, vagabond boys is doubtless true, and he is warranted in a sense of indignation; but, your Honor, is it fair to make an innocent, truthful boy an object on which to vent that indignation?"

"Not altogether, sir, but the circumstances warrant the presumption of guilt?"

"That there is a presumption which has an unfavorable side I am ready to admit; but, sir, the importance of a matter like this to a young and susceptible mind, and the attendant influences of its injudicious consideration upon the community can scarcely be estimated. You would be just, sir?"

"Certainly."

"And be governed by the facts?"

"That's what we want here, the facts."

"Well, the charge has been made, and I contend that it is insufficient to hold either of the boys (here a murmur indicative of doubt and half-suppressed applause was heard among the audience). Now let us have the statement of the large fellow, and then that of the younger, if your Honor will not object."

The Justice then ordered Tim to be placed at the platform, and he stolidly averred as follows:

"I wuz a standin' by that little cuss, an' he sassed me, and I just giv'm a clip and tumbled 'm ag'inst them boxes 'n things; an' he jist up and bounced inter me's ef he could a-licked me. Th'other fellers as wuz a-hangin' round, prigged the oranges; I didn't."

"Didn't you tell him to take some of those oranges?" asked the Judge.

"Nary time, Jedge."

"What do you mean by his 'sassing' you, Tim?" asked Mr. Stanley in a kind tone.

"Wal," said the cunning rogue, somewhat confused by this unusual manner of cross-examination where he was concerned, "'twasn't what he said 'xactly, but he wuz a-puttin' on airs es ef he wuz so all-fired bettern'r us fellers, w'en he lives on the same block on Houston and Prince 'n ain't got nothin' ter brag on anyhow."

"You mean, I suppose, that he kept away from you and other boys who live in the neighborhood as if your company wasn't quite up to his notions; and when you taxed him about this offishness, his answer was not altogether satisfactory?"

"You've hit it close ter the bull's eye. Yer

see, mister, it grinds me ter see a muffin like him with them patched britches a-struttin' roun' es ef he owned the hull city, an' not sayin' nary a word to us fellers."

"Do you say," demanded the Justice, "that you didn't intend to steal this man's fruit?"

"Nary a bite, Jedge."

"You can take your seat. We'll hear what the other has to say."

An officer nudged Norton, and the boy came forward. He appeared pale, as if he had slept but little during the night; and a little embarrassed at finding himself the cynosure of so many eyes. Still, for one of but twelve years, he bore this new and severe experience bravely, and a thankful expression beamed from his large, frank eyes, as he gazed on Mr. Stanley.

"Now tell us, young sir, in few words what you have to say for yourself," said the Judge.

"What took place; how the stand was thrown down," suggested the volunteer counsel.

"Bumpy and I were standing—Bumpy is a boy I know — were standing in front of this gentleman's store—"

"Is that boy you call Bumpy in the room?" interrupted the Justice.

"I be," replied a clear voice from the lower part of it.

"Come forward, then. We want to see you."

Bumpy came briskly forward to the platform. The Justice and officials smiled when they saw a boy of about Norton's age in poor, ragged garments take a place beside the culprit.

"Go on with your story."

"Yes, sir. This boy and me—I—were standing in front of the store, and Tim there, with some other boys belonging to the neighborhood, or most of them, were a little way down the street. Tim comes up to Bumpy, this boy here, and told him to go and take an orange or two and bring them to him. Bumpy says 'I won't for yer. If you want oranges get them yourself,' or something like it. Then he turned to me—"


NORTON AND TIM ON TRIAL.

"Who turned? Give us the names," said the Justice.

"Tim did, and said to me: 'Here, let me see you just get those oranges for me.' And I said I wouldn't steal oranges for him or anybody else. Didn't I, Bumpy?"—

"Here," interposed the Justice;" "I'll ask this big-headed little champion of yours to give his own version of the affair when we've done with you. So don't appeal to him. Go on."

"When I said, sir, I wouldn't take the fruit, Tim squared off, this way (doubling his fists) and said he'd have them out of my face, anyhow; and then I moved away from him, as I didn't want to fight with him or anybody else; but before I knew what he was a-going to do I was thrown against the stand and the man there has told the rest."

"Not exactly, my boy," said Mr. Stanley. "Perhaps his Honor would care to know why you attacked Tim?"

"Because, sir, he acted so mean in knocking me against the stand, and then, sir, I wanted to hold him until the man came out. I told him, this gentleman who owns the fruit store, and the officer this, but Tim denied what I said, and they wouldn't believe me, when it's the truth."

"These young larks," said Mr. Jebson, "are up to all sorts of dodges, you can't believe what they say."

"And yet you believe enough of it to suit your purpose of making a complaint," retorted Mr. Stanley.

"Has the complainant any questions to ask? If not, we'll see what this comrade of his can say," said the Justice.

Mr. Jebson shook his head, and Bumpy was called upon to give his testimony, and did so in so direct and earnest a manner that he evidently won upon the good opinion of the Judge, notwithstanding his baggy trousers and tattered coat-sleeves.

"If you weren't any to blame, boy," said the Justice in a gentler tone than usual, "why did you run away like the other boys?"

"'Cause I didn't want to be taken up, es I know'd I'd be ef I staid by Woolly. Wouldn't a this yer man (pointing to Mr. Jebson) said I wuz one of them other fellers as run off and wuz only playin' innercent?"

This answer made the Justice and the lookers-on laugh, while at the same time its undercurrent of sound reason was clear enough.

"Don't you go with that crowd?" demanded the complainant.

"Not much; you jest ask Tim if I does."

"How about it, you lubber?" questioned the Justice of that individual.

"That leetle pup," replied the cross-eyed Arab, contemptuously, "wy, he's mommy's nuss-gal, and nusses a baby mos' of the time. He ain't big 'nough ter pal with me, I guess."

"He's mean 'nough ter make little fellers crib fur'm ef he kin," retorted Bumpy.

"W'en d' I ax yer ter do anything fur me?" asked Tim menacingly.

"That'll do. No squabbling in this court," declared the Judge. "Any further questions, gentlemen?"

"Your Honor, before you decide this case," said Mr. Stanley, "I would ask you to consider the merits of the complaint in their relation to the different characteristics of the accused. You, sir, and no candid man, not even our friend, the complainant here, embittered as he may feel on account of the loss of his fruit, can look upon their faces and pronounce them of similar moral dispositions, and feel that they should be estimated alike. Our young friend here shows that open, frank expression which appeals for trust and belief. His head rises high in the forward part, and is full in the crown. If your Honor will place your hand on his head—"

"How's this, sir?" interrupted the Justice. "It seems to me you are bringing in a new line of evidence. You are discussing a point of physiognomy or phrenology. I don't think I can allow it. There's no authority for it in judicial proceedings."

At the mention of the words physiognomy and phrenology there was at once a movement in the crowd; the spectators seemed to lean forward, and a more than customary quiet reigned in the room. All were, doubtless, interested in this, to them, new turn of affairs.

"Excuse me, sir," rejoined Mr. Stanley, "you will find, by a reference to the criminal records of Naples, about the year 1780, that the Marquis Mascordi, presiding Justice, was accustomed to examine the heads and faces of the culprits brought before him, and adapted his judgment to the indications of mental integrity thus found."

"Indeed, sir, but that's a long while back to go for a precedent, although I know that learned jurists sometimes go back to the days of Justinian."

"If you insist on something recent, sir, I can refer you to the testimony offered in behalf of Lawrence Sullivan, on his trial for murder in the spring of 1870, in this city. You may remember the case, as it was an aggravated one."

"Yes, sir, I remember; it was tried before Hackett."

"The testimony then offered with regard to Sullivan's mental and physical condition by a professional phrenologist was subsequently confirmed by a special commission, ordered by the Governor in 1871, and Sullivan was sent to the Insane Asylum. Will this do?"

The police Justice was not profoundly versed in the law; and, like most of his class, regarded with much respect the rulings and practice of upper courts. He replied:

"How do you apply the rule to this case, sir?"

"Easily," returned Mr. Stanley. "I can show you in a moment how much these boys differ in organization. Place your hand on Norton Camp's head, this way," illustrating on Bumpy's, who stood near him.

Norton had been standing near the Justice's desk, and at the request of Mr. Stanley, went close to the chair of the magistrate, who manipulated his curly crown in imitation of the self-appointed counsel.

"Your Honor will perceive a fullness of this part of the head, which runs quite evenly on both sides."

"Yes."

"Now, if you will try the head of Tim in the same manner, you may perceive a difference."

Tim was then ordered to come to the desk, and the magistrate, evidently curious, felt his head carefully, then tried Norton's again, and then said:

"I perceive that this young man has quite a narrow conical projection up here where the boy's head is filled out and round."

"Exactly, your Honor, and the difference is caused by the difference in their development respectively of the organs of Conscientiousness. One boy is naturally disposed to tell the truth and act honestly; the other, through unfortunate associations and training, is disposed to dissimulate, evade, deny, and falsify. If there be any one in this room who knows Tim well, he will confirm my statement, I'm sure. Yet, your Honor, I would not ask this, as I do not wish any prejudice to occupy your mind which would influence your adjudication of this case, which must rest upon the facts adduced."

"This kind of pleading has gone far enough," said the complainant, "and I'm in a hurry to get back to my store. I ask, therefore, your decision in the matter."

"And I, also, ask the decision of the court," said Mr. Stanley; "and I further request that the court will not overlook the fact that the complainant has not averred anything material to his charge besides what he obtained from the accused, or one of them; and I insist that his statement, such as it is, and being altogether secondary, is insufficient to convict the boys of more than a squabble. They stole nothing; they merely displaced a few boxes of fruit."

"I'm willing that this one should be let off," said Mr. Jebson, pointing to Norton; "but that fellow is a hard one, and ought to be sent to the Reform school."

"He needs reformation surely," responded Mr. Stanley, "and before he's a minute older should, for society's sake, at least, be placed in such relations that his moral sentiments would be rendered active, and his intellect trained; but I can not see how your Honor can hold him only."

"Time presses. I dismiss the complaint," said the Justice. "And you, fellow (to Tim), be careful that you're not brought in here again, as I'll give you a long term for discipline and reform if you are."

"Thank you," said Mr. Stanley.

"I'm much obliged to you, sir," said Norton, as he wrung the hand of his generous advocate and made his way out of the room by his side.

(*To be continued.*)

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MEN who do the noblest deeds
Never say I can't.
He who lacks the strength he needs,
Tries his best and ne'er gives o'er,
Surely will at last succeed.

## PHOTOGRAPHS, No. II.—A QUEEN.

A FINE-LOOKING woman, with graceful carriage and well-set head. Some ten years ago her face was even handsome, but now her prominent gray eyes are fierce in their expression, and discontent and suspicion have set their marks upon her features. She realizes that time will turn back no more forever, and that her life is a failure. Her ambitions are at an end, for she has achieved a mediocrity which admits no hope of future triumphs, and fretful activity has given place to fretful endurance.

She feels that she was born to be a queen, yet one by one her kingdoms vanish, for her capacity for ruling is scarcely equal to her will. She knows no equal friendships, acknowledges no superior. She must be to those around her a patroness or an enemy, and the price of her patronage is surrender of individuality and a heavy tribute of adulation. The presence of superiority in any form is an offense to her. She numbers among her female friends not one beauty, nor even one of moderate prettiness, not one whose purse is longer than her own, not one of pre-eminent talents. Over a certain class of weak feminine minds she exerts an almost boundless fascination, and the exercise of this is her greatest delight, for it is the only exercise of the power she covets which is now left her. Among her humble satellites she reigns supreme, until, as occasionally happens, some stronger mind delivers one or another from her sway. They beam in her smile and tremble at her frown, do homage to her taste and vie with each other in rendering her service. For the slightest deviation from the service she exacts they pay most dearly; and sometimes she torments them from mere wantonness and out of the cruelty of her nature.

This throneless queen was married in her early youth and has the prestige of widowhood; but willing enough on her own part to change her condition, she finds that she has no arts, beyond her outward sweetness, to attract. Those who have hovered about her, hoping to find those inward graces which the outward promised, have found that they hovered in vain, and them she accuses of treachery, inconstancy, and shallow fickleness; but lost friend or lost love, only her vanity is wounded, not her heart. All her life long she has been building up an ideal, not to attain to, but to seem in the eyes of others. A little creature full of love, she calls herself. She is a little creature full of petty spites. She knows how to simulate all the fine sentiments, but is sincere in none. Avaricious, cold-hearted, and self-indulgent, she would seem benevolent, charitable, and open-handed, and by great economy of action sustains the character; giving nothing except for the reward that it will bring her; always letting the left hand have full knowledge of the right hand's doings; withholding justice to bestow alms, and thereby gaining credit for self-denial which she has never practiced. In society, a lady amiable, though reserved in manner; in the privacy of her home she is vulgar, exacting, and violent to an incredible degree. Those about her suffer perpetually from her outbursts of hot temper, from her fierce discontent with life and all mundane affairs. You have heard her dilate upon the tenderness of a mother's love and the holiness of the tie between mother and child, yet for a mother's person she has no respect. Hot-handed tyranny is her attitude toward the meek slave who bore her, and has borne with her ever since, and who, instead of moulding her daughter's character, has been warped from the original integrity of her weak nature by that daughter's influence. In the best days of her youth our queen, like many another imaginative girl, created for herself a sort of fairy realm, to be forever exempt from the common chances and changes of life. In this region of romance all things were to revolve around herself, the central figure. Wealth and honors were to flow in upon herself alone, and she was to bestow her bounty with a liberal hand. All were to marry and be given in marriage according to her dictates. Young and old, men and women, were to fashion themselves after patterns of her choosing. Bonnets were to be always becoming, mantua-makers always obliging, beaux always at-

tentive. Her quarrel with existence is that the real world is so different from this fancied realm. Her little chickens have gone astray entirely out of reach of the sound of her clucking. They have proved to have desires and identities of their own, therefore are they ungrateful in her eyes. If these runaways are happy or content, it is no satisfaction to her. She can hate most heartily the creature or thing that has escaped from her dominion, and there is a vast vineyard of sour grapes just without the narrow walls of prejudice and vanity that hedge her in.

She should have been the most beautiful, the richest, the most gifted of earth's daughters, so it seems to her; and just so much as she feels herself to fall short of this standard, is she in rebellion against fate. She can not lift herself up. Her alternative is to pull others down. The loveliest belle is, by her showing, only a vicious flirt, the exercise of talent only a meretricious display. Genius is pretension. Beauty has always some insurmountable flaw. Wealth is ill-gotten or ill-deserved. Such virtues as she has or boasts are the only virtues. Those which circumstances forbid her to simulate, are no virtues. The vices which prudence or inclination have led her to avoid, are doubly blackened, a trick which many virtuous ladies know to enhance their own whiteness. Such as she are greatly to be pitied, losing the richness and beauty of life in a vain struggle. Yet this woman is shrewd in all save the knowledge of what is truly precious. If her aims were right and reasonable, she could accomplish her farthest desire. Mistress of all strategies, she who, at the bidding of interest, can assume the tenderest emotions, who can shed tears at will to reconcile an offended friend or show the tenderness of her sensibilities, who grieves ostentatiously over crime and physical suffering, has no real tear for the sorrows of those who are nearest her, and regards all bereavements and afflictions of whatsoever nature merely as personal annoyances. She who can compass all ends to discomfit a rival or an enemy, who can spend untold energy in malicious warfare or greedy strife, cares not to comfort sorrow or win love by earning it. She who is not too proud to stoop to and acknowledge the pettiest meannesses—eavesdropping, prying, false-witnessings, as well as bolder wickedness—is too proud to stoop for the sweet, small morsels of happiness that fall like manna for all the children of earth. False estimates of herself and her deserts have made her bankrupt. HARRIET IRVING.

## HOW JOE LOST A BAD REPUTATION.

FOR OUR BOYS.

JOE THORNTON was the worst boy in school, and everybody said it. He was twelve years old now; a strong, good-looking lad, that could not read intelligibly, because his mind was bent on mischief the whole day through. With the winter teacher, a man, he just kept within bounds; but every summer he had a *brush*, as he called it, with the woman teacher, and kept her in an anxious, excited state throughout the term. This summer the presiding genius of the red school-house had a kind face, and so tender a heart that she had never once thought of its capabilities of becoming steely, when circumstances might cause it to harden. Joe always had a name for his teacher. The winter school-master had been Long-Shanks; the lady who had taught the summer previous, was May-Pole; and the little girl who smiled down upon them this summer was Rosebud. As this was her first school, Joe confided to the boys that he should postpone breaking her in for a while; so, for a few days, she was left to the illusion that the group of little children around her was made up of so many cherubs, and then he began to lay plans for a siege.

His base of operating at first always consisted in defying the rules; so his first offense was staying outside half an hour or so, after school had called at recess. Now, the summer before, he had not only remained outside, but he had pelted the school-

house wall, as well; so you see he meant to be a little forbearing, after all.

Well, what did Rosebud do but detain him as many minutes after the others were dismissed as he had remained absent.

Under ordinary circumstances, Joe would have just marched out and paid no attention to the teacher's command. But the little school-mistress stood quietly by the door, and looked at him; and though he was well aware that, physically, he was much the stronger, there was in her eyes a look of power that he did not resist. But when once set free, he gave a whoop upon the school-house steps, and told the boys when he joined them that Rosebud and he had got to have a brush, and that was just what it was coming to.

On his way to school, Joe passed a little, grimy smithy, where the village horses were shod. The proprietor of this establishment, Jack Jones, and he were old acquaintances. The next morning, when Joe passed for school, Jack stood in the door, looking as sooty as his shop. He was a huge fellow, sinewy and powerful, and looked as though he might have been made at his own forge; and yet in this steely case throbbed a heart soft and warm, and exceedingly tender. Rosebud, in passing that way once or twice, had looked into his shop with seeming interest, because it was work, and Jack had fancied that he caught the same look in her face that had belonged to a little daughter of his, who had rested now seven years under the daisies.

"Joe," said Jack, "John Town told me last night that you was goin' to lick the teacher."

Joe straightened up, and looked important. "Wal, yis, Jack, I do think of commencin' operations, a little, in that line. She's the delicatest little thing, and it won't do to be very savage, and it won't do to have her bossin' of a feller 'round, nuther, you know."

"See here, Joe," said Jack, "I don't believe you ever had a fust class whippin' in your life, and I'll tell you what I'll do. You tech a hair of that little gal's head, and I'll give you a sound maulin', as sure's my name's Jack Jones;" and Jack brought down his sledge-hammer of a fist with emphasis on to his leathern apron.

Joe put his thumb up to his nose, and marched on. He did not care much for Jack's threat; he felt so sure he could keep out of his way, and he *did* mean to give the young school-mistress a scare, and this was the way he would do it: he would break rules again, and she would call him out, but he wouldn't go. He felt pretty sure she was gritty enough to undertake to whip him; then he would catch the stick, break it, throw it over her head, assume so offensive an attitude, in short, that she would be glad to retire to her desk, and leave him master of the field. This was to be the programme. It was all to be done without bloodshed, and let Jack Jones catch him if he could.

So a little while after school had taken up that morning, he commenced throwing spit-balls; but Rosebud, who was attending to a class, seemed entirely oblivious. When she had finished, she walked up the aisle to do *sums*. She was at work a little back of his seat, when pop went a ball, and hit Tiny Smith on the chin.

At the instant, from some mysterious fold of Rosebud's dress, flew a long, tough, willowy blue-beach, and gave several quick slashes around the shoulders of Joe's linen coat before he seemed to comprehend the position. Then he sprang up and caught at the stick. But the blows came thicker and faster, first at one point, then at another, until the whole stick was worn up, and he had not succeeded in catching it once. Joe was defeated, but not conquered, and he would get the better of her yet, as sure as fate, he told the boys at recess. So all day long while his wounds smarted, he pondered some new method of assault; and, no doubt, Rosebud would have been equal to the occasion, had nothing supervened. But as Joe went home that night with head bent, still studying at his problem, he was caught by Jack, who held him as if in one of his own iron vises. He carried him into his shop, and laid him across his anvil block.

"Hand me the hammer," said Jack to his man, who was at work at the bellows, that puffed and snorted, and threw the

angry sparks up, snapping and crackling. Jack turned the boy over on the block, held both his hands in one of his, placed his knee upon him, and raised his free arm.

"Hold — hold on, Jack," blubbered Joe. "I—I didn't do it. I never teched 'er. But she gin me a awful wallupin'."

Jack hesitated. "I've hearn long enough that Joe Thornton was the wust boy in school, and was travelin' on 's fast 's he could to the gallows. He'd better die a respectable death here, at this present time, and not be 'lowed to walk the airth any longer, jest fer a skerge, never dewing any good whatsomever."

Jack looked like a grimy angel of retribution, firmly devoted to his work.

"O Jack, I won't, I never will ag'in! Jest lemme go this time, and see ef I do. I'll do all I can for mother, and try to be a good boy at school. Do, Jack, let me up."

Jack set him off the block, and replaced his anvil.

"Ef you're sot on bein' a good boy, Joe, I hope you'll be a reg'lar Methusaler, and I'll be the last man that'll ever end yer days. But as yer present character stands, the whole community would be glad to git red on ye. Did ye ever think of that, my boy?"

"I never knowed how mean I was before, Jack. I ken see it now, and I'm goin' to change."

And really, after this Joe went to work with a new set of faculties that his brain appeared to have in reserve somewhere; and that is the way it happened that he lost the reputation of being the worst boy in school.

MARIE S. LADD.

## HAPPINESS.

TO some the word has a hollow, empty sound. Happiness, it is said, is but a mockery, a delusion, a mystical something which, in this world, can not be found. Is this, indeed, true? We think not; for is it not the one boon for which we all are striving? Is it not the one thing for which we live, and which we hope will come at some future time?

And yet it is strange how far we go astray in our search for this priceless gem. We obey the mandates of Fashion; we lay all the nobler impulses of our nature on the shrine of Wealth; we spend our nights in revelry and our days in lounging and sleep, and yet we find not that for which we are searching. We seek happiness in gambling, in the drunkard's glass, and in the dens of infamy, but we find it not. Then, again, we draw down our faces; are always grave and solemn; crush out all the tender thoughts and affections of the mind and heart, and obey the Ten Commandments because we fear eternal punishment if we do not.

And all those who are seeking in vain for happiness, would it not be much better did they possess a true knowledge of themselves, and thus be enabled to choose the right way? It is plain to the phrenologist that man *can* be happy, for his mental constitution proves that he was created to enjoy this life. And what a blessed truth it is that we need not dwarf or exterminate any of the faculties of our minds in order to be happy, that all should be exercised in their proper sphere.

We should love our family, our friends, and the good things of this life; should be industrious, economical, and energetic; should observe, remember, and reason; construct, compare, and invent; love the beautiful, the grand, and sublime; music, the arts, and sciences; appreciate the opinion of others; be self-reliant and firm; mirthful, hopeful, spiritually-minded, and imbued with a love for God and divine things.

And, after all, what better rule for securing happiness can we find than is contained in those words of George Combe: "Let the animal passions be subservient to the moral sentiments and guided by the intellect."

JAMES PERRIGO.

WHAT is the most beautiful thing? The universe. The strongest? Necessity. The most difficult? To know ourselves. The easiest? To give advice. The rarest? A true friend.

# Literature, Mental Science, and Education.

True philosophy is a revelation of the Divine will manifested in creation; it harmonizes with all truth, and can not with impunity be neglected.

## BRAIN AND MIND.

### A SURVEY OF ANCIENT AND MODERN PHILOSOPHY.

PHRENOLOGY, then, stands exactly like the other sciences of observation upon the basis of phenomena and their observed correspondence with a theory which is deduced from them.—SILLIMAN.

FOR more than two thousand years the study of mind has engaged the attention of the best intellects of every generation. What is the substance or essence of mind? Is it material or immaterial, mortal or immortal? How is it connected with the body? Has it a special seat in any particular organ? If so, in what part of the body does it reside? Or is it equally diffused through every part? Is it an entity which exists separate from the body, and entirely independent of physical organs in its manifestation? or has it a habitation within the body, and particular parts of the body, for particular modes of manifestation? How many, and what are its faculties? Are these innate in the mental constitution? or is the mind a blank at birth? And are its various faculties developed by education and other adventitious circumstances? These are some of the leading questions which have excited discussion among the learned since the days of the early Greek philosophers; and every distinctive theory comprehended within them has had its earnest advocates.

Pythagoras, five hundred years before Christ, enthroned the thinking principle in the head. Democritus entertained a like opinion. Plato, whose lofty soul furnished the inspiration which illumined the speculations of succeeding philosophers, even until the present century, placed the rational power in the head, while he assigned the passions to the bowels. Aristotle, the first true physi-

ologist of whom history has preserved a record, set the mind in the brain, and was the exponent of a system perhaps invented by him, perhaps recognized by his contemporaries, which is analogous to that of Phrenology. In Aristotle's scheme, the brain is divided into three parts, corresponding with his view of the location of its interior openings or ventricles. Common-sense, a faculty which he supposed had relation to the five senses, he placed in the first ventricle, believing it to be situated in the anterior part of the brain. Imagination, judgment, and reflection he assigned to an opening in the center of the encephalon. In the posterior part he set memory. This conception and distribution of the mental powers were followed closely by the medicists and metaphysicians who lived and flourished from the day of the great Stagyrite almost down to the time of Dr. Gall. Galen, Albert Magnus, Thomas Aquinas, Bernard Gordon, Ludovico Dolce, Jean-Baptiste Porta, and Thomas Willis, may be cited as illustrious examples of the mediæval learning which recognized the Aristotelian teaching.

But other views of the seat of life and thought had eminent authority to sanction them. Stahl taught that the soul occupied the whole body as its habitation. Von Helmont assigned the stomach as the special seat of the mind, and Drélincourt located it in the cerebellum.

Nearly all the learned anatomists of the seventeenth and eighteenth centuries entertained the opinion of the distribution of the brain into parts subserving distinct functions, although Aristotle's scheme seemed, to their advanced enlightenment, little more than shrewd conjecture. Near the time of Gall's publication of his discovery, Charles Bonnet, Herder, Tissot, Willis, Haller, Von Swieten, Prochaska and Cabanis had declared a belief of that nature. Cabanis supported a doctrine concerning the production of thought which had its analogue in antiquity, and is recorded by Galen. This doctrine relegated mental phenomena to the blood, of which they were said to be a vapor or spirit, highly subtilized and refined by the membranes of the brain. Cabanis' attitude among metaphysicians is that of a materialist. In his writings he avows principles with regard to the nature of thought similar to those entertained by conspicuous authors of the present day. For instance, he says in one place: "The active principle of life and movement in animated bodies, which Stahl calls the soul, is one, but it acts diversely in the organs according to differences of structure and function. It digests in the stomach, secretes bile in the liver, and thinks in the brain."

Professor Flint, in his late treatise on "The Physiology of Man," says: "The brain is not, strictly speaking, the organ of the mind; for this statement would imply that the mind exists as a force independently of the brain; but the mind is produced by the brain substance; and intellectual force, if we may term the intellect a force, can be produced only by the transmutation of a certain amount of matter."

It would be impossible to present within the space of a single volume, to say nothing of a single chapter, a complete analysis of the theories of the many metaphysical systems which have been propounded; and indeed this is not our province. We will, however, glance at some of the more prominent authors before proceeding to the exposition of our proper subject.

Whoever has scanned the field of ancient and modern philosophy knows that it is characterized by disagreement, contradiction, and inconsistency with respect to the faculties and powers of the mind, and he has, doubtless, found himself "in wandering mazes lost," ready to exclaim with the great poet:

"Vain wisdom all and false philosophy."

Before the days of anatomy and physiology, man seems to have regarded his moral faculties as owing their peculiar qualities or phases to external impressions, or according to his will and inclinations. He divided, therefore, his intelligence into two parts—the understanding and the will. The first comprised the power of perceiving ideas, associating them, and judging and reasoning, etc.; the second was understood to be a faculty by or through which man was affected in an agreeable or disagreeable manner, and so prompted to like or dislike, and to act in accordance with such feeling. In process of time further distinctions were made. Differences of impressions made by the same thing upon the minds of different men were recognized, and faculties were designated, one after another, in accordance with the differences existing between intellectual ideas. With Plato we have the appearance of systematic doctrine. "Ideas," said he, "are everything. They form the universe, are derived from the Supreme Being, or constituted by Him, and form the aggregate of creation." Thus arose the doctrine of innate ideas. Aristotle, though a disciple of Plato, differed from him with regard to the nature of ideas. A careful anatomist, and regarding only the material aspect of things, he denied that ideas are innate. In accordance with his distribution of the brain into parts, he claimed that ideas are impressions recei ed through the senses, the understanding being likened to a smooth, waxen

tablet, or a sheet of blank paper. For many hundreds of years a conflict was waged between the followers of these two great champions; and their doctrines have found earnest friends even in the schools of our own century.

Helvetius, in the early part of the eighteenth century, taught that the mind, in both man and animals, is a blank at birth, and that all its powers are acquired by instruction. Ignoring the fact of "instinct," he said that the beaver, for instance, has no innate mental power which prompts it to build its dam; but its wonderful constructive ability is acquired by instruction from its parents. The bee is not instinctively impelled to build or to gather honey, but learns by instruction how to build its cells with the greatest economy of space and material, and how to select its flowers and gather its honey. The fox hunts because it has learned hunting from its parents. The bird sings and builds its nest in consequence of instruction; and man becomes man by education.

The Scotch writers, whose vigor and brilliancy contributed to make the last century an era which will be ever memorable in the history of intellectual philosophy, endeavored to found their systems upon common-sense, and so pass in review the qualities and suggestions natural to man—as love, hatred, the sentiments of justice, veneration, admiration, the feelings of fear, courage, etc., and admit them to be primitive faculties or impulses of themind. The Edinburgh school comprised such men as John Hutchinson, Thomas Reid, Dugald Stewart, Lord Kames, and Thomas Brown, who contended against the skeptical views of the German writers of the period. The most notable of the latter are Kant and Hegel. Kant, in his "Critique of Pure Reason," says: "All our knowledge begins with sense, proceeds thence to understanding, and ends with reason, beyond which nothing higher can be discovered in the human mind for elaborating the matter of intuition and subjecting it to the highest unity of thought." The Hegelian philosophy is a jumble of speculation, in which belief in intellectual intuition is rejected. What is regarded as the German school of metaphysics owed its origin mainly to the teachings of the famous Descartes, whose inquiries into the nature of self-consciousness produced a revolution in scholastic philosophy, and yet merely changed the current of speculation.

"From the days of Aristotle to the present time," says Mr. George Combe, "the most powerful intellects have been directed with the most persevering industry to this department of science; and system after system has flour-

ished, fallen, and been forgotten in rapid and melancholy succession. To confine ourselves to modern times, Dr. Reid overturned the philosophy of Locke and Hume. Mr. Stewart, while he illustrated Reid, yet differed from him in many important particulars; and recently Dr. Thomas Brown has attacked, with powerful eloquence and philosophical profundity, the fabric of Stewart, which already totters to its fall. The very existence of the most common and familiar faculties of the mind is debated among these philosophers. Mr. Stewart maintains Attention to be a faculty; but this is denied by Dr. Brown. Others, again, state Imagination to be a primitive power of mind; while Mr. Stewart informs us that 'what we call the power of Imagination, is not the gift of nature, but the result of acquired habits aided by favorable circumstances.' Common observation informs us that a taste for music, and a genius for poetry and painting, are gifts of nature bestowed only on a few; but Mr. Stewart, by dint of his philosophy, has discovered that these powers, and also a genius for mathematics, 'are gradually formed by particular habits of study or business.' On the other hand, he treats of Perception, Conception, and Memory as original powers; while Dr. Thomas Brown denies their title to that appellation. Reid, Stewart, and Brown admit the existence of moral emotions; but Hobbs, Mandeville, Paley, and many others resolve the sentiment of right and wrong into a regard to our own good, perception of utility, and obedience to the Divine command."

Thus, after the lapse and labor of more than two thousand years, philosophers are not yet agreed concerning the existence of many of the most important principles affecting the intellectual powers of man.

If we inquire into the causes of these conflicting theories, and the barren results which have attended the study of mind in the past, we shall find its explanation in the methods of investigation which have hitherto been employed. Anatomists and physiologists have dissected the human body, analyzed its various systems, and discovered the functions of nearly all its parts. The knowledge which they have obtained of the physical system by material appliances is precise and definite; so that there is now a general agreement in regard to the fundamental principles of physiology. But the mind is not subject to such methods of investigation. They who taught that the brain is the seat of three general faculties of the internal sense, were never able to discover by dissection either common-sense, or phantasy, or memory slumbering within its ventricles.

Nor were those who taught that the passions had their seat in the thoracic and abdominal viscera ever able by dissection to find any traces of courage in the heart or anger in the liver. No anatomist, by the most skillful use of the scalpel and the microscope, has been able to discover the function of an organ from an examination of its substance. Lay before an anatomist the nerves of the five senses, and by nothing in their structure or substance would he be able to determine which was the nerve of taste, which of hearing, which of smelling, which of sight, or which of feeling. He might, indeed, after having learned the purposes which the eye, the ear, the heart, or the stomach subserved in the animal economy, be able to trace out in its form and structure its complete adaptation for its purpose, but never would he be able to discover its function from a mere examination of its material parts. How utterly impossible, then, must it appear to discover the nature and powers of a subtile, intangible principle, a thought, an emotion, from an examination of the cerebral tissue!

Philosophers have pursued the study of mind by different methods. but generally have endeavored to shut out the material world, and to shut the mind in upon itself, and thus make its personal phenomena a study. By reflection on consciousness, they have attempted to analyze the mind and resolve it into its elements. But reflection on consciousness can not reveal the function of an organ, the processes by which thought and feeling are elaborated, or the means by which the internal operations of the body are performed. Consciousness does, indeed, localize the mind in the brain, but it gives us no idea of the functions of its different parts. We will to move an arm, but we are not conscious of the nervous influence being transmitted to and from the brain along the nerves of feeling and motion. We see, we taste, we smell, we hear, but consciousness gives us no knowledge of the location or the condition of the nerves of the senses, nor does it reveal the changes which they undergo in the performance of their functions. If we ignore the influence of organization in the mental manifestations altogether, and undertake to resolve the mind into its elements by reflection on consciousness, the imperfections of the individual mind of each philosopher would naturally appear in his system.

This is actually the case; most of the writers on mental philosophy have given to the world systems or doctrines which are little more than reflections of their individual modes of thought and feeling; hence the great diversity of opinions which characterize their works.

Whatever may be the original powers of mind, or their means or mode of manifestation, it is evident that men differ widely in disposition and capability. Some are selfish, others are generous; some are penurious, others are liberal; some are passionate, others are mild and pacific; some are ambitious, others are deficient in aspiration; some have a delicate sense of truth and justice, and others ar influenced by these sentiments in only a feeble degree.

We observe also that one individual has a peculiar talent for mathematics, another for music, and another for drawing and penmanship. One is able to express his ideas with great fluency, and another passes for a dullard in society because of his inability to give his thoughts expression. The style of one is concise, harmonious, and abounding in well-chosen illustrations; that of another is dry, diffuse, obscure, and lacking in grace and beauty. One loves to reflect upon the deep and hidden things of nature, and to trace phenomena back to the causes in which they originate; another readily discerns the mechanical adaptation of things, and shows peculiar skill in the employment of tools and machinery. It would be natural that those characteristics which are strongly manifested in the mind of any individual would appear to him to be the direct result of innate and original powers, while those sentiments which he experienced in a feeble degree would appear to him unimportant or scarcely existing in the mind at all. This is another explanation of the diversity of opinion among philosophers in regard to the original powers and faculties of the mind.

If it is said that the common consciousness of mankind must be the criterion in all disputed points, the question occurs, What is the common consciousness of mankind? If, after the lapse and labor of more than two thousand years, there is yet no unanimity among philosophers concerning the most important principles affecting human action, how futile must be the attempt to reconcile conflicting opinions in regard to the principles of mind by an appeal to universal consciousness. So long as men differ in mental constitution, there can be no universal criterion in regard to the primitive faculties of the mind derived from reflection on consciousness; and hence the impossibility of building up a science of mind which shall be universally accepted by such a method of investigation.

In the construction of the system commonly termed Phrenology, the study of mind has been pursued in a manner very different from any which had been hitherto employed. Its deductions rest on a foundation similar to

those of the purely physical sciences. No one previously to experience would be able to predicate the qualities which the oak or the pine possessed. But after many observations, the conviction would be irresistibly forced upon him that there is a law inherent in the constitution of each which determined its peculiar qualities, and ever afterward he would be able to predicate those qualities of the pine and oak with confidence. By this method of observation and induction, the sciences of botany, chemistry, geology, astronomy, etc., have been evolved; and we claim that this method of studying mind is the only one which can give a universally accepted basis for a system of mental philosophy.

In regard to the questions which have been raised concerning the substance or essence of mind—whether it is material or immaterial, or how the spirit and the body are united—our philosophy is silent. We study mind only as it makes itself manifest through the physical organization. Observation shows that there is a concomitance between the vigorous manifestation of certain traits of character and a large development of certain parts of the brain. And wherever we find a large development of a cerebral part, we infer that there must be a correspondingly vigorous manifestation of the mental characteristic peculiar to it; and wherever we find the trait of character strongly manifested, we infer that there is a large development of the cerebral part. But back of this reciprocal relationship between the mind, the vital entity or influence, and its material organ, we do not, can not go. Nor is it necessary. We have perceptive faculties which enable us to observe the facts, and reasoning faculties which enable to trace out their relations; but we have no powers, so far as human intelligence has been able to discover, by which we may study mind as a spiritual existence. Indeed, the sphere of investigation indicated by our subject is wide enough to enlist the best resources of the intellect; and should we attempt to answer the questions concerning the essence of mind and the nature of its connection with the body, we would be likely to contribute only to the great mass of indefinite and unsatisfactory speculation.

(*To be continued.*)

H. S. D. & J. McN.

## GROUNDWORK OF POLITICAL HEALTH.

THE few are in possession of knowledge which, if made public, would tend to remove the dams that now lie in the stream of good, diverting undue proportions of it to individuals. Equalizing labor is the first step in all equity. No general health of body and mind is attainable without a system of industrial education based on the great natural truths of existence. The data bearing upon this system are carefully ignored by most of the systems of education now in vogue.

Free exchange—not only of the commoner necessaries of life, but of knowledge—is the great desideratum. The moral strabismus which permits the indirect and covert robbery of labor is a constant bar in the way of the dissemination of knowledge. Until this is removed by such changes in educational matters as are necessary, progress is impossible. We must make up our minds to call things by their right names. Now, robbery is known as "finance," and so on through the whole vocabulary. These may be unpleasant truths, but they are necessary to the attainment of the conditions required for general health. All skirmishing around the subject will never reach the desired end. We are no iconoclast, but we do sincerely desire every one to have and enjoy the blessings of bodily health, and this can not be so long as the monopoly of knowledge is permitted. Agricultural schools will not avail, either, until youth are taught to cease farming out of each other's misfortunes and come back to first principles, *i. e.*, the tilling of the soil. Knowledge is bound by a golden chain. To sever this bond is undoubtedly a herculean task; but let us gird ourselves for the work!

It is of no use to kill the goose that lays the golden egg; in other words, those who undertake this work must subsist! This all will admit. The question arises, How? This is the question I am endeavoring to give a practical answer to in my own way. Long ago it was seen that this question of bodily health was a fundamental one, and labor in proportion has been given to it. The old adage that the doctors disagree, will hardly apply in our case, for we carefully wash our hands of all doctrines. This is a matter which, if it ever be elucidated, must be done by work, not by doctrine. And nothing short of the combined co-operation of all workers will accomplish it. Doctors of every name and nature are only stumbling-blocks in the way of progress, simply because their profit now lies in the line of disorder. This is certainly plain. However mortifying this fact may be to the professional classes, is it not better a thousand-fold to have the fact made evident than to go on straining at a rope that is fast to ourselves? Happiness—*happiness* is what we all are seeking! Then clear the track, ye fossils!

"Survival of the fittest" is no longer left in doubt; that son or daughter of earth who comes nearest taking root in the mother's breast will undoubtedly survive—not as a parasite, however! The "vine and twine" business has become too transparent to find adherents, however poetical it may be. But it must not be inferred that the amenities of existence are to be dispensed with. On the contrary, the love principle has full play and scope Heretofore it has been cramped and hedged about. It is the letting loose this principle that brings the humanities into use—taking the place of other coin and forming a circulating medium most glorious. Gold and silver have been useful, but have had their day. True civilization demands the relegation of power to legitimate hands, and the destruction of the myth of money as known heretofore. The time is not far distant when the superstition of money, as now holding, will be the most ridiculous of fancies—useful as it may appear at present. When that time arrives, patent medicines, along with all other patents, will be abolished, and the coin of good will be sufficient to purchase all purchasable commodities.

F. M. S.

THE SCIENCE OF HEALTH

It is only by training all together—the physical, intellectual, and spiritual elements—that the complete man can be formed.

## CROUP--ITS NATURE AND SYMPTOMS.

WINTER with its severities of change and exposure is at hand, and with it has come anxiety to many parents. The word Croup has now a special terror to their ears, and like the sword of Damocles, suspended over the heads of their beloved, seems this too fatal malady. Whoever has seen a croup-sick child knows this fear to have good warrant. But as uncertainty burdens the mind a great deal more than certainty—even the certainty of a fatal termination—the fear of this disease is greater than it need to be.

Croup attacks mostly young children and very seldom grown-up persons. In many cases several phenomena precede the real attack of the disease, and these phenomena vary so much that it is impossible to predict by them always the real nature of the malady. Children sometimes feel for one or more days much inconvenience in swallowing; may complain of pain like to that occasioned by pressing a finger slightly against the larynx, or the organ of swallowing; the voice may become hoarse, and there may be a cough, either dry or accompanied with expectoration. These symptoms may occur without being followed by a croup attack, so that a physician can not assure a mother merely from them that the so-much feared disease will follow. Precaution at this time is necessary, for these symptoms indicate sickness, and there should be the observance of such dietetic measures as may tend to relieve the stomach and lymphatics, and this simple course often obviates the approaching disease. Taking care to keep the child in a temperate, dry, and well-ventilated room, with his feet and abdomen well warmed, is found in most cases effective as a protective when the early symptoms have appeared.

An attack of the croup usually happens at night. Out of a seemingly quiet sleep the child starts up suddenly with a shriek or a dry cough; this cough usually ensues with a certain vehemence, and the single attack

*Fig. 1.*

Interior of nose, mouth, and throat; *a*, the part of the throat between the nasal cavity and œsophagus, which in *b* is continued; *c*, the uvula; below and behind is the left tonsil; *d*, fold of the soft palate; *e* below is the larynx; in the larynx the ligaments of the left side; below the epiglottis is the trachea with the thyroid gland.

lasts, as with the whooping cough, for some time. The sound of the cough is peculiar—rough, hollow, hoarse, yet with a metallic hardness. The sound resembles now the barking of a dog, then again the crowing of a cock. The sound of the cough itself, occasioned by the violent expulsion of the air of the lungs, resembles the barking of a dog; the sound which is similar to the

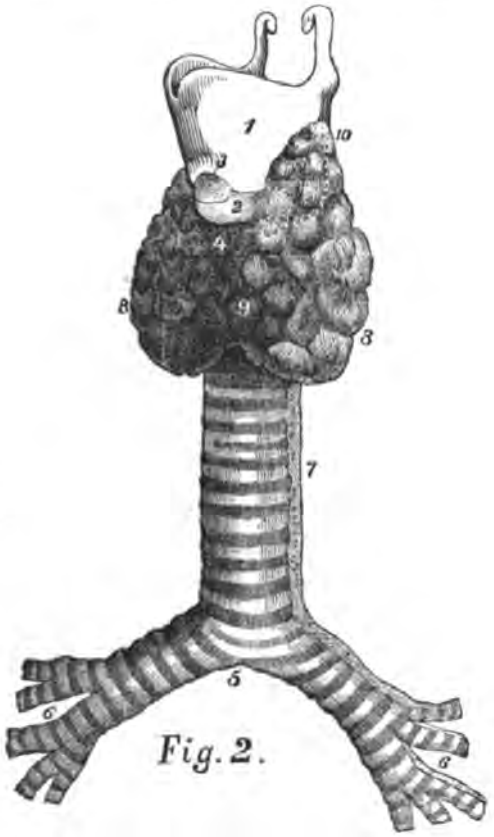



Fig. 2.

The larynx, 1, 2, 3; thyroid gland, 8, 9, 10; the trachea, 7, which branches at the lower end, 5, and ramifies in the lungs, 6. Seen from the left side.

crowing of a cock is due to the obstructed inhalation.

In very rare cases the croup-cough in its first attack may endanger the life; it is the immediate precursor of the disease, which the following night, and sometimes even at the same hour, will break out and develop its danger. The cough must therefore be considered as the most impressive warning. A tendency toward mending is usually indicated by vomiting; if the child vomit after the first attack, then the disease is usually broken, and recovery follows. If in vomiting particles of a thin and loose skin are thrown out, then the sickness is true croup; but where this is not the case, it is only one of many disorders of the larynx which will produce similar appearances. After vomiting, the cough will lose its barking and


Fig. 3.

Part of the windpipe from behind with the ends of the horseshoe-like cartilage; 1, 1, 1, the cartilages lying between; 5, the back wall of the windpipe, with its longitudinal fibers, 2, and oblique muscular fibers, 4; small glands below, 3.

metallic sound, the inhalation become easier, the voice get louder and less hoarse. But if the attack should be more violent, and should return the following night, the distress of the little patient is increased in consequence of the impeded respiration and the danger of choking. The distress of the very sick child is a sad spectacle; now it lies on this side, then on the other; now it sits up in its bed, then it bends forward; then again it throws itself upon its back and tosses convulsively; it throws the head backward to breathe, and gasps with all its

Fig. 4.

A piece of the membrane of the windpipe prepared anatomically.

might. The nostrils expand with the greatness of the respiratory effort; and under the skin we can see the larynx drawn up and down, and the little hand of the patient grasping it as a sign of pain. The eyeballs

seem to stand out and are painfully distorted; the face is turgid, now dark red, even violet, then again pale; the lips are bluish; the voice becomes hoarser, and at length an expression of indifference shows the last degree of exhaustion. At this stage, however, recovery may set in, if vomiting voluntarily appear or is produced by mechanical

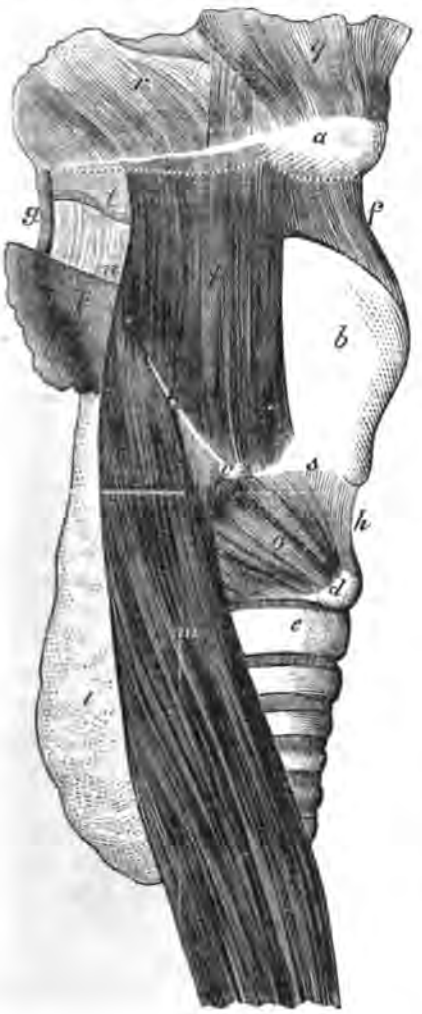



*Fig. 5.*

*a*, the hyoid bone; *b*, the larynx, and *e*, the windpipe, seen from the right side; the muscles, *g*, *r*, by which the hyoid bone is attached to the lower jaw; *m*, muscle attaching hyoid to the breastbone, or sternum. In front is *l*, the thyroid gland cut off, and under the muscle, *m*.

means. After vomiting, relief immediately follows, and the weak or almost extinct voice reappears; this relief is, however, not always recovery, and great care is still necessary in the further treatment. In most cases a recovery can be procured by proper treatment and carefulness of the nurse, although the child will be short-winded and weak for several days, a condition which is to be attributed to a resultant weakness of the lungs.

2. The most usual cause of croup is a cold which has settled in the throat; this cold may be brought on by unsuitable clothing, as well by the faulty habit of wrapping up children at one time too closely in shawls and furs, as by letting them go with insufficient protection against cold. Children who wear, as a rule, only a light wrapping about the throat, or none at all, will seldom or never be attacked by croup, as hardiness is the best preservative. In other cases the disease is brought on through the inhalation of cold air and simultaneous wetting or chilling of the feet and insufficient warming of the abdomen; it is also the attendant of scarlet fever, measles, and inflammation of the throat. Stomachic disorder renders a child more liable to contract cold when other conditions are present.

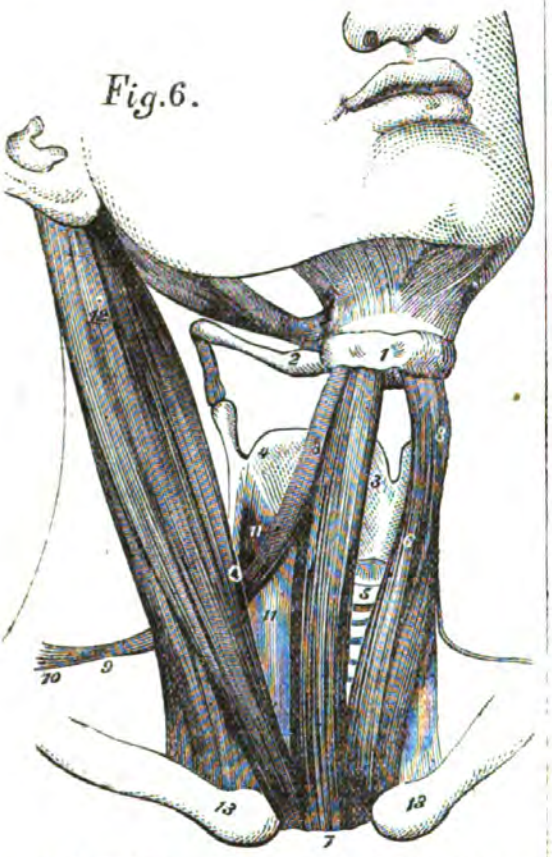
Real croup or croupous inflammation of the larynx is, as already mentioned, extremely rare, and many much less dangerous illnesses are confounded with it. Among these are catarrh of the larynx and windpipe, which shows at the beginning symptoms of croup, but ends more quickly and turns into a slight cough; it is not usually accompanied with danger.

Cramp of the glottis consists in its contracting, in consequence of a dense conjunction of the vocal chords. This disorder is very much like the croup, but is not accompanied by cough or fever, nor is the sound of the voice and the respiration before and after the attack in any way changed. Light attacks are not at all dangerous, but choking is sometimes to be feared in violent attacks.

3. Such applications as will produce vomiting are remedial in croup; a warm bath, either by the use of vapor or water, with manipulations, tend to relieve the surcharged mucous passages. In desperate cases, where the danger of choking is very great, a surgical operation called tracheotomy, or

opening the windpipe below the larynx, is sometimes resorted to. This operation consists in a longitudinal cut, which is made in front of the throat through the skin into the windpipe, either above the thyroid gland or

Fig. 6.

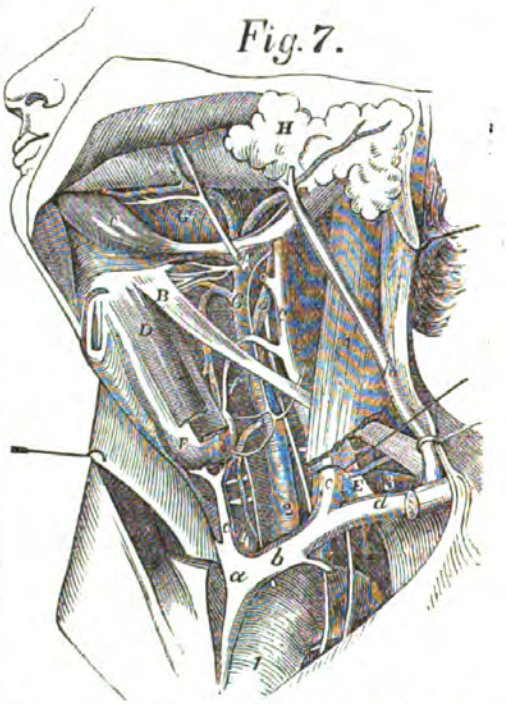


The hyoid bone, 1, 2, seen from the right side; the larynx, 3, 4; the windpipe, 5; muscle of the sternum, 11; muscles connecting hyoid bone with shoulder-blade and breastbone, 7, 8; the clavicles, 13.

directly through or below it. The wound must be kept open after the operation for breathing. For this purpose either a small silver pipe, Fig. 8, of which the outer part (*b*) is kept over the wound by means of a thread which passes through the holes in the shield; the inner pipe (*a*) may be, without molestation to the patient, at any time removed, cleaned from slimy deposits, and inserted again; an opening upward lets air pass through the larynx into the nose, and so aids the cure. Where the pipe creates too much irritation to cough, so that it has to be removed, an elastic collar (*collier dilateur*), Fig. 9, with silver hooks, to keep the wound open, will serve best.

The operation of tracheotomy will never be successful if the following rules are not strictly observed: 1. To cover the wound loosely with from eight to twelve folds of muslin, in order to carry the air warm and moist into the windpipe for inhalation; the air in the sick-room being kept warm and moist to supply to the breathing child a substitute for the warming influence of the mucous membrane of the nose. 2. Take the utmost care in the nutrition of the child to keep off inanition. Bretoneau was the first to make use of this operation; he saved the life of a girl in 1825 at Tours by its performance. Trousseau, of Paris, has repeat-

Fig. 7.



The anatomy of the throat, seen from the left side; the shoulder-muscle, B; muscle from hyoid bone to breastbone, D; thyroid gland, F; salivary glands of the lower jaw and ear, G and H; aorta, 1; the carotid, 2, with 5 its inner and 6 outer branch. On the carotid lies the nerve hyoid and breastbone muscle (hypoglossus descendens), and close behind runs the vagus nervus to the lung and stomach; the axillary artery, 3; anonyma, 4; *a*, *b*, *c*, *d*, *h*, veins.

edly performed the operation, and saved 41 out of 153 children. Gersant cured in one year six children out of twenty on whom he performed the operation. But in all

these cases more lives would have been saved had the operation been done sooner—the parents or relations of the sick being averse to the surgical knife. The wound,

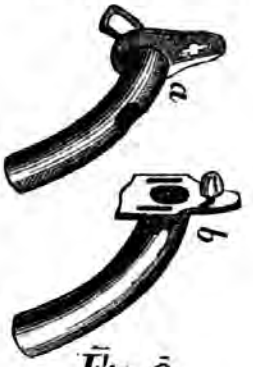



*Fig. 8.*

THE TUBE USED.

after the operation, is of no great importance, but may become dangerous if cold air enters the windpipe, causing violent cough, inflammation, and even pneumonia, or if much blood should pass into the windpipe; the last may happen, notwithstanding all precautions, because the sudden in-rush of air tends to draw it in. But this opera-

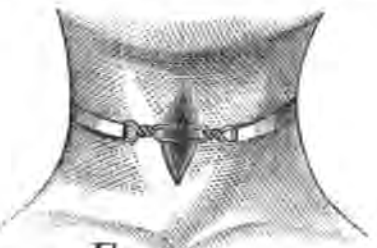


*Fig. 9.*

DILATING COLLAR.

tion is only performed to prevent suffocation, while the disease or croup itself must be treated with such means as skill and care may furnish to procure a recovery.—*From the German.*

## CONVALESCENCE.

DURING a severe illness, when the patient is not harassed by pain or fever, he occasionally experiences sensations not far removed from pleasure. His very prostration may have a certain charm about it. Rest and repose being at such times the highest objects of his ambition, when he obtains them he feels a contentment nearly allied to actual enjoyment. Some people are of opinion that even death itself, apart from the diseases which cause it, is probably an agreeable process. On the other hand, the first dawn of recovery has its pleasures. It is like waking on a summer's morning after a long night's sleep. But however delightful the transition from death to life, it heralds a period of weariness and distress almost exceeding the sufferings of the illness itself. A parallel may be found in the case of minor ailments. For instance, when the blood has been accidentally prevented from circulating freely in one of our limbs, no inconvenience is experienced; but when the vital fluid reflows, great discomfort and pricking sensations succeed. Again, the act of fainting is said to be far from unpleasant, while the resuscitation is disagreeable or even distressing. So in severe illness there may be periods of pseudo-pleasure, while the restoration to health may be irksome in the extreme. Returning strength seems almost too rough and rude a friend for the poor weak body; and if its first tenders of assistance are welcome, we are tempted to wish that it would not be quite so energetic in its later advances. Our bodies during convalescence become bones of contention between strength and weakness, each of which struggles hard for the mastery. It is disheartening after a rapid advance to find that we had overrated our powers, and to be thrown back for a week or two. As we begin to walk about a little, we become more keenly sensible of our great weakness than we were when still lying in bed; and when we throw ourselves down for rest upon an easy-chair or a couch, we draw unfavorable comparisons between their comfort and that of our bed. It would be like striking our flag to return to the latter place of repose; and we therefore remain wearily on the sofa or arm-chair until the happy

moment arrives when we can respectably ensconce ourselves between the comfortable sheets. During convalescence reading must of necessity form our chief amusement; but our brains and eyes soon weary of it. And then in our books and newspapers we read of those who are, or have been, up and doing; and this makes our own enforced idleness the more painfully apparent. Everybody seems to be at work except ourselves. Perhaps it strikes us that our confinement to the house is a capital opportunity for working up some foreign language, or cultivating some art or science. We set to work valiantly, but the grammar proves quite beyond our strength, the pencil will not bring the lines into drawing, and the scientific problem makes our heads ache. . . . . There are no limits to human folly. The patient who is sane enough in mind to be aware that he has no special genius will probably long for society. Yet when his friends come to visit him, he soon becomes intensely wearied. The callers' very anxiety to amuse without fatiguing him makes them stilted and awkward, while he has not sufficient vital energy to keep the ball of conversation rolling about conventional nothings. . . . .

The appetite of the convalescent is fitful and capricious; yet his friends insist upon stuffing him at all sorts of odd hours, as if he were destined to fill a tureen *de foie gras*. Between breakfast and luncheon he must swallow some raw meat juice and a glass of wine; at 3 P.M. he must take some strong jelly; between dinner and bedtime he has to face beef-tea, and during the night-watches he is dosed with Liebig's Extractum Carnis. An attack of biliousness soon follows, which has to be relieved. . . . . The doctor tells him that he never intended him to be overfed in such a manner, and reads him a long lecture on the incapability of the stomach to respond to too frequent calls upon its energies. In place of being overgorged, he is now overtonicked, until a buzzing in the head and sudden deafness demand rest for the system from medical pick-me-ups. There is yet one more torture in store for him. He is sent abroad. According to the time of year, a German watering-place or an Anglicized town in the south of France is selected as the scene of his banishment. The necessary arrangements before leaving home harass him beyond measure. Even were he in good health, they would prove a considerable burden. Wearied out by these preliminary worries, he starts upon a long and tiring journey, reaching his destination more dead than alive. To be treated like a child by his courier humiliates and annoys him; yet he is perfectly helpless in his hands. Likely enough, wet weather or the mistral hails his arrival. Sad, indeed, is then his lot. Confined to the house, as he lies all day in his one sitting-room, he wishes himself back in his comfortable English home, with its choice of rooms and domestic interests.—*Saturday Review.*

## CITRON FRUITS--THE ORANGE.

**A Cosmopolitan Fruit—From China and India—Seville Oranges—The Sweet Orange—Blossoms—In the Azores—The West Indies—Wholesomeness—Varieties—Dressing and Eating—The Fruit Dish.**

HERE is a cosmopolitan fruit. True, it does not grow everywhere. It could not mature its golden hues or its delicious juiciness in the cold and sterile regions of the North, but it packs its delicate flavors so safely in its double rind that they may be carried with impunity to the Arctic Circle. Besides this, it spreads so rapidly in soils and climates at all congenial, that it is naturalized in many places in and about the tropics. Many of the inhabitants of these countries find it so abundant and so luxuriant in its wild growths that they would claim it as indigenous, did not indisputable and even recent history forbid such a claim.

It has been known from time immemorial

### IN CHINA AND INDIA,

and it is believed that the Arabs first brought it from the latter country into Europe. The Chinese have long had delicious oranges, so long that their literature contains no account of their introduction. They claim it

as a native fruit, and we know of nothing to controvert the claim. How it happened that Marco Polo overlooked it we can not tell, but that does not prove that it was not there. Some of the best oranges came from China, and were long known as China oranges, both in this country and in Europe. Those first introduced by the Arabs into Spain traveled by the way of Northern Africa, and, whatever might have been their original flavor, they were bitter upon their arrival. They are known as

SEVILLE ORANGES,

from the city of that name in Spain, where they abound. Some argue that they might have been sweet once, but that their abode in Northern Africa, or rather, their route through that arid clime, produced a change. We submit that since Spain is sufficiently salubrious to produce excellent sweet oranges from proper stock, these bitter oranges ought to return to their original sweet condition after so long a residence there. But this they obstinately refuse to do. It looks very much as if they had some stronger reason than mere residence.

This variety has quite a demand in European markets for cooking purposes, but is never eaten raw. We are not aware that it has ever made its appearance in the American market; certainly it has not to any considerable extent. This was the only kind of orange known in Europe until after the year 1500.

The first

SWEET ORANGE

tree is said to have been brought from Asia to Lisbon by Jean de Castro in 1520, as a present to Conde Mellor, Prime Minister to the King of Portugal. Others claim that the tree was cultivated previously in Genoa, where, not far from this time, it attracted much attention, and whence the fruit was subsequently exported in large quantities into France, Germany, and other countries. It appears tolerably certain that the ancients could have known nothing of this fruit, for the tree is so easily cultivated, and the fruit is so delicious, that they could not have escaped the most glowing descriptions of both naturalists and epicureans. The only fruit of which the outward description at all corresponds was so acid as to be entirely unfit to be eaten, and was probably the citron.

Sir Francis Carew, a nephew of Sir Walter Raleigh, has the credit of first introducing the tree into England about the close of the same century. A grove was planted in the open ground in Surrey, where they grew thriftily, being protected by a movable covert in the winter. When about forty years old, they are said to have produced 10,000 oranges, but they were shortly afterward killed by a great frost. Trees are still grown in the open air in many parts of England, but they are usually trained against walls containing heated flues, and protected by straw mats in the winter. They often produce excellent fruit, but this is not their chief charm.

The fragrance of the

ORANGE BLOSSOMS

is such that the tree could not fail to be cultivated in greenhouses for their sale, since they can not well be imported, while the fruit can be imported cheaper than it can be raised. Home-grown orange trees are therefore chiefly prized for this purpose. The flowers grow in clusters, each blossom with from three to five petals, white or faintly tinged with pink or violet, and from twenty to sixty yellow stamens. These stamens are the only part of the entire tree which is not covered with vesicles containing an essential oil. When these stamens by culture are developed into petals, they, too, take on the vesicles of oil. These blossoms when distilled make the notable perfume known as oil of neroli, which is frequently one of the ingredients of Eau de Cologne. This, however, is mostly imported. The principal use of the home-grown blossoms is for decorative purposes, especially for the use of the bride upon her wedding day. The origin of this custom can not be traced, but it is supposed to have been at first adopted on account of the extraordinary fertility of the orange tree. We do not intimate that any such significance is attached to its use at the present day.

"Each other blossom in its hour
The maid at will may wear;
Once, only once, the orange flower
Her wreathed brow may bear."

The orange was early domiciled in the Azores, and from these largely, as well as from the southern part of France and from Italy, Europe receives the greater part of its supply. And this supply is enormous, Great Britain alone taking more than a million of bushels, and the quantity yearly increasing. If the bushel contain 650 fruits, which is a fair estimate, that makes twenty-two for each man, woman, and child in the kingdom. And it is the special treat of the children and the sick to a far greater extent than it is in this country. The small extent of the island brings all its country towns into easy communication with its seaports, and thus oranges everywhere are usually cheaper than apples, and they are eagerly sought and used. It is the only fruit, too, which can be had at all seasons of the year. These are additional reasons why it may properly be called a cosmopolitan fruit.

Our own supply comes partly from the Mediterranean, Messina oranges being noticeably cried upon our streets, but to a still larger extent from

THE WEST INDIES,

where the tree was long since introduced. Until quite recently Havana oranges have outrivalled all others in size and sweetness, but of late in our home-market they have been called upon to divide their honors with those from Florida. Not that the oranges raised in Florida are any better intrinsically, but they do not require to be so long on the journey, and therefore they are permitted to ripen more nearly before picking. For it is a fact not very agreeable in the history of orange importation, that the fruit is almost invariably picked while yet green and allowed to ripen while on the journey. Fruit so ripened the exporters in the West Indies would not condescend to eat at all. The fruit for their own eating remains on the trees improving for months afterward, but they deem this quite good enough for the foreigners whom they serve. It is true that the great mass of the fruit could not well be exported and re-shipped and kept for weeks, as it often is, in any other way. But if anything like intelligent care were taken, large quantities of much better ripened fruit could be shipped to the large seashore towns and disposed of to advantage among customers who understand the difference. It is largely because this thing is done in Florida that the tide is setting in favor of the Florida orange.

There is much indefiniteness in the common idea about the time of the orange harvest. The loose talk about seeing flowers green fruit, and ripe upon the tree at the same time, might well lead one to suppose that this tree has no seasons for special duties. This is not the case. The tree usually blossoms in February or March, according to its latitude; the fruit grows slowly, and is picked for the "foreign market" mostly in the ensuing December and January. In this case it blossoms again very profusely and bears another large crop the ensuing season. If not plucked it still blossoms and bears, though not quite so profusely, the old fruit remaining on turning color and growing more and more delicious for several months. In this early season, then, if the tree is left to itself, the blossoms, the green fruit, and the ripe can be seen on the tree all at once, but not throughout the year.

Not a few of those who wish to be careful as to the quality of their food have doubted the

WHOLESOMENESS

of the orange in our market on this account. A fruit, they have said, which is picked so green and kept so long can not be very desirable food. These queries, however, have mostly died away before the experimental proofs of its wholesomeness. Invalids and all sorts of well people eat of it freely without known ill effects. Many have gone to the other extreme and attributed to it health-giving properties, which they deem almost marvelous. For example, it is said to be a sort of insurance against disease to eat two oranges before breakfast for three months in the spring, say from March to May inclusive. We admit that such a course, if generally pursued, might turn many doctors out of employment. But is there any

peculiar charm about oranges? The terms in which the prescription are given leave you to suppose that there is—that it must be oranges and nothing else. From this we would demur. We would be quite willing to take the risk on apples, though we should prefer not to be stinted to two for the day's supply. But while we would like to have the reasons for such a prescription put on the right basis, we are constrained to admit they may be right who say "oranges" and give no reason and allow of no substitute, for half their patients would not know enough to decide what might be a proper substitute.

Another prescribed use is to cure a longing for alcoholic drinks; the sufferer must eat an orange the first thing in the morning. We have faith in the remedy, so far as it goes, but to make it effective the subject must earnestly desire to give up the drink, be determined to do so, and then the orange will be a natural help to quench thirst, to aid in healing the stomach, and to induce a wholesome tendency in the system generally. This much ought to be understood to prevent any one from supposing that it acts like a charm or philter to take away the unnatural craving. That will return again and again for some days, and if the subject understands this, instead of being discouraged, he will take another orange, and calling all the moral and social aid he can command to his help, he will be much more likely to succeed.

If in hot, unhealthy countries generally men would eat an orange in place of drinking a glass of gin, brandy, or other alcoholic liquor, the results would be most advantageous. And if some juicy fruit were eaten always in place of taking unwholesome water or any other drink whatever, the malaria of the worst localities might become almost harmless. If the water be wholesome, orange or other fruit juice mingled with it makes it very much more satisfactory, both in taste and results. If we took half the pains to provide ourselves with fruits that we do to provide ourselves with alcoholic drinks, we should soon see a beneficial change on the face of affairs.

The orange can be more

EASILY KEPT

than any of the common fruits, excepting the apple. Its naturally long period of ripening delays the danger of decay, while its thick, spongy skin, covered by a very oily layer, prevents any rapid drying. Its greatest danger is from dampness, so that dryness is the most essential condition of preservation up to the point of freezing. The temperature may even be quite warm, without much danger, provided the dryness is secure; still, cool and dry are preferable. If any in the package are decayed, remove them, wipe the others carefully and wrap them in dry paper, and you have increased their prospective keeping qualities tenfold. This is usually done by the dealers when the package is received, provided there is any call for such treatment, but a repetition at any time will not be likely to do the fruit any harm.

VARIETIES.

The varieties of the orange are numerous, and their boundaries are not well defined. Few tree fruits are so much inclined to sport. The sweet and the bitter orange seem to keep their limits well, at least in these days, but the latter has sometimes developed into the most grotesque forms. The fruit will be spotted or striped with green or purple, which will perhaps disappear as the ripening is perfected. One *Bigarade* (as the French call these bitter oranges) is described as having branches and flowers of mingled colors, with leaves of all sizes, some serrated and others smooth-edged, while the fruits were citrons and limes, sweet oranges and bitter, or the different kinds mingled in the one fruit. The tree was considered a great curiosity, and the grafts, which sold for a large sum, continued the same sporting propensity, till at last, perhaps, they would suddenly settle down after an orderly fashion and bear but one kind of common fruit.

Ordinary fruits often sport by showing small fruits within the large ones; some show a horn or several of them, and still others are deeply seamed. Of constant varieties, beside the sweet orange and the Bigarade, we have the Malta blood-orange, which, as it ripens, has the pulp stained

red. Such oranges not unfrequently appear among our market oranges and are usually considered sweeter and more delicious. The Mandarin is a small flattened orange, very sweet and of delicate flavor, the skin of which is edible, and as it ripens it becomes disengaged from the inclosed pulp. There is also a smaller Chinese orange, not much more than an inch in diameter, which we sometimes get among our candied fruits. The Bergamot orange is cultivated more for its fragrance than for the edibility of its fruit. The blossoms, though small, are extremely odoriferous, and the essential oil extracted from these and from the rind of the fruit, is known as the oil of bergamot, which is highly prized.

The *Bigarade* is the tree most cultivated for the fragrance of its flowers, and from both its flowers and its fruit are made most of the common orange perfumes, the oil of neroli, and orange-flower water. But any orange pays well for cultivation in our houses, the whole plant being fragrant and of a beautiful shining dark green. We often place the seeds in pots or in garden beds, being careful not to let them dry before planting. They do not vegetate quickly, but they are very hardy, and it pays to have a supply of the little trees to put into bouquets or to wear in the pin, the fragrance being more delicate and refreshing than that of the rose-geranium. With a little care, placing out-of-doors or on the veranda in the summer, and in the hall, bath-room, or dining-room in the winter, you may have a really handsome ornament, which will yield fragrance to your touch whenever you challenge it. If you wish it to blossom and bear fruit, the greenhouse gardener will graft it, and it will give you probably more satisfaction than most other plants. The orange and the lemon can be distinguished by the leaves; the former having a winged petiole, while the petiole of the lemon is naked. An orange graft, however, will readily grow upon a lemon tree. The shaddock has also a winged-leaf stalk like the orange.

The orange tree is of long, slow growth, and it commonly lives to the age of from one to two hundred years, the fruit increasing in quality and quantity with the age of the tree. The fecundity of the orange tree is wonderful, five or six thousand being a common number to pick from each tree every year, while the number in St. Michael's has been known to go as high as twenty thousand. Some have lived from about the time of their first introduction into Europe until the present century. The wood of the orange is firm and handsome, and was formerly much used in cabinet work.

The manner of

### DRESSING AND EATING

the orange does not admit of very great variety. At least this much we may say, it is almost invariably eaten uncooked. We scarcely recall any other fruit that is so utterly spoiled by cooking as the orange, and in truth very few attempt it. I have seen men recommend an "orange pie," and, indeed, if the crust could be first cooked, as in case of strawberry shortcake, it might do very well; but attempt to apply heat to the fruit, and the delicious flavor would be more volatile than that of the strawberry. The Seville orange is often cooked, and so is the sour orange of our own market, but both with the addition of the skin in some shape, and that is the item mostly desired. In most cases, too, the juice is expressed; it is very rare, indeed, that the fruit is cooked as we cook apples or peaches, and then but very slightly. An excellent pudding sauce may be made by pouring a boiled thickening of Graham flour and water of the required consistency into the expressed juice and pulp of sweet or sour oranges, or both mixed, and then sweetening to the taste. But you have only to boil this to spoil it. There are, doubtless, many ways in which orange juice may be used to advantage in uncooked dishes, as, for instance, in a dressing for sliced bananas. Quite a showy and palatable dish may be made by alternating grated or desiccated cocoanut and cut orange in a glass dish. Sliced orange with juice makes an acceptable dressing for boiled rice, put into presentable shape, as an orange lily; and crushed pearl barley might be treated in a similar manner.

But anything that is made up so perfect

and so delicious as the orange, should seldom be tampered with. I always begrudge the juices for the pudding-sauces, the lilies, and the bananas, unless I save them from broken oranges, not presentable at the table, wherein is a hint for economy in great houses, if not in small ones.

THE FRUIT DISH

is their proper place, either by themselves or with other fruit, the latter preferably. Most people now cut down the rind in segments and peel it off, either before it is served or afterward, leaving the country-bumpkin to slice it whole, and to the school-boy to make a hole in it and suck it dry. If not very juicy, however, it can be cut in quarters or eighths and delicately peeled out without much waste. The most satisfactory method, however, is to separate the peeled fruit into segments and to take them one by one without the loss or the dripping of the precious juice. If the skin of the segments be very thick, it may be quietly rejected, but usually a good set of teeth will readily dispose of it. Eat deliberately, and enjoy it all the more if you can share it with one sufficiently intimate to accept such an offer. Let the skins, the rejected wrappings, go out with the plate. Be content to admire them after they have done their work so well; a hygienist wants nothing more of orange peel. Gather up the pips and plant them around the rim of some flower-pot where there is room. It will make a moment's occupation quite in harmony with the satisfied, pleasant condition of the inner man. When the sun smiles upon them it will call out tufts of glossy, fragrant leaves, pleasant reminders of a pleasant moment; and you turn away thankful to the kind Hand that so fitly fashions the beautiful and the delicious to meet both the eye and the taste, and feeds you with "food convenient" for you.

JULIA COLMAN.

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THE WARM BATH IN PUERPERAL FEVER.—Dr. Konitz saw, that during an epidemic of puerperal fever, several women took a warm bath immediately after their lying-in, and remained perfectly healthy. In Southern Russia it is the custom that every woman takes a warm bath after her confinement, and then is brought in a clean, warm bed. It can not be denied that such a purifying bath is decidedly refreshing, and it would be therefore advisable, not only to adopt such a plan in private practice, but to attend to it carefully in lying-in asylums, especially when infectious diseases are around. —*Allg. Med. Centralzeit.*

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## DEAD DRUNK.

I HEARD the words and a jeering laugh;
I looked, and a youthful form
Across my pathway lay stretched and still,
Its life-pulse beating warm.

And this was a man! I paused to think.
Ah, where was the manhood then?
It was warped with lethargy, strangled
With rum, which numbs the souls of men.

He had a mother, a wife, a child,
Unto him was fortune kind.
Rich blessings awaited his garnering,
If he had but been inclined!

His heart was good, but his courage weak,
And strong drink bore him down,
Inch by inch, till it laid him low
At the feet of the busy town.

The son, the husband, the father—he,
Bound close by the ties of earth
In tenderest bonds of relationship
To those of virtuous worth.

And should we pass this drunken sleep,
With only a careless word—
Deaf to the groan of a chained-down soul
The living God has heard?

Should we let the poison cup pass round
A land that is ours in trust,
Till it blights and drags dear human-kind
Groveling into the dust?

Shall we, when God in His own good time
Asks our brother at our hand,
Reply, "We are not his keeper, Lord,
He is dead drunk on the sand?"

There are Cains enough. Let us blot the brand,
And gather the weak ones up
Into the ranks of the Temperance van,
Away from the baneful cup.

Let us spill the contents and break the cup,
Though difficult task it be,
The right is with us and must succeed
Through faith and persistency.

S. L. OBERHOLTZER.

# NOTES IN SCIENCE AND AGRICULTURE.

**Arctic Coal.**—English reports state that coal has been found in latitude 81° 44′ north and 65° 3′ west, now known as the Discovery Bay. It was found in the side of a narrow mountain gorge. The prevailing rock of the surrounding district was a shining claystone of an irregular arrangement, but mainly dipping to the westward, and so far as could be ascertained, devoid of fossils. Vegetation included no less than sixty species of plants. Coal had been brought home on previous expeditions from high latitudes, but not so far north. The coal (specimens of which were exhibited) has a bright, shiny appearance, is somewhat of a pitchy character, and very brittle. On analysis it could not be distinguished from a bituminous coal of exceedingly good quality, and belongs to the true carboniferous period. It is very similar to coal found in some English coal fields, and particularly in Chesterfield.

**A correspondent of the Rural Home**, speaking of the benefit which birds render the farmer, says: "On Thursday last, while at work near a wheatfield, my attention was called to the fact that some of the wheat had been picked from the heads in certain parts of the field. As my neighbor seemed to think that the mischief was done by yellow birds, I procured a gun and killed one of the supposed offenders. Although interrupted while taking his breakfast, we found in his stomach only three grains of wheat, and by actual count 350 weevils."

**Reclaiming the Everglades.**—It is proposed now to turn the historic everglades of Florida into fruitful fields. A writer in the *Engineering News*, says that it has been for some time known that the surface of the everglades is elevated between four and five feet above the waters of the ocean, and the scheme of draining this immense territory has been advanced. There is some prospect of the realization of the project, as parties in New York, representing abundant capital, have taken hold of the matter, and an engineer has been employed for some time making investigations. This is a subject that will well repay examination, for here are 5,280 square miles of the richest land in the world, capable of raising $600 worth of sugar per acre, without any fertilizers. This land, once drained, would far exceed in value the *polders* of Holland, owing to its semi-tropical position and its adaptability for the raising of bananas, sweet potatoes, and all tropical fruits. The report of the engineer making the preliminary survey is looked forward to with lively interest by all Floridians and others who are aware of the capabilities of this region.

**Ptolemy's map of the world,** made in the second century of the Christian era, contains some bits of geographical information which must dampen the enthusiasm of many on the score of recent discoveries in Africa. Recent examination of one of the few copies extant shows that the great lakes, which English and American travelers have proved to be the sources of the Nile, are set down as such on Ptolemy's map. The inference is that the world of that age knew even more about the sources of the Nile than the present age, until Stanley and others explored its course.

**The Cave-Dwellers.**—According to *Nature*, Dr. Mitchell, of Edinburgh, places the cave-man in the bone rather than the stone age. His weapons were made of bone or horn, and highly finished, while his stone implements were extremely rude. The art faculty and the cranial developments of the cave people, show that they possessed a high capacity for culture.

**Satellites of Mars.**—The *Free Mason* of London, in giving an extended notice of the discovery of the moons of Mars, August 16, 1877, brings forward an account of the prediction of the existence of such satellites by a man in England twenty-three years ago.

"The Americans are justly very proud of this discovery, and our country may justly claim a share of the honor, for Dr. Bedford, the founder of the 'Bedfordian system of Astronomy,' has been urging upon astronomers who possess powerful telescopes, for the last twenty-three years, to look for these satellites in the following words (copied from page 13 of his 'New Theories of the Universe,' published in 1854, bearing date October 17): 'The earth having a satellite, and its mass projected from the sun being less fluid than Mars, and yet capable of projecting her moon, I am confident that such an appendage will also be found to Mars; in fact, I should not be surprised if Venus and Mercury completed the uniformity throughout our system of primaries and satellites, although their satellites would be very small.' The author of these theories also predicted the discovery of cometic systems—comets revolving around comets years before any telescope discovered them; and among other startling announcements, asserted that our world in its infancy was a comet, and that our solar system was originally a cometic system; and this is now acknowledged by Mr. Lockyer and other eminent astronomers."

Mr. L. N. Fowler, now in London, examined, at a public lecture, the head of Dr. Bedford, as a stranger, more than a year ago, and declared him as very fond of science, especially mathematics and astronomy Dr. Hall's discovery is bringing the aged Dr. Bedford and his prediction into pleasant prominence in England. Many thought him a dreamer who now delight to do him honor.

**Effect of Rain on Fertility.**—The question is often asked, Does not the rain which falls on the land leach out the organic constituents of the soil? To this it may be replied that if they are contained in excess, drenching rains undoubtedly do so to some extent; but these constituents are seldom found in such excess as to be carried out by rains. In a soil well drained and friable, water has less effect in carrying away such constituents than in soils where it is longer held. And in such land the water gives up to the soil ammonia, potash, phosphoric and silicic acid, which it holds in solution. In relation to this question Liebig says: "Rain water filtered through field or garden soil does not dissolve out a trace of potash, silicic acid, ammonia, or phosphoric acid. The soil does not give up to the water one particle of the food of plants which it contains. The most continuous rain can not remove from the field, except mechanically, any of the essential constituents of its fertility."

**The Toad in the Rock.**—Of the many stories told of finding toads inclosed in the solid rock, none have hitherto been authenticated to the satisfaction of scientific men; but *La Nature* considers that the following case, reported by one of its correspondents, is well vouched for: "In the building of a new chateau in the department of Aisne, materials from the old chateau were used as much as possible. This building dated from the end of the seventeenth century. One piece of stone had in the middle of one side a large moist portion; it seemed otherwise sound. The stone was sawn to remove the moist exterior (the moisture was attributed to a flow of water into the stone in the old building), and was put in position in a window. Time went on, and the stone (much to the builder's disappointment) did not dry, but presented a villainous contrast with its surroundings. It was at length decided to remove and sacrifice it, in order to find out the cause. On sawing right through the moist part, a large, irregular cavity (about 0.15m. in all directions) was found in the center, and in this cavity an enormous live toad, which by squatting had escaped the saw!"

**Selecting Fruit-Trees.**—In selecting fruit-trees, or any others, be careful to choose those with smooth, healthy-looking bark, which have entirely shed their leaves. Trees on which the leaves remain after frost sets in, and stick to the branches, may be regarded as not healthy, and in some way lacking stamina."

**Experiments with the Turkish Bath.**—Some interesting observations were related at the last meeting of the British Medical Association, by William James Fleming, M.B. (Glasgow). These experiments were performed by the author upon himself, and consisted of observations on the effect of the Turkish bath at temperatures of from 130° Fah. to 170° Fah., upon the weight, temperature, pulse, respiration, and secretions. The results showed that immersion of the body in hot, dry air produced loss of weight to an extent considerably greater than normal, amounting, on the average, to the rate of above forty ounces an hour. This was accompanied by an increase in the temperature of the body and a rise in the pulse rate, with at first a fall and then a rise in the rapidity of respiration. The amount of solids secreted by the kidneys was increased, and coincidently the amount of urea. The sweat contained a quantity of solid matter in solution, and among other things a considerable amount of urea. The most important effect of the bath was the stimulation of the emunctory action of the skin. By this means the tissues could, as it were, be washed by passing water through them from within out. The increased temperature and pulse rate pointed to the necessity of caution in the use of the bath when the circulatory system was diseased.

**Education in New Jersey.**—The school moneys of New Jersey are reported as amounting to $2,050,889.01. Her school property is valued at $6,518,504. The school population numbers 318,378; the number enrolled is 198,709, and the average attendance 72,197. The private schools have about 42,208 pupils. There are 954 male teachers and 2,356 female teachers. The former receive average salaries of $63.78 per month; the latter $37.04. The cost of education per capita is $14.61 per annum.

**Protection to Fruit and Vegetables.**—Too little care is taken to secure the keeping for convenient use of our vegetables and fruit in the winter months. A frost-proof house may easily and cheaply be made by making the walls double of boards and filling in between with some sawdust or spent tan-bark. Put the boards on jointed closely, tongued and grooved is best inside and out, and especially on the outside, nailing on to 2 x 6-inch studding. Make the windows double sash and glass, fitting tightly, and put in a double door; that is, one inside and one outside of the wall. The ceiling must also be double and filled in with the same material. The floor may be the ground, or what is better, made with gravel and cement. The earth should be thrown up around the building and drainage given to carry away the water that falls. A house eight or ten feet square, seven or eight feet high inside, with shelves all around to hold fruit and vegetables, would be a luxury. It will keep the frost out in winter, and be cool in the summer.

**The Great Wall of China.**—The Great Wall of China was measured in many places by Mr. Unthank, an American engineer, lately engaged on a survey for a Chinese railway. His measurements give the height at eighteen feet, and a width on

top of fifteen feet. Every few hundred yards there is a tower twenty-four feet square, and from twenty to twenty-five feet high. The foundation of the wall is of solid granite. Mr. Unthank brought with him a brick from the wall, which is supposed to have been made two hundred years before the time of Christ. In building this immense stone fence to keep out the Tartars, the builders never attempted to avoid mountains or chasms to save expense. For 1,300 miles the wall goes over plain and mountain, and every foot of the foundation is in solid granite, and the rest of the structure solid masonry. In some places the wall is built smooth up against the bank, or canons, or precipices, where there is a sheer descent of 1,000 feet. Small streams are arched over, but on the larger streams the wall runs to the water's edge, and a tower is built on each side. On the top of the wall there are breastworks, or defenses, facing in and out, so the defending forces can pass from one tower to another without being exposed to any enemy from either side. To calculate the time of building, or cost of this wall, is beyond human skill. So far as the magnitude of the work is concerned, it surpasses everything in ancient or modern times of which there is any trace. The Pyramids of Egypt are nothing compared with it.—*London News.*

**An Icelandic Newspaper.**—A type foundry in St. Paul has lately furnished the types for the *Framvavi*, an Iceland newspaper, to be published in the Icelandic colony at Keewatin, on the Red River, in British territory, about sixty miles from Fort Garry. This will be the first newspaper published on the American continent in the Icelandic language. The preparation of the types required the greatest care. They are in the Roman alphabet, but with a great many peculiarities in regard to accentuation, and are of a very antiquated form. The Icelandic language is something like the Norwegian language as it was spoken about 1,000 years ago.

**A small piece of ground can be** made to yield a great deal. Some of the Western States show great results from tillage. For instance, it is stated in the Greeley (Colorado) *Tribune* that a little plot of ground 100 x 160 feet in size has this year produced 1,110 quarts of strawberries, 125 large heads of cabbage, several bushels of peas, a quantity of tomatoes, beans, corn, raspberries, grapes, crab-apples, and some garden stuff. Mr. Hotchkiss, the owner, fertilizes highly, and therein lies the secret of his success.

**Status of the Larger Planets.**—Professor R. A. Proctor adheres to his view that Jupiter and Saturn are hot planets. This view has been attacked by Professor Vogel in an essay describing researches with the spectroscope as to the light of those planets, researches which have won for Professor Vogel a prize from the Copenhagen Academy. The attack was based on the evidence that the spectra of bands and lines in those planets were similar to those of our own atmosphere, occasioned by the presence of aqueous vapor. Professor Proctor argues with force against the conclusion that aqueous vapors constitute the chief envelope of the larger planets. According to the accepted theory of their formation, those planets are practically much younger than the earth, and they, Professor Proctor shows by estimate, have not yet had time to cool their enormous bulk. Their lack of density can best be explained by supposing that their condensation is still prevented by internal heat. Such atmospheres as they evidently have, would be, unless continually expanded by heat, compressed and solidified by the gravity of such great masses. The cloud-belts present aspects and changes which can be explained best if we believe that they exhibit the surface of up-rushing heated vapors, with cloud-like summits. These clouds and belts bear no relation to the diurnal or annual exposure of the surface to the sun's rays, and hence their changes must be referred to local causes. The outlines of these planets have frequently been noticed as varying from a circular form, and a satellite occulted by the edge of the planet has reappeared briefly, just after concealment; such facts may be readily explained if the surrounding atmosphere is more than 2,000 miles deep and is subject to great mutations. Finally, the light of the planets is two and a half times greater than that which pure white sandstone would reflect; hence it seems probable that they produce light. Professor Proctor thinks that those planets will not be in a condition to support life for many millions of years.—*New York Tribune.*

**Dean Swift as a Scientific Prophet.**—The *Journal of Chemistry* has received the following note from Dr. Robert Reyburn, of Washington, D. C.: "In the recent accounts of the discovery of the satellites of Mars, we have not seen any reference to the curious and remarkably accurate statement made by Dean Swift in his celebrated satire of 'A Voyage to Laputa,' published in 1726. It may be found in the third chapter of this work, and reads as follows: 'They have likewise discovered two lesser stars or satellites which revolve about Mars, whereof the innermost is distant from the center of the primary planet exactly three of his diameters, and the outermost five; the former revolves in the space of ten hours, and the latter in twenty-one and a half, so that the squares of their periodical times are very near in the same proportion with the cubes of their distance from the center of Mars, which evidently shows them to be governed by the same law of gravitation that influences the other heavenly bodies.'" This was expressly written to cast ridicule upon the astronomers of his day, and now about one hundred and fifty years afterward it becomes numbered among the established facts of science.


MRS. C. FOWLER WELLS, *Proprietor.*
H. S. DRAYTON, A.M., *Editor.* N. SIZER, *Associate.*

NEW YORK,
JANUARY, 1878.

## A NEW-YEAR PROLOGUE.

WITH this number we signalize the opening of a new volume of the PHRENOLOGICAL JOURNAL, and a "new departure," which the editor and publishers trust will secure a large measure of good results. The chief motive which led to the change of the subscription rate was to meet a demand, which came to us from all quarters, for a less costly magazine embodying similar principles. Aside from this, we were influenced by the fact that the tendency of the age is toward a cheap literature, and that publishers have found encouragement in furnishing the public with editions of standard authors at a low price.

The spirit of Phrenology is progressive; he is no true bearer of its ensign who does not maintain an equal pace with the march of civilization—rather, who does not contribute vigorously to the forward movement. The progress of man means increasing light in science and art, especially in those branches which relate peculiarly to human relations, and here it signifies a better understanding of the functions of body and mind, and a more efficient exercise of the human forces in the work of every day. Hence, phrenological science, which unfolds the nature of mind and shows the manner of its connection with the body, occupies no minor place among civilizing influences.

He who would be conspicuous in society for ability in any department of science or art, of commercial or mechanical industry, can best achieve his object by first studying his physical and mental organization, analyzing his powers and learning their adaptation. This he can not do successfully or satisfactorily without employing the methods supplied by Phrenology. Lest the reader who is unconversant with the doctrines of this system introduced by Drs. Gall and Spurzheim may deem this phraseology extravagant, we will quote from one or two eminent authors who have left their opinions on record concerning the practical value of Phrenology. The late Dr. E. M. Barlow, F.R.M.C.S., of London, said: "The applications of this science to the affairs of human life are sure to extend as its principles become known and appreciated; and eventually they can not fail to prove of the very highest importance to the welfare and happiness of the human race." The eminent Dr. Macnish, of Glasgow, author of "Philosophy of Sleep," etc., wrote: "I have no hesitation in saying that my notions on every subject, whether of morals or physical science, have become more just, more systematic, and more in harmony with each other since I studied Phrenology; and I firmly believe that the same fortunate result may be calculated upon by all who pay any attention to the subject."

To this testimony we could add indefinitely from the declarations of men highly reputed in their several spheres, but we think two such earnest declarations should have weight in the consideration of every one who is doubtful of the expediency of

entering upon an examination of the data of Phrenology.

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The beginning of a year usually suggests to the thoughtful the propriety of reorganizing one's way of living in one or many respects. To him whose last year has been the theater of honest, manly struggle against old habits which had enslaved him and were steadily undermining his moral and physical health, the new year brings new resolutions and fresh pledges for further advancement toward the emancipation of self and the full enjoyment of victory over the powers of evil. To him who has been floating along the stream of time, listless of aught beside personal indulgence, the new year may not be more than a way-mark, a boundary over which we step into another twelvemonth's space. Such indifference to the movement of months and years can not but indicate a moral stagnation, a dormant conscientiousness, and a limited intellectual comprehension. This is a state of declension which no man who contemplates life from the point of view of its practical usefulness would tolerate. Does the reader wish to set the year 1878 on the credit side of his life-account and make it a witness to his progress in the mental concerns of his earthly career, let him—

*First*, survey his past with a close scrutiny, fearing not to confront the darkest items of the record.

*Second*, resolve to improve himself, especially in those particulars which have left the deepest stains upon his past; to this end, breaking boldly away from practices which are inconsistent with moral and physical purity.

*Third*, study the laws of mental and physical growth, to the end that he may avail himself of the best means in the way of diet, exercise, work, and study, to fortify and develop his organization.

*Fourth*, keep in view some high object or standard of moral integrity, and work steadily toward it; hopefully and trustfully labor for its attainment.

*Fifth*, believe in his ability to accomplish the desired end. "All things are possible to them that believe."

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## THE COLORADO WHAT IS IT.

CONSIDERABLE excitement has been aroused in Colorado and California by the discovery of a stone figure which possesses so many characteristics of a human sort that it is pronounced a "petrifaction" by several gentlemen of scientific experience who have examined it. This opinion, however, is not generally entertained, as other savants have declared it a bit of sculpture. A western reader of the PHRENOLOGICAL sent us two photographic views of the figure, which were taken shortly after its removal from the place of its alleged discovery near Pueblo, Colorado. These show the statue or petrifaction to be of extraordinary length, about seven feet and six inches, with a long low cranium, the forehead of which is wedge-like in its projection, with long, ape-like arms, and a short posterior elongation of the spine which represents a tail. The conformation of the head is not unlike the famous Neanderthal skull, but that feature appears to command little attention in comparison with the interest which is excited by the caudal appendage. Some of the enthusiasts have proposed sending an invitation to the eminent Charles Darwin to make the journey from his quiet English home to America for the purpose of examining the figure and ascertaining its value as a contribution to

the physical origin of man. Others have proposed to box it up and send it to him, that the British physiologists may have an opportunity to discuss its characteristics at their leisure.

For our own part we opine that there are scientists in America of sufficient capability to pass upon the statue or fossil. We would respect the opinion of such men as Professors Silliman, Marsh, Hitchcock, Newberry, Steele, and Winchell, and there are earnest students in the far West whose high attainments in geology and natural history would make their opinion of value to us.

As in the case of the "Cardiff giant," the Colorado "petrifaction" finds most discussion among newspaper writers, but there really appears to be more of honesty in connection with the discovery of the latter. That most eminent and shrewd of showmen, Mr. Barnum, according to the St. Jose *Herald*, has purchased a right in the figure for a very large sum of money, so we shall expect to have an opportunity ere long to view it, and until then we reserve a personal utterance of opinion.

## PHRENOLOGY IN LITERATURE.

WHAT a deal of phrenological science has become distributed through our every-day literature! Newspapers and books which portray phases and moods of human life, either in the essay or novel veins, contain allusions and discussions which indicate the practical belief of educated men and women in the adaptation of Phrenology to the analysis of human character. Correspondents at home and abroad embellish the letters which are published in leading newspapers with descriptions of the heads and faces of distinguished men whom they have seen or "interviewed," and in these letters employ the technical phraseology of cranial science, as they understand it, with more or less facility. A well-known writer on the men and affairs of our national capital imparts to her always piquant and edifying letters, which appear regularly in a New York weekly, a special attractiveness by her bits of personal description, whose accuracy is based upon no mean ability to treat her subjects scientifically. A well-known western wit lately wrote a few paragraphs on that much-abused class of people called tailors, and in pointing at their differences as cutters and fitters of the human form divine, finds occasion to remark: "Fault-finders should go through the cities and look at the popular tailors, and if there is one who can cut but a fragment of a coat well, who has not a fine head phrenologically, then I'll cease to extol them."

Essay readers know how frequently Mr. Emerson introduces illustrations and similes from Phrenology, especially in those most persuasive reflections on the "Conduct of Life." Dickens and Bulwer have drawn from the same ever fresh fountain, and that rising novelist, Mr. Farjeon, now visiting the United States, frankly avows his indebtedness to Phrenology for his generally admitted exactness in the representation of character.

Many writers employ the language of science with a freedom which is obtained only through study and careful observation. Others have apparently picked up some knowledge of its methods indirectly, and so exhibit a jumble of truth and error in their attempts to introduce phrenological principles. This is particularly the case where the inexpert observer furnishes the public, through his favorite journal or periodical, *original* reflections on the relation of the nose, mouth, chin, walk, gesture, attire, etc., to personal character. All this, however, shows the wide-spread acceptance of the

basic principles of Phrenology, and just as the masses believe the primary truths of geology, astronomy, and chemistry, but are unable, through a want of technical knowledge, to discuss their secondary or special applications; so people at large in treating of mental phenomena are apt to make mistakes in tracing their correspondence with physical contour and characteristic.

## AMUSEMENT.

"ONLY amusing!" the eminent physiologist Dunglison once replied to a remark by one who thus evinced his disapproval of certain social entertainments; "only amusing; why, amusement I look upon as one of the chief ends of life. I am never better, physically, mentally, and morally, than when I am amused."

Upon this opinion we write our indorsement. The *working* men and women of society need amusement—intervals of unbending from the toil and strain of duty and service, opportunities for the indulgence of levity and playfulness. Let the father, worn by the exactions of the office or counting-room, give half of his evening to a romp with his children instead of sending them to bed or "anywhere out of sight and hearing," and settling moodily into an easy-chair and spending the hours before bed-time in scanning a newspaper or in brooding over trade probabilities with an occasional monosyllabic answer to an attempt at talk by wife or sister. How the little ones rejoice when papa joins in their play! and how much of refreshment their exuberant mirth and youthful abandon furnish to one who "feels used up," the papas who are accustomed to an almost daily round of fun with their children will readily testify.

The brain worker, the man of sedentary pursuits, needs amusement which involves some degree of bodily exercise. Many a clerk returns from his day's routine in the banking office, swallows an evening dinner, and then swings for a half-hour in monotonously grave cadence an Indian club or dumb-bell, and wonders that his digestion does not improve and his muscles grow stronger. He is told that he needs exercise, and he thinks that such make-shifts should furnish it, recking little of the strain forced upon artery and muscle by a practice which is ill adapted to his systemic condition. Instead of riding up-town after office hours in horse-car or omnibus, he should walk a mile or so and have a brisk talk with an acquaintance on the way; he would then arrive at home in a better condition for eating, and need no club or dumb-bell to arouse his circulation.

A game or entertainment which arouses into activity our Mirthfulness is a means of exercise. "Laugh and grow fat" contains more physiological truth than most of us are inclined to believe. Somehow the laughing habit conduces to efficiency in the gastric function and to good nutritive results, even when one's habits of eating are not altogether in accordance with dietetic law; and in their appreciation of this fact hygienists put a good deal of stress on eating in a cheerful, happy tone of mind.

He makes a mistake, as he finds to his sorrow, who goes from the table to study, being eager to employ every minute of leisure in storing his intellect. He may become learned, but with his learning will be most likely to acquire a dyspeptic stomach and a cynical temper, whereas an hour's sprightly conversation with young and old, an occasional attendance at a sociable, a run up the river on one of our steamboat palaces, or even an evening now and then at Bryant's or some other refined comicality will greatly help to invigorate his mind and

keep it in a condition of balance and freedom.

We believe in amusement, playful, sportive, hearty, simple amusement—*not* dissipation. Amusement is antagonistic to the wrinkles of care and anxiety; it promotes fellowship and humanity, it rounds out the character, renders life desirable, even in its gravest fields of labor and duty; and in fine, is essential to true living and a successful career.

AMERICAN INSTITUTE OF PHRENOLOGY.—The second session for 1877 closed on the 17th of November. The class was composed of ladies and gentlemen of superior intellect, who evinced a deep interest in the subjects of study embraced in the curriculum.

In the next number of THE PHRENOLOGICAL JOURNAL will be published an extended report of the exercises which closed the session; and we doubt not that its reading will be interesting to our subscribers. Every course of instruction thus far given seems to invite as pupils those especially who have become ripened by reading and study into the earnest faith respecting the great value of Phrenology as an educator and reformer among men. Last year and the year before there were two sessions of the Institute, one in the summer, the other in the autumn. The summer class was opened for the purpose of giving to ministers and others an opportunity to attend during their vacation; but the two classes imposed a double routine of labor on the teachers connected with the Institute, and in most cases those who attended as pupils in the summer, could have attended in the autumn. It has been decided, therefore, by the managers, to have no summer session in 1878. The next course will open on the first day of October, 1878. The tuition fee will be $100 for gentlemen, and $75 for ladies. Those desiring special information may address this office for a circular.

# 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.*

WE CANNOT 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—stamps being preferred. Anonymous letters will not be considered.*

IMPROVEMENT OF LANGUAGE.—C. Y. P.—Read the best authors within your reach. Make use of their thoughts and sentiments in conversation with your friends. Write out a digest of what you may read, endeavoring to remember the language as closely as possible to the original. Commit to memory extracts from poets and orators, reciting them either by yourself or before company. Associate with people who are noted for their gifts of language, and endeavor to take a good part in conversation and discussion. The use of the faculty will develop it, even where it is small. By exercise activity is promoted, and a good amount of facility obtained.

BUCKSKIN UNDERGARMENTS.—H. L. F.—We would not advise the constant use of this kind of undergarment. The fabric is too close for the health of the skin, because it prevents the escape of the excrementitious or effete matter. A healthy person in normal activity excretes three pounds or more of waste matter in the course of twenty-four hours, a large part of it passing through the pores of the skin, and any

species of clothing which prevents a free excretion of waste is, of course, conducive to congestion, and therefore unhealthiness of the cuticle. In very cold climates one might wear buckskin during hours of exposure to the out-of-door severities; but even in a very severe climate the constant wearing of such a garment would prove injurious. We have seen some undergarments made of this material which were perforated with many small holes, for the purpose of permitting an escape of the unconscious perspiration. These are less objectionable.

RHEUMATISM.—B. V. S.—You have evidently inherited a rheumatic diathesis, but notwithstanding that you may find benefit in a careful observation of the laws of life. Carelessness in diet is one of the most prolific causes of rheumatic trouble. Eat good, nutritious food, avoid everything of a constipating nature. It would be better for you to refrain altogether from eating butter, pork, fat flesh meat of every kind. So, too, do not use much sugar. If given to any habits in the way of drinking coffee or other stimulants, drop them. Eat plenty of fruit with your meals. A baked apple or two every morning before breakfast would help to relieve the system of the biliary congestion and nervous excitement. Eat lightly at night. We have advised rheumatic people to eat merely a cracker and drink a small glass of lemonade moderately sweetened, at night, and they have found this simple prescription quite effectual in relieving them of rheumatic attacks.

WEAK MEMORY.—W. H. B.—We can only advise you to strengthen your health and to avoid all habits or practices which serve to burden or mix up your mental machinery. Read slowly and but little at a time. If you are anxious to get over a large area, you will waste time and derive injury rather than benefit. Avoid all trashy books. You have apparently read an excess of them, and they have contributed not a little to your confusion of ideas. You are young enough to be made over in mental organization.

PLANTS IN THE BEDROOM.—A few plants in one's window would not be objectionable, while a large number would probably be, on account of their property of exhaling carbonic acid gas during the night, and the considerable amount of moist earth exposed to the atmosphere of the room.

BREAD DIET.—G. A. C.—If the bread be made from the whole wheat, it furnishes a form of complete food. Indeed, it possesses all the elements necessary for the support of life. Prisoners confined in our state-prisons upon the narrow diet of bread and water, usually get fat, and the bread which they eat is not the finest quality, by any means. Mr. Beecher did not make the remark which is credited to him by you. He has been incorrectly, if not maliciously, misrepresented by the newspapers with regard to his remarks upon the condition of the laboring class.

BUTTER.—F. J. B.—Butter is unnecessary as an article of food. We think that its use adds nothing to the food. It is simply fat, and therefore non-nutritive. The world of fruits furnishes admirable substitutes. Stewed apples, stewed pears, canned peaches, plums, etc., furnish juices which are delicious additions to bread. Milk should be used sparingly—as a sauce rather than as a drink. A person whose life is mainly out-of-doors can use milk with some freedom. What there is objectionable is the oily or butter part, and that is what renders it unsuitable to many stomachs.

PHRENOTOPHY.—B. V. S.—We have heard of this method of memorizing, but are not sufficiently conversant with it to give you any details with regard to its application and practicability. Most of the methods of mnemonics are impracticable. We are of the opinion that they cramp the mind instead of giving it strength and vigor. One of the best modes of strengthening the memory that we are acquainted with, is that which imparts vigor and health in general; and consists in living rightly and the avoidance of the frivolous and excessive in reading and study.

CARBONACEOUS FOOD.—T. W. E.—Anything may be termed carbonaceous in the order of foods in which carbon predominates. All foods in which there is a large amount of fat or oil are carbonaceous. Some of the farinaceas contain carbon in considerable proportion, and are better adapted to winter than to summer use; such as beans, corn-meal, sweet potatoes, and the like.

INGERSOLL AND HIS PHILOSOPHY.—G. A.—Mr. Ingersoll is thoroughly individual in every respect. His theories and doctrines concerning men, finance, and religion are his own. His system, if he have any in mental philosophy, is that of Ingersoll, which is a photograph, we might say, of his organization. He is a man of remarkable mental energy, magnetic and impressive—a demagogue indeed.

TOBACCO-CHEWERS' RELIEF.—The *Scientific American* appears to appreciate the subject, for lately, in answer to one who wishes to know how the raw taste in the natural leaf is removed, it says: "We believe that the common method of removing the raw taste, that our correspondent complains of, is to soak the tobacco in urine. Tobacco thus treated and then sweetened with molasses dirt, is considered 'lovely,' the 'solace' of mankind, 'honey dew,' etc."

## What They Say.

THE CURING OF DISEASE.—It is very common to hear persons, and even physicians, speak of the curing of disease. When such language is used, it is not possible that what is meant is couched in this expression. Our ideas of curing anything are that of preserving or saving it. This is the idea or meaning of *cure* the world over. No other definition is given in the dictionaries. Nobody means the preservation of disease when they use this expression. On the contrary, an entirely opposite idea is meant to be conveyed. When we speak of curing meat, grain, or grass, the idea or purpose of saving or preserving is attached to it. No such object is entertained in respect to diseases when any method of treatment is proposed or adopted. There is no greater misuse of language than to speak of the curing of diseases, unless such language is meant to convey the idea of keeping sick or of not getting well. This error of expression is well-nigh universal. Not only the illiterate and uneducated, but the cultured and those that make pretensions to scientific learning are guilty of this misuse of our mother tongue. Some may think that these remarks are hypercritical in character, as every one knows what is meant when this expression is used. To all such let me say that if such an expression is admitted to convey an entirely different idea from that which is meant or generally understood, why not do away with it in this sense at once? There is no doubt that it is an inelegant and unscientific expression. When applied to persons it is admissible. All measures and appliances of the healing art should be arranged and used with the object of curing the persons and not the diseases with which they are afflicted. If "all healing power is inherent in the living system, and there is no curative virtue outside of it," then it is absurd and irrational to attempt to cure another of any disease. No one ought to try to cure anybody. The rational way is to establish such conditions as accord with the laws of life and health, and in this manner let the diseased or sick *get well*. The newspapers are full of these self-evident, false assertions and absurd pretensions of the quacks, empirics, and humbugs of the day. It is a wonder that these perversions of truth and falsifications of science are tolerated to such an enormous extent as they now are in this age of enlightenment and progression. Correct language implies correct ideas and true knowledge. NOVICE.

MORMONISM AT NAUVOO—A CORRECTION.—*To the Editor of the* PHRENOLOGICAL JOURNAL—*Dear Sir:* In your article on "Brigham Young," in the issue of your JOURNAL for November, though generally accurate and interesting, you make one or two mistakes. You say, page 328, "A few years later trouble arose in Nauvoo, on account of the introduction of their polygamic system and the interference of the town authorities to prevent it. Joseph Smith and his brother Samuel were arrested and put in jail, and subsequently killed by an excited mob."

Now the polygamic system, if practiced at all at Nauvoo, had little to do directly with the troubles in which Smith lost his life. But the immediate cause of the troubles was this: Certain seceding Mormons had established a newspaper in Nauvoo for the purpose of opposing Smith in his high-handed measures, and had issued one number of said paper, called the *Nauvoo Expositor*. Smith was mayor of the city, as well as "prophet, seer, and revelator," and "president of the church;" and at his instance the city council met and declared said newspaper a nuisance, and ordered the city marshal to abate it, which he did by destroying the press and types in the streets! For this offense the owners of the press obtained judicial writs against the parties and placed them in the hands of a deputy sheriff to execute. They refused to obey the writs, and the officer called out a *posse comitatis*, and both sides armed for a struggle. Great excitement ensued, and Governor Ford appeared upon the scene. In his efforts to maintain peace he induced Joseph Smith, his brother Hyram, and several of the ringleaders to give themselves up and go to jail. While in the jail and while the Governor and his force were on their way to Nauvoo to address the Mormons, the jail was beset by the mob, the two Smiths killed, and others wounded. T. G.

## WISDOM.

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

THE best government is that which teaches self-government.

WHAT men want is not talent, it is purpose; in other words, not the power to achieve, but the will to labor.—BULWER.

HE is certainly very shrewd who has prospered without obtaining a reputation for shrewdness.

ONE great error of our moral teaching lies in the fact that there is too much *don't* to it, and not enough *do*.

MANY men find their manhood, for the first time, when their houses, and their lands, and their money are taken from them.

THERE are people who are suited for everything except just what they are doing, and who are only out of place when in their place.

"THE labor we delight in physics pain."—Macbeth, A. 2, S. 2. For "physics," read relieves.

THEY who stand in high stations wish for higher; but they who have occupied the highest of all often think with regret of some one pleasanter left below.

IT is not poverty so much as pretense that harasses a ruined man—the struggle between a proud mind and an empty purse—the keeping up a hollow show that must soon come to an end. Have the courage to appear poor, and you disarm poverty of its sharpest sting.—MRS. JAMESON.

"HAVING in my youth severe notions of piety," says a Persian writer, "I used to arise in the night watches to meditate, pray, and read the Koran. One night, fully occupied with these practices, my father, a man of practical piety, awoke. 'Behold,' said I, 'thy other children are lost in irreligious slumber, while I alone awake to praise God.' 'Son of my soul,' answered he, 'it is better to sleep, than wake to remark the faults of thy brethren!"

## MIRTH.

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

"SHE may be a very good woman," gasped Thomson, his breath almost choked off by the tightness of his new shirt, while the wrists were so loose that they seemed not to be buttoned at all; "She may be a very good woman, but she don't understand the practical application of topographical engineering to a fine shirt."

"IT was simply an informal affair," wrote the editor, of a little strawberry party at a neighbor's house. "It was simply an infernal affair," read the compositor, and that editor will never get any more invitations from that quarter.

"DOCTOR, my daughter seems to be going blind, and she's just getting ready for the wedding, too! Oh dear, what is to be done?" "Let her go right on with the wedding, madam, by all means. If anything can open her eyes, marriage will."

THEY were at a dinner party, and he remarked that he supposed she was fond of ethnology. She said she was, but she was not very well, and the doctor had told her not to eat anything for dessert except oranges.

PARISIANS are playing base-ball, and now Monsieur le pitcheur gracefully pitches the ball to Monsieur le strikaire, who makes a trois base hit into the estomac of Monsieur *le champ a la gauche* (left field), who exclaims, "Ventrebleu!" and sits down on the grass for rest and refreshments.—*Puck*.

## 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 or physiological science.*

THE LOCUST PLAGUE IN THE UNITED STATES; being particularly a Treatise on the Rocky Mountain Locust, or so-called Grasshopper, as it occurs through the Rocky Mountains, with practical Recommendations for its Destruction. By Charles V. Riley, M.A., Ph.D., State Entomologist of Missouri, etc. 8vo, pp. 236. Illustrated. Chicago: Rand, McNally & Co.

The importance which the Western grasshopper has acquired in the consideration of farmers and agriculturists, on account of its widespread devastation during the past eight or ten years, is a sufficient warrant for the publication of this volume. Dr. Riley has devoted much time to the examination of this pest, and in the volume before us has embodied the results. The book is a scientific treatise and very thorough. The numerous illustrations furnish realistic views of the development, size, and varieties of the offensive creature. Considerable space is devoted to the consideration of the means for its destruction or prevention. As the regions which are ravaged by its visitations are among the most fertile of our continent, what he recommends in the way of relief will be heartily welcomed.

A KNIGHT OF THE NINETEENTH CENTURY. By Rev. E. P. Roe, author of "Near to Nature's Heart;" "From Jest to Earnest," etc. 12mo, cloth. Price $1.50. New York: Dodd, Mead & Company.

No further introduction of this book is required to secure the attention of people than to state that it is by the author of the very well known "Barriers Burned Away," which appeared three years or so ago. But one of ye knowing sort might suggest that Mr. Roe has shown an extraordinary fertility and produced a volume or two each year since the successful launching of "Barriers," and that it is rare for a writer to maintain the quality of his work with so much quantity. We will not dispute the principle thus bodied forth, but are ready to insist that the volume under our eye represents a deal of close application and hard thinking on the part of Mr. Roe, and impersonates much excellent moral teaching. The motive is crystallized in the single verse which constitutes the preface:

"The best deserves a knightly crest,
Who slays the evils that infest

His soul within. If victor here,
He soon will find a wider sphere.
The world is cold to him who pleads;
The world bows down to knightly deeds."

The hero of the tale, Egbert Haldane, we take it, is a type of the young man of the day in his birth, training (or want of it), tendencies to impropriety, sad, harsh experiences, etc., and in the course of the graphic picture of his career many a sharp and much-deserved reproof is delivered at the fashions of home and society. There are occasional touches of masterful power in the narrative which must command the admiration of every reader.

VITAL MAGNETISM: Its Power over Disease. A statement of the facts developed by men who have employed this agent under various names, from the earliest times down to the present. By Frederick T. Parson. 12mo, pp. 235. New York: Adams, Victor & Co.

There is room for a book of this kind, abundant room, and the wonder is that attempts have not been made before to fill some of the vacant niches. The important service which magnetism may be made to render in the sick-room has never been fairly presented through the press by those who make use of it in their practice as physicians, and we cordially welcome a volume in which its merits are the topic of consideration. The author says truly enough, in his preface: "A class of enthusiasts calling themselves *healing mediums*, have met with more or less success in the use of this agency, and have sought to wrest it into the support of a misnamed spiritual philosophy. They have often succeeded only in arraying the intelligent against a force which has been known from the earliest ages, and which has a wide and benign application to the ills of man."

Every physician should be able to bring to bear the soothing and vitalizing influences of magnetism when they may be needed; and the fact that every physician does exert an influence favorable or unfavorable upon a patient by his mere presence renders it important that he who would practice the noblest art of Apollo aright should understand, to some practical extent, the therapeutics of personal relationship. Many an invalid is kept an invalid by the mere every-day contact with "dear" friends who are entirely ignorant of the injurious impression they exert.

The author considers different phases of nervous condition and arrays the testimony of eminent physiologists and authors to show how powerful an element in human life for weal or woe is that subtle force which is called mesmerism, or magnetic influence. The celebrated case of Miss Martineau as recorded by herself is included among the many, to show how efficient may be the simple treatment of the magnetizer when the best skill of learned medicists has utterly failed.

SUMMER RAMBLES IN EUROPE. By Alexander Clark, author of "The Gospel in the Trees," etc. 12mo, cloth. Price, $1.25. Printed for the author, by Nelson & Phillips, New York.

This volume is a collection of letters previously published by the author in a church newspaper. There is an off-handed vivacity in the narration which is out of the usual course of travel-books, but as Mr. Clark's tour does not seem to have followed directly the beaten track, we are given glimpses of celebrated and uncelebrated places in England, Wales, Holland, Belgium, Germany, Switzerland, and France, with now and then a bit of moralizing, proper enough from a clergyman, but not too frequent to appear studied or put in for effect. The sketches of Dutch life are specially agreeable, and indicate how large a field for study it offers to the American tourist who so infrequently gives much time to travel in the Netherlands. Mr. Clark traveled without a passport, and appears to have experienced little inconvenience to person or effects when crossing the frontiers of the different nationalities he visited.

LAPSED, BUT NOT LOST. By the author of "The Schonberg-Cotta Family." 12mo, cloth. Price, $1.25. New York: Dodd, Mead & Co.

The author of "The Schonberg-Cotta Family" has written many excellent books besides that first effort; but, in our opinion, she has not equalled it in all respects by any subsequent production. The scene of this last is laid in the palmy days of Rome, and the impersonations are illustrative of different phases of Christian experience amid the idolatries and prejudices of a people largely devoted to the maintenance of Roman authority. The story relates mainly to the early life of the Christian Church in Carthage when Cyprian, as bishop, exercised a benevolent sway over that branch of the faith Catholic. We have brought into strong relief important features of the controversy between Alexandria and the eminent Origen, but the most interesting part to the reader will probably be the love of Valerian and Eucharis, and their sweet domestic life, and their mutual helpfulness when assailed by persecution.

SAVED BY SYMPATHETIC KINDNESS AND THE GRACE OF GOD. A tale of to-day. By M. E. Winslow, author of "Barford Mills," etc. New York: National Temperance Society and Publication House. Price, $1.00.

A moral reformation wrought in a young man in the walks of wealth and fashion through the influences of domestic love and the ministrations of the church is the burden of this well-written story. The luxury of ease, jolly fellows at the club, an easy, accommodating disposition, drew

him into the whirlpool of alcoholism in spite of promises and affection; and when he had sunk so low that even a devoted wife and a tender mother had despaired of his recovery, the chance hearing of a street preacher opens the way to a new effort for self-emancipation, which succeeds. 'Tis a new reading of an old story with lights and shades which contribute to interest the reader from first to last.

WATER-SPOUTS. Edited by J. N. Stearns. 16mo, pp. 256. Fancy cloth. Price, $1.50. New York: The National Temperance Society and Publication House.

An olla podrida of incident, anecdote, witticism, and illustration bearing on the subject of temperance; adapted to the reading of young and old. The pictures with which the volume abound are just the sort to attract the eye of childhood, and impress them with moral truth. The elegant style in which the book is bound, aside from the character of its reading-matter, adapts it well for a holiday present.

SEVERAL NEW PUBLICATIONS in the line of object teaching have been received lately from Mr. E. Steiger, of New York. Among them are volumes No. 1, 2, and 3, of the KINDERGARTEN GUIDE, an Illustrated Hand-book, designed for the self-instruction of Kindergartners, mothers, and nurses. By Marie Kraus Boelte and John Kraus. This is the first really successful attempt to bring before the American public, in a concise, didactic form, an exposition of the methods of teaching introduced by Froebel. No. 1 is intended for very young children, and relates to the "First and Second gifts," has 50 illustrations, showing the relations of the sphere, cylinder, and cube. No. 2 treats of the "Third, Fourth, Fifth, and Sixth gifts," or the combinations of the cube, with upward of 90 illustrations. No. 3 treats of the "Seventh gift," or the Tablets, with upward of 550 diagrams. The prices of these numbers are: For the first, 35 cents in paper; 65 cents in cloth. No. 2, price in paper, 70 cents; cloth, $1.00. No. 3, paper, 50 cents; cloth, 80 cents. These volumes are beautifully printed and substantially bound. We have had occasion in former numbers of the JOURNAL to allude to the efficacy of the Kindergarten method of teaching, and now that through the efforts of many earnest teachers it has been introduced into American schools, it is unnecessary for us to enlarge upon it. These new manuals will be welcome on account of the increasing interest shown by the public in the system of Froebel. Most mothers are disposed to complain of the time which is required to amuse their young children and to keep them "out of mischief." Such will find in these little books many valuable hints for supplying that amusing occupation to their little ones which will serve them indefinitely.

## PUBLICATIONS RECEIVED.

REPORT OF THE COMMISSIONER OF AGRICULTURE, of the operations of the department for the year 1876. Washington: Government Printing Office.

This volume of 450 pages contains much of value to agriculturists at large. The Reports of the Entomologist, Chemist, and Statistician are especially worthy of consideration. The whole volume being a digest of agricultural matters, covering the whole country, renders it an important contribution to the subject of its title.

THE WESTERN REVIEW OF SCIENCE AND INDUSTRY. Published by the Kansas Society.

The current numbers of this publication come to us in order. It is well prepared, and a creditable indication of the interest exhibited in science by Western scholars.

THE SECOND STENOGRAFIK TEACHER. A Guide to a Practical Acquaintance with the Reporting Style of the Art of Stenography. Designed as an Assistant Instructor for Teachers, Schools, Colleges, and Private Instruction to Students. Amherst, Mass.: John Brown Smith, Author and Publisher.

THE ATLANTIC MONTHLY for December indicates no loss of intellectual vigor on the part of its brilliant contributors. Indeed, the publishers, Messrs. Houghton & Co., have arranged several fresh features for 1878, which should be very attractive to the cultured mental appetite. One of the more notable of these features is the offer of superbly executed portraits of the poets Whittier, Bryant, and Longfellow to subscribers, the portrait selected adding but $1.00 to the price of the magazine. The portrait of Whittier, recently offered, seems to us particularly fine.

CATECHISM ON ALCOHOL, with Responsive Exercises on Temperance. By Julia Colman. Price, 5 cents. New York: National Temperance Society and Publication House.

A calm discussion on a scientific basis of the leading questions involved by the subject. Let the young read it.

THE ACTION OF ALCOHOL UPON THE BODY AND ON THE MIND. By Benjamin W. Richardson, M.D., F.R.S. Pp. 58. Price, 20 cents in paper. New York: National Temperance Society and Publication House. Contains two able and important lectures delivered by Dr. Richardson in England. This has had a very large circulation in the United Kingdom, Dr. Richardson being regarded a leading authority on the physiological action of alcohol. The excellent Cantor Lectures by the same author, published by this society, may not have obtained the wide circulation which they deserved, on account of their cost. This pamphlet, however, being a concise presentation of the important subject, is available to all, and should be read by the masses of the people.

THE PHRENOLOGICAL JOURNAL AND LIFE ILLUSTRATED.

VOL. 66. 1878.

NUMBER 2.] *February, 1878.* [WHOLE No. 470.

## THOMAS A. EDISON,

### THE ELECTRICIAN AND INVENTOR.

THIS portrait indicates an organization of remarkable activity. The mental element predominates greatly in the physical constitution, and so contributes to his energy of thought and facility of action. His brain is broad between the ears, indicating that he possesses force of character in a high degree, which is exhibited in his disposition to be doing, to find opportunities for the employment of his hands or mind or both. He has courage to work out his plans and purposes when obstacles present themselves. Earnestness characterizes his efforts in any chosen direction; and this, coupled with his mental intensity, renders him very thorough-going. Whatever engages his attention, so far as to make him a worker either as principal or assistant in its

promotion, receives no half-way attention. He throws himself vigorously into its methods. Back of his efforts lies ambition, which is indicated by the width and fullness of the upper back part of the side-head and crown. He has ever entertained high aspirations; to achieve whatever he may attempts has been an uppermost quality in his mental character.

His intellect is characterized by a large proportion of the reflective element. He has also very strongly-marked Constructiveness and Ideality. These two faculties are closely associated, and have impressed his whole intellectual career. The brain is well developed in the moral region, giving a strong sense of duty, an appreciation of honor and respectability. He is also sympathetic and confiding, yet possessed of so much impressibility and sensitiveness as to show irritability; and people who do not understand him may think he is impatient and fretful. His extraordinary mental activity works off his physical force with great rapidity; so that, unless he order his habits in accordance with the requirements of physiology and hygiene, he will become exhausted and break down. We would suggest, for the sake of the career which has been already opened so grandly by him, and for the achievement of further and even greater successes, that he take special precautions for the invigoration and safety of his health.

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Thomas Alva Edison, the subject of this sketch, was born in Milan, Erie County, Ohio, on the 11th of February, 1847, and is, therefore, scarcely thirty-one years of age. His father's people came from Holland, and settled near Newark, N. J. His father's mother was an Ogden, from a branch of the New York family of that name. The Ogdens were of English descent. When Edison was about eight years of age, his parents removed to Port Huron, Michigan, from which time he appears to have begun to earn his own living. He was then a newsboy; and, at the age of twelve, obtained an exclusive contract for the sale of newspapers on the Detroit division of the Grand Trunk Railway. Here his energy and determination to excel began to exhibit itself. He employed several boys to aid him, and continued to travel and sell newspapers until seventeen years of age. Meanwhile, he purchased a small printing outfit, which he carried on the train, and with which he printed a small weekly paper, called *The Grand Trunk Herald*. In this office he was editor, manager, typo, devil, and all, within himself. Articles were contributed by the employés of the railroad. The printing was done by hand-pressure, and the paper issued with regularity. Its subscription list showed 450 names. The son of Robert Stevenson, who accompanied a Board of Inspectors sent from England to inspect the Grand Trunk Railway, seeing an edition of the paper being worked off while the train was in motion, purchased 200 copies and sent them to England as samples of American newspaper enterprise, and the only newspaper in the world printed on a railway train.

Mr. Edison finally abandoned the printing business, and set up instead a traveling chemical laboratory, consisting of innumerable bottles and packages of chemicals and drugs, which he carried in a large chest on the train, experimenting with them during his leisure hours. This enterprise came to sudden grief by the spontaneous combustion of several ounces of phosphorous, and the consequent firing of the baggage-car in which they were carried. Upon the breaking out of the war in the South, the enormous increase in newspaper traffic confined his attention solely to that branch of industry, and offered opportunities for the exercise of his original genius to meet the eager demand for news—a demand which Mr. Edison noticed could ill brook the tedious movement of the trains. He conceived the idea, and had constructed large bulletin-boards, one of which he placed at each station along the line. Upon these boards he caused to be chalked, by telegraph oper-

ators and station agents, the news headings of his papers, which he telegraphed in advance of the train. This device was noticed and characterized by the press as a "thoughtful idea of a newsboy," and was speedily adopted on other roads. The relations young Edison thus formed with the telegraph awakened a desire to understand it, which he gratified by very soon learning to operate it. Not content with the ordinary opportunities offered by the railway telegraph stations, he, in conjunction with a neighbor having similar inclinations, built a line of their own, one mile long, through a wood dividing their houses. Edison constructed the instruments, but having no battery, and, doubtless, no money to purchase one, was at a loss to know what to do. A novel expedient soon occurred to him, but its application resulted in total failure. Having noticed that by rubbing a cat's back electric sparks were generated in the fur, he tried the experiment of fastening the wire to the cat's legs, and rubbing Tabby briskly, watched for an effect upon the instrument, but none followed. His failure he doubtless attributed, at that time, to the crudely constructed instruments. It is proper to call particular attention to this incident here as it is perfectly characteristic of the man. He will to-day undertake elaborate experiments and conduct them with great care and marvelous patience and perseverance, although his reason clearly points their utter futility. It is this trait, however, which has led him into lines of original discovery and observation unattempted by others.

Edison now became absorbed with the telegraph, and speedily very proficient as an operator. He took charge of the telegraph office at Port Huron, but soon quitting the railway telegraph service for the higher branch of commercial telegraphy, we find him occupying positions successively at Indianapolis, Cincinnati, Louisville, Memphis, and Boston. While at Cincinnati, in 1867, he conceived the idea of transmitting two messages over one wire at the same time; this had been attempted by electricians many years before, but of this fact Edison was totally ignorant, and he continued to make experiments in every branch of telegraphy, attending to his office duties at night, and experimenting in the day-time. It was this compulsory division of labor which founded the habit now too strong to be shaken off even by the combined pressure of family and health considerations, and which is commented upon as an eccentricity by those who do not appreciate the power of a long-established habit in the division of one's mental labor. It is unquestionably a fact that Mr. Edison finds his brain more active in the small hours of the night than at any other time; and the writer of this sketch has personal knowledge of the fact that nearly all of his most valuable and brilliant conceptions have been made just before the break of day, when a general discussion of their merits would be had with his assistants, and drawings made for his workmen to use the next day.

In his early days, as well as in later, Mr. Edison's entire earnings were spent in these experiments, he having few personal wants, and no vicious extravagances of any kind. In Louisville, Cincinnati, and Boston he always had a laboratory of more or less magnitude. In 1869 he left the operator's chair entirely, and came from Boston to New York with a duplex and a printing telegraph, the latter being the basis of nearly all the Gold and Stock Exchange reporting telegraph instruments. In New York he soon formed an alliance with electricians and manufacturers, and after years of varied experience with partners in the laboratory and in the shop, has finally and firmly established himself upon an independent footing in an extensive way at Menlo Park, New Jersey, where he is surrounded with everything which can contribute to domestic comfort or facilitate future invention and research. His property consists of a well-constructed and furnished laboratory with chemicals, telegraph instruments of every description, etc., etc., in its comprehensiveness being second to no other establishment of the kind in the United States, having a factory with steam power for the construction of models; a foundry for casting iron and brass; a handsome villa, with stables and outbuildings, and comfortable

cottages for his assistants and workmen. Among Mr. Edison's contributions to the telegraphic art, we find sixty patents and caveats assigned to the Gold and Stock Telegraph Company of New York, fifty to the Automatic Telegraph Company, and some thirty patents and numerous caveats for miscellaneous inventions; in all, a total of one hundred and thirty-nine patents and sixty-seven caveats, and all taken out since 1870. He is joint inventor with E. A. Callahan, of the American District Telegraph instruments (the modern messenger service); inventor of the Domestic Telegraph system (another messenger service); inventor of the main features in the Gold and Stock reporting telegraph; inventor of the American automatic (chemical recording) system; inventor of a chemical recording automatic Roman letter printing telegraph; inventor of the celebrated quadruplex system now so extensively used by the Western Union Company; inventor of numerous forms of duplex telegraphy, and inventor of the Electric pen, which is fast becoming popular as a substitute for circular printing.

Of this invention, an account has already been given in this journal. It consists of an electrical engine fixed to a needle working vertically in a hollow tube, the whole being held in the hand as a pen, and operating to puncture fine holes in a sheet of paper upon which one writes, thus producing a perfect stencil of the written matter. By placing this stencil upon a blank sheet and passing an ink roller over its surface, a perfect fac-simile in ink of the perforations may be had. Other inventions of more or less value, which it would occupy volumes to describe, are the product of Mr. Edison's genius.

The electro-motograph, for which he received the eighth patent issued by the United States for original discovery, would, of itself, give us a perfect system of telegraphy, were magnetism never discovered. It in fact offers the only other means of contributing motion (and controlling it) to mechanism at a distant point—the foundation principle of the electric telegraph.

The discovery which led to the construction of this instrument is this: That when certain chemical salts are subjected to action of an electric current they lose their frictional properties. Thus, if a s of paper is moistened in a solution of chloride of potassium, and laid upon a p having connection with one pole of a tery, and a flat platinum strip having c nection with the other pole of the bat is held by the hand and drawn heavily the surface of the moistened paper, tl will be found little or no friction betw the platinum strip and the paper, it glic over the surface like iron on ice. But now the electric current is interrupted, hand will be involuntarily stopped, cause the current no longer passing thro the paper the normal friction of the p is instantly applied. Upon closing the tery current while the hand is slowly dr ing the platinum strip over the p against the friction, the hand will be stantly released, and involuntarily g forward. With this difference of fric obtainable by the action of electricity, Edison saw at once that he could duce precisely the same mechanical re as by the electro-magnet. The mechar of this substitute for magnetism may varied in a hundred ways; the simplest f however, may be thus briefly described clock work is made to revolve a flat metal drum. This drum carries over surface a continuous strip of the chemi saturated paper, not too moist. Pivote right angles with the drum is a leve brass with the free end projecting slig beyond the center of the drum; thr this end an adjustable screw with plati or lead point is made to rest upon the p strip, thereby supplying a frictional sur To increase this friction to any desired tent consistent with the tenacity of paper an adjustable spiral spring is pl under the lever to draw it downward the drum (the pivot of the arm being do acting, permits this motion also). Two justable stops confine the movement o lever within any desired limits. It wi seen that the revolving of the drum carry the lever against the forward poin means of the great friction imposed b pressure of the lever point upon the p

A second adjustable spring is now made fast to the lever to pull it backward against the friction, but being adjusted so as not quite to overcome it, the lever remains against the forward point. The circuit is now made through the paper from the lever to the drum, and instantly the friction is destroyed and the lever drawn back by the spring against the back stop, remaining there until the current is withdrawn, when the constant forward motion of the drum as instantaneously grapples the point and carries it forward. Here, then, we have all the functions of an electro-magnet for telegraphic purposes.

This is regarded as Mr. Edison's greatest achievement, and one destined, some day, to prove of immense value. Its extraordinary delicacy may be appreciated when it is stated that in the course of one experiment it was made to give telegraphic signals through 70,000 *ohms* resistance by means of a battery current that through that resistance would not record a trace of itself upon paper steeped in a saturated solution of iodide of potassium.

The electro-motograph telephone is an invention based upon the above described principle of action, and is now demonstrating the marvelous range of action of this wonderful discovery, by transmitting the full compass of vocal and instrumental vibrations over an ordinary telegraph wire 200 miles in length, reproducing the tones with great accuracy. The vocal vibrations are converted into electrical impulses, thus:

A brass tube six inches long, two and a half inches in diameter, having a mouthpiece at one end, and a thin metallic or mica diaphragm stretched across the other end; in the center of this diaphragm is fixed a delicate elliptic spring having a platinum face. Through this spring is passed a cushion of felt, the object of the hole being to prevent rebound. Immediately in front of this is placed an adjustable screw with platinum contact point. The diaphragm being connected with the line and the adjustable point with the battery, when the air-waves are thrown into the tube from the voice or a wind instrument, the diaphragm responds in unison, and at every outward movement comes in contact with the battery point, thus completing the circuit, and of course breaking it again upon its receding from it, the whole constituting a key responsive to the vibrations of the voice instead of the touch. The electrical impulses thus passed over the wire to the distant end, comprising precisely the same number per second as the air-waves which set them free, are made by means of the electro-motograph to vibrate a sounding-board a like number of times, and thus reproduce the original air-waves or sound. The apparatus for effecting this vibration is very simple.

A small hand-crank with cog-wheel attachments operates to give motion to the metallic drum of the motograph; a strip of paper moistened in a solution of sulphate of sodium is carried over the surface of the drum. A sounding-board (an old style dulcimer is used) is stood upon edge, and a brass arm fastened rigidly to it projects outward to the center of the drum, lying parallel with it. A steel spring with platinum face is fixed underneath this arm and made to bear with considerable pressure upon the paper immediately over the center of the drum, by means of an adjustable screw which passes through the end of the arm. Now when the drum is revolved outward from the sounding-board, the paper is drawn under the platinum-faced spring attachment of the arm, and the sounding-board is drawn outward by means of the friction imposed. The current coming over the wire from the distant station, passes through the paper, destroying the friction, and thus permitting the sounding-board to drop back to its normal position, and the cessation of this current permits the friction to be again imposed, and the board again drawn out. This treble electro-chemical and mechanical action is so instantaneous that the finest and highest notes of the female voice are perfectly and audibly reproduced 200 miles from their source of origin upon a single wire of No. 8 gauge. Of course a static induction compensation is used to permit free passage of the electrical impulses through the wire.

Mr. Edison has also just perfected a speaking telephone, which reproduces the

human voice over great lengths of line with marvelous accuracy and distinctness, by means of which conversation is carried on with great facility. Reiss, a German, Mr. Edison, and A. Graham Bell are the only persons who have ever grappled with this problem. Reiss, in 1866, succeeded in transmitting musical tones and some spoken words. Edison and Bell began experimenting in this direction about the same time, and each have succeeded in producing that which is characteristic of them. Bell's apparatus is the beautiful realization of a theory, but too receptive to outside or foreign electrical influences to be effective in their vicinity, and it is just there, in large cities netted with electric circuits, that the telephone is of value. Edison, using the regular battery, has a direct force commensurate with the work to be done and the foreign influences to be overcome, and c thereby give the volume of sound, and c tain the freedom from confusing effec which brings effectiveness and marks telephone with the practical stamp of all inventions. Mr. Edison is also perfecti an automatic translator which, when ado ed, will prove of great value toward che ening telegraphy. It will enable one ope tor to do the work now done by two. is also engaged in perfecting a sextuplex means of which six messages may be sim taneously transmitted over a single wi and lastly, he is at work on a machine recording the human voice and reproduc it at any future time, by which we may all able to speak after we are dead. This, course, seems almost beyond the bounds belief; yet it has been already accomplis in part, as many persons are ready to test

## THE DEVELOPMENT OF THE EARTH AND OF EARTH-LIFE.

### First Paper.

THE earth, it is probable, once formed a part of our sun (as did all the other planets of our system), and was, at the beginning, in a state of igneous fusion. Its surface gradually cooled until it formed into a thin crust, which in course of time grew thicker, but so slowly that it measures at present but one-thousandth of the earth's diameter. That the interior of the globe is in a molten state is proved by the temperature of the crust gradually increasing toward the interior, viz., for every 100 feet the thermometer rises one degree. At a depth of 10,000 feet water boils; at forty miles deep the heat is estimated to be 1,800 degrees, where iron melts; and at seventy-five miles of depth all known substances must be in a liquid state. For further proofs of this internal heat, we are referred to the hot springs, geysers, and volcanoes.

The first solid crust formation was probably like a smooth, thin shell, surrounded by a fiery and dense atmosphere, in which water would only exist in gas form, and which was impenetrable to solar rays, so that the earth was inclosed in darkness. As the cooling went on, the molten interior was more and more condensed, the crust fell or broke in at many places, that its surface became uneven and rugg After the temperature of the surface sunken to the degree at which the vapo water is condensed, the first water appea and the falling rain began to clear the hit to turbid atmosphere. The primitive sea impregnated with carbonic and other nicious gases, and, like the surrounding mosphere, in a hot condition.

The first layer which surrounded the earth-kernel consisted of the hardest rc granite, syenite, basalt, porphyry, etc., of the heaviest metals. On account o richness in siliceous rock, this layer is c the "silicate mantle," while the rocks l directly inside of this mantle are called primitive or plutonic rocks. Over the cate mantle was formed, by the bur through of the fiery liquid, a second or canic layer, which partly through refrig tion and partly through atmospheric sure was crystallized, and is remarkabl its undulatory and slate-like struc These volcano-neptunic formations are ed slate rock or primitive clay-slate,

consist principally of gneiss, mica, and talc. Out of this layer was formed, through the decomposing power of water and air, the soil. In this soil, after the high temperature of the water and air had sunken so low that it would no longer destroy organic life, first plants were produced, and later, animals of the most simple organization.

Since that ancient time water has continued its extraordinary activity without interruption, and still is producing, slowly, but surely, transformations of the earth's surface. If this activity of the water were not interrupted by volcanic risings and sinkings of the earth-crust and by other occurrences, the surface would, in time, become even, and entirely covered with water. The reaction of the igneous liquid mass inside the earth causes an uninterrupted rising and sinking in different parts of the globe; and as this rising and sinking changes the contour of the surface, there is now one and then another part of the surface brought out of, or drawn under, water; and rocks are formed through organic and inorganic depositions which are of the most heterogeneous composition, mixed with vegetable and animal matter. Plants and animals are continuously at work to raise the bottom of the sea; in the shallow parts of the sea are the shells and corals, and in the lower or deepest parts are the microscopic diatoms, polythalamias, and cellural animals, which by myriads aid in the precipitation of the silicious and calcareous earths.

Those matters which are precipitated in the water usually by layers are called sediments, therefore all the earth-layers above the primitive slate are called sedimentary layers, stratified rock; the essential parts of those layers are argillaceous (clayey), silicious (flinty), and calcareous (limey) earths, which caused the formation of the clay, sand, and lime-stone. These more or less concentric strata or earth-layers have different thickness, form, and structure in different parts of the earth, having been at times displaced and reticulated by underlying rocks. But between these different sedimentary layers are no sharp boundaries so as to justify the theory of earth-revolutions from time to time, which destroyed all and every existing thing, so that after such a catastrophe an entirely new creation had to begin.

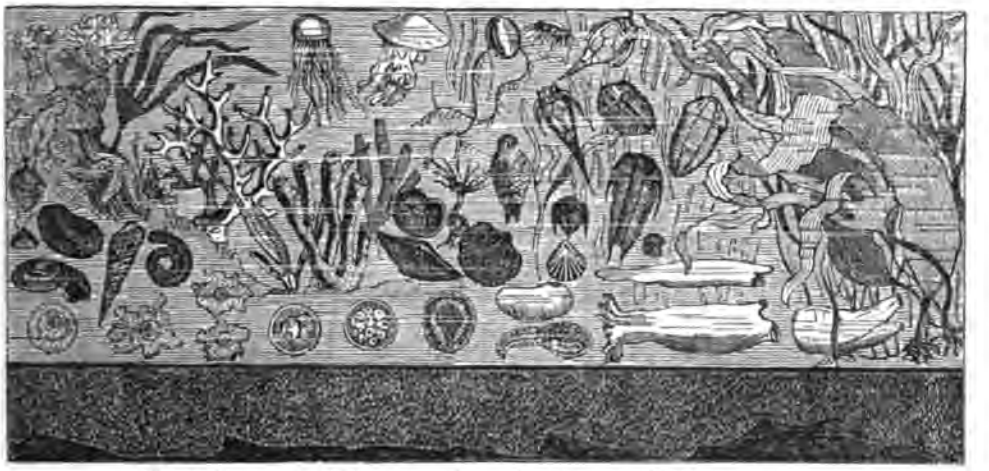

Fig. 1.—Life in the Primordial Age. Seaweed and Headless Animals.

The rising and sinking of different parts of the earth-surface went on, so that in the course of untold ages probably no part of it exists which has not been repeatedly under and above the surface of the sea. This manifold changing explains the variety in the composition of the numerous neptunic strata, which in most parts are found of considerable thickness. These strata form together a crust of about 130,000 feet thick, and are by geologists divided into five groups and periods, each one having its subdivisions or systems, which again consist of smaller groups or formations.

The principal divisions are: 1, Primordial

Age. 2, Primary Period. 3, Secondary Period. 4, Tertiary Period. 5, Quaternary Period, or Post Tertiary. The difference of zones, which is at present so very distinct, did not exist before the quaternary or present period; there was but one climate, that is, an equally hot one, which was probably somewhat hotter than the middle-tropic climate of our present time. As is shown by the remains of plants and animals, the highest north was once covered with palm, tulip, and myrtle trees, and other tropical plants, and also inhabited by elephants, rhinoceroses, tigers, etc., etc. Very gradually the heat diminished, and not before the tertiary period does the effect of refrigeration become perceptible at the poles, where occurred the first division into climatic zones. During the tertiary period the cooling advanced so far that the first ice appeared at the poles.

This change of the climate had an enormous influence on organic life, and caused partly the extinction of those organisms which could not adapt themselves to the cold, and partly their immigration into warmer climates. In the diluvial time the temperature was still continually sinking, and, from the north pole, the cold spread over Northern and Central Asia, Europe, and the northern part of America, and produced a solid ice-crust, which in Europe reached down to the Alps. From the south pole the ice spread over a great part of the southern hemisphere, and there was only a small zone left between the two frozen seas on which enough warmth was left for organic life.

This part of diluvial time is usually called the Ice or Glacial Period, and during its continuance man came into existence. Our knowledge of this glacial period has been obtained through the so-called wandering or erratic blocks, and through the glacial movements, the meaning of which was first explained by Schimper, and subsequently by Charpentier, Agassiz, and Forbes. These erratic blocks were recognized as rocks which had been transported by ice masses from their original home to distant places. Very slowly the sun asserted its power over that frozen ocean and brought about our present distribution of zones and seasons. But more than one glacial period seem have existed, even repeated changes temperature from warm to cold in both northern and southern hemispheres. T glacial periods are the most important solved problems of geological research.

Within the different layers or strat the earth-crust which were formed aqueous deposit are found relics of or isms of so different a nature that one certainty can perceive how each of the la was inhabited by different plants and mals. In the stratified rocks the fossil ics of plants and animals exhibit a gra transition, more or less distinct, from lower into the higher layers. In the lo strata the relics of more simple and im fect plants and animals are imbedded in the higher strata, and the higher up fossil organisms, the more they reser present organized life. With the increa thickness of the earth-crust living creat appear to have gained in variety and fection.

In consequence of the manifold cha wrought by the rising and sinking of di ent parts of the earth, in the course of a strata containing remains of animals plants long extinct were brought to li and in the different periods when the cada of these organisms sank to the bottom of waters, the forms of their bodies were pressed in the soft mud and incorrup parts, like bones, teeth, and shells, were bedded, so that these are found nov fossils or petrifactions in the neptunic rc

Palæontology, or the science of the cient life of the earth, for early research which we are indebted particularly to Cu gives us, with the aid of these fossil petrifactions, information with regard the development through which animal vegetable life have passed from the be ning. It divides the groups of organism our earth into five eras or ages correspon with the geological strata, viz.: Primor and Primary, Secondary, Tertiary, and ( ternary Periods.

Of man, fossil bone relics are found only in the quaternary period, but even fore the glacial in the middle tertiary pe and usually in connection with more or

perfect tools, implements, and arms. At the beginning these were fabricated from rough stone, later from polished stone, then from bronze, copper, burnt clay, and finally from iron.

Of fossil human relics the parts especially found are lower jaw-bones and skulls, as the lower jaw, from Nanlette, Martin Quignon, Hyeres, Arcis-sur-Aube, the Neanderthal and Eagis skull, etc. The fossil man of Denise and Natchez, on the Mississippi, must have lived in the time of the mammoth.

That part of our earth's crust which was formed by gradual layers of sedimentary and stony masses, brought about by disintegration of the primary or slate rock and its precipitation, contains the fossil relics of almost every organism which has existed upon the earth. Geologists distinguish in these stratified sediments the following five epochs or ages:

*First.* The Primordial or azoic time, the Acephalic or headless age, or age of sea tangwood, the Archæolithic or archæozoic age. (See fig. 1.)

This period lasted much longer than all the other ages together; its layers are upward of seventy thousand feet thick, and form three mighty neptunic systems, viz.:

1. The Laurentian system with Labrador, with silicated, argillaceous, and calcareous earth with a particle of natrium and the Ottawa formation, thirty thousand feet in thickness, having, on the upper part, calcareous earth and shells, and below, gneiss, quartz, conglomerate and granulous calcareous earth.

2. The Cambrian system in middle Primordial time, about eighteen thousand feet in thickness, consisting of upper and lower Cambrian layers, which include the deepest graywack, commencing with slate, followed by calcareous stone, and including light-colored sandstone.

3. The Silurian system, in latter Primordial time, about twenty-two thousand feet in thickness, consisting of upper, middle, and lower Silurian layers with glimmery graywack, black slate, and lamina-formed argillaceous sand and lime stones.

The Primordial time contains in its Cambrian and Silurian layers plainly preserved petrifactions, especially of calcareous animalcules, foraminifers, which prove that in that time no land organism existed. Logan discovered, in 1865, in the lowest Laurentian layer, Ottawa formation, relics of an organism called aurora animalcules—*eozoon canadense*—because with them begins, in science, the dawn of life on earth. But this little animal, and likewise the Rhizopods, do not belong to the simplest form of animal life, because they are inclosed in a calcareous shell, whereas the simplest animal organism, the *moner*, consists only of a cellular slime or plasma without shell or muscle. There are found also in the lowest sedimentary layers relics of organic life, of which it is not known whether they belong to the animal or vegetable order. All vegetable relics of primordial time are tender cellular plants, and belong to the lowest of vegetable groups, to the seatang and algæ. They formed in the warm, primordial sea, mighty

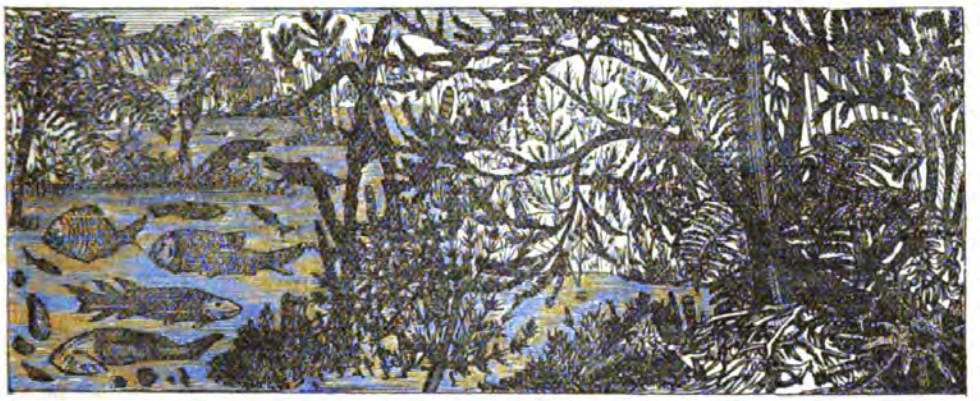

Fig. 2.—The age of Fishes, Ferns, and Stone-Coal. Primary Period.

forests of seaweed, and were of a leathery nature, brown or red in color, without leaf and blossom, and swam loose in the water. The animals of this period also lived in the water; they were crustacean, like the Trilobite, the oldest of crabs. The fishes, which followed the crustaceans, were similar to the shark and turtle, cephalaspides and cœlacanthines. There were the skulless animals, Acrania, headless vertebra, besides the simplest primeval animals, Moneras, Amœba, Infusorias, Ascidians, Apodas vermicular Graptolithus, Radiatas, Polyps and mollusks. In the Silurian formation, among the most remarkable remains are the Graptolithus, which are similar to a spirally rolled up saw-blade.

*Second.* The Primary or Primitive period, the age of fishes and fernwoods; the Palæolithic or Palæozoic age, with vast strata of a thickness of 42,000 feet, divided into:

1. Devonian system (older primary time), with layers of limestone, marl, and sandstone. The Devonian and Silurian systems together are called Transition rocks or older and younger graywack formation.

2. The Carboniferous system (middle primary time), with coal, carboniferous limestone and carboniferous sand.

3. The Permian system (latter prim time), with younger red sandstone ab the coal, and under the upper and n slate; above the latter one is the zechst or dolomite.

Primary time is rich in blossom fruitless land plants, especially ferns, f trees, etc., of which the fossil relics known as stone-coal. (See fig. 2.) animals there is a great variety in period, especially of fishes, similar in to the shark, and with a thick coa bony plates; winged fishes with loric body and wings, and salamanders. land animals there exists the artic arthrozoa (spiders and insects), and vertebrata (amphibia and reptiles) r related to our lizards, as the Prot aurus, Archegosaurus, etc. This tim generally the commencement of the formation of the fish-like body into a phibious, after the vertebrated anima been replaced by the invertebrated ticulated animals.

The trilobites became extinct durir period, and formed the transition fishes (cephalaspis),

During the primary time the se animals which breathe through the commenced.

## EDUCATION AND RELIGION.

EVER since the advent of man he has not ceased to acquire information and add to his stock of knowledge. This feature appears to be one of the distinguishing peculiarities of his nature. While the lower animals soon reach the extent of their intellectual capabilities, and that point beyond which they can never advance, man, on the contrary, is always progressing in intelligence, accumulating fresh stores of learning, and augmenting his ability to command the objects and forces of the external world. So that the history of our race presents the record of his wonderful progress.

Although every age illustrates the fact that man has always been eager in the pursuit of intellectual acquisition, perh period discloses this state of mind n cisively than the age and country i we live. Our own nation, as much other civilized community, displa laudable ambition and the desire t the powers of the intellect, to expa capacity, and multiply the sources o wealth. The means of education provement probably never existed in abundance than now, nor were t better adapted for rendering the me ulties powerful and efficient. The tions and facilities for learning ar ually supplied to meet the demanc the sun of knowledge is constantl upon every quarter of the land to

the shades of ignorance and illuminate the state of intellectual night.

It would be extremely difficult to estimate the value of learning or compute its loss. There are comparatively few persons, either old or young, who at any time view the problem in both these aspects and arrive at any sound or satisfactory conclusion. The danger of ignoring the benefits of education is perhaps much less than the other extreme of exalting its advantages beyond the bounds of reason, for in addition to the intellectual faculties being naturally active, they are also stimulated to exertion by incentives offered to Approbativeness, Acquisitiveness, and Self-esteem. And besides, the exercise of the intellectual powers themselves being attended with a positive pleasure, it is seldom we find an individual throughout his life neglecting to make some endeavors to obtain at least a moderate amount of knowledge. Indeed, it would be very anomalous for any one living in a community, especially an intelligent community, not to add in some measure to his intellectual possessions. No writer, either ancient or modern, ever had the audacity seriously to celebrate the praises of ignorance, and if a specimen of such an author were extant, it would possess the singular distinction of being best known for its rarity.

Contrast this view of the subject with that now to be offered for consideration. The inestimable blessing of education, in all its varieties and modes, is probably more obvious to an enlightened phrenologist than to any other person unacquainted with the true philosophy of mind, because the science discloses the individual faculties of the mind, estimates their size, power, and activity, and furnishes specific information of the different kinds of knowledge best adapted to direct and enlighten the faculties themselves, individually and collectively. Besides this, it demonstrates the relative value of culture, whether it be addressed solely to the intellect or through it to the moral and religious sentiments. It is therefore not a eulogium too high to dignify the science as the alphabetical key to the cyclopædia of education in its most comprehensive sense and utmost reach.

It is not our intention here to extol the benign influence of knowledge, or to attempt to exalt the justness of its claims. Neither do we propose in any measure to disparage a mind endowed with the most splendid intellectual capacities, which may have been cultivated with becoming diligence in acquiring every species of learning and accomplishment which can command the respect and admiration of profound scholarship. In the above sentence, however, we refer only to that description of knowledge which is addressed simply to the intellectual powers —the perceptives and reflectives—omitting all reference to religious knowledge, or that addressed to the religious emotions. Our immediate object is to invite the serious attention of the reader to a general survey of that kind of culture and refinement of the mind which is described in the term education, and to draw a comparison as to the merits of such knowledge with that which is more peculiarly the property of the religious emotions, and then, if possible, to convince him of the real nature of the one and help him to reflect upon the supreme importance of the other. We must first distinctly concede all the benefits and advantages which can by any means flow from a liberal education, and which can be imputed to it by the most strenuous advocate.

We must also assume as a fact, what will be universally admitted, that it appears to be one object of the Deity in our creation to enable us to attain happiness, because our constitution is admirably adapted both to pursue and enjoy it. And secondly, that the sum of man's desires gravitates toward the attainment of pleasure and happiness; for it can not be supposed that a rational creature would willingly covet pain, unless it were the channel by which he hoped to balance the account by a greater amount of enjoyment ultimately accruing to himself or others. Experience emphatically assures us that man is not happy in proportion to his knowledge, or the things he knows, for if he were, the world would soon be converted into a vast seminary for cultivating the intellectual powers and multiplying the means of expanding that part of our nature. The most enthusiastic will confess the truth of these

remarks. No matter how capacious a man's intellectual powers may be; no matter how comprehensive or profound his researches; no matter to what extent he may have improved his advantages in acquiring a knowledge of the arts and sciences; notwithstanding all this, we have the explicit testimony of the most enlightened scholars that literature alone does not supply the deepest aspirations of the mind or confer upon it the most solid satisfaction.

To support these assertions, we here cite the beautiful language of an author eminent alike for the depth of his piety and the superior character of his intellectual abilities. He says: "As the material part of the creation was formed for the sake of the immaterial, and of the latter the most momentous characteristic is its moral and accountable nature, or, in other words, its capacity of virtue and vice, that labor can not want dignity which is exerted in improving man in his highest character, and fitting him for his eternal destination. Here alone is certainty and durability, for however we may estimate the arts and sciences which polish our species and promote the welfare of society, whatever reverence we may feel and ought to feel for those laws and institutions whence society derives the security necessary for enabling it to enlarge its resources and develop its energies, we can not forget that these are but the embellishments of a scene we must shortly quit—the decorations of a theatre from which the eager spectators and applauded actors must soon retire. 'The end of all things is at hand.' Vanity is inscribed on every earthly pursuit, on all sublunary labor; its materials, its institutions, and its objects will alike perish. An incurable taint of mortality has seized upon and will consume them ere long. The acquisitions derived from religion, the graces of a renovated mind, are alone permanent. This is the mystic inclosure; this is the field which the Lord has blessed; and this word of the kingdom, the seed which alone produces immortal fruit, the very bread of life, with which, under a higher economy, the Lamb in the midst of the throne will feed His flock and replenish His elect through eternal ages."

These sentiments are entirely consi with the philosophy of Phrenology, moreover recommend themselves to th tates of sound wisdom. The author a quoted is profuse in his praise of litera and wrote an admirable eulogy on th vantages of knowledge; but he incess insists upon the greater efficacy and v of moral and religious truth for prom and perpetuating the chief end of our ence, which is admitted by all Chr communities to be a destiny of eternal tion, where the nobler attributes of the may have amplitude for infinite displa

If the immortality of *all* men in a st bliss were not involved in obscurity doubt, all religion, except natural rel might be justly discarded, and the p of knowledge compose the object of hopes and exertions. But no sensibl son can close his mind to the reflectio the final destiny of all mankind may one of happiness; and while the veil o tery hides the future from our view not an act of wise discretion to remo consideration of these questions till ne compels us to entertain them. The period in our history when the conte tion of death and its effects will arr sentiments, the affections, and the pow reason, and the anxious desire to loc futurity will then absorb all other int

Mr. Joseph Cook, of Boston, in hi ure on the question, "Does death enc solved it, we think, by an analogica ment in which he inferred from the su qualities of matter and mind, that does not end all. But the most be and forcible hypothesis for the imm of the soul, is that derived from Phre and one might naturally and boldly that from the constitution of the pow the mind its survival beyond the g hardly a matter of speculation. A losophers of both Christian and I systems, as well as the general con barbarous and civilized peoples, all in the belief and assumption that th of man continues to exist after death question, however, requires to be na or at least examined in another asp less important or less impenetrable.

admitting the immortality of the soul, yet the qualification of its immortality might adapt it as well for a condition of woe as for a state of bliss. To solve this problem, reason is confessedly inadequate. The only appeal is to Revelation, which combines the whole theme of immortality, asserting the reality of the prospect, but limiting the scope of its operation. While the Bible nowhere distinctly promises a happy futurity to unbelievers and the finally impenitent, it positively declares that state to such as are penitent and conform to its precepts. So much is certain in addition, that the creeds of Christendom generally ascribe a higher stage of existence after this life, not to all, whatever their faith and practice may be, but to those only who lead a true religious life by subduing the propensities, and who sincerely cultivate the moral sentiments of Benevolence, Veneration, Conscientiousness, Hope, and Spirituality; or, in other words, those who manifest the true spirit of piety. This is the doctrine, with modifications, entertained by the Church for eighteen hundred years, and is still inculcated by men of the highest intellectual and moral endowments; by men, too, whom Phrenology characterizes as possessing all the faculties which are requisite to form a comprehensive judgment, such as is most in harmony with enlightened reason and Revelation.

The affirmed relationship, then, subsisting between immortality and religion is fortified by a cloud of witnesses, whose interpretation of such matters is entitled to great weight, if not implicit credit. Speculation may, of course, differ with these conclusions, but the greater preponderance of reasonable faith leans decidedly to the decision respectfully submitted in this discussion.

Since, therefore, it is destiny which gives to man and his prospects all their glory, it becomes a question of personal import whether the present age does not attribute a fictitious value to the mere cultivation of the intellect, to the exclusion of that species of knowledge which, the highest wisdom informs us, fits the immortal part of man for an abode of celestial and infinite duration. What is the proportion of time spent in a scholastic and college education and that dedicated to the acquisition of religious knowledge? Here we have intellect on the one hand and the moral sentiments on the other. The intellectual faculties are the great repository of facts, an acquaintance with which constitutes a knowledge of the sciences, but unless that kind of knowledge is allied with religion there is no assurance that it will not terminate with this life. Here also we have the moral and religious sentiments, whose habitual cultivation renders the prospect of future welfare all but absolutely certain.

That infatuation which can despise the greater treasure and only appropriate the less can only be characterized as blind imbecility, for the gulf which separates their interests is as wide as eternity. Learning is most intimately related to time; religion comprehends the affairs of time in those of eternity. Education, instead of superseding religious knowledge, which it often does in the estimation of its youthful votaries, draws its brightest lustre when subservient to a life of piety; for what ultimate benefit is to flow from the most brilliant scholarship, if death shall dissolve the mental powers and dissipate all conscious existence? Seeing that the grave may obtain such a complete victory over our body, and all there is of us may return to the elements, the most vital considerations suggest the concerns of sacred history as the sublimest that can occupy our contemplation. What if after devoting thirty, forty, or fifty years of life to compass a knowledge of science and literature, the individual finds at last that he has neglected those nobler themes which his higher sentiments were bestowed to explore, which would have augmented his secular enjoyments here and prepared him for scenes of loftier employment hereafter?

THOS. TURNER.

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THE INNER WITNESS.—When we hear a beautiful song, we are moved by it. We may know very little about music. We may not be able to tell wherein the beauty of that song consists, or why it moves us. A musician might tell us that it was full of defects, and possessed no artistic excellence.

We might not be able to answer him a word; and yet we would know it was a beautiful song, because it touched a chord in our own souls which responded to the touch. It is not a thing to be proved or disproved; we have felt it, and we "testify that we do know." We do not need to understand the rules of music before we can appreciate a song, nor need we be able to discuss the principles of art before we can enjoy a painting. We feel the harmony of the one and the beauty of the other, because our souls were made to respond to them.


## MY HOME KINDERGARTEN.

No. I.

EDITOR OF THE PHRENOLOGICAL: The accompanying letters by my Aunt Penelope may be of interest and value to your readers.

AMELIE V. PETIT.

MY DEAR NIECE!—Poor in purse though rich in love, I trust the papers I have written out for you may prove as valuable a wedding-gift as those you will receive from many friends. Lovingly, PENELOPE.

When first it became known to me that the sacred office of motherhood was to be mine, my whole mind was engrossed with thoughts of parental duties and responsibilities. All the time that could be spared from domestic affairs was consecrated to that unknown being whose destiny lay so greatly in my power. Though ignorant of much a mother ought to know, a thorough education had developed my reasoning and reflective faculties, and, aided by a few books, I diligently applied myself to overcoming my ignorance.

"What," thought I, "can be done before my child comes for its physical well-being?" Mothers usually answer this question to themselves by making dainty, charming little garments, which look pure and beautiful enough to robe an angel. Well, this I too did. The fairy drapery was soon made, for I applied the principles which governed my own dress. The garments were handsome material, neatly sewed. I da not spend upon an infant's dress in co fragile lace, what would comfortably cl many a motherless one.

Having learned that a mother's he would influence much the health of the ure child, I took especial care in habits diet, keeping my rooms well ventil protecting myself against cold by clothing if the weather demanded change, and eating nothing very ric gross, though avoiding too much solic upon the subject. Then I thought, "I can influence the health and physical stitution of the unborn child, why may not its heart and intellect?" So I de to try endowing my child with those ities which it seemed desirable for o possess.

My temper was not violent or ung able, yet was not always curbed w should have been. From that time ever, I watched myself and avoided occasion of unpleasant disagreeme anger, trying to think gently and kir everybody, and, as far as possible, k my mind calm and tranquil.

My household duties were perform neatness and regularity; then I my time to reading, music, and d trying always to interest myself dee

give my whole attention and thoughts to my pursuits; to impress upon my soul the lofty and noble ideas of my books; to fill my mind with the harmony of music, or stamp upon my memory the beautiful forms I was imitating in drawing. Especially did I devote myself to reproducing with my pencil pure and noble human features. I purchased some beautiful prints of cherub heads and hung them in my sitting-room, where my eyes could turn easily to feast and dwell upon their loveliness.

I loved the works of nature, landscapes, flowers, clouds, trees, all with perfect passion. I spent much time formerly in contemplating the perfection and grandeur of creation, and now debarred from general society, turned with redoubled ardor to the beauties of the spring-time. I climbed the hill-side, followed the windings of the river, gathered the trailing arbutus from among the dead leaves of the last summer's glory, and watched day by day the changing foam-wreaths of the clouds as they shadowed or brightened the glorious blue of the far-away firmament. I rejoiced in Nature with all my heart. Thus the months went by; and when the dying June cast away the fading petals of her brightest roses, my dark-eyed child lay beside me. How I loved, even then, the fragile, pink-tinted human flower the Holy One had given me to prepare for the coming and endless beyond.

When the novelty of the child's coming was over, and friends had commented upon its size, its eyes, and its hair; when those who wished to flatter had called it the sweetest, brightest babe that ever was, and my husband, patting my cheek, had said, "No matter, plain or pretty, the little thing is ours;" when all this was over, and I once more occupied my place in the sitting-room, and the child had attained the dignity of a crib, my thoughts turned to the future culture, the moral and mental training which must soon begin. I then matured a systematic plan for her education.

My watch over my temper did not relax in vigilance, for it seemed important that my child should never see me ungovernably angry or habitually cross and petulant. Children imitate so readily, and imitation soon becomes second nature. I feared a disobedient, disorderly household, and spared no trouble or sacrifice to render mine different. Unless order and good-nature are present in a house, there can not be peace and happiness.

My husband was one of those noble souls, so rare on earth, gentle, affectionate, sincere, endowed with a firm, well-balanced mind, diligently cultivated; not a genius, but possessing a high order of talent. He was ever ready to support my authority, though never interfering in the government of our children, believing it a mother's office to model and control the offspring so peculiarly hers. The discouragements so many mothers have to contend with were spared me. Frequently have I seen the husband of a friend take from her arms a child she was endeavoring to subdue, and fondle and pity it; this, too, when she was perfectly right in the punishment administered. The result was, the child contracted a feeling of contempt for his mother's authority, and now, at the age of fifteen, openly sets both parents at defiance.

Even though one parent may sometimes be a trifle harsh and severe to a child, it is infinitely best that the other should acquiesce and treat the offender as an offender until the child is subdued and restored to favor. My husband believed in and trusted me, and his evident confidence in and regard for me gave me added importance in the eyes of the children and servants.

When Dora began to show indications of dawning intelligence, my work commenced anew. She was always addressed gently; harsh sounds and unkind words were strangers to her ears. The servant was not permitted to play roughly with her or talk what is known as "baby-talk," a mixture of false pronunciation and silliness. I do not object to an infant being addressed in playful, endearing words, though they may be trifling, but that jargon in which a foot becomes a footy, an apron an apy, a father a faddy or daddy, is only calculated to teach the child a corrupt pronunciation of language which will afterward require great labor to correct.

It is best, even in the first year of a child's life, to address to and teach it such words as are proper and most elegant. A child will as readily learn to say "I have not" and "I can not," as "I haint" and "I can't;" "I dislike," is as easily acquired as "I can't bear it;" "I think so," as "I guess so." Every one should learn from the earliest childhood to prefer that which is most beautiful, best, and wisest in language, conduct, and dress. The pure, the beautiful, and the good should always be sought. It has been quaintly said that "purity, beauty, and truth are three sides of one eternal prism, of which the presence of one presupposes that of the other two;" and it is true as regards language; pure language indicates pure thought, and pure thought indicates pure actions and a pure life.

When twelve months old Dora began to partake of the simpler dishes of our food; previously she had eaten only milk, bread, rice, and ripe fruit. Now she sat at table, and I gave her what I deemed it fitting she should eat, not allowing her gravy, butter, meat, pastry, or cake. I myself ate sparingly of these articles, confining myself almost wholly to vegetable food and brown bread. The digestive powers of a child are not as strong as those of a grown person. It would be strange if, weak and feeble in every other way, a child could yet eat advantageously the food that might be of advantage to a strong man.

I wished my child to grow up as handsome as possible, and I know that coarse forms and features and bad complexion are caused, in great part, by gross food. Plain, nutritious food taken at proper times, in proper quantities, accompanied by free and frequent exercise in the open air, prevents indigestion and dyspepsia with their attendant yellowness, and will promote a clear, ruddy complexion, sparkling eyes, a bright, pleasant expression of countenance, a free, springing step, and pure, happy thoughts. Many people say, "Children will eat these forbidden articles when grown, and hence may as well have them when children." I say, not so; they may eat almost with impunity in maturer years what would seriously injure them when so young. To late pers and insufficient or improper exe may be attributed the early-fading be and almost invariable ill-health of n American women.

After the first two months of Dora's she was taken out in the open air every when the weather permitted. Air, pure air, is the first essential of life, young children require it even more their elders.

As my child grew older I tried to im upon her mind the value of exercise, she was not only allowed, but urged to at some active game several hours dail did not give her a doll, as a matter of cc to spend her little thoughts upon, but of various colors, teaching her the nan each color. Next she had colored b with letters upon them, and she was t to select the blue A, the red A, or the B, or the yellow W. Thus the larg small letters were all learned withou conscious effort or any childish hear While teaching her the letters, I also t the name-sound of them, and by degr the prominent sounds, thus insuring c enunciation while her vocal organs flexible.

Children are too often told that th spending precious time when at pl might better be employed in read sewing. This is all wrong. Young p require exercise for their proper d ment, physically, mentally, and n They should, as far as possible, b care-free, healthy, and happy. comes soon enough. Let every on have in their hearts the memory of ant childhood, when they were treat love and tenderness. Give them proper indulgence of their tastes an affections; teach them by exam precept the charm and beauty of lov and virtue; they will always be bett pier for having once been truly hap

Girls take too little active open ercise. At ten or twelve years of a mothers begin to tutor them abou ing and playing so much; the r girls at fourteen are staid and qu their animal spirits almost wholly

Playing grace-hoops, tossing ball, running upon the lawn would be considered by the young misses as very childish and improper. If a child thus tutored still retains a lively, brisk gait and springing step, she is continually reminded of Mary, or Lucy, or somebody who is *so* gentle and lady-like. Even to the age of twenty years, children should devote some hours daily to sport, mere pastime. It is good for both mind and body to rest frequently, sometimes to be even idle, that wearied nerves and brain may have time to recuperate. Riding on horseback is excellent exercise for young girls, and daily walks should be continued throughout life.

During these years when playing so much in the open air, some care of the complexion is necessary to preserve the beauty. Nearly all children are pretty, or, at least, pleasing-looking, because of their fresh faces, and free, graceful movements. There is no reason why they should not grow up pretty, if they only know how. The face should be guarded from the cold, sharp blasts of winter and the rough winds of February and March. If tan and freckles are kept from the face during the first fifteen years of life, the complexion will not require so much care afterward. "Beauty is ever that divine thing the ancients painted it;" and though it sometimes proves a fatal legacy to an ill-trained, weak minded girl, yet it is oftener a blessing than otherwise, and mothers ought to strive by all proper means to make their daughters beautiful and engaging as well as virtuous and truthful. Beauty may be greatly promoted, may almost be created, by a mother's care and knowledge. By proper food, fresh air, good temper, exercise, and moral and mental education, any child having tolerable features may be made pretty if not beautiful. Our children did not inherit beauty, for neither parent could claim more than passable faces, yet they are esteemed more than ordinarily well-looking. I attribute their beauty in great part to the care bestowed upon them. Beauty of expression is the most enduring and highest kind of beauty, and the expression of the face is undoubtedly more capable of being controlled and improved by culture than is fairness of complexion.

Every day we see faces ugly and distorted by crossness, anger, melancholy, revenge, and sensuality which were once bright and lovely with the innocence and smiles of childhood. What has changed them so greatly, if not coarse food and bad passions? Every cross, jealous, proud, angry feeling, like every blow of the chisel upon marble, serves to carve a line upon the features, and each time such feelings are indulged, the work of the invisible carver is deepened until the face is made ugly by unkind and unholy thoughts and feelings. In a similar way kind, pure thoughts, gentleness of word and deed leave their impress, making bad complexions and common features almost radiant with the beauty of goodness.

Education, not alone intellectual, but also moral education, increases beauty. A countenance beaming with intelligence, united to a gentle, winning manner, will always be thought handsome by sensible people, and this beauty will endure and grow throughout life. Any one may prove the truth of this statement by noticing the ignorant, vicious children who are sent to a School of Reform where they are properly fed and instructed. Day by day as they receive new ideas of right and wrong and think new thoughts, their eyes brighten, and the whole expression of the face becomes so changed as to pass unrecognized by those who had formerly known them.

How noble are the faces of most men known for their culture and genius; so noble that, in any crowd, they would be noticed and remarked though unknown. It is not that they are, in the common acceptation of the term, handsome men, but it is because education and intelligence have wrought upon their features until they are grand as the sculptured faces of heroes and demi-gods.

To physical education I always attached great importance, not only as promoting health, but also gracefulness and beauty. An erect and pleasing carriage of the body and head adds vastly to the appearance of child or adult, and can be acquired by

practicing throwing back the arms and shoulders a few minutes each day, walking upright with a moderately heavy weight upon the head, calisthenic exercises, with music and dancing. Many young persons acquire an ungraceful manner by stooping over their desks at school, the shoulders droop, the neck and chin are thrust forward in a very ugly way. Pupils should not be allowed to bend over their desks except in drawing and writing; then they should bend at the waist, not crouch down from the shoulders. Too much importance can not be attached to the perfect development of the form; the health of the lungs and other vital organs depends so greatly upon erectness of the figure and expansion of the chest that no care or vigilance should be spared to ensure them.

Implicit and unquestioning obedience was one of Dora's first lessons. When she began to talk, and I was confident she could understand me when I gave her any order, I paid strict attention that she did what was directed. Mothers often teach their children disobedience by laxity in enforcing commands, ordering certain things and then taking no notice whether the order is obeyed. Children are very observing, and when they notice that their disobedience passes without censure, they conclude it was of little importance, and the habit of disobedience thus formed increases rapidly. It is much more difficult to reduce a child to obedience than to bring it up to obey. It will be found very difficult to make a noble, well-educated man or woman of a disobedient child. I made it an invariable rule with Dora not to grant to a repeated request what judgment had once denied. Occasions sometimes arise when one may reconsider and allow what has been previously forbidden; but a child should not imagine that indulgences may be gained by teasing, by tears, by violence, or by crossness.

If a request is to be granted, let it be done promptly as if it were a favor conferred with pleasure; if it must be denied, let it be denied firmly, yet kindly, giving the child to understand that the denial is made not to thwart its wishes, but because it is right to deny them. Children should be taught to believe in their parents to suc an extent as to think there is good reaso for not granting their requests if it is n at once revealed to them. They must n imbibe the idea that they are refus through caprice or idleness; a child shou have perfect faith in its guardians. Paren should anticipate their children's lit wants, and surprise them by gratifyi their unexpressed wishes. If young peo believe their parents are willing and anxi to make them happy, they will much m readily comply with parental requireme and submit to parental restraint than they imagine their parents are only ta masters who impose restraints merely their own pleasure and convenience.

When Dora spoke quite plainly, I be teaching her to repeat each day some l phrase, as, "Speak the truth," "Do rig "Be kind;" thus exercising her mer in words and thoughts she understood, teaching her correct forms of expres I furnished her now with sets of block building a house, a church, a fence, a car. These were an unending sour amusement and instruction. She le by them order, regularity, shape, an sign. When tired of them she was o to put them back herself in their bo she also laid her little clothes away week in their drawer. I remembere "as the twig is bent the tree is inclin

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LONGEVITY OF NOTED LITI WOMEN.—Miss Jane Austen died aged 42; Mrs. Radcliffe, 1823, ag Miss Mitford, 1855, aged 69; Mrs. Tr 1810, aged 69; Miss Jane Porter, 185 74; Mrs. Elizabeth Montagu, 180 80; Mrs. Piozzi, 1821, aged 81; M bauld, 1822, aged 82; Miss Edg 1849, aged 82; Lady Morgan, 185 82; Madam d'Arblay, 1840, aged 8 Hannah More, 1833, aged 88; M cet, 1859, aged 89; Miss Joanna 1851, aged 89; Miss Berry, 1852, a Mrs. Somerville, 1872, aged 92; M riet Lee, 1851, aged 95; Miss Carol schel, 1848, aged 98; Lady Smi aged 103—giving for the 19 litera an average age of 81.

## POPULAR SHOWS AND SPECIAL GENIUS.

SINCE last February, when an immense concourse of colored people witnessed the exhibitions of the Carnival in Memphis, the spectacular spirit has been growing among them, and manifesting itself in all sorts of humble imitations, carried out on a larger or smaller scale. In the progress of mankind from a savage to an enlightened condition, there are as many grades as mark his passage from infancy to manhood. The colored people when emancipated were very much like children, highly credulous, with but little idea of responsibility, and exceedingly dependent on the educated people, who in owning them had provided for all their material wants. Of course, this in part at least resulted from their long enslavement; but any people from whom progress is shut off, as it once was from the serfs of European despotisms, evince the same traits; and people in such a mental state invariably display a great avidity for spectacles. Such is the case to this day among the stolid and unprogressive people of India, as well as the lower and more ignorant classes in Italy and France, and such was strikingly true among the French people in the reigns of Louis XIV. and XV., preceding that tremendous popular agitation that followed the teachings of Voltaire and Rousseau.

Well, our poor colored people here in the South are children of no larger mental growth than those peasants of Europe and Southern Asia. They are therefore naturally mercurial in temperament, and dear lovers of excitement in any shape and form. Oh, how they all love coffee! and as for whisky, every man, woman, and child of them will drink it whenever he, she, or it can get it. The warm season of the year is generally a time of religious excitement with them—their protracted meetings begin with "laying by" their crops, and last till cotton picking gets to be too serious a business for hard-working "hands" to sit up till midnight every night shouting, singing, and praying at the tops of their voices. Last summer they had the *Spectacular* excitement. A place of rendezvous is selected, a basket-dinner provided, "marshals" and other officers named, and a long train of wagons, with following of people on horseback and on foot, form a procession, which marches through the neighborhood to the sound of music and so proceeds to the picnic ground. These wagons are modelled after the platform cars on which appeared the *tableaux vivants* of *Mardi Gras*. Wooden pedestals are placed in the wagons, draped, painted, and ornamented with garlands; and on the canopied seat at the top is placed a "queen" of love and beauty. There are three or four queens in a procession, each dressed fantastically in gauze and tinsel, flowers and feathers. Banners also are borne; the "cavalry," bedizened with wooden swords, prance along four abreast, and the poor little Sunday-school children and the young women, all decked in their "Sunday-go-to-meetings," trudge in the dust and hot sun with the patience which long habit has trained them to endure in the fields. There is tremendous drum-beating for days and nights preceding the "Picnic," and that day is ushered in and closes with noises of all instruments the darkeys can muster and control. The Sunday-school children always drill beforehand, expecting to "repeat poetry and sing songs," but when the picnic ground is reached and the baskets opened, nothing more is heard above the multitudinous hubbub but the big drum. These picnics are expensive to the colored people, who strive to outdo each other in their viands and costumes, which run up large sums with the frequent outlay. They have even averaged two large picnics a week. In this connection I must give you an incident that has a bearing on Phrenology. As Mr. C. and myself sat on our piazza one night awhile since, some colored people from a picnic passed our gate, carrying a large accordeon. Mr. C. called the accordeonist in and asked him to play for us. He modestly complied, when we soon discovered that he possessed quite unusual skill. I asked him his name. "Richard Simmons," he said, "a native of Alabama." "Who taught you to play?" "No one; I never had a lesson in my life." I

said to Mr. C., "Now we will have a fresh proof of the truth of Phrenology. You remember Blind Tom's face, with that peculiar fullness just above the eyebrows? Let us see if there is anything similar in this man's face."

Richard sat in the shadow of the morning-glory vines, which draped the piazza, and in the pale moonlight his features were scarcely discernible. I brought the lamp, when lo! he sat revealed!—an ordinary-looking colored man, with large, coarse features, a pleasant smile, and the peculiar frontal projection over the exact location of Tune, whence the forehead somewhat abruptly retreated. I afterward learned that he can play on several other instruments with equal ease and skill; though with the peculiar modesty of a special genius, he supports himself as a field-hand, playing for the darkeys at the picnics without charge.

VIRGINIA D. COVINGTON

S. C. HALL.

## A LITERARY PAIR.

MR. AND MRS. S. C. HALL.

THE lady and gentleman now presented in portrait have been prominent in literary life for so many years, that we need scarcely more than point to the venerable but lively-looking lady and say, "This is Mrs. Hall," and to the bright, well-preserved, clear-featured gentleman, and say, "This is Mr. Hall." Perceptive talent is strongly marked in both, and those well-defined, clean-cut noses have physiognomy in their favor, as indicating highly cultivated symmetrical minds. Mr. Hall's intellect possesses those qualities which characterize the narrator and critic, whose power is in the field of the esthetic, and whose observations have a firm basis in an appreciation of the real and true.

Samuel Carter Hall was born at Wexford, Ireland, in 1800, at which time his father, Col. Robert Hall, with his regi-

was quartered there. Shortly after his birth, the family returned to his native country, Devonshire. Young Hall was educated for the bar, but his taste being strongly literary, he did not practice law. In his twentieth year he published a book. In 1823 he commenced to report in Parliament for *The New Times*, and acquired distinction in that pursuit. In 1824 he married the estimable lady who has for more than half a century been his wife and help-meet in almost every conceivable sense of that term. Mrs. Hall is of Irish birth, having been born in Dublin; her mother was of Huguenot descent. At the age of sixteen, while residing in London, she became acquainted with Mr. Hall, and in due time the two were married. In 1825 Mr. Hall established a paper called *The Amulet*, and conducted it for several years with much success. In 1829 Mrs. Hall published her first work, "Sketches of Irish Character." In 1830 Mr. Hall became editor of the *New Monthly Magazine*, succeeding the poet Campbell. After some years he withdrew, and was succeeded in the place by Theodore Hook. During this time Mrs. Hall published her child's story, "Chronicles of the School-Room," and her first novel, "The Buccaneers," following this by "Tales of Woman's Trials," "The Outlaw," "Uncle Horace," and then what is considered her most successful work, "Lights and Shadows of Irish Life." In 1839 she published her "Marion; or, The Young Maid's Fortune," which was translated into the German, Dutch, and French languages.

It was in 1839 that Mr. Hall conceived the idea of establishing a magazine devoted entirely to esthetic literature, and so launched *The Art Union*, which, under the somewhat modified title of the *Art Journal* he has continued uninterruptedly to conduct until the present day. In this undertaking he created his constituency, there being at the start no public taste for art literature, and for a few years there was little encouragement accorded by the press to his enterprise. Mr. Hall had much to do, of course, with encouraging artists, and had the pleasure of marking the growth of public interest in high art. Changes have taken place in the proprietorship of the *Art Journal* in the course of years, but the main features and original conception are still preserved.

Not long subsequent to her "Marion," Mrs. Hall wrote the stories of the "Irish

MRS. HALL.

Peasantry," and shortly afterward, in conjunction with her husband, published "Ireland, its Scenery, etc.," which gives a better description of the Irish people than any other we know. In 1845 Mrs. Hall wrote another story, entitled "The White Boy," and later, "Can Wrong be Right?" In 1857, "A Woman's Story;" in 1859, "The Book of the Thames," which has passed through various editions, appeared as their joint productions. Among Mrs. Hall's further contributions to general literature, we have "Mid-Summer Eve," "Irish Fairy-Tales," and "Pilgrimages to English Shrines." Another joint production of the husband and wife is "The Book of South Wales." Three or four other books prepared by Mr. Hall deserve mention: "The Royal Gallery of Art," "The Book of Gems," "The Book of Irish Ballads," "Baronial Halls of England," all of which were famous books in their day, and are yet highly esteemed by the lovers of fine art. Still another admirable contribution to general literature, and the production of the joint pen of husband and wife, is "The Book of Memories of Great Men and Women of the Age, from Personal Acquaintance." This was published in 1871, and a revised edition in 1877. It embraces portraits of the celebrated men and artists of the century who have passed away, but were well-known to the authors. Although advancing in life, Mr. and Mrs. Hall still maintain a vigorous facility in authorship. Mr. Hall by his "Trial of Sir Jasper," and Mrs. Hall by her "Boons and Blessings," have shown the enthusiasm of advocates in a good cause; so, too, Mrs. Hall's "Prince of the Fair Family," and "The Fight of Faith," have indicated that although Time has sprinkled snow in her once bright hair, he has by no means cramped her literary energy. Mr. Hall is now engaged on a work which will be likely to secure a wide interest, entitled "Recollections of a Long Life." American publishers have received contributions from Mr. Hall from time to time, so that our public can not be said to be altogether unconversant with his style and quality.

Two marks of royal favor have been conferred upon Mrs. Hall—the first, a grant of a hundred pounds per year, during her life; the second, the gift of a fine portrait of Her Majesty, and also earlier portraits of the Queen and of the Prince Consort, accompanied by an autographic letter. Of the Crystal Palace Art Union Mr. Hall was one of the founders, and has long been one of its leading managers. Other institutions exerting public benefit have also received his advice and assistance.

It is the lot of few couples to live more than fifty-three years in happy, sympathetic wedlock as have these eminent persons and their physical vigor promises to add many years more to their long companionship.

## WITHOUT A SHADOW.

One Peter Schlemihl, years ago,
'Tis said, no shadow ever cast,
Though sunshine beamed with brightest glow
And all the world looked on aghast.

And it no mercy to him showed—
For ages this has been the way,
To add unto the heaviest load—
And he at once became its prey:

Until, pursued by boys and men,
The earth to him looked like a grave;
Rather than meet the mob again,
He hid his life in Thebais' cave.

Like him how many pass along,
Full conscious that the world condemn
Since from the ordinary throng
Some natural trait hath singled them.

Oft 'tis a gift, to most denied,
That makes this curious life complet
Yet must they stem the oppressing tide
Though they are innocent as Peter.

MARIE S. LAI

## THE ARROW AND THE SON

I shot an arrow in the air;
It fell to earth—I knew not where
For so swiftly it flew, the sight
Could not follow, in its flight.
I breathed a song into the air;
It fell to earth—I knew not whei
For who has sight so keen and s
That it can follow the flight of s
Long, long afterward, in an oak
I found the arrow, still unbroke
And the song, from beginning t
I found again in the heart of a f

LONG

# LIGHT IN DARK PLACES.

"This mournful truth is everywhere confessed,
Slow rises worth by poverty depressed."—SAMUEL JOHNSON.

## CHAPTER XVI.

### NORTON REPORTS HIMSELF.

PARTING from the gentleman who had rendered him so kind a service, Norton ran home with Bumpy at his heels. Bursting into the room, he shouted:

"I'm all right, mother, and hungry as a bear, and so is Bumpy."

"I am very glad to see you come home in such spirits, my boy," replied Mrs. Camp. "You will find something in the pantry. Bring it out, and fetch a chair for Bumpy, and then tell me about the proceedings before the magistrate."

Norton went to the pantry and found that several good things had been reserved, and he spread them on the table, with a plate, knife and fork for his companion, and then the two boys sat down and soon were in "the midst of things."

"How is it you are so hungry, Norton? Didn't you have enough for a breakfast of all that I sent and took to you?"

"Well, mother, there was enough for me; but you know, mother, that 'mong such a lot of poor fellows who were locked in with me there were some who were just half starved; and when I came to eat my breakfast this morning, I couldn't stand the way they looked at the things I had, and as I didn't feel hungry scarcely any, I gave all to them. But by the time I got into the court-room I was beginning to feel empty about the waistband. But, mother, the way Mr. Stanley fixed them—judge, old Jebson, and all—you just ought to have seen. He's the best lawyer I ever saw. Isn't he, Bumpy?"

"Yer can bet on't," replied Bumpy, with his mouth full.

Norton then went on to relate the incidents of the examination, in the course of which Bumpy interrupted him now and then to correct or add something; and when he had mentioned the part taken by Mr. Stanley in showing the difference between the boys' heads, Mrs. Camp remarked:

"Why, he brought in Phrenology! You remember, Nortie, how papa used to talk about heads, don't you?"

"Yes, mother, because he often talked about your head and mine being alike in something, and mine being like his in something else, I didn't understand exactly what. Oh, yes, I remember papa once said that I would be more like you in learning how to do things, to work with tools, and might make a good carpenter or cabinet-maker if I grew up strong and well."

"What the lawyer man got off 'bout yer head and Tim's 'pears ter've finished the job fur yer," broke in Bumpy. "And it fotched everybody up. Yer'd oughter seen the people look when the jedge wuz a feelin' uv yer head and cross-eye's."

"Yes, I think the judge knew something about it or he wouldn't have let Mr. Stanley talk about it so much. Don't you, mother?"

"It is very likely, Norton; for educated people generally nowadays have some acquaintance with the principles of Phrenology, or with the way in which the shape of the head shows one's disposition."

"But, mother, why don't they use it in the courts and trials and everywhere? Wouldn't it save a good deal of trouble?"

"Yes, my son; if Phrenology were properly applied in the every-day affairs of life it would be a great help in saving time, money, and trouble. But the world has not advanced enough; people have not become sufficiently free from the influence of old notions and old practices to admit it into general use."

"'Pears to me," said Bumpy, or Larry, if we would give him a respectable cognomen, "that this ere individible would feel kind o' scary ter have people a-feelin' uv his cokernut and a-tellin' all about wot he'd do ef he'd a chance."

"That's the kind of feeling which leads

people to say that it's not true. Isn't it, mother?" said Norton.

"Many people," replied Mrs. Camp, "would not care to have their real characters known, and so they oppose a system which judges one's disposition from the head. If storekeepers knew enough about it to examine the heads and general appearance of the boys who came to ask for situations, they wouldn't take thieves and deceitful rogues into their stores. But this matter, my boys, has to do with many things above your knowledge and comprehension now; and, if you have finished your meal, you should be thinking of your regular duties."

"Tha's so," said Bumpy; "and I'll be off. Guess mom's a-washin' ter-day, an's had ter guv the baby ter the nigger woman up-stairs. An' if this individible aint jest hum wen she comes back he'll ketch blazes."

Snatching his dilapidated cap, Bumpy made off, and Norton soon followed.

Thinking that it would be proper to inform Sadie of his escape from confinement, the affectionate brother on his way stopped at the bindery and solicited a two-minute interview with "my sister," which the foreman granted with a grumble, saying: "Make quick work of it, bub, as it's against the rules for the gals to have company in work hours."

Sadie was, of course, glad to see him, and listened eagerly to the hurried account of his night in the station-house and of the examination that morning.

"What a dear, good man Mr. Stanley is!" she exclaimed. "You'll be forever obliged to him; won't you, Nortie?"

"I guess so," said the boy; "but he isn't the kind of man who likes to have people obliged to him, for when I thanked him for having taken so much trouble on my account, he said: 'That's nothing, my son; I couldn't begin to pay you for all the good your father did me in one way or other.' I wonder what he meant by that?"

"I'm sure I don't know," replied the young girl. "Perhaps mother can tell us something about him and father. But, Nortie, it's time you went. Briggs is looking this way, and sour enough."

Norton, on this hint, immediately sp out of the shop and went on his customa round.

## CHAPTER XVII.

### IN WHICH MR. STANLEY IS FURTH INTRODUCED.

MRS. CAMP'S promptitude in deliver the work finished with the aid of Betty, g "satisfaction," and secured further j from the same house; but her expectati were not fully met, as during the remain of the summer there were one or days in each week when she had no out engagements. Her "off-days," as termed these, were filled up, however; there were always in her mind plans settled convictions relating to things w would contribute to the welfare of family or of her neighbors; and the p tical carrying out of any of these, as le permitted, resulted in much comfort to

Work is the grand solace of the tressed heart, especially work which h view the benefit of others. If the sands who go about listlessly bemo lost time, lost opportunities, lack of ployment, poverty, misfortune, woul earnestly to work at whatever their find to do, thinking little of the pecu recompense, society would be relieve vast load of misery.

Mr. Stanley called two or three tin the widowed mother, and convers matters which concerned chiefly his life. Of course his association wi late husband soon gave him the plac friend in Mrs. Camp's esteem; but fined sensitiveness and dislike to inc ligations rendered her almost distrus herself in allowing a friendly intima a gentleman whom she had known son so short a time. Stanley's hea nestness and trustful manner had v good opinion in the outset, yet she it wise to maintain a prudent res the sake of her children. Stanley side, felt more and more drawn tov lady, impressed by her lofty chara rarely-endowed mind. He remem remark, half jocose, which his fr

lieutenant had dropped one day in the course of talk on the women of society. He had reviewed in a cynical, bitter tone the superficial, vapid manners which too much prevail in fashionable circles, and inveighed against the insanity which led men to bow before shrines whose beauty was made up principally of lace and tinsel, while of mental endowments they possessed little of practical significance. Lieutenant Camp listened to this vehement indictment with a half-amused expression playing on his face, and finally broke in with—

"They are a good deal of what you say, sergeant, but, should you see Mrs. Camp, you would forgive them for her sake." The more he saw of the lady the more he was persuaded of her great worth, of the no-

MR. STANLEY.

bility and beauty of her womanhood, and he found himself now and then soliloquizing—"Camp was right; that woman, indeed, balances the caprices and frivolities of the others." He had not lived more than forty years without experiencing some phases of the tender passion; and people who knew him wondered how it was that so companionable a man had not settled down in the domestic relation years before, instead of lingering on the hospitality of this or that housekeeper, whose particular consideration in entertaining him was a mercenary one. There was in his memory one warm niche where rested sundry sweet recollections of a pair of sapphire eyes with which his own deep brown ones once held tryst. He might have loved their owner—he certainly had reached the point of warm esteem, when a bold and dashing wooer with the glittering prestige of wealth—Stanley was only a clerk then—stepped in and bore the lady to a western home. She was poor and ambitious, the daughter of a widow invalided and dependent largely upon a son whose wife regarded with a jealous eye every contribution made for the mother's comfort. The young lady accepted the proffer of wealth for her mother's sake, Stanley was sure, and he could not blame her; yet the loss of her society gave him much more pain than he would have expected had it been previously suggested to him. He did not turn to the society of other ladies for solace, but gave closer attention to business, and his heart's loss proved his pocket's gain, as his assiduity won promotion and excellent remuneration.

Another reason for his bachelorhood, and one applicable to the period when lack of income could not be urged as a practical objection, was his business relation then; he traveled a great deal for the firm, being absent from the city six months or more in the course of the year. Stanley insisted that a husband's place was at home; that he should not follow a vocation which required him to leave it frequently; that the claims of wife and children are imperative, and of the highest character known to human life; and the man who, by frequent and long absences from home, compelled his wife and little ones to look to others for protection and counsel was unworthy of being a husband and father. Furthermore, he realized the peril in which one lived who was traveling from place to place at different seasons, and he deemed the anxiety of a wife so related a direct imposition of cruelty. This may be regarded as an extreme view by most readers, but Stanley's generous sympathy for woman, particularly in motherhood, added intensity and consistency to his convictions.

The war interfered greatly with his business, as its transactions had been largely Southern, and he himself felt keenly the bitterness of the strife since he had traveled throughout the Southern States and had

formed many friendships there. The dullness of trade at length determined the firm to suspend, at least temporarily. Then Stanley's patriotic sympathy led to his volunteering in defense of his country's flag. How he met Lieutenant Camp has been related. That gentleman's earnestness and culture drew Stanley at once toward him, and a close intimacy grew up between them, to be severed so suddenly by the horrid shaft of battle.

Mustered out of service, he returned to Boston, his former abode, and soon afterward learning that his old firm had recommenced business operations, but in New York, he wrote to the senior partner, offering his services. A few days later there came an answer, requesting him to repair at once to the American metropolis. He did so, was warmly received, and in a day or two occupied his old position. Three years later one of the partners proposed to withdraw from the concern, and Stanley was invited to take his place. A married sister, who had long resided in New York, invited Stanley to live with her family, and the homeless man gladly accepted the opportunity. He now was no longer required to travel, and for the first time began to experience some of the enjoyments and peace of home life. A small circle of friends, his sister's family, a little of philanthropic work, and an evening or two at the Mercantile Library, filled out his leisure from week to week. Perhaps the routine of it was becoming a little monotonous; at any rate he welcomed the new experiences which the discovery of the Camps brought, and found himself becoming more and more interested in them as the acquaintance continued.

## CHAPTER XVIII.

### A DRESS CONFERENCE.

SUMMER had almost passed, the frequent recurrence of cool days reminding the community that it would be wise to make provision betimes against autumnal cold and its sickness-producing allies—easterly winds and rains. Mrs. Camp's liberal knowledge of hygiene led her to use such means as she could command to feed and clo her children in accordance with the weatl She deemed it the extreme of folly for p people to attempt to imitate the fashion: society, and pitied the women and girl: her neighborhood who spent the wages cured by the hardest labor for ribbons gew-gaws and shoddy stuffs that they m appear somewhat like the garish pictur fashion plates. She aimed to dress n and gracefully, but at no sacrifice of cor and health. The latter she regarded a value so far exceeding the observan fashion that its demands were to be res ed always without any heed to fashion that tyrannical goddess came in cc with health.

Sadie, like all vivacious, robust gir drawn toward rich dress and brilliant ration, and often sighed when a lady per-tendom passed her on the stree silken skirts *en train* and bright f waving from a delicate frame of st felt called a bonnet, because she w nied the ability to equip herself in b garments. The course which she wa to take in her daily walk to and fr shop was not often selected by la fashion, so that when one appeared neighborhood her attire contrasted with the poor garments of its h Sadie was on her way homeward fo one day that summer when she p lady of *ton*, who had just alighted handsome carriage and was ente hallway of a tenement, perhaps int some errand of benevolence or in s some woman who had advertised fo for household service. The flas lady's bespangled and fluted robe f the young girl's eye, and she paus ment in her rapid walk to gaze c play of manifold trimming, and t sued her way, absorbed in thoug wild fancies coursing through he head. At the dinner-table she forbear alluding to the incident, expression disclosing the regret deep within on account of her i gratify the esthetic aspirations of l

"How happy such people must er dear," said she, "when they ca

such materials and styles as they like, and always appear so elegantly!"

"My darling, you see only through gilded glasses when considering such people. Your experiences of life have not yet included an intimate contact with the votaries of fashion. Your fresh, generous heart can scarcely conceive of wealth and mental culture as being hampered and controlled by selfishness, jealousy, and the petty exactions of convention. You look at people favored by fortune, and envy their ability to do noble and great things for others, little realizing the fact that the acquisition of wealth and the gratification of self, which is usually coincident with it, tend to suppress true feelings of sympathy and benevolence."

"Why, mother, it is the duty of the rich to help the poor."

"Yes, my child, but people do not always respect the call of duty. The old proverb, 'The more we have the more we want,' applies so directly to those who live in the midst of profusion that the pure and candid soul is astonished by the amount of absolute wretchedness which exists among the wealthy, simply on account of unsatisfied desires. The great poet says:

> "'Tis better to be lowly born,
> And range with humble livers in content,
> Than to be perked up in a glistering grief
> And wear a golden sorrow.'

And if you could have the opportunity to study the home life of the finely-dressed women whom you meet, you would find many a 'glistering grief,' and look with far more content upon our humble lot."

"Oh, my own mamma, I wouldn't exchange my home for the proudest palace on earth, unless you were with me. I couldn't be happy, except you and Dell and Nortie partook of my good fortune. But, mother, don't you like to see and to wear beautiful garments?"

"Certainly, my love, but I would have the qualities of harmony, propriety, and fitness enter into their selections and make-up. Every one should dress in accordance with her station; should consider the law of correspondence as regards complexion, size, avocation, etc. It is right to endeavor


SADIE MEETS A LADY OF FASHION.

within reasonable limits to make ourselves look as well as possible, but we should not sacrifice valuable time in questionable and injurious methods of decoration, like painting and powdering the face, wearing medicated gloves to whiten the hands, and in contriving startling and extravagant effects in dress for the head or body."

"I'm going to wear patent-leather shoes when I can afford 'em," said Norton, "for they're handsome, and I've noticed that men who wear 'em aren't much troubled by the boot-blacks. Jim Tuff blacks boots,

and he told me one day that he'd just like to burn up all the patent leather ever made, 'cause the fellows who wore it felt themselves so much above the boot-blacks. Now I think that patent leather must be very convenient, 'cause it saves time. One who wears it doesn't have to shine his shoes every morning and doesn't have boys running after him and getting in his way with, 'Black yer boots? shine 'em up?—only five cents.' I wonder that more people don't wear 'em."

"I think they're real pretty, and you'd look so nice in a pair, Nortie," put in Dell, who was much given to championing her brother and occasioned much fun to mother and sister by her arch earnestness in it.

"When Nortie can afford to wear patent-leather boots or shoes, mamma will offer no objections. Such dressing for the feet needs nice dressing for the body to harmonize with it, just as a handsome bonnet requires handsome garments. Here it is where many people who can not afford to dress well show their want of taste and judgment; they put on an expensive sacque or mantle over a cheap and sleazy dress, or expect an elaborately-trimmed bonnet to compensate for the scantiness of the remainder of their costume, not realizing that the strong contrast of quality thus presented by their attire renders them objects of ridicule with those they would imitate."

"I heard you say, mother, once, if I aint mistaken—"

"You mean, my boy, if you mistake not."

"Oh, yes, mother, if I mistake not, that you like to see a good hat on people, even if the rest of their clothing was shabby."

"Yes, I probably said that. I meant that a neat, proper hat or bonnet relieved in a considerable degree poor or much-worn garments. You know that shoes may be ill-fitting and be patched, yet when kept clean and bright they impart an air of gentility to a threadbare coat. Neatness, my children, will cover many defects of face and dress which would otherwise be rendered conspicuous. One advantage," continued the lady, "which we poor people possess over the rich, and which is not sufficiently co ered, is that we can pay a close rega comfort in our selection of things to v and we can use good sense in rejectin follies of fashion, and wearing only wh becoming, without being criticised by neighbors. When you become a lad society, my Sadie, you will find yoursel kind of slavery; being expected to c other ladies do and to sacrifice your judgment in very many ways, and oft matters of vital importance, especially be a wife and mother."

"I'm sure, mother dear, if I coul do what I thought to be proper and ri would not care to be rich, for unde restraints I couldn't be happy."

"But you might be rich and not a ety lady,' so called, and act in acco with your views of duty; and in usi great opportunities which are in the wealth to help others and benefit s you would heighten your enjoyment c

"Quarter to one, and I must go, r I wanted to speak about somethin but I've quite forgotten it; perhaps I of it by tea-time."

Sadie put on sacque and hat and down-stairs, and the family conferer dissolved.

H. S. DRA

(*To be continued.*)

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THE TWO HEAPS. — The Re Newton once said: "I see in th two heaps—one of human happir one of misery. Now, if I can the smallest bit from the second add to the first, I carry a point. go home, a child has dropped penny, and if, by giving it anoth wipe away its tears, I feel tha done something. I should be deed, to do great things, but I neglect such little ones as this little offices lie within the sphere one.

Literature, Mental Science, and Education.

True philosophy is a revelation of the Divine will manifested in creation; it harmonizes with all truth, and can not with impunity be neglected.

## SMOLLETT AS A NOVELIST.

THANK Heaven! the foundation of every production in literature must be the same. It is truth. Accuracy in the historian, and careful delineation in the novelist; exactness in the poet, and precision in the philosopher—to these the appeal of the critic must be made. And when this latter personage loses himself in the intricate wanderings of an author's fancy, or finds himself bewildered by the capricious enigmas of his thought, he finds in Truth a compass by which to take his bearings. Would it not be well if many authors would supply themselves with a similar instrument, and referring to it occasionally, understand whither they are drifting? Unfortunately, Truth is, to a great extent, a negative virtue merely. The plain structure, solid though it be, is uninviting. The reader loves a varied picture. Sweet dreams of happier days, and the stirring songs which courage sings of war, come like a breath of spring to the wearied fancy. The historian without imagination and a spirit of true philosophy, is unworthy the name, and the novelist, without a true conception of the poetic, speedily sinks to his own place.

In the immense demand for fictitious writing at this time, even such an important fact is lost to view; and thousands of people, young and old fitted neither by nature nor education, are swarming into the field like paupers to a free feast. By pampering to some popular passion, their effusions raise a clamor of coarse approval, but ere long their sentimental dreams of love and duty must melt away like morning frosts. This is nothing new. People of all degrees of capacity have always been writing. Some have already stumbled into stagnant pools of oblivion; others have come down to us with a greater or less degree of popularity. Among this latter class, Tobias Smollett, less popular to-day than in the days of our grandfathers, is still accorded some degree of merit. He was a sailor in early life, then a physician. He was somewhat acquainted with life on the continent, and knew the ill-usage of publishers and magnates of the theatre. All this experience was valuable, for from it he has derived his chief excellencies.

Our attention shall be directed mainly to the contemplation of "Peregrine Pickle," which will afford us a just opportunity of judging the character of Smollett's work. In this tale, all unity of plan is disregarded. We are snatched from scenes already familiar and from companions whom we ought to have loved, with a regard for the affections decidedly Oriental. We are whirled from London through the continent; back again, and round again. In emulation of the biographical brotherhood, we begin with the ancestral line. We are called to the marriage of Pickle's parents, and our acquaintance does not cease till we see the hero himself safe in the folds of the same holy alliance. We are with him in a youth of wantonness; we go with him down to the despair of prison life, and rejoice when fortune smiles again. We are bewildered by a multitude of characters, evidently thus lavishly thrown in to show the fertility of Smollett's genius—an end which some critic has been prevailed upon to believe is accomplished thereby. It would rather indicate a paucity of judgment and lack of concentrative power. The great merit of the work is the delineation of character in the person of his hero. This wonderful

youth, completely disgusting in himself, perhaps, well illustrates the course of a spirited boy, cast off by his parents and adopted by a mad and doting uncle of unlimited fortune. Pickle was a prodigy. Developing wondrous beauty of figure and boldness of address, keenness of intellect and pungency of wit, he was petted and courted until his insolence and haughtiness became revolting and his conceit such as to believe that no woman could withstand his charms, when he deserted the girl to whom he had plighted his love because he believed she was no longer his equal. Intoxicated by the attention paid his fortune and wit, he leaped into the most unrestrained prodigality, which terminated only when, with squandered fortunes, and deserted of friends, he was lodged in prison until the death of his father, when he was again elevated to wealth, married the girl whose honor he had attempted, and settled down to steady life, it is to be supposed, a wiser man. This is spread through two volumes, which, if condensed to the compass of the "Vicar of Wakefield," might have been almost as popular; but filled as it is by records which, for their brilliancy, might have been copied from the pages of "Euclid," it will always be passed as "no favorite of ours." The interminable memoirs of "A Lady of Quality," and the everlasting tale of the clergyman in the "Fleet," both inserted in emulation of Cervantes, have no more connection with the purpose of the narrative than Sancho's proverbs with the chivalry of his master. In the early part of the story the reader is led on by the agreeable humor of the sea characters, Trunnion and Hatchway, whom somebody has called "inimitable." He must be antagonistic, indeed, who will admit that Smollett is not frequently decidedly funny. Yet there is none of that delicate levity, half earnest, half ludicrous, which abounds in the pages of Goldsmith.

Smollett had little of that poetic imagination which characterizes Bulwer so remarkably; neither has he the art of presenting his reflections boiled down to those delicious kernels of truth, to which the Greeks of Hippocrates' day gave the name of aphorisms, and which make up a fo of philosophy peculiar to the novelist. I has he the faculty of fascinating the rea by beautiful comparisons and flights fancy—qualities of style which give to l wer a peculiar character among novel Smollett seldom attempts such boldne perhaps because he is conscious of his of ability, and perhaps because his atten was never directed to its advantages. W ever he chances to approach it, he care feels his way, keeping near shore, r striking boldly out and bringing back discoveries to please and instruct. Sm is evidently master of his passions; when he speaks of love, he talks moder "Love (when he reigns in full empi altogether irresistible, surmounts every culty, and swallows up all other qua tions." Not so Bulwer; he is all or Glaucus and Ione have met; have They are gazing upon the dark mo of Vesuvius. "A sudden and unac able gloom came over them as they and in that sympathy which love had a taught them, and which bade them slightest shadows of evil to turn for re each other, their gaze at the same m left the mountain and, full of unima tenderness, met. What need had t words to say they loved?" Smollet fond of comparisons. It is not oft he loses control of himself as in the ing: "Like a stream which, being d accumulates more force, and bursti its bounds rushes down with dou petuosity." Notice in contrast thi ful comparison from Bulwer. Ar walking in the damp cellars ben luxurious mansion. "These rude that furnish the luxuries of the ha are like the laborers of the world spise their ruggedness, yet they very pride which disdains them." is Smollett so passionate as this baleful envy! thou self-tormenti how dost thou predominate in a blies, from the grand gala of a co meeting of simple peasants at thei home." Sometimes he makes statement: "A man, conscious o indiscretion, is implacably offend

rectitude of his companion's conduct, which he considers as an insult upon his feelings never to be forgiven, even though he have not tasted the bitterness of reproof, which no sinner can commodiously digest."

Perhaps Smollett's weakest point is his deficiency in taste. If he intended Pickle as a model youth, it would be nothing strange; but we will not do him the injustice to suppose that he did. While in many authors prudish notions of propriety give to their characters an appearance of artificial morality, such blemishes must not be credited to Smollett. On the contrary, he seems to take pleasure in coarse references; and, like the irrepressible train-boy, is continually thrusting his favorite wares upon you with a leer of satisfaction. His hero picks up a common street-walker, dresses her up *à la mode*, gives her a few superficial lessons in etiquette, and introduces her to society as a niece of his friend Hatchway, in which character she passes for a lady of birth and culture until she unfortunately betrays herself and Pickle by unguarded behavior. By this episode our author gets off a sarcastic hit at society, and makes plain that "all persons whatsoever, capable of maintaining a certain appearance, will always find admission into what is called the best society, and be rated, in point of character, according to their own valuation, without subjecting their pretensions to the smallest doubt or examination." His attempts toward the pathetic are almost failures. When Lord W—m, the husband of the "Lady of Quality," dies, the loving wife is told by a friend that her "dear devoted" is dead—a fact of which she learns for the first time, though occupying the same bed with his departed lordship. She gets up; steps over his head as if afraid to wake him, (how sublime!) throws up the window and stares at the sun!

Smollett is not forgotten because he could read human nature and make men laugh. He has wit and sarcasm; yet, with but few exceptions, his characters seem unreal. We do not feel with them. We are passive. They are like wooden puppets dancing upon a distant stage. They are always flitting about; but whether they be few or many, whether they look like men or women, we care not. We know they are all of wood, inanimate, lifeless. GRANVILLE M. TEMPLETON.

# BRAIN AND MIND.

## CHAPTER I.

### GENERAL PRINCIPLES.

PHRENOLOGY—composed of two Greek words, φρην, mind, and λογος, discourse—is a system of mental philosophy founded upon the physiology of the brain. It assumes as its fundamental principle that the brain is the organ of mind just as the eye is the organ of vision, the stomach of digestion, or the heart of circulation.

It was long a disputed point among physiologists what function the brain performed in the animal economy. Hippocrates and Astruc thought the brain was a sponge; Aristotle considered it a bloodless mass which tempered the heat of the heart; Praxagoras, Plistonicus, Philotinus, and others regarded it as a mere excrescence of the spinal marrow; Misticelli called it an inorganic mass; Malpighi thought it was a collection of confused intestines; Sabatier and Boyer considered it a secretory organ; Galen and many others imagined that it secreted vital spirits, and distributed them through the arteries of the body; and Bichat thought it an envelope to protect the parts beneath. It is now generally conceded by the leading physiologists that the brain is the organ of mind. As, however, there

are those who are disposed to dispute the correctness of this opinion, it may be well for us to bring forward some of the proofs by which the truth of this proposition is established.

1. ***Size and Intelligence.***—A low degree of mental power invariably accompanies a marked deficiency of brain. In the lowest class of idiots the horizontal circumference of the head, above the ears, measures from 12 to 13 inches; in a full-sized head the circumference is 22 inches. In such idiots the distance from the root of the nose, measured over the top of the head to the occipital spine, is but 8 or 9 inches; in a full-sized head it is 14. The heads of barbarous or savage races are smaller than those of the civilized; the negro skull has a brain capacity averaging 82

Low Type. Idiot Skull.

cubic inches; the higher tribes of American Indians, according to Prof. S. G. Morton, like the Seminoles and Oneidans, have a brain-measurement of about 90 inches; while the measurement of the English and German encephalon internally is placed by the best authorities at over 100 cubic inches. In a table derived from 405 autopsies of white and negro brains, recorded by Prof. Austin Flint, of New York, the average weight of the white brain is given at 52 ounces, and that of the negro at 46.9; these negro specimens, however, were of men who had been associated with whites almost from birth. Whenever the head does not exceed 13 or 14 inches in horizontal circumference, idiocy is the invariable consequence.

2. ***Brain Development and M tality.*** — Throughout the whole mal kingdom the brain is found t larger and more complicated in portion to the strength and numb the mental faculties manifested. find," says Prof. Graves, of Du "that exactly in proportion as th cephalic portion of the nervous sy is developed in the vertebrated ani we can trace the appearance of faculties, which, few and obscure lower species, become, as we as more numerous and more distinct we arrive at man, in whom the bra tains a degree of preëminence suf to place him far above all other s of mammalia . . . . But man do

Well Developed Skull.

only differ from other animals configuration of his brain and pacity of his mind, but also exh singular fact of a great difference respects between individuals of species: it being an obvious f different men exhibit as much in their intellectual powers as were animals of a different ge all such cases (where the differ tween the intellectual power treme), there also we invariab striking difference between and size of their skulls, the mo gifted always presenting a gre tive proportion of brain." On modern physiologists are

agreed. Prof. Flint, in his late work on Physiology, cautiously writes: "It may be stated as a general proposition that, in the different races of men, the cerebrum is developed in proportion to their intellectual power; and in different individuals of the same race, the same general rule obtains." Cromwell, Cuvier, Abercrombie, Dupuytren, Chalmers, Napoleon Bonaparte, Daniel Webster, Spurzheim, and other men of conspicuous eminence possessed heads much larger than the average.

3. ***Effect of Morbid Conditions.*** —In disease of or injury to the brain the mind is always affected. Dr. Stokes, in his lectures on the practice of medicine, relates a case in which a tumor was removed from the interior surface of a man's skull; whereupon the patient was immediately, and for the first time, attacked with loss of consciousness, and convulsions of the trunk and extremities. The surgeon, thinking that the removal of the pressure from the brain, to which it had gradually accommodated itself during the growth of the tumor, was the cause of these symptoms, made a gentle pressure on the exposed surface, and the convulsions immediately ceased and consciousness returned.

Another authority, Prof. Chapman, relates a case in which the brain was exposed by the loss of a portion of the skull. In this instance consciousness could be suspended at pleasure by merely pressing on the exposed surface with the finger, and restored by removing the pressure. Sir William C. Ellis reports, in his "Treatise on Insanity," that out of 221 cases of dissection, he found that 207 showed decided marks of brain disease; four of the remainder being congenital idiots must be excluded from the list, thus leaving only ten cases in which he could not detect organic disease of the brain; and of these ten, seven were recent cases, being only about a month ill.

4. ***In Swooning,*** the blood being rapidly withdrawn from the brain, consciousness is suspended.

4. ***Movement.*** — Where the brain has been exposed by the removal of a portion of the skull, it has been observed that it is agitated in proportion to the degree of mental excitement. A young man was brought to Sir Astley Cooper who had lost a portion of his skull just above the eyebrow. "On examining the head," Sir Astley says, "I distinctly saw the pulsation of the brain. It was regular and slow; but at this time he was agitated by some opposition to his wishes, and directly the blood was sent with increased force to the brain, and the pulsations became frequent and violent. If, therefore," he continues, "you omit to keep the mind free from agitation, your other means (in the treatment of injuries of the brain) will be unavailing."

Dr. Pierquin reports the case of a woman who had lost a large portion of her scalp, skull, and dura-mater. When in a dreamless sleep, her brain was motionless, and lay within the cranium. When agitated by dreams, her brain moved, and protruded outside the cranium. In vivid dreams the protrusion was considerable; and when she was perfectly awake, especially if engaged in active thought or sprightly conversation, it was still greater.

These are but a few in the vast multitude of cases which might be brought forward in support of the principle that the brain is the organ of mind.

### THE BRAIN A CONGERIES OF ORGANS.

A second principle of Phrenology is, the brain is made up of as many individual organs as there are distinct mental faculties. This is a proposition

which is not admitted by all of those who readily concede that the brain is the organ of mind, yet it is supported by an array of proof fully as convincing as that. It is in point to remark here that the necessity of considering the brain a compound organ had presented itself to the minds of many earnest inquirers of ancient and mediæval times, from Aristotle down, in order to account for the great diversity of mental characteristics which they observed among men.

Aristotle, as has been stated in the Introduction, divided the brain into parts, and designated them as the seats respectively of common sense, imagination, judgment, reflection, and memory. This distribution was accepted or followed in the main by leading philosophers from Aristotle to the time of Dr. Gall's discoveries. Such authorities as Galen, Albert Magnus, Bernard Gordan, Huarte the Spaniard, Porta of Naples, Ludovico Dolce, Thomas Willis, a professor in Oxford University, are noteworthy. Of Prof. Willis a recent author, Dr. B. W. Richardson, says that it was "he who gave the world of science the first true light on the function of the different parts of the brain." A work on the "Anatomy of the Brain" was published by Willis in 1644, in which he sets forth his doctrine that the brain is a congeries of organs, and the seat of moral and intellectual action.

Fœderé, a zealous opponent of Phrenology, is compelled to admit, when speaking of a plurality of organs in the brain, that "this kind of reasoning has been employed by the greater number of anatomists, from the time of Galen down to our own day, and even by the great Haller, who experienced a necessity for assigning a function to each department of the brain."

Cuvier says, in his "Anatomie parée," vol. ii., that "certain parts brain in all classes of animals are or small, according to certain qu of the animal." Bonnetus assert "the brain is a very complicated or, rather, an assemblage of di organs." Tissot also asserts every perception has different while Van Swieten and Prochas tertained the opinion that the ir senses occupy in the brain org distinct as the nerves of the e: senses. But it was reserved f Gall to give a substantial basis theory that the brain is a com organ, by discovering the res places in it of different mental fa The weight of authority suppl the authors we have named is gr aside from them we think that th is demonstrated to be a compou gan by the following arguments

1. ***Organ and Function S*** —Every distinct physical funct a special organ. Sight, hearin digestion, circulation, etc., has appropriate organ, which is cap performing only its peculiar f And whenever any organ has pound function, it is found to sessed of a complex nervous ap The tongue, for instance, whic cises the function of taste, p also those of feeling and moti accordingly it has three sets o corresponding with its triple f From analogy, therefore, it is able to suppose that such differe tal operations as loving, hating, hoping, etc., should have differe bral organs.

2. ***Mental Faculties Succ Indicated.***—The different me ulties do not all appear at the period of the individual's e Almost the only faculty m

by the new-born babe is the desire for food, but soon it comes to observe things which exist around it, and to love, dislike, and manifest anger and stubbornness; while its capacity to reason, and its sense of duty and responsibility, do not appear until a much later period. Were the brain a single organ it would manifest at any time one faculty as readily as another.

3. ***Genius or Talent Partial.***—The fact that genius is almost always partial is plainly contradictory to the organic unity of the brain. For, if a mental faculty be only a particular mode of mental manifestation, and if the whole brain be concerned in every operation of the mind, there is no reason why an individual who possesses a remarkable talent for mathematics should not be equally gifted in music, painting, poetry, or in any other special talent. It is to be observed that remarkable talents often appear at such an early age that the old metaphysical theory that they are "the result of acquired habits, aided by favorable circumstances" is entirely precluded. Allan Cunningham, in his "British Painters," says of Richard Wilson: "His love of art appeared early. How this came upon him in a place where there were no paintings to awaken his emotions we are not informed, but a slight cause will arouse a strong natural spirit." Of Benjamin West he says that at the age of seven he drew an accurate likeness of his little sister with red and black ink, and this is the more remarkable as "there were neither professors, paintings, nor prints among the primitives of Pennsylvania." Pope says of himself that he "lisped in numbers, for the numbers came." And George Bidder astonished the world with his mathematical calculations at the age of twelve. Within a year past Mr. Smiles' interesting biography of Thos. Edwards, the Scottish naturalist, has been published, which furnishes additional testimony, if any be needed, to the variations of mental organization and partial genius. Mr. Smiles, in striking terms, shows how the innate qualities of this eminent subject displayed themselves in childhood: "When only four months old he leaped from his mother's arms to catch some flies buzzing in the window;" and when a boy he persisted in collecting and studying the habits of beetles, frogs, crabs, lizards, rats, mice, etc., in spite of threats and whippings.

4. ***Idiocy and Insanity Special.***—Partial idiocy and partial insanity are explicable only on the supposition that the mind operates through a plurality of organs. There are individuals who possess a remarkable talent for music, drawing, rhyming, calculation, or mechanics, but who in all other respects are practically idiotic.

Fœderé, in speaking of the Alpine Cretins, says: "It is remarkable that, by an *inexplicable singularity*, some of these individuals, endowed with so weak minds, are born with a particular talent for copying paintings, for rhyming, or for music. I have known several who have taught themselves to play tolerably on the organ and harpsichord; others who understood, without ever having had a master, the repairing of watches and the construction of some pieces of mechanism." These powers, he says, could not be attributed to intellect, "for these individuals not only could not read the books which treated of the principles of mechanics, but were confounded if spoken to on the subject, and never improved themselves."

The reader is probably familiar with that remarkable American musical prodigy, "Blind Tom," who has been so ex-

tensively exhibited. This negro youth, although a wonder to all who hear his musical performances, is an imbecile in most other respects.

Were the brain a single organ, these phenomena could not occur; for whatever power it possessed it would be equally capable of manifesting that on every subject, and it would be just as unreasonable to suppose that such power could be exercised on music, drawing, mechanics, or mathematics, and be utterly deficient in every other respect, as to suppose that the eye which is capable of seeing a horse, a cow, a tree, or a house might be blind to every other object in nature.

In *monomania* and partial insanity, again, the phenomena of the mind indicate derangement in one or several faculties, while all the rest appear perfectly sound.

"Hospitals for the insane," says Pinel, "are never without some examples of mania marked by acts of extravagance, or even of fury, with a kind of judgment preserved in all its integrity, if we judge of it by the conversation; the lunatic gives the most just and precise answers to the questions of the curious; no incoherence of ideas is discernible; he reads and writes letters as if his understanding were perfectly sound; and yet, by a singular contrast, he tears in pieces his clothes and bed-covers, and always finds some plausible reason to justify his wandering and his fury. This sort of mania is so far from rare that the vulgar name of *folie raisonnante* has been given to it."

Sir George Mackenzie mentions the case of a man who was able to converse rationally on every subject but the moon. On hearing the moon mentioned he became greatly excited, as he believed himself secretary to the moon. Dr. Gall speaks of a lunatic who was confined in the hospital at Bicetre, w succeeded so well in persuading a m istrate who visited the asylum that was the victim of the cupidity a cruelty of his relatives, that the ma trate thought seriously of examin into his case with a view to setting at liberty. But as he was about tal his departure, promising to re shortly with good tidings, the mad remarked: "Your excellency wil ways be welcome except on Satur for on that day the Holy Virgin m me a visit."

These cases of partial insanity, those of partial idiocy, are utterl compatible with the idea that the has but a single organic apparatus they are clearly and rationally ex ed on the supposition that the br composed of a number of organs. then, in cases of partial idiocy, it i fectly rational to suppose that th gans of those faculties which are s ly manifested are well-developed, the other mental organs are in s rudimentary condition as to be pable of the proper manifestat mind; and all cases of partial in are rationally explained by the that one or more mental orga diseased, and thus give forth verted manifestation, while all th are sound, and capable of per their normal function. This, has been proved in a vast nu instances by actual demonstrati

5. ***Injuries*** to parts of th tend, in like manner, to con notion of its compound char well as the correctness of the lo many of its organs. A boy in V ton was once struck on the he place where the organ of Tun ated, and had a sliver of t driven into the brain matte part. He immediately began

fest a powerful disposition to whistle; he whistled constantly; would even whistle between his mouthfuls of food, but when the portion of bone which was driven into his brain was withdrawn, he whistled less and less, until the wound had healed, when his impulse to whistle was entirely removed.

A man received a blow upon the organ of Mirthfulness, and soon after exhibited such a disposition to make fun of everything he saw, that his friends had him confined as a lunatic. But on the application of treatment to reduce the inflammation of the injured part of the brain, he was entirely cured in a few hours of his disposition to laugh. A farmer in Massachusetts, while yoking oxen, received a blow from the horn of one of them on the back part of his head. Though formerly an affectionate husband and a kind neighbor, he soon came to treat his wife very harshly, and would order his former friends and neighbors out of the house when they came to visit him, while with strangers he was courteous and sociable. A *post-mortem* examination revealed the fact that the organ of Friendship was the portion of brain which had received the blow from the ox, and it and adjoining organs were extensively diseased.

### SIZE AND MENTAL POWER.

One of the arguments which we have brought forward in proof that the brain is the organ of mind is that a deficiency of brain is always attended by a low degree of mental power, and that men of commanding mental capacity have invariably had heads of unusual size. Now, what is true of the brain as a whole, is true also of its individual organs. The greater the size of an organ, the greater will be its power of manifesting its faculty; and, on the other hand, the smaller an organ, the weaker will be the manifestation of its faculty. In other words, the size of an organ is the measure of its power. The principle that size is the measure of power holds true universally wherever objects are compared which possess the same qualities. A large bone or muscle possesses greater strength than a small one; and the function of respiration will be vigorous or feeble in proportion to the size of its organ, the lungs. Some, indeed, have asserted that this law does not hold true of the brain, but only of those organs whose exercise is connected with mechanical force, as in muscular contraction. The perfection of vision, it is said, does not bear the least proportion to the size of the eye, either when considered with respect to different species of animals, or with respect to different animals of the same species. But though the power of vision is not measured by the size of the eye, it is incontrovertible that it is measured by the size of the optic nerve, which is in reality the medium of vision. According to Desmoulins, in the screech-owl, whose sight is defective, the parts from which the optic nerves arise are not more than one-twentieth part of the brain; while in the eagle, which is proverbial for keenness of vision, the same parts are about one-third of the brain. The optic nerves in these two classes of animals are in the same proportion. This same author says that in order to increase the surface of the retina, which is the expansion of the optic nerve, it is thrown into folds in eagles, vultures, and falcons, so that the folds hang loose in the eye; but in animals of ordinary sight these folds do not occur. The compound eye of insects like the fly and bee is associated with an optic brain-center of conspicuous dimension. The Schneiderian membrane in the

nose of man is spread over a surface of only twenty square inches, while in the seal it covers one hundred and twenty square inches; and so great is the power of smelling in the seal that hunters are obliged to approach him directly against the wind, else he would recognize them by their smell.

These cases tend to prove that in nervous matter, as well as in those cases where the exercise of an organ is connected with mechanical force, Size *is* the measure of power. In laying down this principle with reference to the mental organs, however, we are always careful to put in the qualifying cla *other things being equal.* If we wer compare a pine stick with an oak st or an oak stick with an iron bar, obvious that the law of size being measure of power would not hold g because of the different propertie these different materials. In esti ing the power of a mental organ its size, in like manner, there ar fluences which enter in as modi conditions, and which it is of highest importance to take int count. * * * *

(*To be continued*).


It is only by training all together—the physical, intellectual, and spiritual elements—that the complete man can be

## FAT AS FOOD.

A READER, G. H. I., of Titusburg, sends quite a long defense of fat. His first argument is that laboring men and others eat it and say "it makes them stronger to endure hard work."

What "people say" in such cases is not very accurate. A great many people say that alcohol helps them to work—that they could not get along without it. But accurate scientific investigation has shown that they can work better without it than with it, while the experience of thous nds of total abstainers proves it. So the scientific experiments and investigations of Pereira (quoted in the article to which Mr. I. refers in the Nov. number of the PHRENOLOGICAL JOURNAL) show that in the cases quoted, in repeated and fairly made experiments, fat failed to keep the body in health and strength and good condition. The conclusion that fat is not necessary is further justified by the robust and increased health and strength of the people who have ce tirely to use it. It has been tried l hard laboring men as well as the se and they declare that the less fat the stronger they are, the warm feel, and the more work they can cases of wood-choppers and oth might be quoted.

The experiment of feeding do with fat was tried in France by an physiologist. The dogs became e lost in vigor and activity, and fin from inanition.

Boussingnault experimented in way with ducks, and with the sam

Lately, experiments in feeding th army have culminated in the d that the best physical results were by supplying a ration composed and a preparation of dried pease.

The writer of the article refer traveled much and observed cl

visited twenty States of the Union, and lived in several; has been familiar with the habits of working-men from childhood up; has taught school, and "boarded around" among farmers and other working-men; can work hard herself, manually as well as mentally, and has done so, and, moreover, has tried the experiment of eating fat and of doing entirely without for a long time, which is more than Mr. I. professes to have done. With all kindness we recommend that he try the doing without faithfully, and perhaps his "theories" of the value of fat may "set, never to rise."

We are a little surprised that he should quote the Jews as fat-eaters. We do not know what degenerate specimens he may have found who use *lard*, but we do know that to the true Jew the hog, and all its products, is an abomination; we know that here, where Jews abound, they are so very particular about the healthfulness of their meats that they have their own butchers who are noted for having the best flesh meats in the market, while any one who has frequented slaughter-houses knows that the fattest animals are by no means the healthiest. Of all people in the world the Jews are the most faithful to their traditions and ancestral teachings, and of these the elimination of fat from their food is one of the most definite. The injunction is emphatic and repeated: "It shall be a perpetual statute to you throughout all your generations that ye eat neither fat nor blood" (Lev. iii. 17). Again and again in ordering the manner of the sacrifices they are directed to burn the fat. In Lev. vii. 23–25 the whole subject of fat-eating is gone over—they are told that they may use fat for other purposes, but they may not eat of it under severe penalties.

We do not say that the Jews now are faithful to all their ancient laws and traditions, but we have reason to believe that they eat much less fat, and certainly less pork and pork fat, than their Gentile neighbors.

While this may conduce to their healthfulness as a race, there is another habit which probably has far greater influence—their comparative temperance. They are not a drinking people. They do not poison themselves so deeply as other people do with alcoholic liquors. With all the rest we do not admit that they are the healthiest people in existence. Such broad assertions are not easily proven, and injure rather than help an argument.

If Mr. I. wanted a case where the people are known to eat largely of fat, he should have quoted the Esquimaux. The conclusions drawn, however, would have been all in our favor. They are a lazy, stupid, sickly people, rapidly dying off with consumption, their condition largely confirming the conclusions drawn from the fat-feeding to animals quoted by Pereira.

It is the object of this journal, and especially of this department, to instruct and help all classes alike. While the fact is recognized that a laboring man may work off a certain quantity of fat meat, etc., with less apparent injury than the sedentary, yet we consider it healthful, conducive to strength, and therefore very economical for us all to omit the eating of fat.

We would remind Mr. I. in passing that we do not always need the amount of fat that we may have. The body may be plump, the muscles moist and in good condition, and the healthful juices of the system may be abundant without much fat. These things are often confounded by those who see only skin deep. Like the herbivorous and graminivorous animals, we can make all the fat we need from such food.

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TO STOP NOSE-BLEED.—A correspondent of the *Druggists' Advertiser* says: "The bleeding may arise from an impoverished state of the blood, or it may be the symptom of some other disease. If the attack gives rise to serious apprehension seek the advice of a physician. At times simple remedies relieve great ills, and perhaps a knowledge of the following simple remedies might prove serviceable. Bleeding may be stopped by raising the arms above the head; sponging with ice-water the forehead and face; applying a towel wet with cold water between the shoulders; or by the application of a strong solution of alum to the inside of the nostrils, or plugging the nostrils with lint or cotton-wool soaked in this solution."

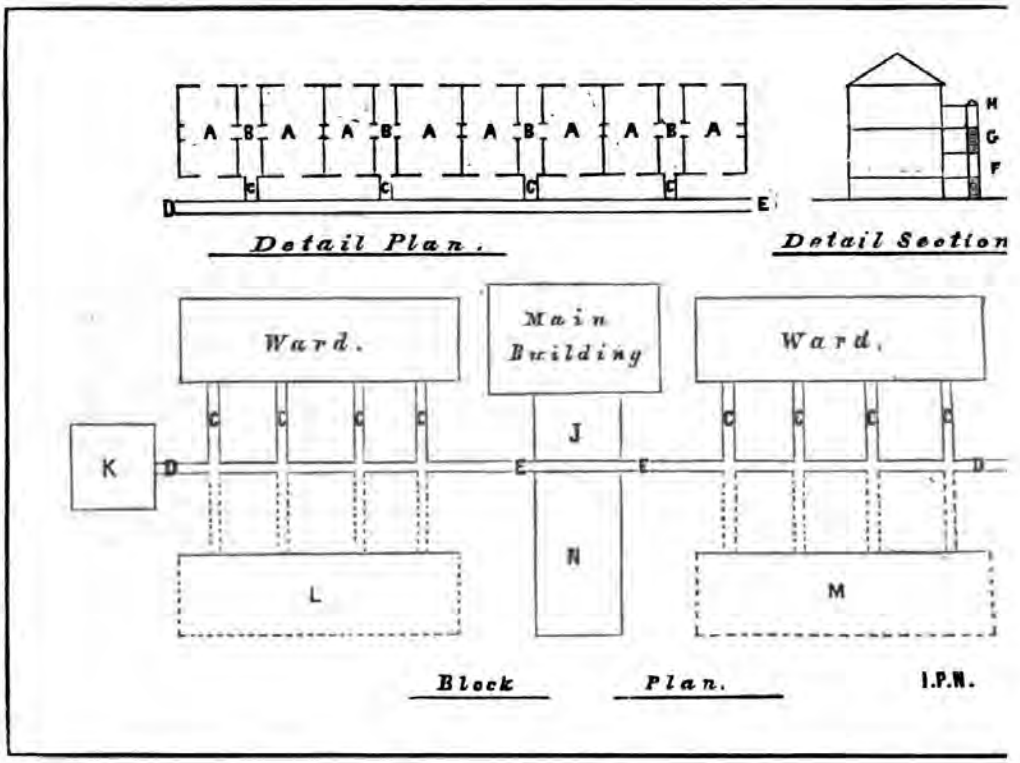
## HOSPITAL CONSTRUCTION.

SUGGESTION FOR THE COMBINATION OF THE PAVILION AND CORRIDOR PLAN

IN the Pavilion Hospital plan the public wards are all large rooms, and, on an average, contain from twenty to thirty-two beds—the larger the hospital the larger the ward. These large rooms, with a large number of patients, have certain disadvantages in heating, ventilation, etc., which it would seem desirable to remedy if possible. The great advantage of the pavilion style of ward is its abundance of light, but abundance of light alone is not sufficient to make a hospital ward perfect as an institution for the treatment of the sick.

In the Corridor plan the rooms are arranged on one side and the corridor on the other. There are certain points of cosiness and convenience about it which make this plan, at present, the favorite arrangement for insane hospitals; but as a general hospital for the treatment of the sick, it is not in very general use, although we understand that it has some advocates for this purpose. It has one special advantage, in that it be arranged in small rooms, but it is clain for various reasons, not to be equal to pavilion ward. It has light only on one s so that the wards are not liable to ge the advantage possible from this impor element in the treatment of diseases; the corridor being thus close to the w the air thereof is apt to be affected by it the ventilation as a whole interfered w

As a general law, the larger the room more difficult it is to heat and venti a hospital ward is no exception to th The more patients brought together room the more contamination to and generally the more difficult it is patients in a satisfactory manner. with our personal experience in a l it is not at all agreeable to a sick m in a large room where there are s other patients constantly before his after day. This repulsive sight is r



beneficial to a patient's case, and is a serious drawback in the large-ward plan, to say nothing of the inability to properly heat and ventilate the apartment.

In the plan herewith submitted, the wards are all of a size and contain only four beds each; the rooms are the width of the building, the same as in any regular pavilion hospital, and in length occupy the usual space allotted to about four beds in the large-ward plan. The wards are arranged in sections of two rooms each with a small hall or ante-room between.

A, A, Rooms or wards.

B, B, Halls.

C, C, Connecting Corridors.

D–E, Communicating Corridors. (See "Detail plan.")

In order to have windows on both sides of the general ward building, the same as in any regular pavilion hospital, the corridors are only of sufficient height for passages; the space from the ceiling of the lower to the floor of the upper story is left open for the play of light and air, the corridor being supported on posts or pillars.

F, Space for corridor, 1st story. (See Detail Section.)

G, Open space for light and air.

H, Space for corridor, 2d story.

These corridors to be roofed in and made weather-tight, and furnished with windows, etc.

In addition to the "Detail plan" and "Detail Section," a "Block plan" is also presented, showing the arrangement of wards and, provided it was desirable, the method of introducing extra wards in the rear of the main or front wards.

J, Covered space with stairs, lift, etc.

K, K, Water-closets, etc.; well isolated from the wards.

L, M, Rear wards.

N, Kitchen and general working department, hall, etc.

This plan being a combination of the regular, pavilion, and corridor plans, its advantages are: division into small individual rooms that are well lighted and can be more easily and efficiently heated and ventilated than the large wards of the pavilion plan or the closer rooms of the corridor plan. Again, the nurses, when not occupied with their patients, are provided with an accessible and comfortable place in which to stay where they may be out of the debilitating influence or atmosphere of the wards as much as possible.

Each ward, containing four beds, can be provided with a large fire-place, for which so much is claimed in the way of ventilation.

In this plan no individual or isolated apartments as such are particularly necessary, for they are all isolated and individual.

Each little ward here is a parlor in itself, and may combine all the advantages of a large room together with other advantages which it is impossible to attain in such an apartment as a large ward.

It may be said in disadvantage of this plan that it may require more attendants than the large-ward or pavilion plan, and that this would add to the working expenses of the hospital. With all the modern improvements in electricity, etc., we think that the cost for attendants need not be much larger for this than for the pavilion plan; while in regard to the corridor plan, there could be no marked advantage in this respect. Again, it may be said that there are more walls to build, and that this would add much to the cost of a hospital. Expense, however, judging from the many extravagant hospitals throughout the world, has not been much considered, provided there was some compensating gain following it; and this is as it should be. Of course mistakes may sometimes be made, yet, as a whole, *cost* should be a secondary matter in these constructions, provided a worthy object was attained that has not heretofore been attained or could not be attained without it.

As to methods of heating, ventilating, and arrangements for the various offices, conveniences, etc., appurtenant to a hospital, these I do not mention, as necessary modifications would be naturally suggested in the course of arranging a building in accordance with my plan. And all things generally combined in a good hospital may, we think, be practically combined in this plan.

This arrangement for the combination of the pavilion and corridor plans is hereby respectfully presented as a suggestion to those interested in hospital construction.

ISAAC P. NOYES,
(*Architect*), R. I.

## CITRON FRUITS--THE LEMON.

**Classic Mention—Habitat—In the Market—On the Table—Hygienic Use—A Hygienic Condiment—Wholesomeness—Lemonade.**

THE lemon is more widely known and more generally, if not more largely, used in this country than the orange. There is scarcely a country grocery store that does not make the attempt to keep lemons on hand with success during more or less of the year. They are not called for on the dessert table, but the cook makes lemon pies when oranges can not be afforded for dessert, and the old apple-woman has her pail of lemonade on every corner all through the hot days of summer, when we are content to pay as much for the lemons as we pay for oranges in their season.

### CLASSIC MENTION.

The lemon tree was originally from India. It is said to have come from Persia to Greece during the later days of Grecian and Roman glory, and the fruit was used only to keep moths from clothing—a use now quite neglected. They could not eat a fruit so austere and acid, and they had not learned to use it in their cookery. They could devise and use garum, but lemon juice was beyond the scope of their management. Even Apicius could not use lemons, though it is said that he devised a method for preserving them, putting them each into an air-tight vessel, hermetically sealing it and suspending it near the ceiling. Why he took so much pains to keep them when he did not use them, history fails to say.

Some have supposed this to be the tree which Virgil mentions as among the richest productions of India, and whose fruits were said to possess the greatest virtues against all poisons. The description given corresponds with that of the lemon, though we must remember that most descriptions in those early times were very indefinite and inconclusive. The value of scientific botanical descriptions consists in the fact that they draw the attention to those points which really distinguish one plant from another, and which are invariable or but slightly variable. The shape, color, taste, and flavor of the fruit may vary grea the same species, while the shape o leaf, the form of its petiole, and eve convexity or the concavity of the litt vesicles which prevail throughout the may remain the same. It required ries of observation to learn what mar mained constant and decided the s and thus to lay the foundation of th ence, which has hardly yet settled its ples, its definitions, and its classific But even common observation has b much sharpened by its influence that longer find people who sow oats r barley, and if they do reap cabbag they thought they sowed turnips, they the careless sowing and not the seed

It may be a new idea to some lad it will be none the less true that th of botany, besides its many directly tageous results of bringing to our acquaintance so large and valuabl partment of knowledge, insures also ness and closeness of observation w themselves would abundantly repa study. Add to this the beauty of jects and the healthfulness inciden curing specimens, and it proves itse suit well worthy of every lady's a while this is just the time of year mence it.

### HABITAT.

The lemon tree is very like th in its appearance, growth, and pre but it is so overshadowed by the of its more showy sister that w more scant materials for a satisfac ograph. In many respects the l follow the orange as the basket-sell followed her English-speaking s when the latter cried up her ware the resources of description h could command, the other was be content with echoing, "Me too

### IN THE MARKET.

So at the docks in New Yo ships from the Mediterranean, f and from Portugal bringing bo and lemons in the same styles of

der boxes, bound around with hoops, and holding about two bushels each, or about 350 oranges and 500 lemons, the numbers varying with the size of the fruit. The treatment they require is the same; they must be kept cool and dry, and the treatment they have received is the same, being picked before ripening, in order to keep a longer period, and very often we shall see traces of the green still on the rinds of both. Perhaps I need hardly say to my readers that the color of the lemon is far more uniform than that of the orange. A pale, bright yellow is always its prevailing tint, while the orange varies from almost as bright and as light a tint down to a reddish hue, scarcely less deep than that of the true scarlet geranium.

In the streets we see them both piled up in the hucksters' wagons, sometimes each occupying a whole wagon by itself, and again the lemons in one end and the oranges in the other, but the prices differ. Commonly you are advised of these by large sheets of manilla paper raised above the fruit. In the winter, when the market is full, you will see "20 lemons for 25 cts.," and not infrequently "25 lemons for 25 cts.," and sometimes "30 for 25 cts." has been reached. Oranges will range higher; "25 for a quarter" being very cheap, and usually of an inferior quality. The lemons may be large and fine, but the largest and finest oranges seldom grace the hucksters' wagons. For these you must look in the markets, where they are piled in handsome pyramids, cannon-ball fashion, or in the shops of the best grocers, where you find them still in the papers and in the boxes, apparently of their original packing. If they have been assorted and re-wrapped, they betray it by no sign. They are usually priced by the dozen; it being mostly street-venders who sell a certain number for twenty-five cents, which, by the way, is a common street-trick in New York. Of its former prevalence in the groceries, we see but one sign left now, and that is in the sale of eggs, it being very rare to find a grocer who will give you the retail price of eggs by the dozen.

But however closely our citron fruits may have traveled in company thus far,

### ON THE TABLE

they are separated. The orange marches untouched and unchallenged to its destined place in the fruit dish, to offer its perfected flavors unchanged to the palate which has been excited by the appetizing appearance of the fruit. The lemon almost as invariably passes through the transforming precincts of the kitchen. But as if to make up for the lack of attention in the dining-room, the cook makes it one of her especial pets. She must have a few on hand continually. Many a dainty dish of chicken and game gets a dash of lemon juice or a sprinkling of the grated rind, or both. Many of the most elaborate gravies and sauces owe some of their piquancy to this source, though often unsuspected. With raw oysters and some other dishes, it is even sent to the table raw, yet usually in halves, as if in apology for its strong and acid tendencies, knowing that a little would be quite sufficient. It is also a grateful addition to many kinds of fruit, when stewed, to add a zest where there is a deficiency of flavor. A form of jelly that would be perfectly insipid, puts on a choice flavor of delicacy when reinforced with lemon. A cracker pie, than which nothing could well be more vapid, becomes like fruit when taken possession of by a lemon. So the equally tasteless corn-starch, with the addition of lemon juice and rind, becomes the favorite of pies when baked on crust. Time would fail to tell us of the cakes and the puddings, the charlotte russes, the meringues, in short, the interminable list of dishes which, under the hands of our modern cooks, owe an added charm to the lemon. Apicius is nonplussed; the lemon has its revenge. It even outdoes the orange.

### HYGIENIC USE.

We welcome the lemon, notwithstanding its pronounced flavor. We shall take our choice, however. Not the rind, if you please, that is a little too much on the biting order; it gives warning beforehand, and we find no use for it in anything. If a little of the rind is stewed in our dried-apples or with our raisins, it is done with a protest. We know the lemon essences are made from this; that it constitutes the flavoring of syrups, custards, ice-creams, candies, and a

great variety of confections, usually without the accompaniment of the acid juice, but all that does not make it wholesome. It is well to make a pointed distinction here. It does not follow because the acid juice is good and wholesome and may be freely used, that the hot and acrid oil must share this wholesomeness. We may not therefore argue that "lemon" essences and flavorings are admissible. They must stand upon ground of their own, which perhaps we may discuss some day soon. On the other hand, it does not follow that all acids are to be received incontinently. Especially should we scrutinize the citric acids put up in various shapes for the acidulation of summer drinks. It does not follow that they are wholesome because they have a vegetable origin, even if you are sure of that. Strychnine has a vegetable origin, so has tobacco, alcohol, and many other poisons. Oxalic acid is a case still more in point. It is derived from sorrel and rhubarb; but though we may eat the sorrel or the rhubarb with perfect safety, the derived acid is a deadly poison. Grapes are wholesome, but tartaric acid could not safely be taken in any large quantities. The fact is, that the chemical change undergone in crystallization destroys the vegetable structure, and we have every reason to believe that with it is destroyed the power of affording nutriment to the human system. We can not therefore recommend the substitution of any of the fashionable crystallized acids, with or without sugar, for the unchanged lemon juice in the acidulation of drinks, or for any other dietetic use. If taken when abundant and canned, with the entire exclusion of seeds and skin, a good supply can be laid in against the ruling of higher prices, but of late their cheapness the year through seems to preclude the necessity for that.

As a

HYGIENIC CONDIMENT,

if we may so call it, we consider the lemon one of the best. If we put it to the test, we can eat it by itself, we are not afraid of it, and it is frequently done. We can not say so much of the oil nor of its essences. In our present transition state, when laying aside so many unwholesome condiments, we find the lemon juice and pulp of great use. We roll the fruit first, if it is l then cutting it across in halves we tak the pulp with a spoon, carefully remov seeds, and it is ready for a sago and pudding, for a pearl-barley pudding a cocoanut and apple pudding, or a r pudding, or we make of it, with thick Graham flour and water, a pudding sa putting with all of these the nece sweetening to make them palatable. ing off the outside skin, we cut the pul rings, and removing the seeds, cook it our sweet raisins or our tasteless pear very little of it, with sweetening to sof improves greens and boiled cabbage taste of many, but we will not exten list. Its

WHOLESOMENESS

of late has been greatly vaunted. are told that it is good for rheum good for consumption, and directed it in quantities, with a faith whic most vies with that of the ancient considered it a specific against the of snakes; but in the cases mention fruit had been eaten before the p were bitten. Probably the previous was not considered essential, or it not have gained much reputation i line. Another point rather conflicts our views. The preserved lemon-pe considered one of the best digestive was recommended for this reason to and delicate persons.

To return to our own times, we doubt but that lemons may be benef some of the cases indicated, especially there has been a deficiency in the acid fruits, but we would have still faith in the constant and moderate milder fruits. We have known of cases of free use of lemons without a harm, but for our own eating we prefer apples and oranges, which the same acids, the malic and th combined, with a much larger propor nutritious food. One of the great mands is for its use in

LEMONADE,

and here again we think its use quite ble. Doubtless, people often drink to of it, which difficulty could easily b ated by making it less sweet, and s

ther by making themselves less thirsty with salt and other condiments. With all due regard, however, to these precautions, it often happens that the waste of fluids from the system in hot weather is greater than the supply can readily be made by the medium of fruit juices. In that case a little weak lemonade, very lightly sweetened, if at all, or oatmeal water, is much more satisfying than water alone, and far safer than ice-water. These and many other facts indicate that fruits and fruit juices are the normal source of the proper fluids for the system, and perhaps in the good days coming, when man shall be sufficiently master of the elements to maneuver all necessary machinery by a hand upon a lever, we shall be able to solve so much at least of the vexed drink question. This much we have already ascertained, that lemons and sugar with water alone are far better for quenching thirst than they are with the addition of wine and brandy, and we hope to see the day that will not tolerate such a waste of good things as happened over a century ago in that "age of powder and suppers," when the Earl of Russell, Commander-in-chief of the British forces, spread a collation in the avenues of his beautiful garden, which were bordered with lemon and orange trees. In the center was an immense marble basin containing the punch, composed of four barrels of brandy, one pipe of Malaga wine, eight barrels of water, twenty-five thousand citrons, eighty pints of lemon juice, thirteen hundred weight of sugar, five pounds of nutmeg, and three hundred biscuits. "In a charming little rosewood boat a cabin-boy belonging to the fleet rowed about on the surface of the punch ready to serve the company, which numbered more than six thousand persons."

Lemons are easily raised, the pips grow readily, and the leaves are as fragrant as those of the orange, but not quite so large. We have seen them in private sitting-rooms hung with fruit and spangled with flowers, which shed a delicious perfume. The wood of the tree is of great value in cabinet-making, and the ancients found a variety in Northern Africa which made tables more valuable than those inlaid with gold.

JULIA COLMAN.

# NOTES IN SCIENCE AND AGRICULTURE.

**Remarkable Meteorites.**—A summary is published in *Nature*, giving some particulars of meteoric fire-balls which appeared in unusual number in this country in the latter part of 1876 and beginning of the present year. Prof. Kirkwood, of Indiana, is the authority. The circumstances attending the appearance of eight conspicuous meteors are included: the dates were 1876, July 8th (two fire-balls), December 16th and 21st, January 3d, 20th, and 23d, and February 8th. The train of the larger meteor of July 8th was visible at least forty minutes, the mass having been apparently dissolved or dissipated in the latter part of its track; the motion about the sun was retrograde, but sufficient materials were not forthcoming for determining the orbital velocity or the nature of the orbit. The fire-ball of December 16th had been visible but a few seconds near San Francisco, when it apparently plunged into the Pacific at no great distance from the shore, the fall being followed by a loud detonation. The meteor of December 21st was remarkable for the length of its track—between 1,000 and 1,100 miles, one of the longest upon record, and, moreover, the track would appear to have been somewhat curved. When crossing Indiana the principal fire-ball was followed by a train of smaller meteors, many of which exceeded Venus and Jupiter in apparent magnitude; the breadth of the cluster, as seen from Bloomington, was 3°, and the length at least 20°, from which Prof. Kirkwood concludes that the true diameter was five miles, and the length about forty miles; several explosions occurred during the passage of the meteorite over Indiana and Ohio and a fragment weighing about twelve ounces, fell upon a farm near Rochester, Indiana, a part of it being secured by Prof. Kirkwood. The body is described as "peculiar in its structure; being pisolitic and remarkably friable." It is inferred that no part of the mass could have escaped out of the atmosphere. The aerolite of January 23d, or rather a portion of it, after the final explosion, reached the earth in Kentucky, and is now in the collection of Dr. J. Lawrence Smith, of Louisville. The report is stated to have resembled discharges of heavy ordnance, in such close succession, that the different discharges were barely distinguishable; height at first appearance about seventy miles.

**A Telescopic View of Mars.**—The sidereal revolution around the sun of the planet Mars is performed in 687 terrestrial days, or, as seen from the sun, it comes again in that time into the same relative position with any fixed star. When a planet rises as the sun is setting, it is said to be "in opposition," because it is then in that part of the zodiac which is opposite the sun. Were the earth at rest in space, Mars would be in opposition every 687 terrestrial days, but as it also revolves around the sun, the oppositions of Mars occur every 780 terrestrial days, or after the earth has made two rounds, and is fifty days on the third. Sometimes these oppositions take place when the earth is near aphelion, or farthest from the sun. If Mars at such a time be near its perihelion, or nearest the sun, it is seen under the most favorable conditions. Its distance then from the earth is about 34,000,000 miles, while when in opposition farthest from the sun, and the earth nearest, its distance is about 62,000,000 miles.

In September last there came one of these

THE PLANET MARS.

times of nearest approach, nearer than at any time within the last seventy years. In fact, no living astronomer has before seen this planet so near, under such favorable conditions, and with such powerful optical aid, as in the months of August and September, 1877. These conditions have been made the most of; for all over the civilized world the planet has been carefully scrutinized, and the details of its surface mapped nightly in scores of observatories, both public and private. In one of the latter the sketch was made which we present herewith, by Mr. C. W. Plyer, of Elizabeth, N. J., on the evening of September 19, 1877, at 10 hours and 25 minutes, Elizabeth mean time. The instrument used was an eight-foot telescope, with an object glass of 6¼ inches aperture, made by Mr. Henry G. Fitz.

The air was so hazy that stars of even the first magnitude were invisible, but so calm and equable that telescopic definition was almost perfect. The moon was full and was surrounded by a large halo, within which were Mars and Saturn. The white spo the upper edge of the engraving is the cap," which is thought to surround t south pole, as the paleocrystic sea surro the poles of the earth. There is a corresp ing white-cap around the other pole, t was not then seen, the north pole being away from us.

The more shaded portions of the dis thought to be seas or lakes. The sp scope demonstrates that water exists Mars, and the telescope shows these sh portions of a greenish hue, like that oceans of our globe. The lighter porti the engraving were seen of a rosy tint, p ularly those which lie adjacent to the ish seas. Toward the edges of the di color was gradually lost. In the low of the engraving, where the coast l rounded, the observer saw a peculiar b or jagged white band stretching man dred miles along the shore. This f which was seen before and after th might have been due to clouds in the M atmosphere. Many English observer noted such phenomena, and have times seen these clouds disappear watched. But Mr. Plyer has elsewh pressed the opinion that there migh on this shore a mountain chain simila great ranges of the earth, and that the and jagged bright band might be sno upon its peaks and flanks. Other s made by this observer on preceding a sequent evenings, exhibit very clea ever-varying features of the Martian and demonstrate that his rotation p somewhat shorter than that of the ear

**New Spectroscope.**—Mr. Chr recently devised a new form of spect which, if the accounts given of it a depended upon, is really wonderfu performance. The prisms employed pound prisms of dense flint glass, c with crown, put together in somet same way as the glass and bi-sulphio bon in the well-known Eaton dire prism. It is said that an instrume new form, with two of the so-calle prisms," gives a diversive power equ of twenty ordinary prisms, while th light is vastly less. The theory of th ment has been a good deal discu some doubts are expressed as to its power, which can only be settled by of actual performance.

**Celery** taken from the trenches tity may be preserved in the cellar b the root ends in moist sand. Kno country or city people who buy cele single bunch or so, might just as it by the dozen bunches, thus sav trouble, and money.

**Incombustible Writing** —Two Spanish gentlemen, of S have just obtained a patent in Spai ing writing paper incombustible. of experiments have been made

process, and the results are said to have been very satisfactory. The paper will not burn, no matter what may be the intensity of the heat applied. A single sheet submitted to the direct action of a flame will carbonize, but does not take fire. If a roll of prepared paper is placed in the hottest fire, the outside leaves will carbonize and the edges for a short depth, but the interior remains unaltered, the writing or printing being perfectly legible. Its cheapness especially recommends it for public documents, archives, etc., which might be desirable to preserve. Papers already written or printed upon may undergo the process without injury. The patentees expect to make an arrangement with the Government to apply the process in the manufacture of the paper used by it for public business, which can be done at a very trifling expense.

**Improvements in Glass.**—The success attending the efforts to toughen glass have led to a number of processes for improving the quality of glass, and among these is one for compressing glass under heavy metallic rolls. This compressed glass is reported to be even tougher than the "La Bastie glass," and has the advantage of greater freedom in working, so that larger pieces can be produced. The compressed glass has a fibrous texture, quite unlike the crystalline structure of the tempered glass. By the use of engraved rolls, the glass may also be ornamented at the same time that it is compressed.

**The Late Transit of Venus.**—The result derived from the contact observations of the Transit of Venus in 1874, made by the British expeditions, has been recently published. The solar parallax calculated from them amounts to 8".76, which would give a distance of 93,300,000 miles — somewhat larger than has been thought probable since the recognition of the fact that Encke's parallax was too small. Thus the value which finally resulted from the observations of Mars at its opposition in 1862 was 8".85; whilst Mr. Stone's amended reduction of those of the Transit of Venus in 1769 gave 8".91. The observations in 1874 now referred to were made at Honolulu, New Zealand, Rodriguez, Egypt (Mokattam, Suez, and Thebes), and Kerguelen Island; the photographic results have not yet been completely discussed.

**The Wheat Crop of 1877.**—The latest estimate of the wheat crop of the United States for 1877 amounts to 325,000,000 bushels; the corn crop to 1,280,000,000. The wheat crop has never been surpassed, but the corn crop was better in 1874 and 1876.

**Danger in Railway Travel.**—M. Gartiaux has published some curious statistics on the dangers of traveling by land in France. He says that in the *diligence* days a man had one chance of being killed in 300,000 trips, and one chance of being injured in 30,000. On the railway between 1835 and 1855 there was one chance of being killed in 2,000,000 journeys, and one chance of being injured in 500,000. From 1855 to 1875 one chance of being killed in making 6,000,000 journeys, and one chance of being injured in 600,000. Now the chances of being killed are as one to 45,000,000, and of being injured one to 1,000,000. Consequently a person traveling ten hours a day at the rate of forty miles an hour, would in the first period have had a chance of escaping destruction during 321 years; during the second period in 1,014 years, and between 1872 and 1875 in 7,439 years.

**A Powerful Artificial Light.**—That carbon bi-sulphide when burned yields a brilliant light, has long been known, but until recently no practical application of the knowledge has been made. A lamp has now been invented which insures the combustion of the dangerous oil with safety by first saturating pumice with it and subsequently burning it in a stream of nitrogen gas. The light which this lamp gives out is said to be more powerful than that obtained by any other artificial means. It is twice as powerful as calcium light, possesses three times the force of electric light, and is superior to magnesium. The chief use of the invention is in photography and for signal lights.

**Ye Thistle, Avaunt.**—A Maryland farmer thinks he has found a "sure cure" for Canada thistles. It consists in sowing the land infested by them with buckwheat early in the spring, allowing it to grow till it is in full blossom, turning it under and again reseeding with the same grain. The last crop is harvested when ripe.

**Irrigation in Agriculture.**—A Nevada farmer, who cultivates a ranch which but a few years ago was a sagebrush desert, says in the Virginia City *Enterprise*: "I have one field of eighty acres on my farm, which pays me two per cent. a month on two hundred dollars per acre. The land is worth a bit an acre, the water $199.87½ per acre. The same land could have been purchased six years ago for three dollars per acre. The miracle has been performed through the introduction and use of water. I would rather cultivate land that I can irrigate conveniently, than try to cultivate the same land without irrigation in a country where the rains fall as they do in the Eastern States. The stream of water gives me perfect command over my land. I plow when I please, I plant when I please, and when I get ready for harvest I know in advance that I am not going to be troubled by rain. Last year I cut eight hundred tons of hay, which, cut and stacked, cost me only $1 25 per ton. I was able to do that because I was not obliged to be careful about the weather. Sometimes I had one hundred tons of hay at a time lying in winrows in the field."

**Telegraphy without Wires.**—Professor Loomis, who has been in the mountains of West Virginia for some months conducting a series of experiments, has about concluded that telegraphing without wires is

practicable. His method of operating consists of running a wire up to an altitude reaching a particular current of electricity, which he claims can be found at various heights. At any distance away this same current can be reached by a similar wire, and communication can be had immediately. It is true that aerial telegraphy may not be much of a certainty during violent storms or electric showers, but Professor Loomis thinks that it will not meet with more obstruc than the ordinary wire telegraphing at times. Professor Loomis has a scheme on foot for a series of experiments fr point on one of the highest peaks in the in Switzerland to a similarly situated pla the Rocky Mountains on this side o world. If this succeeds, his invention rank in importance with that of the el telegraph itself.


MRS. C. FOWLER WELLS, *Proprietor.*
H. S. DRAYTON, A.M., *Editor.* N. SIZER, *Associate.*

NEW YORK,
FEBRUARY, 1878.

## BIBLE FATALISM.

WE are not satisfied with the application which our friend Mr. Deem makes of the quotations from the Bible in his communication on Fatality. We think that they can not be taken as bearing a special relation to it. The first quotation, that of Mark v. 13, concerning the destruction of the herd of swine, shows indeed that they perished "by reason of an irresistible power." But it seems to us that the occurrence was a manifestation of power on the part of Christ for the purpose of convincing those around him of the authority he possessed as the annunciator of a special mission. As for the second quotation, that from Mark ix. 20, it is susceptible of an interpretation warranted by the pathology of the case. The young man who was subject to fits, which to-day would probably be regarded as a phase of epilepsy, may have inherited the disease, or it might have produced through indiscretion, or the of physiological knowledge, so preval that early time.

With our present knowledge of dise view, knowing that hygienic measur preventive—that where epidemics wer to prevail at certain seasons of the care in the matter of cleanliness ar has rendered them almost unknow doctrine of fatality in its morbid p relations has lost its force in a very tant particular. The case of Job wh Deem has cited we regard as beyo realm of logical discussion. On i surface it includes psychological m into which we are not able to penet

The "parable of the sower" is o ally referred to as illustrative of the logical principle of special endown we can not take the fatalistic or view of parts of it which Mr. Dee clined to take. Further, the soil w duces vegetation and the food of nothing more than disintegrated ro ed metal. So "rock," as typical of rate nature, indicates a condition avoidable or susceptible of mo Instances of reform from a life of vicious character are almost daily to our consideration. Even men been born and nurtured amid crim ciations have, by the operation of fluences, been entirely changed whereas the thoughts of such r ously were "only evil continually

came earnest, active agents for the good of others. Christ uttered a grand moral truth in Luke vi. 43, where he said good fruit can not be expected from a corrupt tree; but he nowhere says that the tree could not be improved by proper tillage. We are reminded of an illustration he gave in another place, of the vineyard and the husbandman. The Lord of the vineyard comes year after year vainly looking for fruit from a certain tree, and finally orders the vine-keeper to cut it down; but the latter asks forbearance, and an opportunity to give the tree special care, and then if it still prove barren, he will cut it down.

Organizations differ in capacity for growth, yet in all cases improvement appears to be the tendency of nature. Even idiots are susceptible of training and development. Many a child pronounced fatally diseased by the faculty, has, through the watchful care of a trusting mother, blossomed into health and remarkable mental vigor. No one who is familiar with the birth and childhood of the late Dr. John Todd should despair of any human organization.

Human life seems somehow or other not to be entirely amenable to what logicians and scientists define as law. We find strange things happening. There are now and then outcroppings of a totally different phase of character from what had been sanguinely expected. We hear people saying of this man or that woman, "Who would have expected one born as he or she was would have turned out so well?" There is a something within us which somehow or other tends upward. Call it *force* if you will, or *principle*—it appears to have a law of its own, the operation of which we have not yet fathomed.

We confess to a strong vein of optimism in our views of life, and our study of human nature has but served to strengthen this view. Mr. Deem will find material enough in Scripture language to give him apparent sanction for adherence to fatalistic dogma; so he will find in the same language material to sustain views anti-fatalistic. One remark in particular, pregnant with moral and philosophical suggestion, comes to mind: "But the manifestation of the Spirit is given to every man to profit withal." This we understand to signify that a certain amount of spiritual or moral inspiration or influence is implanted in or given to every man, which, if employed, will prove sufficient for his growth and meet the vexations and responsibilities which come within his sphere of action.

## VILLAGE MUSEUMS.

"Wanted—a dozen or more, to establish and maintain a Museum of Natural History in every town and village."

THIS item *The Rural New-Yorker* somewhat happily comments on with regard to the intellectual profit derivable from the collecting and exhibiting of specimens illustrative of different departments in natural history. Our boys and girls are easily interested in the objects of nature, and nine out of ten in our schools would be delighted to assist in the accumulation of a museum.

As an element in education, we know of nothing more useful than a good museum, which embraces among its features specimens of birds, fishes, different woods, grains, fruits, grasses, minerals, insects, etc.; and it would not be a difficult task for every village which has a school to make up a collection of considerable value. All that would be required would be the leading of some earnest, intelligent person. The teacher should be the one to organize such a movement. The study of natural

history is a department of object-training, and nothing tends more to develop the perceptive and practical organs.

One very important feature should not be forgotten in the outset of an effort to establish such a collection—that feature is the study of Anthropology, one or more of whose departments can be made available quite as easily as the procuring of good botanical and geological specimens. A few casts of the heads of men and women noteworthy for intellectual talent and morality; a few contrasts illustrating ignorance, vice, imbecility; some portraits and diagrams exhibiting parts of the human anatomy; a shelf of animal and bird skulls—which are easily obtained, and essential to the study of comparative Phrenology—and a few descriptive text-books, would constitute a class or section in the museum which would prove as interesting certainly as any part of the whole collection. The editor of *The Rural* speaks strongly of the association of the departments of natural history with a public library, but neglects to drop a word in behalf of anthropology, which, in our opinion, is a *sine qua non* in true popular education. His case is by no means singular. Our newspapers and magazines abound with suggestions for the study of this or that department of natural science, but rarely drop a word in behalf of the most useful of studies—that of human nature. Had we control of the intellectual forces of the community, we would set young and old to work studying themselves to lay a solid foundation for the proper investigation of the world of nature. The key to success in the pursuit of any object is the comprehension of our ability to grasp all the facts and issues comprehended; in other words, it consists in a mastery of our mental capabilities, and their thorough adaptation to the nature of endeavor. Starting with a knowledge of ourselves, we can best obt the knowledge of other men and of ot things.

## THE STUDY OF HEADS.

WE find by coming in contact v people who are constantly in c nection with Phrenology, that there many vague notions entertained by int gent people on the subject. They always talking about bumps and protul ances, cavities and hills on the head, as were by such indications that we estir brain development. There are someti hills and hollows, to be sure, when t are great irregularities in the deve ment of different parts of the brain; the best heads are those which are most nearly even and uniform and neither bumps nor hollows.

When people are informed that method of judging the size of organs estimating the distance from the capi the spinal cord, which is situated as l the opening of the ears, and half-wa tween them to the location of the c on the head, it will do away with th of bumps, because if all the organs equally large, and only developed acc to the size of the head, the surface head would be smooth. If the hea large, the organs would all be large i a case; and if the heads were medi organs would be of medium size. times a head is very uneven, one of organs being large and anothe comparatively small; for, strange a seem to one not observant in this n man will sometimes inherit the fr of his head (all the region of the f from one parent and the middl (around the crown of the head) other parent. Such a one will

dispositions of one parent and the talent of the other. It is on the same principle that the eyes will have come from one parent and the nose and mouth evidently from the other parent. One man has black hair and blue eyes, or flaxen hair and black eyes, or flaxen hair and dark beard and brows; and everybody knows that these do not usually belong together—as light hair and light eyes, or dark hair and dark eyes are more commonly associated.

Every year the American Institute of Phrenology is opened for students, and one or more courses of instruction are given, and students who come several thousand miles to attend these lectures (who are interested in the subject and ought to be pretty well informed) are found to be laboring under this old error of "bumps," just as if a quarter of an inch on the surface told the whole story of large or small organs, and whether the head, as a whole, were small or large.

Phrenology is a most interesting subject, attracts deep attention wherever it is brought fairly before the people; and, indeed, has the approval, tacit or otherwise, of most of the learned; and it is our anxious desire to place in the field men and women thoroughly educated in its philosophy and practice, and well trained in other respects. There is no topic which is worthy the attention and study of the community which is not more thoroughly cultivated by the public than that of Physiology, the science which relates to the growth and health and vigor of the body; and of Phrenology, which relates to the philosophy of the mind's growth and action, and is therefore closely allied to physiology. The men and women who have talent and culture, who will undertake to bless the world by their teachings, will find in Phrenology a rich field; rich, because it deals with the highest entity on earth, man; rich, because of its internal as well as external remuneration; in other words, it gives the earnest worker a chance to do good and get paid for it. Besides, the field not being occupied as is that of law, medicine, or divinity, a man can choose his place of labor, and need not wait for a call or a settlement, but can locate where he will work when and how he pleases, and can have a following, and feel a consciousness that he is every day benefiting the world more than the expenses of his whole existence on earth will cost to the race.

As the next course of instruction in the American Institute of Phrenology will open on the 1st day of October next, those contemplating entry as students will bear in mind that there is to be no summer class, as, for two years past, there has been.

Any information in regard to the proper preparations for entering, and all other facts relating to it, may be obtained by addressing the publishers of this journal.

## HOW LIKE AND HOW UNLIKE.

GLANCING through *Scribner's Monthly* for December we lingered most, as is customary with us—and probably we are not singular in this respect—in the columns of *minion* which contain the paragraph-thoughts of the editor, and there we found this:

"Doubtless their swallow-tail coats and white chokers help give to restaurant waiters their frequent resemblance to members of the distinguished professions. One of our most learned public men—or his double—may be seen any day carrying a tray in the dining-room of a hotel near Grace Church. The counterpart of a well-known Doctor of Sacred Theology serves at a restaurant farther up-town. When I dine at these places I feel like asking these gentlemen to

be seated and let *me* wait upon *them*. At the village of B. the barber looks so much like a certain reverend bishop that I can never get used to submitting myself to his professional attentions.

"But when you come to look closely into the physiognomy and phrenology of these doubles, you find a curious blankness; or, speaking artistically, a lack of firmness and of character in the drawing. Somewhere in the face or in the head is betrayed the want of intellectual or moral stamina.

"Do you not often feel something of the same lack in the faces of men whose reputation is wide? It would be interesting to note whether in such cases the reputation has not been made merely through the possession of extraordinary faculties of the mechanical sort—such as memory, application, etc.—faculties which generally go with genius and insight, but which often themselves suffice for the making of contemporary fame."

Our own impressions, and the impressions of every other systematic observer of men, doubtless, are parallel with these. In the restaurant, the shop, the factory, we meet with faces which at first set us to wondering why their owners occupy places so subordinate; but, on closer examination, our wonder ceases, and, perhaps, a feeling of pity enters into our contemplation. Scattered all through the employments which exercise chiefly the mechanical powers are men and women who might have risen to eminence or become the promoters of noble and useful objects had their mental organizations been developed by fitting tutorage; but, lacking that, they have grown up unconscious of the faculties within them and gravitated into vocations of subordination and repression. The "curious blankness" mentioned by *Scribner's* editor is due to the atrophy or quasi paralysis which has affected the fine intellectual endowment by reason of its little use in the more than half automatic service of a restaurant waiter or barber, while the "lack of firmness" is one of the fundamental causes of the weakness and general inefficiency of the character.

# 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.*

WE CANNOT 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—stamps being preferred. Anonymous letters will not be considered.*

ASSASSIN.—H. L.—My Sunday-school teacher informed the class a few weeks ago that "that Egyptian," mentioned in Acts xxi. 38, was one of the so-called "assassins." Please tell me if this is true, and if not, who the assassins were?

*Answer:* Your teacher made a mistake. "That Egyptian" was simply the leader of a mob of thirty or forty thousand against the Mount of Olives. The "assassins," *hashish-smokers*, were a secret political society of the middle ages. It originated in Persia about A.D. 840. There were seven degrees through which an individual selected to become one of the band had to pass. In the first degree the mind of the novice was purposely perplexed on matters relating to the Koran, that his conscience might be dulled. In a later degree, he was bound by an oath to unconditional and unquestioning obedience. Thus they were passed on and on, initiated deeper and deeper in wickedness, until they were ready to do whatever bloody deed they were bid. They frequently intoxicated themselves with hashish, in order to nerve themselves for performing their allotted crimes; hence their name, *Hashhashin*,

which was corrupted by the Crusaders into "assassin." Since that time all who commit secret murder in a cowardly way have been called assassins. Sheikh el-Jabel, more commonly known as "The Old Man of the Mountain," was the most prominent leader. Jelal ed-Din Malek, Sultan of the Seljuks, having at one time sent an ambassador to the grand master of this order, asking him to surrender, the master called into his presence several of his followers. Beckoning to one of them, he said, "Kill thyself," and the man instantly plunged a dagger into his heart. Another he commanded, "Throw thyself from the rampart," and in a moment he was a mutilated corpse in the moat below. Turning then to the envoy, the grand master said: "Go tell thy lord that in this way I am obeyed by seventy thousand faithful subjects." Up to about the year 1400 they continued with more or less power, but since then there has been but little known of them. Those who remain in some parts of Persia and Lebanon practice some of the doctrines of the old band, but retain none of its fierce, murderous spirit.

SPINAL AFFECTION.—"Spinal irritation," so called, is due in large measure to stomachic trouble, and is curable. If there be actual disease of the spine it is very difficult to treat, and in most cases incurable. We would not advise you to eat honey for your brain and spine. Your system has enough of carbonic matter in it already, and your food should be so regulated as to relieve it of the excess. You need the nutrition which food containing nitrogen and phosphatic matter will supply. Eat tart fruit to stimulate your liver. Frequent manipulation or rubbing of the spinal regions would be beneficial, at least in so far as relieving your pain in a good degree.

MIND READING.—*Question:* Can you explain why it is that four or more persons joining hands around another person who is blindfolded, their finger-tips lightly touching the subject's waist, can, by steadily thinking of a certain object, cause the person to go toward and find that object, although he may have no previous knowledge as to where or what the object is?

*Answer:* This is one of the unsolved problems of psychical life. We have heard of some remarkable performances by mind readers, they themselves being unable to account for the impressions or influences which enable them to accomplish their results. Mind reading is evidently due to some power or process of a physical sort to a great extent, but whose nature is as yet beyond the reach of scientific manipulation. Many theories have been ventured, and a good deal of speculation indulged in in regard to this matter, but it is still a cloudy subject.

INTOXICATION.—J. A. T.—The symptoms of intoxication differ in accordance with the temperament and organization of the intoxicated. This you, as a physician, know, of course. It is necessary for one to know the characteristics of the person in order to be able to judge by his conduct whether or not he is under the influence of moderate alcoholic excitement. One so excited usually acts in a manner out of keeping with his general disposition. There are some persons who are so organized, and have gotten into such habits of speaking and acting, that they seem "half seas over" most of the time to the world at large, while they may not be given to drinking. Of course, it will be necessary to have a different standard for judging such. Usually when a man is under the influence of liquor, the organs in the lower part of his head, or the propensities, are congested and stimulated, and his speech and actions indicate a lack of moral discernment. He says and does things which are more or less improper, and if the excitement be great, he may do violence.

IMAGINATION—D. C. L.—Imagination depends mainly on the organs of Ideality and Sublimity. If one be deficient in these organs, a measure of improvement will be obtained by the study of works that are mainly the product of the imagination or fancy. The reading of poetry, of the higher class of novels, the contemplation of fine scenery, and association with people of fine poetic natures will help in this regard. The study of any good treatise on Phrenology will give you further hints.

GALLANTRY.—W. P. J.—When a gentleman escorts a lady anywhere, whether it be to church or to the concert room, he should remain near her. His proper place in the church is at her side during the services. He may leave her for a moment at the entrance if they are both strangers in the temple, for the purpose of making inquiry in regard to seats; but on finding places, he should return to her and escort her to them. If it be agreeable to the folks at home, it is entirely proper for you to invite a friend to take dinner with you on Sunday. Our opinion is adverse to the marriage of cousins.

FRENCH SOCIETY.—A. B. C.—Not long since a little book, written by a traveled author, appeared with the title, "How they live in Paris." This would probably meet your wants. We think the price is about $1.25, and would procure it on receipt of your order.

DYSPEPTIC.—P. W.—Dyspeptics are usually affected with nervous excitement, and such a systemic condition is but a natural outgrowth of their stomachic disorder. It would require much space to cover the field in prescribing for your ailments. It would be better to re-

fer you to some standard work, like "Digestion and Dyspepsia," by Dr. Trall, which was prepared expressly for the treatment of cases like yours. You will find the book in our list.

VEGETARIAN GROUP HOME.—Mr. Oliver Taylor, of Mount Pleasant, Monroe County, Alabama, desires information on this subject. Will those interested in the movement please communicate with him?

TEMPERAMENTS.—N. C.—In the course of a series of papers on the "Brain and Mind," now publishing in the PHRENOLOGICAL JOURNAL, you will find the Temperaments considered, both according to the old nomenclature and the new.

## What They Say.

THE PRISON-BOUND.—I am interested in Phrenology, and have been from a child, and believe if people generally took more interest in the science, we might some day look for better men and women developed from better children. No allowance is made to-day for the criminal who is simply a result of misunderstood laws and the most egregious selfishness. "The parents have eaten sour grapes, and the children's teeth are set on edge," and there is little help for the majority of these suffering ones. These unfortunates should not be left to themselves, and to the tender mercies of those who view them as "wretches" and "corralled wolves," and who believe that "prisons were not intended for reformation, but for punishment." It might, perhaps, be well to leave these unfortunates to their misery, if by so doing crime could be prevented; but while the ignorance and selfishness of mankind are breeding criminals by the thousands daily, it is well to make an effort for the fallen, while at the same time we seek to educate the people into a condition where they will understand that *crime* is *disease;* then, they will take different measures with unfortunate humanity, and will give their best efforts toward the creation of immortal souls that they may in reality be but "little lower than the angels." I am in receipt of letters daily that cause me to keenly feel our injustice as a people. But a few days ago the judge of a court in Lowell, Mass., sent a little boy seven years old to the Reform School for two years for truancy. Who can wonder that our unfortunates believe that even God is against them! They judge of God from what they know of Him; and what do they know of good in their false or limited life? God help us to see our way out of the misery which encompasses us! But "God helps those who help themselves." We have got to think before we can accomplish anything. To-day we are moved by impulse and "what people will say." When will the to-morrow come when we shall care only for what we think of ourselves? Not till *thought* drives Mrs. Grundy from the field and causes us to realize that in order to have a good harvest we must see to our planting—must have good ground, good grain, and as good care. We have so much to learn as a people. Humanity needs help. Let us teach our children to do right for right's sake, for the sake of all that is sweet and beautiful in life, and let us all do more as we would have others do by us, or even setting aside this, do good for the pure love of it. Then shall we have what humanity has vainly prayed for these many, many years, "Thy kingdom on earth as it is in heaven." MRS. M. S. W.,

*Charlestown, Mass.*

HOW SOME PHRENOLOGISTS WORK.—*Editor of the Phrenological Journal:* Permit me, although a stranger to you personally, to address you, as a friend to your valuable journal, as well as one interested in the science of Phrenology. Some years ago I was a reader of the JOURNAL and something of a student in the science, but for a few years past little has been heard among us on the subject, until a few days ago Mrs. P. W. Irving, a graduate of the Institution under your direction, I believe, came to our village, and during her stay examined the heads of several of our most prominent citizens. Mrs. Irving evinced a knowledge of the science of Phrenology to the satisfaction of those best versed in that science among us, reflecting credit not only on herself as a practical student, but upon the Institute whose fame for thorough and superior instruction is almost world-wide.

In my humble opinion Phrenology is *the* science to be understood. To know one's self is wisdom, is power, yea, is *life*. But to be able to instruct men in a knowledge of themselves and of their fellow-men seems beyond human capacity. How much of the old superstitious creeds would fall to the ground were the masses educated in the knowledge of Phrenology and Physiognomy, and the complaints of injustice in the Supreme Judge (whose laws are everlasting in "visiting the sins of the fathers upon the children, unto the third and fourth generations") would be withdrawn. Yea, an understanding of these branches of science lights up even the sacred page, and enables humanity better to comprehend Deity. Hence, allow me to congratulate you as public benefactors in teaching this divine science, and my prayer is, that your labors may be rewarded in seeing much fruit, even "an hundred-fold," in this life, and that the cycles of eternity unfold to your ever-increasing admiration the glories of the celestial realms until you become as familiar with the mind and character of the Great Creator as you are now with the organs of the human mind.

Yours truly,

*Dalton, Mass.* F. S. B.

# 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 or physiological science.*

THE CEREBRO CONVOLUTIONS OF MAN. Reported according to Original Observations; established upon their Development in the Fœtus. Intended for the Use of Physicians. By Alexander Ecker, Professor of Anatomy and Comparative Anatomy in the University of Fribourg, Baden. Translated by Robert Edes, M.D. New York: D. Appleton & Co., Publishers.

Dr. Ecker hits the true principle of observation in regard to mental phenomena, when he tells us that "it is only by actual observation, in connection with the most careful autopsies, that we can gradually arrive at some knowledge of the physiological meaning of the single convolutions from the cerebral surface." It is impossible to obtain definite results through the process of vivisection, and it appears to us to be a matter of wonder that so many gentlemen learned in physiology should insist upon an exploration of brain in the living subject for the determination of psychic peculiarities. The object which Dr. Ecker has in the preparation of this treatise is the mapping of the brain in a systematic manner, so that investigators shall be enabled to meet upon a common ground in their discussions of its various parts. The old divisions are totally unsuited to modern anatomical intelligence, being mainly arbitrary and not dependent upon the anatomical structure. Messrs. Gratiolet, Huxley, Turner, and Baker have given considerable attention to mapping of the brain, and Dr. Ecker presents the tabulated results of their operations. He gives careful directions for the examination of the brain, but does not appear to have learned the peculiar process exhibited by Drs. Gall and Spurzheim to admiring assemblages of the best anatomists of Europe and America.

BEAUTIFUL HOMES, OR HINTS IN HOUSE-FURNISHING. By Henry T. Williams and Mrs. C. S. Jones. Vol. 4. Williams' Household Series. pp. 315. Cloth, price $1.50. New York: Henry T. Williams.

American homes have a friend in this enterprising publisher. Volume after volume has been issued by him with the motive to instruct the housekeeper and house-owner with respect to the march of invention and discovery in things pertaining to home improvement. We are told in the Preface that "household taste is but a synonym for household culture; and she is a wise woman who surrounds those she loves with objects of beauty; for she may safely rely on the influences (so intangible) which the beautiful (both in nature and art) ever exerts in a moral, intellectual, spiritual, and social point of view. The beautiful picture or softly-tinted wall, the peaceful drapery or chiselled statuette may perhaps be the means of opening some fount of wisdom else closely sealed or touching some sensitive nerve of thought otherwise dormant." To all this we agree with especial heartiness, if in the endeavor to educate through the artistic practical considerations are not lost sight of. Too much art culture gives a distaste for the plain utilities of every-day life, and there is a tendency in the growing love for bric-à-brac, and beautiful nothings, which is conspicuous to-day, to lose sight of the solid moralities of useful things. "Beautiful Homes" discusses in twenty chapters the esthetics of furniture and other appointments of the household. It is designed not only as a guide in the selection of articles of use and ornament, but also in their home manufacture. With such a book as this at hand, no housekeeper, if she have leisure from the "endless routine of duty," need sigh in vain for things to make her rooms "look nice." Very richly illustrated.

HOUSEHOLD HINTS AND RECIPES. By Henry T. Williams and "Daisy Eyebright." Part I., pp. 156. Price, paper, 50 cts. New York: Henry T. Williams.

This compilation will be found a very convenient assistant to the housekeeper of economical disposition. Some of our friends preserve scraps cut from newspapers and periodicals or the publications entire, which contain hints and recipes of value, but when an emergency occurs it is usually found a matter of much difficulty and delay to hunt up the one scrap or paper which they *know* is just suited to the case. Having a little book like this at hand, with its complete index, a moment's search finds what is wanted, and expedition is usually an accompaniment to success.

CONTRIBUTIONS TO OPERATIVE SURGERY and Surgical Pathology. By J. M. Carnochan, M.D. With Illustrations from Nature. Part III. Quarto. Price 75 cts. New York: Harper & Brothers.

The contents of this number of Dr. Carnochan's valuable series include a case of amputation of the entire lower jaw for necrosis, etc. Remarks on amputation of the entire lower jaw; A case of amputation of the entire lower jaw for osteo-fibroid tumor, twice; On shock and collapse, the primary treatment of injuries, etc. The first operation noted was accomplished by Dr. Carnochan in fifty-five minutes, in presence of the hospital staff and several prominent sur-

geons at the Emigrants' Hospital on Ward's Island. The patient, Nicholas Donegan, aged forty-three, recovered entirely, and subsequently pursued his calling of a dairyman. The second case was that of a lady aged forty, whose entire lower jaw was also successfully removed, for tumor. Both cases (the first instances of the kind known in this country) are described with the minuteness requisite to make them fully understood and valuable as guides to the surgical brotherhood, and are at the same time of surpassing interest to the lay reader, as showing the wonderful achievements of which surgical skill is capable. Beautiful full-page lithographic presentations of the cases accompany the text.

THE ELEMENTS OF TACHYGRAPHY. Illustrating the first principles of the art, with their adaptation to the wants of literary, professional, and business men. Designed as a text-book for classes and for private instruction. By David Philip Lindsley. Fifth edition. Price, cloth, $1.75.

The title describes this recent candidate for attention among the writers of short-hand. Tachygraphy, however, can not be said to be an entirely novel process of brief-writing, as it has been more or less in use for more than twelve years, and the inventor has been encouraged to issue several editions of his first compendium which was published in 1864. The basic principles of Mr. Lindsley's system are substantially the same as those of Pitman's phonography and the main feature of difference is in the assignment of special outline signs to the vowels for the purpose of their insertion in the word forms, so that the manner of writing is similar to the ordinary long-hand. This, of course, is an advantage; and, on account of it, the stenographers who employ tachygraphy claim for it a superiority over phonography in facility of acquirement and legibility, while phonographers reject with much positiveness any such assumption. Allowance must be made for the disposition of short-hand writers to vaunt the excellence of their respective systems. Time will show whether Pitman or Lindsley or Scovill has brought to light the best system for all practical purposes. Meanwhile, as phonography has the great majority of disciples, and its adaptation to the requirements of business and art appears almost complete we can scarcely expect it to yield ground easily to a younger system, although it may be demonstrated to be a better one.

JOE'S PARTNER. By the author of "The Blue Flag," "The Jewish Twins." 18mo, 128 pp. Price in cloth, 50 cents. New York: National Temperance Society Publication House.

A pleasant little volume for boys and girls to read, conveying excellent lessons of practical morality.

## PERSONAL ITEMS.

THE death of the venerable Cyril, Patriarch of Jerusalem, is announced, in his eighty-seventh year. He was born on the Island of Samos, and became Patriarch of Jerusalem in 1845.

WILLIAM WIRT HENRY, a grandson of the genuine old original PATRICK, has just been elected to the Virginia Legislature.

SENATOR BECK, of Kentucky, is very large and has crisp curly hair. He shows his Scotch derivation in temperament and expression. He is solid, square-cornered, and emphatic.

SENATOR ROLLINS, of New Hampshire, looks dyspeptic, and probably is. Most of our New England Congressmen are inclined to stomach weakness from lack of care in their diet, and also because of their excessive mental activity.

MR. MOSES H. GRINNELL, one of the veteran merchants of New York, died in December last at the age of seventy-five years. The house of which he was a member, Grinnell, Minturn & Co., was for many years one of the largest shipping firms in the country.

MRS. SARAH J. HALE, who still writes for *Godey's Lady's Book*, is in her eighty-ninth year. She attributes her physical and mental preservation to constant occupation, and she is right.

MR. ROEBLING, who with his father planned the details of the Brooklyn Bridge, one of the great engineering works of the age, and under whose direction the work goes on, has seen the structure but a few times in the last three years. When the great caisson was being sunk he contracted the "caisson disease" from exposure to the compressed air, and paralysis of the body and impairment of the nervous system have resulted.

GEN. M. C. BUTLER, of South Carolina, the new Senator, is a handsome man, of good figure, seeming a refined gentleman, with fine, gentle features, with a general aspect of extreme amiability.

MARRIED, in Detroit, on the 10th of October last, at the residence of the bride's father, by the Rev. C. F. Van Auken, Mr. Ira L. Guilford, graduate of the American Institute of Phrenology, now of Grand Ledge, Mich., to Cara Wightman, of Caro, same State. We learn that the newly-mated pair will prosecute phrenological work in company, Mrs. Guilford showing an earnest and practical interest in the subject.

MISS SALLY PARKER, of Proctorsville, an active young lady of eighty years, who has within a few years visited Great Britain and other European countries, and who visited the Centennial last summer, has gone to Washington for the winter, and expresses the determination to go to England again in a year or two.

THE
PHRENOLOGICAL JOURNAL
AND
LIFE ILLUSTRATED.
VOL. 66. 1878.

NUMBER 3.] *March, 1878.* [WHOLE No. 471.

## NATHAN ALLEN, M.D., LL.D.

THIS gentleman has a very marked organization. His head is large, and though he is at present stocky, solid, and weighs nearly one hundred and eighty pounds, we remember him as a slim, dark-complexioned young man, weighing perhaps one hundred and thirty-five, with a head richly covered with black hair and disproportionately large for the size and weight of his body. Then the mental and motive temperaments predominated. Since that time the vital system has acquired much more

influence and power in the constitution, and he is now able to manufacture as much vitality as the large and active brain requires. He has an organization remarkable for its elasticity, executive efficiency, and abundant nutritive power. He inherits largely from the mother's side of the family, has a long body, and every function that belongs to constitutional vigor is well provided for.

His mind works first on the intuitive principle. He gets a subject flashed, as it were, instantaneously upon his mind, with such vividness as to impress him with its truth and lead him to a decision, and he rarely has occasion to change such intuitive impressions. He has the ability to enter upon the logical investigation of a subject, and though he is prepossessed in favor of a given hypothesis, he will work it out as he would a mathematical problem and accept results of investigation; but being very intuitive, he rarely has occasion to modify his first impression, except to intensify its force. He has all the conditions of an excellent memory; first, the phrenological developments which indicate ability to retain impressions; and secondly, that nutritive vigor of constitution which keeps the brain amply fed. This latter is a point not to be overlooked. Hundreds of persons are organized mentally for a good memory who, by the want of ample nutritive power, are unable to feed and sustain the brain and keep its apprehension vigorous.

Dr. Allen has strong reasoning powers, but his Comparison originally was much stronger. As an element of reflection, he has of late years developed his Causality, which formerly worked through Comparison, but now he is able to use Causality in abstract thinking without any special relation to collateral topics. He can reason, *per se*, and is able to do what few men succeed in doing, viz., he can reason soundly and fairly on both sides of a disputed question. Hence, he can see his opponent's argument and give him full credit for its force, on the same principle that a pound weight in one scale may be said to give full credit to a half-pound weight in the other scale and makes no pretensions to superiority, except in the sum of eight ounces. While he is a man of strong convictions and definite ideas, it is easy and natural for him to give ample credit and respect to the other side of the question.

He is ingenious, has mechanical judgment, and might have become a good architect and engineer. He is cautious, anxious about consequences, and, at the same time, he manifests a vigorous courage that enables him to push his own cause onward against opposition. If he had been placed in an educational field, or if he had studied law and been obliged to cultivate public speaking, he would have made an able public teacher; but being more devoted to quiet investigation and to writing, his power for oratory and for swaying a present audience has not been so much called out.

His Firmness is uncommonly strong. People give him credit for tenacity, and like it much in him when he happens to be coöperating with them, but they think it very inconvenient, and are apt to magnify its power, when it is exerted in antagonism to their cherished notions. He has strong Conscientiousness; believes in the truth; seeks to follow it without fear or favor. He is ambitious to be approved; suffers if he be disgraced or his motives or conduct disapproved. He is a good friend, warm in his affections, strong in his regard for woman, and especially well calculated to win the confidence and coöperation of children. He has so much of his moth-

er's nature that his social disposition qualifies him to be popular in families.

He is systematic in his plans; clear and earnest in his statements; economical in his administration of affairs; vigorous, but not noisy or specially demonstrative in his energy, and is more qualified to move quietly but persistently in an intellectual and moral channel than to enter the arena as a noisy champion of a fiercely-contested case. The head and face, as exemplified in the likeness, evince strongly, though less, indeed, than in the real presence, sound common-sense, integrity of thinking, patience in the line of laudable effort, integrity of purpose, ingenuity, prudence, ambition to be approved, and that consistency and steady strength of the social nature which wins and holds friends, and renders a man popular where he is well-known.

As the first editor of the AMERICAN PHRENOLOGICAL JOURNAL, his head, face, and well-preserved constitution, combined with the breadth and importance of his researches, do no discredit to the JOURNAL or to the cause which it was established to sustain.

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NATHAN ALLEN was born in Princeton, Mass., April 25, 1813. He was brought up on a farm and accustomed to hard work from early life. In a public address made some years since before the Agricultural Society of Princeton, the following reference was made to his birth-place: "Here I wish to make my public acknowledgment to that overruling Providence which ordered my birth and early training in this place, distinguished no less for intelligence and morality than for health and devotion to agricultural pursuits. The greatest gift that any human being can receive in this world is that of a sound constitution, which can come alone from parents perfectly healthy in body and mind. The next greatest blessing is that this constitution be early strengthened and developed in accordance with natural laws, while at the same time the mental habits and moral character receive proper training and the right direction. To these blessings I confess the strongest possible obligations; first to the Creator, second to parents, and third to the healthy education and moral influences of this quiet rural town."

His academic education was finished in 1836 at Amherst College, where many who have become distinguished as clergymen, lawyers, and statesmen were enrolled among his classmates. Young Allen was very anxious to obtain a college education, and his father did not possess ready means to meet his wishes; but Mr. James Smith, a gentleman of wealth, then residing in Massachusetts, and now living in Philadelphia, observed the youth, and being impressed by certain promising traits of character in him, offered to assist toward the end of his ambition. This offer was gladly accepted; and now Mr. Smith, at the age of 90 years, congratulates himself on the good accomplished. In 1838 young Allen went to Philadelphia to pursue a course of medical study, and three years later received the degree of M.D. The thesis written for the Commencement which closed his attendance at the medical school was entitled "The Connection of Mental Philosophy with Medicine," and was published in the third volume of the AMERICAN PHRENOLOGICAL JOURNAL. This essay attracted at the time much attention, and is significant of the direction its author's mind had thus early taken in a line of investigation for which he has become distinguished. While a medical student Dr. Allen edited the first three volumes of this JOURNAL, being associated with the early and trying days of its establishment.

In 1841 he settled in Lowell, Mass., and commenced the practice of medicine, and soon afterward entered upon a course of researches relating to the laws of population, physical culture and degeneracy, public health, hereditary influences in the improvement of stock, longevity in its connection with life insurance, causes and treatment of insanity, etc. The results of his

investigations have found their way to the public in many essays and treatises, among which his pamphlets on "The Opium Trade between India and China," "Medical Problems of the Day," "Intermarriage of Relations," and his "Report to the Massachusetts Legislature on Lunacy," are specially deserving of mention. The pamphlets or papers he has published number over twenty distinct essays, and would make two large octavo volumes.

Through these publications Dr. Allen opened a field of practical thought and discussion quite new to the majority of thinking and scientific men. Besides his numerous publications, he has scattered a great deal of useful teaching on health, hygiene, physical education, in addresses and lectures. His position on the Massachusetts State Board of Charities for fifteen years, and his appointment as Examining Surgeon for Pensions for the same time, have enabled him to exercise a marked public influence. For twenty years he has been a trustee of Amherst College, and chiefly instrumental in introducing the methods of physical culture for which Amherst College has taken special rank among American educational establishments. The plan which has been adopted by this institution is worthy of being imitated by all who are related influentially to the work of education and public hygiene.

When Dr. Allen first announced his conviction that the native stock of New England was decreasing rather than increasing, as compared with the rate of increase of the foreign population, he was a good deal ridiculed; but he has so fortified and justified his views by statistics and sound reasoning that economists have generally come to the conclusion that he is right, and that New England is gradually ceasing to be the country of "a peculiar people," and in a fair way to be overrun by another race. The birth-rate of the foreign element Dr. Allen estimates to be more than twice that of the American; indeed, he states that the birth-rate of N. E. has long been gradually declining, and approaching nearer and nearer to the death-rate. Among the causes of this decline of the birth-rate he enumerates "love of money and adventure; fondness for mental rather than physical labor; too high a standard of living, based upon artificial wants; dislike of hard work; the standard of civilization upon a wrong basis; a change in physical organizations, dependent upon the foregoing conditions, the nervous system being developed at the expense of other parts of the body." These points will apply with almost equal force to our higher social communities outside of New England, and it is well that attention has been awakened in many of the States to these interests. Dr. Allen is among the first to maintain that the laws of propagation or population are based chiefly upon the science of physiology, and that a great predominance of the nervous system becomes unproductive. When, therefore, a race or people become generally possessed of such an organization, the legitimate tendency is to run out in offspring, and as a race or people become extinct. This doctrine is comparatively new, and, if true, is one of vast importance.

In 1872 Dr. Allen visited Europe. To the International Congress which met in London that year to consider the matter of reforms in prisons and other correctional institutions, he was a delegate. His reputation had long preceded his visit and provided a cordial welcome from eminent men of his own profession, and secured many desirable opportunities to study the sanitary methods and institutions of England. Last autumn, Dr. Allen, in passing through New York, called into our office incidentally, while the Phrenological Institute was in session, and, in response to invitation, delivered an impromptu address before the students, of which the following is an abstract:

"I have come before you entirely unexpectedly, a good deal wearied with a long journey and much running about in the city; but upon urgent invitation, I concluded to make a few remarks. When I was in college, about forty years ago, Spurzheim delivered a course of lectures on Phrenology in Boston. He came to establish the science in this country, but, as you know, died only a short time after his arrival. The subject was a new one in this country, and attracted considerable attention. It came up for discus-

sion in our college debates, and I was much interested. After leaving college I taught school awhile, then came to New York with the intention of studying medicine, and here the Fowlers were established in Phrenology; and having a little leisure, I did some writing for them; but not being satisfied with the opportunities for medical instruction then afforded in New York, I went to Philadelphia, intending to go through a course of medical lectures there, which I did. The Messrs. Fowler had also opened an office there in the meantime; and while I was attending medical lectures, the gentleman who was engaged to edit the AMERICAN PHRENOLOGICAL JOURNAL, after getting out the first number, gave it up; and in their disappointment Messrs. Fowler urged me to take the editorship; but as I was only a medical student, unknown to the public, I did not feel capable of discharging the duties properly, and shrank from it. They, however, urged the matter and I undertook it. By referring to the first three volumes of the JOURNAL you will not find my name disclosed till the end of the last volume, when I left it.

"After finishing my medical studies I went to Lowell, Mass., and settled, entering on practice there, but I have not forgotten Phrenology, though my attention has been taken up with professional duties. Perhaps I might say that at that time I was very sanguine of the progress the science would make. I was somewhat over-zealous, thinking it would do a great work and that it would be adopted speedily. I was fully satisfied as to the truth of the doctrine and its principles, and that they must therefore be permanent, and in time exert an influence on education, on the state of society, and on Christianity somewhat; but this influence seems to have been rather slow in its progress, although perhaps really making great advances. It is especially making advances among the reformatory class of people, the more thinking people, but not advancing quite as fast as I expected when a medical student, being, of course, a zealous student and thinking the profession would at once adopt Phrenology. In that I was disappointed, but still find it has made great progress.

"George Combe visited Philadelphia in 1838, and while expressing much interest in the success of the JOURNAL, did not look with much favor upon the practical application of the science in the examination of heads, and instruction in the development of character. The Combes were great men, and their writings will last as long as people have minds to read. Andrew Combe was indebted to Phrenology for much that is found in his works, and this he acknowledges. Charles Caldwell, one of the greatest writers on Physiology in this country, was an early writer on Phrenology and for the PHRENOLOGICAL JOURNAL. I had several interviews with him.

"When in London and Edinburgh some years ago, I took time to make inquiry as to the state of Phrenology there, and found that some eminent writers were coming over to the doctrines of Phrenology, but rather slowly. They are quite willing there to acknowledge the brain to be the organ of the mind, and that different parts of the brain perform different functions; but when we reduce it to particular organs for particular faculties, some objections are made. I think they will gradually come to accept the whole doctrine as well as the general principles.

"If you take men who have worked in the phrenological field for many years, they will acknowledge that they are more indebted to Phrenology than to almost anything else; that they would not exchange their knowledge of it for anything else. I do not wish to be egotistical in referring to myself, but it is to Phrenology that I owe many of the ideas and thoughts that I have been advancing in articles for magazines, etc. Phrenology teaches that the great thing to be desired and gained is to have a well-balanced mind; to have the best development of brain, and each of the faculties well set over against the others. On looking back I find that it is to that general idea I am indebted for a correct understanding of physiological laws. All parts of the body, all the temperaments, all the physical conditions, should be harmoniously blended or developed. I have carried out this thought in writing on the laws of pop-

ulation and statistics which relate to health, longevity, etc.

"Sanitary matters, hygiene, etc., are attracting more and more attention, and people are inquiring about these things. I have given considerable attention to the subject of developing the body and physical training in our institutions of learning and elsewhere. Physical culture is as important as mental culture, and is necessary in order to have health and ability to do strong mental labor, and it manifests its good results when made a regular exercise as much as the study of text-books.

"I was asked what right had we to make it compulsory on students to develop the body. We have as much right to make that a matter of compulsion which gives strength of body, and thereby clearness of mind, as we have to require students to perform mental labor; and there should be as much inducement toward physical culture as for mental; and when that is the case, students will be likely to take as much pleasure in discharging their duties in that respect as in learning their lessons from the text-books. We must look after the body and obey the health laws that are established by the Almighty if we would be vigorous and strong in both mind and body."

## FALLING THROUGH SPACE--A QUESTION OF CONSCIOUSNESS.

SEVERAL years ago a builder named Morris fell a distance of about one hundred and twenty feet through the spire of the First Baptist church at Belvidere, Ill. Of course, he was instantly killed. At the time there was some discussion in regard to his mental sensations during the fall; some persons arguing that he was conscious while falling, others that the upward rush of air caused insensibility by depriving him of power to breathe. The facts of a somewhat similar case, which I am about to notice, seem to indicate that the power of thought over the body in such an emergency is greater than we realize.

The first question which arises is in regard to the power of the will to produce unconsciousness. We shall see further on that unconsciousness appears to be the immediate effect which the mind or thought produces at the beginning of a long fall. It is possible that the action of the mind may decide the question of consciousness, but probably not unless the mind perceive a chance of escape from the danger. It is not demonstrable that there is a voluntary giving up of consciousness.

The important consideration is that the mind seems to require that outside circumstances be partly under its control in order that it may exist as we know it. One of the conditions is that it shall have at least partial power over the body, and that in proportion as it has such power, it is in its normal condition. Some philosophers have defined the mind as a constant action, or an endless condition of *becoming*, and Plato would perhaps define it as a flowing point in accordance with his definition of a straight line. It is certain that this power of action is a prominent element of our existence. The severe punishment which results from confinement in the dark cell is due to restricted mental action, which would in time cause imbecility. In cases of paralysis, in which nearly all power of motion is absent, it is quite probable that even if the brain were not affected, consciousness would be imperfectly retained, owing to the powerless condition of the patient. But in falling a long distance the helplessness is much more appalling, because the action of the mind is not obstructed by bodily derangement. We have the anomaly of a clearly conscious mind in a helpless body, and hence the result may be a condition of complete insensibility. If a man were unexpectedly shot upward like a sky-rocket, instant unconsciousness would be the first effect, owing to his confused and helpless condition. The old-fashioned joke of tossing with a blanket is, to say the least, a very severe play; because one of the conditions of consciousness is that we feel a certain power over this law of attraction; that is, the mind not only causes the body to escape the destruc-

tive action of this law, but also turns the law to its advantage in various forms of mechanism. In this limited sense—the sense of comprehension—the mind is superior to this law. Let us carry this question of superiority further. We find that this mastering power is properly exerted in the attempt to control events. As Goethe says:

"The fabric of our life is composed of necessity and chance; the reason of man takes its station between them both; it treats the necessary as the groundwork of its being; the accident it can direct and guide and employ for its own purposes."

This natural superiority is in a measure reversed while falling—the mind having lost its proper power to control the body. Goethe's thought—that we should control events—thus discloses one of the necessities of all consciousness as we know it; for if all controlling power be lost, as in falling, the consequent confusion of idea causes insensibility. Goethe simply carries this principle to a higher point by using it as an argument against fatalism. Let us imagine, if we can, the mental condition of a person suspended in space or falling toward a planet. The supposition at once presents impossible conditions. It recalls Jean Paul Richter's vivid dream, in which he fancied that he was penetrating space with the velocity of light. An illimitable abyss with far-off glittering stars would present a scene of grandeur which could not be adequately imagined even by Richter. The picture is imposing, and to a certain extent pleasing, if we conceive that the mind might have penetrating power of movement; but should the mind helplessly drift past these stars it would probably lose consciousness. An aimless, wandering condition can be conceived of meteors, but not of the mind. One of our very natural misconceptions may be the intuitive impression that at death the mind flies to far-off spheres. Perhaps our reason for fancying this is that we look at everything with a sense of motion and time. But time vanishes before high mental action. Emerson has shown us that the "future state is an illusion for the ever-present state." And we have no reason to assume that motion or the power to penetrate immense distances will be one of our future mental conditions. So near an approach to omnipresence is of course utterly at variance with our present limited condition and our inability to receive more than an easily-estimated number of mental impressions in a given period of time.

The question here noticed is, that it may yet be shown by statistical evidence that unconsciousness is inevitable at the beginning of a long fall. Several years ago Mr. George Augustus Sala contributed to an English magazine an article in which was an interesting account of his sensations while falling with the car of a balloon. The balloon had attained an altitude of one mile. The persons in the car were looking down at London when the balloon burst with a sharp report, like the discharge of a pistol. The aeronaut, who was a plucky little man, cut the balloon open at the lower ring, and then the great globe of silk was rent in pieces, which sailed up into the netting and formed a parachute. Mr. Sala wrote: "It steadied instantly. There was no collapse, and down we came, swiftly but easily, in a slanting direction, alighting among some cabbages in a market garden, Fulham Fields." In this instance the fall produced no effect more serious than nervous tension. Mr. Sala described minutely his sensations while falling, and his description made it clear that he was not only conscious, but observed with coolness the objects which were apparently rushing up from below—in particular a tall church spire, which seemed to be shooting up at him like an arrow. This narrow escape had a characteristic effect upon the two men. The aeronaut was physically active, and so saved two lives. But Mr. Sala, as a literary man, observed the general effect of the rapidly rising housetops. The perception of blank space beneath, with nothing to break the fall, would doubtless have produced instant loss of consciousness in both men. The following case illustrates this point:

On the morning of December 6, 1875, Mr. H. K——, who was ascending a narrow stairway near an open hatchway, fell from the third floor. He lay unconscious at the foot of the hatchway about twenty minutes

before he was seen by people who were passing. At the hospital he regained consciousness two hours after. Four weeks elapsed before he partly recovered. In his account of the accident he said that he instantly lost consciousness before concussion had injured his body. He clutched at a partly-opened door as he lost his balance, and when he saw his utter helplessness the thought produced the stunning effect of a flash of lightning.

The following case further verifies the experience above given: Several years ago the floor of the Central Baptist church at Syracuse, N. Y., gave way and precipitated a crowd of people into the Sunday-school room below. The falling floor caused fourteen deaths. One of the survivors told me that when the crash came he remembered nothing further until he was recalled to consciousness by a sharp pain in his leg, which had been caught by one of the falling beams. He was not aware of his physical injury until after the accident.

That the insensibility is purely a mental effect, is suggested by the fact that there is no loss of consciousness if the person knows or imagines that the distance to fall is short. This is seen in the case of a person who stepped out of a second-story window upon a supposititious balcony. As he fell backward it seemed to him a long distance down, and he wondered when he should reach the ground.

It may be thought that the loss of consciousness is simply due to fright. But what is fright? Is it not a condition of mental anarchy which results in insensibility in proportion as the mind is disorganized? There is loss of power to fix the attention upon a fact or an outside condition. It is known that fear, by destroying the mental grasp or center of idea, may cause not only partial paralysis, but insensibility. The condition of the mind when under the influence of fear is well described by Professor Bain in his work on "The Emotions and the Will:" "As regards volition, there is, as already remarked, an excited activity in the supposed direction of escape. With one definite course open, there is concentration of energy in that course. But the worst cases of fear are those that present no sp cific opening; and there is then a pain mimicry of voluntary exertion, a shifti about at all points. In the extreme for combining danger and uncertainty, there utter paralysis of activity."

It is noteworthy that helplessness is of the conditions of this fright, which stroys the center of idea; for, like the s system, the mind can not exist as we kr it without a point of concentration—e though it be a point of constant motion. falling a long distance we are deprive that necessity of consciousness—the pression that the earth is solid and t worthy. The earth's surface is the l upon which we form conclusions for fu or controlling action. We also requi proper perception of gravitation. Th distorted as consciousness is impaire inebriation or any physical cause. V the motion of an upright wheel-swing versed, and the seats drop backward the highest point of the wheel, the s tion is like that described by Mr. Sal earth seems to rise as if the point of co were midway. This feeling is notic when an elevator falls or rises unexpec In fact, few things disturb our tranq more than uncertainty of footing. I hint reminding us of our complete de ence upon this main law of the system.

An investigation of our impre when regaining consciousness after might disclose some interesting fa which it would be doubtless found th perception of gravitation is an inv element of consciousness. In wak have no misunderstanding in regarc direction of the earth's center—that tion is instinctive—but we sometim confused impressions of the direc certain doors and windows. As co ness dawns clearly, these illusions of vanish; but we are not quite oursel we grasp clearly these outside co Fortunately, our perception of gravi not easily disturbed. We do not h fused impressions on waking that blank space beneath us, or that la tance is perpendicular distance, bu

at times have confused impressions of our relative position.

Aside from the interesting question of the power of thought over consciousness, the discussion of this subject adds force to a metaphysical conclusion advanced by Sir William Hamilton—that the limits of the mind are the logical results of its existence. The deduction is, that if the mind had no limits, it would have no existence as we know it. Every fact of existence has a certain logical relation with every other, and each fact fits its necessary condition, like the pieces of a Chinese puzzle or a dissected map; and if we imagine a person falling through space, like our sun and its accompanying solar system, we dispel one of these important relations, and then the logical result is confusion. Kant has demonstrated that time and space are invariable conditions of consciousness. Another condition seems to be the perception of gravitation and the power of action upon material conditions.

WILLIAM A. EDDY.

## DEVELOPMENT OF THE EARTH AND OF EARTH-LIFE.

### PART II.

THIRD. The Secondary Period, the age of reptiles and pine forests (Mesolithic or Mesozoic Age), with three layer systems about fifteen thousand feet in thickness. This consisted (1), of the Trias system, or rocksalt group, in older secondary time, with variegated sandstone, a dense mixture of fine crystalline quartz and ferruginous clay, shell-limestone with rocksalt and keuper, consisting of layers of marl and sandstone; (2), of the Jura system, in middle secondary time, or the Oolith-formation, so termed on account of the globular, sleazy form of its limestone, with black or lias slate, brown ferruginous jura and white jura; (3), of the Chalk system, in later secondary time, with lime and sandstone, white chalk, green sand, with free sandstone, wood-clay, muscle and snail shells.

Fig. 3.—Life in the Secondary Period—Reptiles and Pine Forests.

Secondary time contains *reptiles* predominantly, which have a great similarity to those now living. There were lizards, crocodiles, and turtles, besides marvelously formed amphibiums (sea and land saurians, dragons), labyrinthodons, which lived on land, and were of a mixture of lizard, frog, crocodile, and turtle, as large as a full-grown swine. Their foot-marks in the variegated sandstone are similar to the impression of a man's hand. They had a slender head, a long tail, and short, clumsy limbs, with a body covered with fine horny scales. The enalios, or sea saurians, were fish-like, and about fifteen to twenty feet long, with large, fin-like limbs and naked skin. Of these, several species existed, like the ichthyosaurians, with a large, dolphin-like head, short neck, and short, but broad fins; the plesiosaurians, halisaurians, halidragons, dinosaurians (which were gigantic,

about one hundred feet long), clumsy land lizards or crocodiles, with lumpish legs. There were also the pterodactyls, or winged saurians, naked, bat-like lizards, but not much larger than our bats. Toward the end of this period birds appeared; and a fossil bird found in the jura indicates its derivation from the lizard. Mammals then came in existence, as the amniotes, animals with bills, and opossums. Of plants, there were especially pine (*conifers*) and palm-ferns (*cycades*).

*Fourth*. The Tertiary Period, the age of mammals and leaved forests (Cenolithic or Cenozoic Age), with a thickness of about three thousand feet, consisting of three molasse layers, which are difficult to separate.

This period consists of (1), the Eocene system, or old tertiary epoch, with its gypsum, wasser-lime and London clay brown amber, earth-oil, and asphaltum (2), Miocene, or middle tertiary system with brown coal, carbonized plants, a palm, cypress, and pine woods, ambe petroleum, asphaltum; (3), Pliocene (ne tertiary) system, with molasse formatio

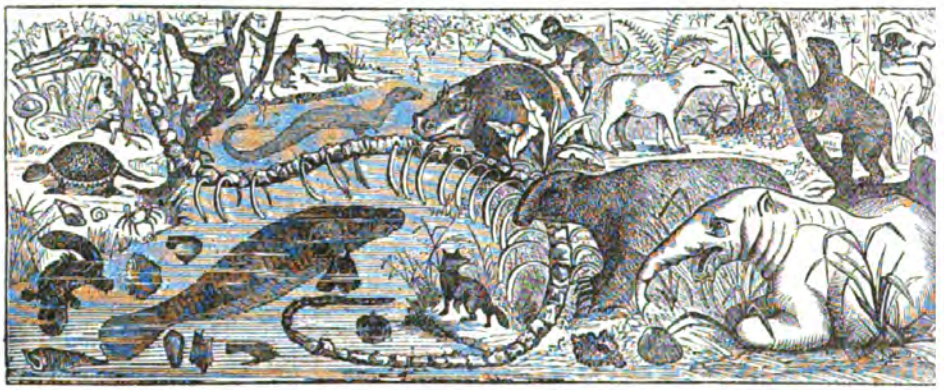

Fig. 4.—Age of Mammals and Leaved Forests—Tertiary Period.

with sweet wasser-lime, relics of infus the triple polishing-slate, etc. The up most of this group is also called clay n the undermost, the sub-apennine forma

The Tertiary Period draws nea the present time; mammals prepond among the vertebrates, and the seed ed plants among the plants. Of th mals of the tertiary strata, most be the Pachydermata, to which belong phant, rhinoceros, horse, and swine. sea were the whales, dolphins, and o imals similar to the sea-cow, and tw

Fig. 5.—Age of Man and Cultivated Vegetation—Quaternary Period.

like animals, the ziphias and the metaxytherium. The clumsy, tapir-like vegetable-eater, palæotherium, with its body closely covered with hair, a long nose, and four toes in front and three toes behind, was very numerous. The anoplotherium, a vegetable-eating, hoofed animal, is the first animal found with a single split hoof and a long tail; it seems to have had a horse-like muzzle. The dinotherium, a walrus-like, vegetable-eating sea animal, was from fifteen to twenty feet in length, and had a whale-like head on a short, thick neck, with two long teeth extended downward. The zeuglodon (*hydrarchos*, *basilosaurus*), formerly, but wrongly, included among the saurians, was also a whale-like mammal, with a head like a sea-calf. The silvatherium was a ruminating animal, of very large, clumsy, giraffe form, with a head like an elephant. There were sloths of great size—the megatherium, megalonyx, and mylodon. Among armadilloes were the glyptodon and the holophorus. The largest gnawing animals were the toxodon and the hippotherium, similar to the horse; the mastodon (Ohio animal) was similar to the elephant; the halitherium was a vegetable-eating, whale-like animal. Besides these there were, as now, snakes, frogs, and toads. The fossil relics of a giant salamander of this time (Andreas Scheuchzer's antediluvial man) were once thought to be those of a man. There were also the predecessors of the monkey tribe, the *prosimiæ*, lemurs, gorillas, chimpanzee, ourang, gibbon, etc. Among the relics of the botanical world are examples of the cypress, palm, and needle, or pine forests, which formed the brown coal.

*Fifth.* The Quaternary Period, or the age of men and cultivated forests (Anthropolithic or Anthropozoic Age), only about five to seven hundred feet in thickness, consists o the older quaternary, or ice, or glacial period of the middle quaternary or post-glacial period, and of the latter quaternary or culture period. The lowest strata, the diluvium-pleistocene, consists of sand, gravel, rubble-stones mixed with loam, and of the most different stratified rocks. Above the diluvial strata are the alluvial strata of the recent time, consisting of sand, rubbish, alternating with loam and marl layers, marsh land, and soil.

Animals and plants were improved by man. In the diluvial period, including the ice time, there existed the cave-bear and the mammoth, a species of elephant, but with longer and more curved tusks, and bristly, long-haired skin. Specimens of the mammoth have been found in Siberia imbedded in ice and frozen soil, and so perfectly preserved that even the flesh was in an edible state. Other diluvial animals were the rhinoceros, the cave-hyena, the cave-lion, the urus, the reindeer, the giant-deer, and others. The alluvium was produced by decaying plants, marshy soil, and by the disintegration of various rocks, and the decomposition of organic substances which constitute the upper earth or soil.

These five ages, or epochs, it may be noticed, are not divided by sharp or distinct lines, but pass from one to another very gradually. It has been very difficult for the geologist to discriminate between them in some regions.

## TONGUES OF FIRE.

"WHEN thou shalt see," says Plethon, "the divine fire that can not be represented under any form, give thanks, and full of joy listen to the voice of the fire, which will give to thee a very true and certain prenotion."

Seeking "a very certain and true prenotion" of various manifestations connected with the supernatural, the intelligent student is immediately attracted by the beautiful phenomenon of fire. The "voice of the fire," or the mystic union of sound and flame, then arrests the attention, and we listen to an audible tongue of light speaking from a body of material nature, and patiently await its full interpretation. More observing than the pagan Plethon, we find this divinity represented under many forms, the tongue sometimes appearing as "a star," "a crown," "a stream or pencil of

light," a "quiet glow," etc., each having its peculiar tone or voice; each speaking of an invisible truth ready to be revealed to the reverent listener. The first question naturally arising regarding these unknown tongues is suggested by their similarity or apparent relation to the magnetic and electric lights of the scientist, and can only be answered by a glance at the essential facts connected with each class of phenomena; then by "a backward guess from fact to principle we arrive at a conjecture or divination regarding something which lies behind the facts, and from which they flow in necessary sequence." Taking the isolated fact of the fiery crown rising from the head of our famous modern medium, Mr. D. D. Home, before we believe in its supernatural origin, we must inquire if there be any known law which will account for its sudden appearance or explain the seeming miracle of its shape, sound, and motion. During a seance at the house of Mrs. S. C. Hall, Mr. Humphrey asserts that "Mr. Home had now passed into a trance state, and around his head I noticed a luminous halo; after a short pause a fiery coronet of star-like points settled upon the head of Mr. S. C. Hall and remained stationary for several minutes. Mr. Home then rose from his chair and was walked to and fro, complaining of a pressure on the head.

"I then noticed that a crown, shaped like a Greek patera, the base fitting on like a skull-cap, had been placed on his head. Tendrils and outlines of leaves were plainly visible, the leaves being vine-shaped, appearing to hang from the edges of the broad patera. Mr. Home appeared greatly agitated, and repeated, 'I am crowned, I am crowned; I am free from pain; I am receiving a new mission. The pain in my head is gone.' He then walked up and down the room, the excitement all but overpowering him. Finally the crown was removed from his head, while sweet-toned notes were distinctly heard proceeding from it; after which it was gently carried toward those present, as though for their inspection, and then removed into the angle of the door, where it remained luminously visible for four or five minutes—visible as though it were from its own intrinsic light. The brilliancy of its star-like form had so deeply impressed all present, that after its disappearance they continued to gaze at the place where the beautiful luminous crown had once stood, unable to realize its disappearance."—*Incidents in My Life*, p. 161.

Leaving our English friends to wonder at this beautiful mystery, let us go back to the drawing-rooms of the ancients and examine a similar manifestation occurring in the fourth century. Iamblichus evidently alludes to this appearance when he says: "If the presence of the *fire of the gods*, and a certain ineffable species of *light externally accede to him who is possessed*, and if they wholly fill him, have dominion over and circularly comprehend him on all sides, so that he is not able to exert any one energy of his own, what sense or animadversion or appropriate projection of *intellect* can there be in him who receives a divine fire, what *human motion* likewise can then intervene, or what human reception or passion or ecstasy or aberration of the phantasy can then take place?"—*De Mysteriis*.

How shall we interpret these unknown tongues? Mr. Home assures us they are the tongues of the angels, while the Grecian priestess affirms they speak the language of Apollo.

"The prophetess of Delphi, whether by means of the thin and fiery vapor which proceeds from the mouth of the cavern, she gives oracles to men; or whether from the Adytum, sitting upon a brazen tripod, she gives answers to men; in either case she gives herself to the divine influence, and becomes *effulgent with rays of light*."—*De Mysteriis*.

From the halo of the ancient priestess, sacredly guarded by the rites of pagan superstition, we turn to the witches on the scaffold at Salem, and find the familiar light encircling the doomed form of the accused, shining fair and clear above the fires of martyrdom, triumphing over death with every vital truth of nature. "What," asks the stern fanatic Cotton Mather, "is their traveling in spirit while their body is in a trance? What is their appearing, some

times *clothed with fire or light* upon them, but a blasphemous imitation of certain things recorded about our Saviour and His prophets and the saints in the kingdom of God."—*Wonders of the Invisible World.*

Here we behold our familiar spirit speaking the same unknown language, and are told it is the voice of the devil. But here in the luminous crown of the martyr we stand face to face with a divinity of historic fact, which points to a single hypothesis as the only true interpretation—the electro-magnetic force concentrated in and about the person of the psychic, manifesting itself in the waving flame.

Pliny, in his second book of Natural History, mentions a similar appearance, and tells us that it settled not only on the masts and other parts of ships, but also upon men's heads. "Stars make their appearance both at land and sea. I have seen a light in that form on the spears of soldiers keeping watch by night upon the ramparts. They are seen also upon the sail-yards and other parts of ships, *making an audible sound* and frequently changing their places."

This "audible sound" leads us by a law of association directly back to our starting point, the "sweet-toned notes" of Mr. Home's crown, and we inquire more persistently than before, can this flaming crown, in its complex form, be the simple expression of a natural force? Supposing Mr. Home's body in the condition of a permanent magnet, or that he is magnetized by induction from the persons about him, would a flame of this peculiar character possibly appear? Can we find any analogous effects among the experimental facts of electro-magnetism? Does the electric or magnetic light ever assume the shape of a leaf? Mr. Wilson, one of the most careful experimenters in this branch of science, assures us that it does. He says upon rarefying the air within a glass vessel (closed at both ends) about five hundred times, and afterward turning the glass in the lathe, while at the same time it was rubbed with the hand, a considerable quantity of lambent light, variegated with all the colors of the rainbow, appeared within the glass under the hand. When more air was let in, the flashing was continual, and streams of bluish light seemed to issue from under the hand within the glass in a thousand forms. Sometimes it seemed to shoot out into the *forms of trees, moss,* etc.—*Wilson's Essay,* p. 216.

Von Reichenbach, in experiments upon certain magnetized surfaces, repeatedly refers to a similar effect. "Mlle. Sturmann, when the room was darkened instantly, discovered a crystal by its light, and giving on three occasions the same account of its flame. She described it as somewhat of the form of a tulip, like one of its petals, or like the flame of a candle beginning below with an arch directed outwards." At another time, when a hollow, spherical electro-magnet was used, "she compared the whole flame to a loosely-bound sheaf of corn standing on the ground, the ears and stem of which hang over on all sides." Here we discover an interpreting truth shooting athwart these tassels of mystery, and find every new branching or subdivision of the subject has only supplied new proofs of the accuracy of our theory, and new guaranties for the unity or consistency of the facts confirming our first "backward guess," that the medium exhibits effects in common with the earth of which he is made, effects produced by terrestrial magnetism in any soft bar of iron, or appearing upon the surface of many electrified substances. Dr. Priestly produced analogous results by "placing lighted camphor in a metallic cup, and when the cup communicated with the electrified conductor, the camphor threw off numerous ramifications, shooting forth its branches *like a vegetable in growth.*"

The identity existing between the magnetic and electric lights is not surprising when we consider the fundamental law that "electricity in motion produces magnetism, and magnetism in motion produces electricity," the principle accounting for the shape of the flame explaining also its identity of sound and motion. "The flame leaves the magnet with a certain force of a projectile nature, which carries it away from the poles; but it has on the other hand an innate tendency to rise in the air, its material substratum must be therefore lighter

than air at the earth's surface. This flame may be affected by a breath or current of air and mechanically set in motion." In regard to the motion of an electric flame, Dr. Priestly observed: "When the discharge takes place between a good conductor presenting a small surface and a bad one of larger surface, there is a rapid but intermitting succession of sparks to the particles of air around, and the sparks thus dilated form a brush which has a quivering kind of motion, and is attended by a *subdued, roaring noise.* Its root is brighter than its rays. When a point is held to a surface charged resinously, a star or point of light is produced instead of a brush; when the charge is feeble, the light is sometimes a quiet glow, instead of the noisy brush, and convection then takes place—that is, a current of air conveys the discharge to a distance, which current has a sufficient force to give motion to electrical rays arranged for that purpose." In regard to the nature of the flame, "electric and magnetic light consists, like all other flame, of incandescent molecules in a state of minute subdivision, the heat and light of the shock proceeding from the combustion and ignition of the particles of ponderable matter." Its "subdued, roaring noise" may sometimes fall like "sweet-toned notes" upon a rarefied air, or under certain surrounding conditions they may have a "musical intension and remission," a phenomenon often observed in connection with the supernatural. In 1814 a party of Englishmen were on Mount Etna during a storm of thunder and lightning accompanied by a heavy fall of snow. One of the party felt his hair moving, and upon raising his hand to his head, a buzzing sound issued from his fingers. The rest of the party experienced the same sensation, and by moving their hands and fingers they produced a variety of musical sounds audible at the distance of forty feet.—*Chambers' Cyclopedia.*

Dr. Priestly noticing a similar effect among the machinery of his private laboratory, "attempted to reduce this variation to some measure. Accordingly, by the help of a couple of spinets, I endeavored to ascertain the *tone* of some electric explosions, and observed that every discharge made several strings, particularly those in accord, to vibrate; but one note was always predominant and sounded after the rest. A jar half a foot square, sounded F sharp; one of three feet sounded C below F sharp." While "a current of electricity passed through the ear gave rise to bubbling, ringing, or crackling sounds, and sometimes to distinctly musical tones." That these diverse notes, proceeding from a discordant class of phenomena (a body of fact the antipodes of a material and spiritual philosophy) have a certain harmony, is evident to the least sensitive ear; but to the question, "Is there any foundation for belief in a spiritual inspiration?" they give back an "uncertain sound." Let the "philosophy that makes light of impossibilities" reply.

JULIA M. HOLMES.

## HELENA P. BLAVATSKY.

THE head of Madame Blavatsky is one of remarkable strength in many elements of character. With her fine physical constitution and temperamental balance her brain is capable not only of prolonged labor, but of extraordinary exertion under excitement. She is not of that quiet, scholastic mould which is so often found in literary pursuits, but possesses an intensely emotional and energetic nature, adapting her to fields of robust action.

With a large head, whose intellectual development is very marked, particularly in the perceptive region, she exhibits a strong leaning to observation and the study of facts and things as they exist. We do not find much evidence of the disposition to trust to mere impressions, or to be won over by probable or plausible showings; she is rather skeptical, more inclined to be iconoclastic in her attitude toward philosophy, religion, and literature, than to build

up a system by negative reasoning, or by speculation. The type of her intellect renders her critical, and that, assisted by her cautious skepticism and strong individualism, makes her a stubborn and fearless partisan of her own convictions. She has a great deal of firmness, and the sense of justice, duty, and of honor is nearly equal to her firmness; hence, whatever cause she may espouse she will maintain with enthusiasm. When she has confidence in persons, or in the sources of her information, she accepts and acts upon them to the fullest extent.

Her social nature is influential, but on account of her moderate Spirituality and Intuition, her full Secretiveness and critical intellect, she may be said to watch mankind closely, and is thoroughly distrustful where she perceives cause for distrust. So in society she combines a vigilant observation of persons with a great deal of earnest friendship. Her highly sanguine temperament and energetic nature lead her to adhere to friends through good and evil report. Being as earnest to conquer opposition in social as in intellectual relations, she is highly capable of love and friendship which are real and practical, but disposed to laugh at what people generally term sentiment in litera-

ture and character, relegating it mainly to effeminacy and weakness.

She has a great love of freedom, and aversion to almost any kind of restraint which prevents her from taking an independent course, and acting out her own convictions. In emergencies she would generally show great coolness and boldness. She has a great deal of hope and enthusiasm for the elevation of humanity according to her own peculiar views; and her views in most cases are likely to appear peculiar and extreme to others, notwithstanding her caution and self-control. She is patriotic, and would be brave in the defense of country, home, family, and faith. Her attachments would tend ever to carry her back to the country and home of her love, especially if it were among a people whom she could impress by her mental force. She would never feel at home among people of a gloomy and cynical temperament.

Her development of Self-esteem is not large, so that she does not believe so much in herself as in her knowledge, experience, duty, and purposes. Her temperament ministers great activity to an energetic, thorough-going nature; so her force and ambition lead her into a bold career, but in such a career she does not make her accomplishments redound so much to her own honor and elevation, as a woman of greater self-esteem would.

The reader must have been struck at first sight by the unusual development of Language which renders her a natural linguist, and gives remarkable ability in the expression of her thought. Madame Blavatsky has a masculine order of intellect, and a masculine energy with a woman's temperamental susceptibility and social feeling. Hence we should not expect her to follow the conventional routine of the society lady, nor yet to adopt the passive round of most society men, but we should expect her to display unusual qualities and pursue a career unique, individual, and exceptional in achievement, as she is exceptionally endowed.

It is rare for us to meet a person, man or woman, so advanced in life with so much physical freshness and youthful ardor and capability. She would pass easily for a lady of but fifty or so, while she differs from most people of fifty, in being still an earnest student of life and literature, taking up and pursuing new subjects with vigor and success.

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The subject of this sketch is in many respects a very rare one. Whether we take into account her originality and breadth of thought, her physical and moral courage, her adventurous pursuit of knowledge, seldom sought and more seldom found, or her zeal in propagating Oriental religious ideas, Madame Blavatsky is altogether an extraordinary personage. She was born in Asiatic Russia and reared in the tenets of the Greek Church. She left home and friends at an early age, to travel in strange lands and sojourn among strange peoples and tribes. She has, unaccompanied, traveled three times around the globe, and has dwelt among dark-skinned races for years together, learning and speaking their languages, studying philosophy and practicing magic with their priests; indeed, making herself for the time being one of the people with whom she dwelt.

The Russians of the upper class have always been noted for their linguistical talent, but Mme. Blavatsky seems to have excelled most of her compatriots in this respect. Prince Emil Wittgenstein, a cousin of the present Empress, in writing to Col. Olcott, of New York, said that he knew Mme. Blavatsky well some twenty-five years ago at Tiflis, when she was famed for her ability to speak Georgian, Mongolian, Circassian, and other Caucasus dialects. Those who have met her can certify, that besides the French and Italian, several other languages are familiar to her. Epes Sargent, the American

author, in a recently published letter, affirms that she writes English with the ability of George Eliot, and the Hartford *Times*, reviewing her "Isis Unveiled,"* says, "that she makes use of the purest English, is matter of surprise to her readers. She expresses herself with the utmost clearness and simplicity, even when dealing with the most abstruse subjects." In this view other critics concur. Dr. R. Mackenzie, one of the better known of our literary reviewers, wrote in the Philadelphia *Press:* "We have to admire the thorough simplicity and natural grace of Madame Blavatsky's language. It is pure and expressive, which is singular, considering her Asiatic birth, and that the first languages she learned must have been Oriental, which, in their expression, certainly are very deficient in simplicity."

Before the appearance of her notable work, the panegyrics pronounced upon Mme. Blavatsky by her intimate friends were attributed to over-partiality. But now that "Isis Unveiled" has run the gauntlet of criticism on both sides of the Atlantic, it is easy to see that in its author we have one of those characters who usually become historical. Such individualities, by the very intensity of their magnetism, invariably arouse the enthusiasm of friends and the rancor and hostility of enemies. It is not surprising, therefore, that while one class of critics finds in our Russian visitor the evidences of profound erudition, marked intellectual depth, and elevation of sentiment, another should toss her volumes aside with a sneer and expression of derision.

It is a strange news that Madame Blavatsky brings from the Orient to us Western people. She relates that not only have the mystical brotherhoods over there all those literary treasures that we have long supposed were burnt in the Alexandrian libraries by the Moslem General Amru and others, but that the secrets of the ancient magi, those "wise men of the East," are preserved and put to practical use. European travelers have seen and testified to some of the magical feats performed by these adepts, but attributed them to legerdemain. None, however, have reported a tithe of what Mme. Blavatsky has witnessed.

In the course of Mme. Blavatsky's long life—for she is upward of eighty years old, yet wonderfully young in body and fresh in mind—she has had her life in peril by sword, fire, shipwreck, poison, wild beasts, pestilence, not once, but scores of times. Were the space and time afforded to record her travels and experiences, a story of the most romantic interest could be unrolled.

Madame Blavatsky, judged by her writings, is from one view an iconoclast, but does not tear down without offering to rebuild. She assails the old routine of Christian theology, and proposes to replace it with Buddhistic and Brahmanic ethics. She rejects our exact science, and holds that in Oriental psychology and physiology there is far more to be learned of nature and its forces, of man and his tremendous powers. This being the case, we need not wonder that the Russian Government, as if apprehensive of the injury her "Isis Unveiled" may do to the State religion, has prohibited its admission across the frontiers.

For the admirable photograph from which our portrait was engraved we are indebted to M. Sarony, of Broadway, while our acknowledgments are due to Prof. J. R. Buchanan, M.D., for contributions to our phrenological notes.

* *Isis Unveiled:* A Master Key to the Mysteries of Ancient and Modern Science and Theology. New York: J. W. Bouton.

## HOPE.

AWAY in the heart's deep shadows
There sings the livelong day,
A little bird with a wondrous voice,
A sweet and soothing lay.

It sings a song of sunshine,
Tossing the boughs about
That shaded with gloom the merry heart,
Till its light had nigh gone out.

Though oft its voice is siren,
And its notes contain no truth,
I care not, so long as in singing
It sings the songs of youth.

M. S. L.


## A SERMON BY A WOMAN IN A BACK SEAT.

AFTER the minister warmed up, I could hear very well, distant though my seat was. True, I lost the earnest and pathetic clinching of truth which occasionally succeeded the oratorical roar. That was of small account, I thought, as "pointing a moral and adorning a tale" came directly in the line of my aptitude. Still, I could not help wondering all through the able discourse—able so far as I could hear—why clergymen, as a rule, never seem aware of weak voices and imperfect enunciation. They shriek and they mutter, but the pure, talking tones which a public speaker with an ordinary pair of lungs should make perfectly audible are seldom heard. Unfortunately situated on another occasion, I lost the very best utterances of a popular American preacher, and was only aware of it on reading a careful report of the sermon the next morning. This only "*en passant*," as I did not take up my pen to preach to ministers; notwithstanding, there *are* recognized modes of voice-building, and truth certainly would have a much wider dissemination if all could hear instead of part. As I was saying, my seat was a back one, and in close proximity to the open door. The meadows beyond were green and fascinating, and the hum of insects made a pleasant accompaniment to the voice of the speaker. All was peace and pleasantness.

"Why are we thus disciplined?" inquired the minister.

"Do we not always appear to have the one trouble of all others which is hardest for us to bear?"

"This mother loses her idolized child; this man his idolized money. This one, to whom quarreling and fault-finding are as poisoned arrows, is thrown into the society of those who rend and tear her at every turn. And what, my friends, are we to learn from all this?"

Imagine the disappointment, yes, worse than that—disgust—at not being able to hear the solution of this vast theological problem—a sum in spiritual geometry which has occupied the attention for ages of priests, poets, and philosophers. The stalwart tones subsided to a sepulchral whisper, of which the hiss was alone audible to my ears. Just then my attention was attracted to a sound outside, and I turned to see a pig of enormous size—perhaps I should say hog—dodging viciously about between two men. "'Taint no use to try this way," said one of them, in a hoarse undertone. "'Taint no use. You set down, and I'll drive him just opposite from where I want him to go, and if I don't have him in the pen in five minutes, you may shoot me for a crow."

The sexton closed the door, and to this day I don't know whether the ruse succeeded. I suspect it did; and out of this episode my text is taken for this little discourse. It would, doubtless, not be just the thing for me to say that there is a good deal of humanity in a pig; but surely it can not be out of the way, since we all know it, to say there is a good deal of the pig in humanity.

"Just opposite from where I want him to go!"

The swinish instinct chose the forbidden path, and superior intelligence, desirous of guiding the animal in the proper direction, allowed him to believe he was having his own way, only to find himself in the pen of repentance. Does not this example throw a little light on what the preacher calls our disciplines? Please look at my neighbor for a moment. I know him to be a man of inordinate ambition. His wife must be clothed in silks and overlaid with jewels. The best

—that is, the most expensive—education must be given his children; and to make both ends meet—for my neighbor has no hereditary estate—he works day and night, taxing brain and muscle to the utmost. The walls of his brown-stone mansion inclose dissatisfied children and an anxious wife—for she is compelled to share the consequences of her husband's overtaxed energies. A few years and my neighbor walks straight into the pen, apparently of his own accord, but to my mind in obedience to a law which could promote the growth of this man in no other manner than by allowing him to believe he was having his own way. The pen was only postponed, and sooner or later every human pig of us finds himself obliged to begin anew, if not too sadly wounded. Even then, though we may occupy but one humble corner of the pen, the spirit understands and surely starts afresh, though it may be to the undiscovered country. There is no deception in this mode of pig-driving and human discipline; nor have we any reason to think that the experience we get in our own way is not the best we could have. Sometimes I am forced to believe that bereavement, loss of means, loss of friends, troubles of all kinds that have come to others and been experienced by myself, are just so many blows to the self-hood of the sufferer. If it were not so, would we be constantly hurt in our most sensitive parts, and is it not true that we invariably feel better when we get over it? and is not the reason quite as much because of the rich experiences which have been born of our agony as the cessation of pain? The mother who disciplines her child, allowing him to suffer the consequences of his disobedience, and the man with the pig are to me examples of the infinite force which allows humanity to head wrong for the sake of a speedier and safer return.

I have always thought that if the preacher could have seen the pig and heard the conversation I did on that beautiful Sabbath, he would have been inspired to use the episode as a fair illustration of his subject, and a partial answer at least to his query. Considered in this light, I am sure he will forgive me for preaching a little myself. E. K.

## LIGHT IN DARK PLACES.

"This mournful truth is everywhere confessed,
Slow rises worth by poverty depressed."—SAMUEL JOHNSON.

### CHAPTER XIX.

#### SADIE CATCHES AT AN OPPORTUNITY.

THE "something else" Sadie had on her mind, came out that evening in the course of their family talk. From the gossip of the girls at the bindery, one or two of whom, new hands, attended an evening-school which had just been started by the Mission, she had caught a remark to the effect that a teacher was wanted in the regular day-school of that philanthropic establishment; and, hopeful of its truth, thought that she might apply for the place. The compensation, she knew, could not be large, barely more than she was receiving for her hand-work; but then, the change would be almost every way for her benefit, and in the direction of her aims.

"What should I do about it, mother?" she asked.

"First ascertain that the opportunity exists, Sadie. Next Sunday you can inquire of the superintendent, and if there be a vacancy, learn the nature of it. I have little doubt of your competence to teach a class in that school, as they have no advanced departments."

"It seems to me that to teach young children, mother, one must have a great deal of patience—more patience than learning."

"Patience is necessary to success in teaching, whether in the primary or grammar schools. I think, indeed, that competence, or special adaptation, is more needed in the teacher of very young children than in the instructor of advanced pupils. In Germany, as I've been told, more care is shown in se-

lecting teachers for the primary schools than for the academies, and even higher salaries are paid them. Here, the notion that anybody can teach young children seems to prevail."

"I guess from what Bumpy's told me," said Norton, "they don't teach much in some of the primaries. He's been to two or three of 'em, and says that some of the teachers don't know any more than to scold and knock the young ones around."

"Bumpy is not a very trustworthy witness, I think, in educational matters," replied his mother. "He can give a better account of a tussle on the street, or make a better estimate of the value of a stray bit of old iron than he can judge of the merits of a teacher. To be sure, a boy or a girl soon learns whether he or she can get along nicely with a teacher, and the good teacher generally wins the respect and affection of all her little pupils. In this country few persons comparatively choose teaching as a settled pursuit, and so most of those who are engaged in it, particularly in public schools, have taken it up because they could find nothing else to do for their support, and intend, when more remunerative employment offers, to withdraw from their classes. In the primaries the salaries are low, and the teachers, though young and comparatively inexperienced, think themselves very poorly compensated for their labor; and this, with the cramping influence of necessity, renders the majority of them somewhat indifferent to the moral responsibility of their position."

"I almost shrink from the thought of such a place, mother," said the young girl, "when I consider how much one can do toward injuring the life of a child by careless treatment."

"The true teacher, my child, appreciates her responsibility in the guidance of young minds at the period of their greatest susceptibility, and seeks to implant only the seeds of truth and virtue."

"I think though, with your kind help, mother, I could do pretty well. You know so much about getting at people's characters, and you can so easily understand children that you ought to be a teacher yourself."

"Mother's a teacher, I'm sure," broke in Norton. "Isn't she teaching people all the time, as well as you and me, and Dell? She's the best teacher in the world," and the earnest boy stole up to his only parent, and put his arm around her waist.

"Yes, indeed, our dear mother is one of the best of teachers, I know," rejoined Sadie with much warmth. "But you know, Nortie, I meant one who keeps a regular school."

"We understood you, I guess," said Mrs. Camp with a smile, at the same time caressing the smooth brow of her boy; "but let us talk business, as the store-keepers say. If you feel quite sure that there is a vacancy at the Mission, you can write an application for the appointment; and if you learn on Sunday that the opportunity exists, you can at once hand in your application."

"I'll set about it right away," exclaimed Sadie.

The last of the tea service had been scarcely placed in the tidy cupboard, when a rap at the door announced Mr. Stanley. A hearty response was given to his cheery "Good-evening," and he was soon seated in the small family-circle of that third-story back apartment. An observant bystander might have noticed a slight flush appear on the cheek of the widow, when Stanley entered; but the lady otherwise appeared calm and courteous. Dell, who had at the first been much taken with the gentleman, flew in childish glee to meet him, on the mention of his name; and now that he was seated, brought her own little stool and sat down close beside him, where she kept a close watch upon his face, and appeared to measure his every word. Of course Stanley liked children, or Dell would not have shown this interest; and much of his conversation which was meant for the others was addressed to her.

"Well, little one, how is mamma, sister, and brother to-night; and your little self, too?" said Stanley.

"All very well, I 'spose, sir," replied Dell.

"And nothing new has taken place here since I saw you last, three long weeks ago?"

"We can not speak of aught but good,

Mr. Stanley," answered Mrs. Camp; "matters have gone on peacefully with us."

"'Blessed is the contented mind.' You know my opinion with respect to your residence in this quarter, madam, so it's unnecessary to repeat it. You will persist in declaring that you are satisfied with the wages of toil and self-abnegation, and with such a living as your means furnish. Be it so. I must respect your conduct and your motives, so far as I have been made acquainted with them. But, excuse my persistence, would you not, for the sake of these dear children leged circle, unless assured of the permanence of the relation."

Stanley appreciated the moral propriety of this view; and, turning to Dell, said with the manner of one impressed by a sudden idea:

"My Dell, when your mamma turned seamstress the world lost a most admirable teacher. I wonder that she did not try it. A seminary with its forty or fifty boarding and day pupils would not wear upon her intellectual strength any more than the effort to make ends meet here, and to improve the people who are your neighbors."

THE CAMPS AND MR. STANLEY IN CONSULTATION.

if the ability were yours, seek another residence, and afford them better associations? Knowing, as you do, the influence of environment upon the youthful character, you could not be averse to procuring the best facilities for the mental development of your children."

"Do not mistake me, good sir," returned the lady earnestly. "I could not be so careless a parent as to debar them from the most refining influences that society can furnish, were it in my power to breathe the atmosphere in which they radiate. But I would not attempt to live in the most privi-

"They are very grateful, I think," said Sadie, "for the attention and instruction mother gives them."

Mrs. Camp glanced half chidingly at her daughter, as the latter made this remark.

"No doubt of it. Mrs. Camp is a natural director, and can not help giving her neighbors, who, she knows, so much need counsel, the benefit of her experience and culture. I see the effect in the very air of this building. It is sweet and agreeable as compared with like houses in the neighborhood. But, my young lady, with such a mother, how is it

that *you* prefer sewing books to instructing the young idea?"

"I don't precisely. Dear mother, may I mention it?"

"As you please, Sadie."

"Oho, you have been talking up the subject," exclaimed Stanley. "Permit me to enjoy a little of your confidence—if I deserve it."

"Oh, Mr. Stanley!" broke in Norton, who had been quietly listening to the conversation, yet all the time anxious lest his mother would not broach the subject of Sadie's candidacy for the supposed Mission-school vacancy, "I'm sure you deserve our confidence; doesn't he, mother?"

"Mr. Stanley has shown us the consideration of a friend, my son, and we are indebted to him for his kindness in—"

"Thank you, my dear madam, that'll do. Now, Miss Sadie, what is the nature of the undertaking you have been thinking about?"

"You are right, Mr. Stanley, in so far as your opinion agrees with my wishes about teaching, but I am not very confident in my ability; I have a long time treasured the hope of preparing myself to take a position in some school, and mother has been helping me in my reading and study."

"With such tutelage, I have no doubt of your competence to begin now," remarked Stanley. "Have you anything in view?"

"I heard lately that there was a vacancy in the day-school connected with our Mission, and just before you came in, we were speaking of it, and with mother's consent I am to apply for the place."

"When?"

"Next Sunday, sir."

"Three days hence; 'twon't do. A hundred applicants might present themselves before that time; and you, my young lady, come in a day or two after the committee had selected one. Write your application and send it to me by Norton, and—"

"Oh, no, Mr. Stanley, I don't wish to do that. But I thought you might know the gentleman who has charge of the school—the oversight, I mean—and could give me his name."

"Address your application to the General Superintendent of the Mission, and refer to me."

"Thank you, dear sir," said Mrs. Camp. "I presume that if the superintendent or committee think favorably of the application, Sadie will be requested to report for an examination; but that is expected, as a matter of course."

"And she need have no fear of her capacity to meet the requirements. Well, my little one, how would you like to see sister mounted on a high platform, with a great strap in her hand, and talking *sharp* to forty or fifty little boys and girls?"

"Sister Say wouldn't talk sharp, I guess. If she teaches, I'm goin' to her school. Won't it be nice, sir, to have my own dear sister for my teacher?"

"Very nice, my child, and perhaps it would be nice for mamma and brother in some other respects which you may not quite be able to understand. By the way, Mrs. Camp, I have a little request to make, on behalf of my sister partly, and on my own account. You know when I dropped in the last time, I had been stupid enough to forget the hour and found you at tea. You insisted upon my partaking of your cheer, and I found your brown biscuits most agreeable to my palate. I have represented their virtues to the people at home with so much warmth that they have become desirous to learn the way to make them. My sister's two little girls are delicate bits of humanity, and seem to me languishing for something more nutritious than baker's bread and tea-biscuits, and I think that butcher's meat is not suited altogether to their weak digestion."

"Sadie, please to write the recipe for Mr. Stanley," said Mrs. Camp.

"Oh, give it to me verbally; don't take that trouble. I'm good at remembering figures and processes."

"Yes, my good sir, I have no doubt that you are, but you must let me have my way even in this simple matter. A great deal of household work fails of success because the housekeeper does not follow rules. Especially is this the case in cookery. Women, careful, perhaps, at first, grow careless in preparing this or that article by reason of familiarity with the process. They *guess* at the quantity of flour or meal, the number of eggs, the ounces of butter or lard, if they use

such substances for shortening, the quantity of sugar or salt. They guess at the heat of the oven, the time required for baking, etc. Whereas, by taking counsel of a good housekeeping manual, and following its directions closely, they would be uniformly successful."

"System, particularity, I know, Mrs. Camp, are characteristics of the good housekeeper. My mother was a dear good woman, ever kind and sunny-tempered, but a poor hand in the kitchen. Father used to say, 'She never made a thing twice alike.' She *guessed* at this and that in her ménage, and was sure the bread and cake and pie would be good enough, if she did not measure and weigh the ingredients. 'Heaviness' was the prevailing quality of her cookery; and I think it was the cause of the almost constant stomachic derangement I suffered from when a boy, and an occasion of the dropsy which hastened mother's death at fifty-five."

"Mother never puts any shortening in her biscuit and cake," said Sadie, who had now written the recipe, and handed it to Mr. Stanley; "and I'm sure they are as light as any of the baker's, while they don't have that unpleasant odor of burnt oil or grease which is often noticed in the baker's cake."

"I use a little sweet milk if I wish anything in the way of shortening," said Mrs. Camp, "but would not advise that unless it were fresh and pure. I often feel sorry for the children who are fed on food saturated with oily matter and chemicals, knowing that the diet is laying a foundation for sickness, near or remote."

"Your children certainly do not lack a good diet," returned Stanley, "if fresh and clear complexions and bright eyes denote the sort of food they get. You have done much, Mrs. Camp, toward solving the problem of health, for here, amid scenes and associations which our sanitary authorities declare to be conducive to disease, you preserve a degree of health and vigor in your children which most people accustomed to the ways of ease and affluence would be proud to exhibit in theirs. There, my little one, don't do it again." Dell had yawned, as her usual bedtime had come. "I'll be off. Excuse me, good friends, for lingering and trespassing on your time and duties."

"You need not hurry away, sir."

"No, don't go, Mr. Stanley," said Norton. "It seems so pleasant to have a gentleman come in and stay awhile."

"Yes, indeed it does, Mr. Stanley," chimed in Sadie.

But Stanley boldly seized his hat and departed amid a chorus of Good-nights.

## CHAPTER XX.

### THE APPLICATION.

IMMEDIATELY after the departure of this welcome visitor, Sadie set about the preparation of her request for the teacher's place; and at the end of half an hour's close study of the points involved, handed the draft to her mother, who read it aloud, as follows:

"*To Mr. Edward Hammond, Sec. — Mission.*

"RESPECTED SIR: Having been told that a teacher is wanted for one of the classes in the day-school under your charge, I beg leave to offer myself as a candidate for the place. I have pursued the different branches of an English education to the extent usually prescribed in grammar schools, and have devoted some time at home to readings in history, biography, natural philosophy, and physiology, under competent direction. I shall be eighteen next December; have excellent health, and I think enough patience to get along pleasantly with a class of small children. I have never had experience in teaching, but have long entertained the desire to become a teacher, and for nearly two years have been reading and studying with this object in view. Should an examination be required, I will offer myself for it at any time that may be named.

"Permit me, sir, to refer to Mr. Dashiel Stanley, of the firm of Messrs. Taylor & Stanley, and also to Mrs. Rookway, of whose Sunday Bible-class I am a member.

"Soliciting your consideration of this note, I am,

"Very respectfully,

"SARA J. CAMP,

"No. — Prince Street.

"P. S.—I address this to the Secretary of the Mission, not knowing the names of the School Committee. S. J. C."

"On the whole, very well expressed, my dear girl," remarked Mrs. Camp. "I would, however, omit the postscript, or include its substance in the body of the letter. Then I think it will answer."

"It's a good deal like the lawyer talk we see in the papers," said Norton. "I think Sadie'd better go into a lawyer's office and write, and some day be a lawyer. You know, mamma, that women are becoming doctors and lawyers nowadays. Who was that great one you told us about the other day, that made such a good speech against a Jew who wanted a piece of somebody's skin, and won the case?"

"I presume you mean *Portia*, who in Shakespeare's great play disguises herself in the lawyer's robes of three or four hundred years ago. But that account is mainly a fiction of the poet, although there were women in the past who gained eminence by their legal ability. I think that the time is scarcely come now when women can study law with much hope of a ready entrance into its practice. Medicine, however, is an open field for them, and they are better fitted for it."

"I've seen a good many doctors' signs with women's names on 'em, and I'm sure if you were sick and wanted a doctor, I'd great deal rather go for a lady than a man."

"Well, Nortie," said Sadie, "women have been physicians for many years, and some are very distinguished, so that there's no doubt about their being capable of doctoring the sick, especially women and children, as well as the men."

"I trust that mamma will not need the services of a physician very soon," said Mrs. Camp, smiling.

"Oh, dear; I hope not!" cried Sadie.

"Nearly half-past nine, mother," remarked Norton, glancing at the clock.

"Yes, my children, we should be thinking of our beds. To-morrow morning, Sadie, you can copy the letter in your nicest hand, and I will take it to the Mission when I go out."

Sadie was stirring when the red glow of sunrise shone in the windows next morning, and had made a neat copy of the "application" before it was time to give her attention to breakfast matters. That important meal dispatched, the two young bread-winners gone to their several departments of occupation, Mrs. Camp took up a garment which needed a "few stitches" to complete it. These "few stitches" employed her until the bell of the neighboring public-school sounded its warning to dilatory mothers or pupils that there was but a quarter of an hour remaining before the time for opening the day's exercises. Then folding up the work, she summoned Dell from the hall, where the little girl was enjoying a game of hide-and-seek with Mrs. Moriarty's Mickey, and bid her put on her "sailor" to go out.

"Where are we going, mamma?" inquired the little one as she skipped along.

"To the Mission, and then to the grocery to get some rice and some apples."

"Some apples to roast, mamma, for dinner?"

"Yes, my love, for dinner and breakfast; and if mamma can get some quinces at a moderate price, we shall have a few of them baked for Sadie, who likes them so much."

"Oh, squincers; I like 'em, too; they're so good. I 'member we had some a great while ago. Didn't we, mamma?"

"Last autumn, when they were so plentiful in the market, yes, my Dell. Here we are at the gate. I must pull the bell."

Mr. Hammond received his visitors with his customary official kindness, and informed Mrs. Camp that the rumor was true concerning the vacant position in the school, but that they had received so many applications already, that he could not encourage her to expect a favorable result. Running his eye over Sadie's letter, he complimented its form and neatness, and remarked that in it alone the young lady had a strong advocate which would probably exert some influence with his associates on the committee.

Mrs. Camp left the secretary's office tolerably well pleased with the interview with the Mission functionary; and, having procured the few articles mentioned in the fragment of talk between mother and child, returned home.

H. S. D.

(*To be continued.*)


# BRAIN AND MIND.

## CHAPTER II.

### OF THE TEMPERAMENTS.

THERE are great differences among men in the substance and quality of their organizations. Some, like the wood of the palmetto tree, are porous, spongy, and weak; while others, like the oak, are dense, firm, and strong. A small horse will often out-work a large one; and a small man very frequently displays greater physical strength and endurance than one of a much larger size. The quality of one's organization is not confined to any particular part of the body, but pervades the whole, imparting its influence to the brain and nerves, as well as to the muscles; and thus, through the material instrument of the mind, affecting mental manifestation. This organic quality being the product or result of temperamental combination, a knowledge of the temperaments is most important in the study of mind.

***Temperament*** may be described as a certain state or condition of the body depending upon the relative energy of its different functions. According to the ancient doctrine as promulgated by Hippocrates, the "father of medicine," there are four temperaments depending upon what he considered the four primary components of the body: the blood, the phlegm, the yellow bile, and the black bile. According to the preponderance of any one of these, the individual was known as, respectively, of the sanguine, the phlegmatic, the choleric, or the melancholic temperament. In this classification, the brain is not considered as exerting any special influence, though its function is now conceded to be the most important in the animal economy. The attention of Drs. Gall and Spurzheim was directed to this fact, and they perceived the necessity of considering the brain as the basis of a special temperamental condition.

***Spurzheim's Classification.***—According to the classification adopted by the first teachers of phrenology, there are four temperaments, the Lymphatic, the Sanguine, the Bilious, and the Nervous, each depending upon the predominating influence of the stomach, the lungs, the liver, and the brain respectively. These different temperaments are indicated by external signs which are open to observation.

***The Lymphatic Temperament,*** depending upon the predominance of the stomach, is characterized by a pale skin, fair hair, roundness of form, and repletion of cellular tissue. The vital action is languid, the flesh is soft or plastic, and the circulation feeble and slow. The brain, partaking of the general systemic condition, is slow and feeble in its action, and the mental manifestations are proportionately weak.

***The Sanguine Temperament,*** in which the lungs, the heart, and the blood-vessels are constitutionally predominant, is indicated by moderate plumpness of parts, tolerably firm flesh, light or chestnut hair, blue eyes, fair

Fig. 3.—Motive Temperament. Mr. J.

complexion, and ruddiness of countenance. There is great activity of the arterial system, fondness for exercise, and an animated countenance. The brain, in correspondence with the general state, is active.

***The Bilious Temperament,*** having the liver for its basis, is marked by black hair, a dark-yellow or brown skin, black eyes, moderately full, but firm muscles and strongly-expressed physical outlines. All the bodily functions are characterized by great energy of action, which extends to the brain; and the countenance, in consequence, has decided and strongly-marked features.

***The Nervous Temperament,*** depending upon the predominant influence of the brain and nervous system, has, as its external signs, firm and rather thin hair, thin skin, paleness of countenance, small muscles, and often delicate health. The sensations are lively, and the muscular actions rapid. The whole nervous system, including the brain, is extremely active, and the mental manifestations are proportionally vivacious.

***The Later Classification.*** — The classification of the temperaments used by early phrenologists, although correct and valuable in a pathological point of view, is not founded entirely upon a healthy state of the constitution, two of the temperaments—the lymphatic and the nervous—being traceable to abnormal conditions of the bodily organs. We therefore prefer a later classification which can claim a physiological basis, and is also more simple and comprehensive.

The human body is made up of three grand systems of organs, each of which has a distinctive general function in the physical economy. They are known as the Motive or Mechanical System, the Vital or Nutritive System, and the Mental or Nervous System.

Fig. 4.—Motive Temperament. Miss ...

***The Motive*** or Mechanical System, composed of the bones, the ligaments, and the muscles, forms, by the combination of these three sets of organs, an apparatus of levers through which all the mechanical movements of the body are effected. The predominance of this system of organs in any individual gives

rise to the special expression in the organization of what we call the Motive Temperament.

***The Vital*** or Nutritive System, in like manner consists of three classes of organs—the Lymphatics, the Blood-Vessels, and the Glands—which, through their functions of absorption, circulation, and secretion, are the instruments of the body's nourishment and purification. Where this system of organs is predominantly active, a physiological condition is induced which is known in the new classification as the Vital Temperament.

***The Mental*** or Nervous System, forming the medium of connection between the soul and the external world, and through which thought and feeling are manifested, is likewise made up of three classes of organs—the organs of Sense, the Brain, and the Nerves. A preponderance of these three sets of organs gives rise to the Mental Temperament.

Fig. 5.—Vital Temperament. Dumas.

We have, then, under this classification three temperaments, each of which is indicated by external signs in the physical organization, and exerts a specific influence in the manifestation of mind.

CHARACTERISTICS OF THE TEMPERAMENTS.

***The Motive Temperament,*** depending upon a superior development of the osseous and muscular systems, is marked by a figure tall and striking, and tending to angularity. The bones are

Fig. 6.—Vital Temperament. Mrs. B.

large, and generally long rather than broad; the face is oblong, the cheek-bones high, the neck rather long, the shoulders broad, the chest moderate, and the limbs long and well jointed. The muscles are hard and firm, the complexion and eyes are generally dark, and the hair dark, somewhat coarse, and abundant. The features are strongly marked, and their expression is striking. This temperament gives great bodily strength, energy, and love of physical exercise; and its possessors have strongly-marked characters, and are inclined to take the lead in pursuits which employ largely the bodily forces. They are observers rather than thinkers, are firm, self-reliant, executive, and persevering. They are not easily turned aside from their purposes, and often pursue their ends with a reckless disregard of their own physical welfare or that of others. In this temperament

the mental organs of Firmness, Combativeness, and Destructiveness are usually large or specially active, and the perceptives generally well developed. (See Figs. 3 and 4).

***The Vital Temperament,*** depending upon the predominance of the organs

Fig. 7.—Mental Temperament. Miss W.

of nutrition and assimilation, is necessarily marked by breadth and thickness of body, rather than by length. Rotundity is its prevailing characteristic. The shoulders are broad, the chest full; the abdomen well developed; the limbs are plump and tapering, and the hands and feet are relatively small. The neck is short and thick, and the head and face incline to roundness. The eyes are generally blue, the hair light or auburn, the complexion florid, and the expression of the countenance pleasant and often mirthful. Mentally, persons of this temperament are characterized by activity, ardor, impulsiveness, enthusiasm, and often by vacillation. They possess more versatility than firmness, more diligence than persistence, and more brilliancy than depth. They often give way to passion, but are as easily calmed as aroused, and are generally possessed of a cheerful and genial disposition. They are usually fond of good living and jovial company, and through these are often led away into excessive indulgence in stimulants and the pleasures of the table. The English and German peoples furnish some of the best examples of this temperament. (See Figs. 5 and 6).

***The Mental Temperament,*** depending upon the predominance of the brain and nervous system, is characterized by a frame relatively slight, and a head relatively large, an oval or pyriform face, a high and pale forehead; bright eyes and expressive countenance, and delicately-chiseled features. The hair is soft and fine, the skin delicate in texture, the voice flexible and somewhat high-keyed, and the expression of the countenance animated and full of intelligence. Persons of this temperament are refined and sensitive in feeling, possess excellent taste, great love of the beautiful in nature and art, and are vivid and intense in their conceptions and emotions. The mind is active and acute and disposed to literary and artistic pursuits. (See Figs. 7 and 8).

Fig. 8.—Mental Temperament. From Life.

***Combinations.***—These primary temperaments, uniting with each other in different proportions, form combina-

tions almost as numerous as the individuals of the human race. A purely motive or vital or mental temperament will rarely, if ever, be found; but in so far as it does exist, there is necessarily a departure from symmetry of development. The best temperamental condition is that in which these three primary elements are harmoniously blended. In this we have perfection of physical constitution, and the best condition for harmony in the mental manifestations. (See Figs. 9 and 10). To estimate correctly the relative proportion in which these temperaments combine in any individual, requires considerable observation and practice; but their influence is so powerful in the mental character that they can not be ignored by the practical student.

Fig. 9.—Combination of Temperaments. Lord Derby.

***Sanitary Influence.***—Another important influence which modifies the effect of size is health. Every bodily organ is liable to diseases, peculiar to itself or otherwise, which impair the integrity of its function. The brain, as an organized part of the physical system, forms no exception to this liability to disease, but is subject to abnormal conditions, which either diminish or intensify its action, and which it is very essential to take into account in estimating the power of mental organs. And not only are the mental manifestations affected by disease of the brain, but the body being an organism in which every part exists for every other part as well as for itself, the energy with which the brain performs its function will be largely dependent upon the health and vigor of the other bodily organs. Instances are met with of great mental vigor conjoined with a feeble body and ill-health, but such cases are rare and are due to extraordinary activity of the mental organs themselves, which seem to be capable, in a measure, of rising above the influence of bodily weakness. Yet such persons usually become exhausted suddenly, and their cases by no means militate against the general law, that a sound and vigorous body is essential to the manifestation of a vigorous mind. Were these minds lodged in sounder bodies, there can be no doubt that their activity would be better sustained and efficient.

Fig. 10.—Combination of Temperaments.

***Exercise*** of the mental organs, in like manner, is an important element

in modifying the effect of size. The gymnast, by judicious bodily exercise, not only increases the size of his muscles, but their strength and vigor in a much greater degree. They become supple, dense, and firm by well-timed exercise. The brain coming under the general law of organic development, is affected by exercise in a manner similar to the muscles. When any mental faculty is called into activity, the blood is determined to that portion of brain upon which its manifestation depends, and it is invigorated and strengthened; its size will thus be increased by the stimulating influence of the blood, but its energy and facility of action in a greater degree. Hence in estimating the power of a mental faculty from the size of its organ, it is important to know something of the extent of its previous activity. In the proposition as usually laid down with reference to the mental organs, that size, *cæteris paribus*, is the measure of power, these three conditions, *quality*, *health*, and *exercise*, are what are comprehended by the term, "other things being equal."

## VICTOR EMMANUEL OF ITALY.

THE death of the *Re Galantuomo*, or Brave King, as his people have been pleased to call him, has produced a profound sensation in European affairs. Italy, on his accession to the crown, was weak and revolutionary under the heel of Austria, and the plaything of the Vatican. Yet in the course of twenty years, vast changes were effected. Aided by the counsels of Cavour, and the sword of Garibaldi, he found himself in 1870 firmly seated in the throne of an independent, united kingdom, and fairly set out upon a career of progress and prosperity such as Italy had not known for centuries.

Vittorio Emmanuele Maria Alberto Eugenio Ferdinando Tommaso, better known as Victor Emmanuel II., King of Italy, was the eldest son of Charles Albert, King of Sardinia. He was born on the 14th of March, 1820, in Turin, and received his early education from the Jesuits. In 1842 he married the Archduchess Adelaide of Austria, and six years later took the field with his father in the war against his wife's kindred. At the battle of Goito he was wounded in the thigh, and at Novara won great admiration by his gallantry. The latter battle resulted disastrously to the Italians; and Charles Albert, believing that his son's matrimonial alliance would be of service in treating with the conquering General, abdicated the throne. Victor Emmanuel surrounded himself at the beginning of his reign with able Ministers, including Cavour and D'Azeglio, who gave him invaluable aid in his diplomatic negotiations with other sovereigns, and in quelling the spirit of insurrection that was showing itself at home. He reorganized the financial and military departments of his government, curtailed the privileges of the clergy, and the immense powers over property and education wielded by the Church, and raised the position of Sardinia among European powers to a much higher degree than it had ever before attained. His assaults upon the Church caused his excommunication by the Pope, but he declared his independence of the Papal authority, and laid one plan after another for relieving the country of Austrian oppression on the one hand, and spiritual slavery on the other. In the co-operation of General Garibaldi, who was the idol of the extreme liberals, he received indispensable assistance. Apparently discouraging Garibaldi's revolutionary tendencies, once even going so far as to make him a prisoner, the King was very careful not to place himself in active antagonism to the popular leader, but accepted the fruits of the latter's victories wherever they promised to further the ends he had constantly in view.

By Garibaldi's efforts the crown of the Two Sicilies was won for him; meanwhile the marriage of his daughter Clotilda to

Prince Napoleon prepared the way for an alliance with France against Austria in the war for Italian independence.

An interview at Villafranca between Napoleon III. and the Emperor of Austria ended these hostilities, and Austria withdrew her troops in the main from Lombardy. France received Savoy and Nice for her share in Italy's victory, and Parma, Modena, Tuscany, and a large part of the Papal States were added to the possessions of Victor Emmanuel, who was soon after declared King of Italy. In 1866 the King saw his opportunity to relieve Italy of Austrian encroachment altogether by an alliance with Prussia; and in 1870 the rest of the Papal States came under his dominion, Napoleon III. having been compelled by his own necessities to withdraw the French troops from Rome.

In 1871 Victor Emmanuel removed his capital from Florence to Rome and took up his residence at the Quirinal Palace, the last battle for Italy's freedom and unity having been fought and won.

Prince Humbert, who succeeds him as King of Italy, is about thirty-four years of age, a brave soldier, and a man of independent mind. He is thought to be heartily in sympathy with his father's policy, and will make no important change in the administration.

Prince Amadeus, Victor Emmanuel's second son, was King of Spain from December, 1870, till February, 1873, and is now living in retirement in Italy. Pia, the second daughter, is the present Queen of Portugal.

Victor Emmanuel's illness, termed miliary fever, on account of the appearance of pimples or pustules, about the size of a millet seed, upon the skin, assumed a form at first which caused no special alarm, as he had often suffered similar attacks and rallied speedily. He was very fat, and this fact rendered him subject to many disorders which men of lesser habit escape. It was deemed necessary to bleed him freely at times, to relieve him of the congestion due to plethora and fullness of blood.

His portrait indicates the possession of courage, ambition, and pride, a good degree of off-hand daring little mixed with temerity, and a clear and practical intellect.


It is only by training all together—the physical, intellectual, and spiritual elements—that the complete man can be formed.

## THE USE OF TOBACCO.

### A FEW THOUGHTS FOR YOUNG MEN.

MAGAZINE literature has abounded quite freely of late years in what have purported to be thorough and searching inquiries into the nature of the influence of tobacco on the human system.

Learned-looking articles they were, enriched with anatomical phrases and chemical analyses, giving every property of the plant and its exact influence on the organs.

Generally, they found tobacco to be pernicious, and have ended with "counter-blasts" compared with which that of King George was but a feeble fizzle.

But now and then have come essays apparently quite as thorough and exhaustive, quite as rich in chemical and medicinal lore, which, after dwelling upon the comfort, solace, pleasure, and "company" derived from the "weed," then giving its history, then an account of the wide-spread diffusion of the practice of smoking among the races of men, have descended into its chemical and therapeutical bearings, found them all quite innoxious, and ended with a panegyric if not an apostrophe to "that boon to our race, the tobacco plant."

These articles were all written, of course, to influence the habit of using tobacco. But one of the latter kind has been sufficient to destroy the effect of a score of the former kind. It has had simply to reinforce the already strong power of habit in resisting the effects of the former kind, and this it has done mightily, by arming the defenders of the habit with counter-claims to anything that may be advanced on the grounds of scientific research. No sooner do those who would dissuade from the use of tobacco appeal to science, than they are confronted by science, be it good or bad.

Thus opposed to each other, of course one side must be wrong. It is not the present purpose to weigh between them. We have made no personal investigations, and to assume to say which was right and which wrong, would but be doing what is very common, it is true, but what is also very foolish—speaking from our prejudices.

What we do propose, is something which antecedes these discussions, and though it is hard to conceive how nicotine, an element of tobacco, and a poison so deadly it will almost instantly kill a cat, can be used constantly without deleterious effects on the human system, we may consent for present purposes that these scientific counter-claims exactly neutralize each other and stand for naught.

Ours is a prior question. For let it be distinctly borne in mind, that neither of these disputants claim that tobacco is of any positive benefit to the system. The one side emphatically declares it an injury, while the other simply defends its use as a "pleasure," a "comfort," and insists that it is harmless.

It is the question of its pleasurableness to which we now desire to call attention.

It certainly must be conceded that in beginning it is not a pleasure; the first taste is odious, the first effects poisonous, or, in other words, sickening. It is only as our natural tastes and instincts are overridden and forced to submit that we become used to it. Finally, persistent use makes it necessary and a pleasure.

But what is it that has brought the pleas-

ure? Not tobacco, but *habit*. The same overriding of nature, the same continuous use would have made *anything else a pleasure and a necessity*.

It is said to be a condition of perfect health when a man has nothing to remind him that he has a member or an organ; when he has no headache to remind him that he has a head; no toothache to make him think of his teeth.

It is also a condition of mental serenity and comfort when a man has nothing to amuse or distract his thoughts, when they are free to go unencumbered and uninterrupted to the subject he is contemplating.

But habit may, and often does, make some very singular artificial conditions necessary in order to secure this state of mind. The boy accustomed to suck his thumb, or the young miss in the habit of biting her nails, will always be doing those things when trying to think intently. The man accustomed to carry a cane constantly, will always be missing something should he happen to step out without it. I have known a man to be entirely unfitted for business for the whole day by such a trifling circumstance as having left home hurriedly without his cane.

Tobacco is conceded to be a nervous irritant. We may acquire habits which render it necessary for us to be doing something in itself very annoying in order to enable us thoroughly to forget ourselves. Biting the nails is of that order. I knew a little girl who, to regain control of the muscles of her face, had to have her nose, eyes, and ears tickled with a feather every day. It became a necessity to her; and long after she had complete control of her muscles, if her father did not sit down and tickle her nose for half an hour after dinner, she would be sleepless the whole night.

I know a gentleman who has acquired the singular habit of pulling the hairs out of his head, a few at a time, while reading. It is impossible for him to read without doing it, and as he is a great reader, the consequence is that he keeps himself picked bald. Those who have noticed, at the Liberal Club or other such gatherings, a very eloquent gentleman rise up with a patch of hair on one side of his head while all the rest was bald, only to reappear again in three or four weeks with the patch on the other side, while every hair has disappeared from the spot that was covered before, will know whom I mean. Now the smoker has been doing simply and exactly the same thing. He has gotten himself into the condition of requiring a certain nervous irritation and a certain sensation on the taste-buds of the mouth which, though unpleasant in itself in the beginning, has become necessary. Without it he is not himself exactly. With it he is no more than he would have been without it but for the habit.

All the boasted "comfort," "solace," "sedative influence," etc., which he experiences are but *negative pleasures*. His "comfort" is but freedom from the discomfort which he would experience if deprived of his smoke. It is not a positive gain of pleasure any more than pulling his hair out is a positive gain to the gentleman spoken of. No smoker can tell me that he is any happier with a cigar in his mouth than I am without one. I know from experience, having once been a great smoker, that it is not so. Other things being equal, he is simply as happy with it as I am without it, having lost the habit.

In other words, he has handicapped his happiness with a dead weight for life. I, in health, am in a normal condition. He, in health, plus a cigar, is in the same condition, no more.

His happiness is the safest and surest of being constant with whom it depends upon the fewest conditions and necessities, and who has those conditions most within himself. The smoker has foolishly, most foolishly, placed it within the power of a little weed—a thing entirely extraneous to himself—and his ability to procure or not to procure it, the power to make him happy or unhappy! How cheaply, for how much less than the price of a mess of pottage he has sold out and transferred the conditions of his happiness! Nay, more, he must even pay tribute to his life-long master. He has voluntarily assumed to pay from ten cents to five dollars per day, according to his tastes, for all his life in order to be no more

than he would have been without it. What a fool! Still more, he has needlessly burdened himself with a care for all his life. He must get up when he is weary or go out of his way to procure his inanimate tyrant. And then, if he forgets it, or if money fails, or if any circumstance interferes with his getting it, how miserable!

The man who derives the same kind of pleasure—nervous irritation—from pulling out his hair, is a thousand times more wise. He grows his own supply. He has it always with him. It costs nothing. It is not filthy.

The smoker pollutes his breath and renders his mouth too filthy a thing to offer, if he has any sensibilities at all, to a refined and beautiful woman to kiss. How can she kiss it with pleasure when it tastes of odious tobacco, to which she is unused, and smells like a rank old pipe? What a filthy fool is the smoker!

"It certainly stimulates," did some one say? It does not stimulate the man who has grown used to it, and who requires it to give him his normal powers, any more than the cane stimulated in the case mentioned. But if it did, so much the worse! Why stimulate when every up requires a down? When, by the same law which regulates the tides, there must come a reaction?

The man who thinks that, with his cigar in his mouth and his feet cocked up, his mind is more vigorous and powerful than under other circumstances, only imagines it. His thoughts will flow quite as freely and as brilliantly, in the same position and with the same leisurely mood, when he has thoroughly lost the habit of smoking, as they did before. The testimony of thousands of reformed smokers will confirm this, though they did not believe it possible while they were smokers.

I have not thought it necessary to say anything about chewing. The habit is so filthy and disgusting that it is rapidly passing away of itself. It is now confined mostly to old men or to young men of low origin. No respectably reared young man now chews tobacco. It is not a bit too strong, to say that the possession of the habit by a young man of to-day is good proof that he was brought up in low and unrefined surroundings.

Men are refining. These filthy habits go out one by one. A hundred years ago, snuffing was as fashionable as smoking is now. The management of the snuff-box was then considered quite as graceful an art as the management of the cigar is thought to be by young men now. But in those days men did not change their underclothing once a month! As they grew more refined they saw the filthiness of snuff, and the habit passed away.

"Dipping" was very prevalent in the South, before the war, among the ladies. I doubt if in all the South a young lady can be found to-day who will own to the habit without blushing. This is a good sign that it, too, will pass away speedily.

Chewing, as I have intimated, will be nearly obsolete in another generation. But smoking has a firmer hold. Yet it, too, is surely doomed. As soon as the good taste and good sense of the people is sufficiently aroused to comprehend its real foolishness and filthiness it, too, will go the way of the rest. Already there is getting to be a strong prejudice against the pipe. "Nobody but a loafer would go into the street with a pipe in his mouth," I heard an old smoker say to his son the other day. Who of my readers, seeing that it is foredoomed, will be wiser and more refined than his generation, and discard the habit now? It is certainly something in a young man's favor, even now, to be told that he does not smoke at all.

The habit is usually acquired in boyhood, because it strikes the thoughtless, youthful fancy as an accomplishment. It is yearned for most about the time they aspire to high hats, canes, and long-tailed coats, because they think it helps to make them manly.

It is most amusing to see the street-gamin of eight or ten years, after he has found a discarded butt that suits him, light it and start off. He probably has but two garments on his person, a shirt and a pair of pants. Or, if you insist upon counting his one suspender as a third, there is still likely to be enough missing from an important part of his pantaloons to make the assertion safe that he has no more than two. Yet, what

long, manly strides he takes! And with what an air he removes it from his lips, between his two fingers, to speak to his companion, and then replaces it again!

Even the young man who has just crept under his first high hat would appreciate its absurdity.

But does he know that his own antics with his cigar are quite as amusing to those a little older than himself? And then, again, does the adult smoker know that he, with his cigar in his mouth, is proving himself a thoughtless simpleton to any one who will stop to think of the absurdity of the habit?

No matter how great and wise a man may be, it lessens him just a little in your esteem if you find him a smoker. It is a little sign of a little weakness somewhere.

Who among my readers will proceed at once to place himself beyond the danger of being adjudged a fool, in this respect, at any stage of life? MR. E.

## ALLOPATHY AND WATER-CURE.

FROM "Notes of Hospital Practice," published in the *New York Medical Journal* for January, 1878, we extract the following report of several cases of Acute Rheumatism which were treated hydropathically by Dr. A. L. Loomis in the course of his service at Mount Sinai Hospital. His method is stated as consisting "in stripping the clothes from the patient, and wrapping up with a blanket wrung out of water of from 105° to 100° Fah. A second blanket, similarly treated, was placed over the wrapping, and the whole covered with two dry double blankets. The bed was protected with India-rubber cloth. Perspiration was aided by warm diluent drinks."

We present the notes in the concise tabulated style in which the doctor gives them:

"CASE I. July 1st.—Temperature 101.8°. 2 P. M., the warm pack applied. 5 P. M., pain relieved; can move the extremities without difficulty. Temperature 104.6°. Quin. mur., gr. xxv. The pack was kept on during the night. Patient perspired very freely.

2d.—A. M., 100°; P. M., 102°. Quin. sulph., gr. xx.

3d.—A. M., 101.8°; P. M., 101°. Pain has not recurred.

4th.—Slight pain in right shoulder.

5th.—A. M., 100°; P. M., 101.8°. No pain, but slight stiffness.

6th.—A. M., 100.8°; P. M., 103.4°. Pain returned in both wrists. Patient placed in pack for four hours, when pain was completely relieved.

7th.—A. M., 100.2°; P. M., 101.8°. Slight pain in right wrist.

8th.—Pain returned in knee and ankle. The pack applied to the affected extremity, which relieved pain.

9th.—Pain returned in both knees, which was relieved by pack applied to each leg.

10th.—No return of pain. Patient able to walk about.

13th.—Pain in right wrist and thumb. Pack applied to arm for three hours, when all pain was relieved.

18th.—Has had no pains since 13th. Discharged, cured.

CASE II.—Abraham L., aged thirty-four years. Admitted July 11th. Had an attack of acute rheumatism twelve years ago. Two weeks ago it returned. For the past eight days has been confined to bed.

On admission, all of the joints were found affected. At 2.30 P. M. pack applied. 5.30 P. M. no pain except in right knee and ankle. 7 P. M., pain entirely relieved. The pack was not removed till 4 A. M. the following morning.

July 12th.—No pain. A.M., 101°; P. M., 102°. The patient was able to get out of bed at 8 A. M., and walk about without pain. Quin. sulph., gr. xv. Toward evening pain returned in the right wrist, shoulder, and knee. At 8 P. M. placed in pack till 6 A. M. the following morning.

13th.—Entirely free from pain. A. M., 102.6°; P. M., 101.8°. In the evening slight return of pain in right wrist.

14th.—A. M., 101.2°; P. M., 104.5°. Slight return of pain. Placed in pack from 9 A. M. till 5 P. M., when pain was completely relieved.

15th.—A. M., 102.4°; P. M., 103.6°. Slight

pain in both ankles and right knee. Placed both legs in pack, when pain immediately ceased.

16th.—A. M., 101.6°; P. M., 102.6°. Slight pain in upper cervical vertebræ.

23d.—No pain since July 16th. Discharged, cured.

CASE V.—Max. N., aged twenty-eight years. Admitted July 18th. Had pain in right elbow and metacarpal joints during past three weeks. On admission these joints were found swollen and inflamed, with the fingers contracted. Pack applied to shoulder and arm.

July 19th.—Much relieved. Treatment continued, the pack being changed twice during the day.

22d.—Pain completely relieved. Complained of anæsthesia, with diminished power in muscles. Electricity ordered.

August 2d.—Discharged, cured.

CASE VI. *Failure of Alkaline Treatment—Benefit of Pack.*—Orga. K., aged thirty-three years. Admitted November 7th. Patient was delivered of a child two months ago. Three weeks afterward was attacked with rheumatism, involving the shoulders, elbows, hips, and ankles. On admission was found unchanged. Applied full hot-pack for four hours, which relieved, but did not completely remove the pain.

November 8th.—Placed on full alkaline treatment.

12th.—No relief from alkaline treatment, which was stopped, and patient placed in pack for six hours, which relieved the rheumatism.

13th.—Has had no pain since use of pack.

17th.—Discharged, cured. No pain since November 12th.

CASE VII.—Jenny K., aged fifteen years. Admitted January 2d. Has had acute rheumatism for past three days, which continues on admission; 104°. Heart normal.

January 3d.—Placed in pack at noon. 6 P. M., pain relieved, but pack continued, as no inconvenience is felt by the patient. 9 P. M., pack removed; no pain; 104.2°. Quin. sulph., gr. xv.

4th.—No pain. A. M., 102°; P. M., 104°.

5th.—A. M., 101.8°; P. M., 104.4°. Slight pain in the evening; pack applied till patient perspired freely.

25th.—Discharged, cured. No pain since evening of January 5th.

CASE VIII.—Jacob G., aged fifty-three. Admitted January 18th. Had an attack of acute rheumatism three months ago, since which time has not been free from pain. On admission the knees are principally involved. Placed in a full pack.

January 19th.—Pain relieved; continued packs to legs, changing twice each day.

24th.—Treatment continued. Patient steadily improves.

30th.—Discharged, cured.

CASE IX.—Henry L., aged forty-five. Admitted January 23d. Patient has been suffering for the past five days with pain in the dorsal vertebræ and knees. Pressure over the articulations causes severe pain. Placed in full pack for three hours, when he was much relieved.

January 24th.—No pain in back. Slight pain in knees. Repeated pack for three hours, when pain was completely relieved.

25th.—No return of pain.

28th.—Discharged, cured. No return of pain since January 24th.

CASE X.—Peter M., aged forty-nine. Admitted January 29th. Patient contracted rheumatism while in the army. The attack lasted for four months. Six months ago he again had rheumatism, involving the shoulders, elbows, knees, and ankles. On admission, pain was found in all of the joints of the legs and arms.

January 30th.—Pack applied to the lower and upper extremities for twelve hours, at the end of which time the pain was much lessened.

31st.—Pain continued in arms. Pack applied for twelve hours, with complete relief.

February 5th.—Discharged, cured. No return of pain since January 31st.

CASE XI.—Joseph F., aged forty. Admitted February 2d. Has had severe pain in shoulder, knee, and foot, for four months. Placed in full pack, which relieved the pain.

February 6th.—Has had three packs since February 2d. Pain completely relieved.

8th.—Discharged, cured.

# CITRON FRUITS AND THE POMEGRANATE.

**The Lime—Citron—Shaddock—The Pomegranate—A Compound Fruit—Introduction to our Market—A Pretty Tree.**

THE lime is said to be but a smaller lemon, which, indeed, it closely resembles in shape and external appearance, only that it always retains its green color. It is usually but about an inch and a half in length, and in its rather smooth, fine skin the little oil-vesicles are plainly seen.

Its acid is still more intense than that of the lemon, but to many it is more agreeable. I can not say that the difference is noticeable, and this is so nearly the general conclusion that limes, which are seldom less in price by the dozen, have but a small demand in the market. They are found there usually but a little while in mid-winter. The lime is very little cultivated for the sake of its fruit, though it is somewhat in demand in the West Indies as a hedge plant, for which purpose its low, shrubby growth and its thickly-set spines are well adapted.

Its juice, as well as that of the lemon, is considered a specific for scurvy. It can be obtained in the market in barrels, with oil kept on the surface to prevent its coming in contact with the air. It is, however, difficult to keep, unless scalded and sealed in air-tight cans. Its reputation for this medicinal purpose is decreasing; it being ascertained that scurvy is a salt disease, and that it can be really prevented only by a more wholesome diet containing the usual acids of fresh vegetables and fruits.

### THE CITRON

is another tree of the same genus, much longer known in history than either the orange or the lemon. It is the "apple tree" of Syria to which the bride of Solomon likens her spouse, and it was the handsomest among the trees of the wood. The fruit is large, handsome, and fragrant, but the pulp is very acid and full of seeds. It was anciently used mostly as a perfumery box, the odor of which was very refreshing and "comforting" to love-sickness or to any other languishing condition. The rind is now largely used in the manufacture of the candied citron of commerce. The fruit is much larger and the rind far thicker than most other fruits of the genus, being often from three-fourths to one inch thick after it is dried. There are some large lemons whose peel is used in a similar manner. We will not enter into the details of the manufacture, as it is no more valuable to us than other condiments of a similar nature. It is not, indeed, quite so biting as fresh orange peel, but it is saturated with sugar, difficult of digestion, and of little or no value as a food.

### THE SHADDOCK

has the exact appearance of a monstrous, smooth, coarse, light yellow orange. As shaddocks come at the same time with oranges and some of them are but little larger than large oranges, they are naturally mistaken for them on first appearance, but when once cut into and eaten, the deception is discovered and not likely to be repeated. The inner structure is exactly similar to that of the orange, but lighter in color, and the skins are thicker, so that the little bags of juicy pulp, which are but faintly distinguishable in the orange, can be easily separated in the shaddock. It was found in China and introduced into the West Indies by a Captain Shaddock, after whom it was named. The French call it *pompelmouse*.

### THE POMEGRANATE.

The name is a description—*Poma*, an apple or a fruit, *granatum*, seeded. It is about the size and shape of an orange, with a rind very similar in texture and color, though not quite so thick. Its calyx end, however, is not smooth. It spreads into an open coronal, about half an inch in depth, and perhaps three-fourths of an inch in width, persistent and almost woody. This makes the appearance of the fruit quite ornamental, and has secured its imitation in needlework and architecture. Bible readers will remember that the bottom of the high-priest's robe was decked with "a bell and a pomegranate," alternately; while in Solomon's temple the two grand brass pillars, which were the master-pieces of its architecture, were ornamented principally with pomegranates.

In later days its empty regality has been recognized. Anne of Austria adopted it as her device, with the motto, "My worth is not in my crown;" while the French have framed the idea into a riddle, asking

"Quelle est la reine
Qui porte son royaume dans son sein?"

It might not be inapt as the emblem of a limited monarchy—an empty crown—only that neither monarch nor people would like to say so, and true democracies do not acknowledge even an empty crown.

We can look upon it, however, in a different light—a tribute of taste to the queenship of beauty in the natural world, a distinct effort to lend the grace of form to food destined to regale the taste. Let us look within, tearing off the skin as we would that of an orange. The internal structure is even more singular than the external. We had occasion to remark the separate cells, or rather sacks, inclosing the pulp and juices of the orange and the shaddock. Here they are still more distinct, each one forming a fruit by itself, with its seed and its skin, the latter very delicate indeed, yet often allowing of separation from the mass without breaking, which is more than we can say of the little fruits that form the raspberry and the blackberry. The pomegranate, then, is

A COMPOUND FRUIT,

of which the bright yellow peel is the envelope. These little fruits are ranged within in the most compact manner, looking more than anything else like kernels of corn, they are wedged in so tightly. Yes, and in color, too, they are about the same as the reddish corn which we still sometimes find in old-fashioned cornfields. But these kernels, instead of growing on cobs, grow on tough, whitish divisions, stretching regularly from the center to the sides of the fruit, this substance very much resembling the white inside of orange peel. This is not eaten.

The kernels, as they are called (the individual berries, in fact), come out readily and are very juicy, fresh, and racy, and quite agreeable to the taste. Some have compared them to currants, and in color there is a slight resemblance. That comparison may be the best available to an Englishman, but to an American they will much more readily suggest the Indian corn. It was a few tempting kernels of this tempting fruit that Proserpine is said to have eaten in the Elysian fields—just enough to break her fast and prevent her returning to earth. Whatever else this may be intended to teach, we certainly gather from it the high value placed on it by the ancients. They had two or three kinds—a sweet, a very sour, and a subacid. The latter was the kind most common. It was very abundant in Egypt and in Canaan, several places having "Rimmon," the Hebrew name for this fruit, attached to them in one form or another. Homer tells us that there flourished in the gardens of Alcinous—

"High and broad fruit-trees that pomegranates bore,
Sweet figs, pears, olives, and a number more
Most useful plants did there produce their store,
Whose fruit the hardest winters could not kill,
Nor hottest summers wither; there was still
Fruit in his proper season all the year.
Sweet zephyrs breathed upon them blasts that were
Of varied tempers. These he made to bear
Ripe fruits, these blossoms, pear succeeded pear,
Apple grew after apple, grape the grape,
Fig after fig."

The Romans also cultivated it, and in the isle of Eubœa there was formerly a statue of Juno holding a scepter in one hand and this fruit in the other. But the name by which they designated it was "Carthaginian apple," having been brought from that neighborhood in the time of Sylla. Thence also probably came its botanical name of Punica. It is very abundant all through Northern Africa and Southern Europe. It is supposed that Granada, in Spain, owes its name to this fruit, especially as a split pomegranate forms a part of its heraldic device. It was probably brought there from Africa. The juice of the fruit is very refreshing, being often prized for invalids more highly than that of the orange. "The spiced wine of pomegranates" is one of the delicacies mentioned in the Song of Solomon. It is known to have been subjected to a similar process of manufacture as the wine of grapes, though we do not find any evidences of its being fermented.

Of its use in cookery we find no mention in the ancient archives of cookery. At the

present time the juice of the most acid part is sometimes substituted for lemon juice, and the subacid fruit is used for conserves and jellies. Its preparation for the table often consists of a separation or a shelling out of its kernels and dressing them with sugar, as we do our berries. The seeds are large enough to be slightly in the way, being white and compressed probably when forming in the young fruit. It is often a question, as with grapes, whether they shall be eaten or rejected, and we would advise precisely as we do about grape seeds, "Do as you like." We are quite sure, if we could have them introduced, that the agreeable, subacid juice would soon come into demand for puddings, sauces, for cooking with sweeter fruits, and other similar uses.

### INTRODUCTION TO OUR MARKET.

They grow larger and finer in the West Indies than in Europe, and they also bear transportation well. We had during the past season the pleasure of offering some to the taste of a lady who had eaten them in Palestine, and she declared that they were preferable to those she found in that ancient home of this renowned fruit. It is certainly one of the great desiderata in our fruit list—a juicy, subacid fruit that will bear cooking, not so sharp as the currant and cranberry, and one which can be eaten freely fresh as well as cooked. We wish some of our dealers were enterprising enough to introduce it and advertise for the public benefit. Perhaps they might also be benefited in return. It is said to have been introduced into the Southern United States, though we are not informed exactly where. Even as I write this, I am reminded of a California Agricultural Report and other documents, generously given me at the Centennial Exhibition; and looking them up I find the pomegranate mentioned as one of the fruits raised there, and that they "thrive well." The Santa Clara and the San Joaquin Valley Fairs both awarded premiums for pomegranates in 1874, but these had not arrived at the dignity of a mention in the table which recorded the number of fruit trees of different kinds then growing in the State. We find also the following extract, taken originally from *The Woman's Pacific Coast Journal.* It was written by a visitor in Yuba County, in the month of March: "Fifty miles from the bay-window where we write, the snow-covered heads of the Sierra Nevada Mountains stand clear and sharp against the eastern sky. Here in the foot-hills fuchsias, geraniums, and roses are bright with half-open buds and blossoms. In the closet are crisp, hard quinces of last year's crop; while along the borders the quince trees are thick ly covered with blossoms. The purest crystal waters come leaping from the hearts of the hills, and all the meadows laugh with the gayest-colored flowers. Humming-birds and swallows, callas and verbenas, orange, lime, and lemon trees, are all mixed up in sweet confusion. Yonder are olive trees in perpetual green, and, a little further, English walnuts and grape-vines with leaf-buds fast swelling. The apple trees patiently bide their time and season; but peaches, apricots, and nectarines are tossing to the breeze the sweetest perfumes. . . . . Pomegranates, almonds, and Newtown pippins grow in the same border as peaceably as if they had always been friends. Oleanders and sweet-cassia trees are from ten to twenty feet high, and out-of-doors all winter. Down the walk I see blackberries, raspberries, currants, gooseberries, and half-grown strawberries."

The pomegranate can be trained as

### A PRETTY TREE,

fifteen or twenty feet high, though it is usually grown as a bush, and not unfrequently as a hedge plant. In many parts of Peru the hedges are nearly all of the pomegranate bush. The branches are often thorny, the leaves a very bright green, and the handsome flowers, borne either singly or in bunches of three or four, with a red calyx and scarlet petals surrounding a crowd of stamens. As they blossom from June to September, they would be very ornamental for their floral beauty, and many are so cultivated. The fruit, like that of the orange, frequently hangs on the tree until spring. It is not one of the citron fruits, although it resembles them in many particulars. It is one of the myrtle blooms, and is related to the guava, the rose-apple, the allspice, and the clove.

JULIA COLMAN.

# NOTES IN SCIENCE AND AGRICULTURE.

**Properties of the Human Gastric Juice.**—M. Charles Ricket has been experimenting upon the boy patient on whom Prof. Verneuil, of Paris, recently performed the operation of gastrotomy. According to his researches the acidity of the gastric juice is equivalent to 1.7 grammes of hydrochloric acid to one thousand grammes of fluid. This acidity increases a little at the end of digestion. Wine and alcohol also increase it. It tends to return to its normal acidity after the introduction of acid or alkaline matters. The mean duration of digestion is from three to four and a half hours, and the food does not pass gradually out of the stomach, but in masses. According to four analyses, after a modification of Schmidt's method, free hydrochloric acid exists in the gastric juice; and altogether this secretion appears to consist of one part of lactic acid to nine parts of hydrochloric acid, the former of which is free in the gastric juice. The nature, therefore, of the free acid in the stomach seems almost solved, and it may be said that in every one thousand grammes of the juice there are 1.53 grammes of hydrochloric acid and 0.43 of lactic acid.

**An Energetic Woman.**—Mrs. Saurn, of Kansas, is a woman whose energy deserves mention. She has a farm of three hundred acres of prairie land. Last spring she harvested ten acres of wheat of her own plowing and sowing, and put down twenty acres more. She is not physically strong. When she began her plowing she was so feeble that she had a chair at the end of her furrow, and was obliged at every second row to stop and rest. She chose this life because she had more fitness for it than for anything else that gave promise of a future for two little sons whom she desires to educate to usefulness. Her health improves, and a sheep-raiser in the neighborhood has engaged her to plow ten acres of land for him and take her pay in sheep.

**Catastrophism vs. Evolution.**—In his address before the Alumni of the Sheffield Scientific School, New Haven, Conn., Mr. Clarence King takes high ground against the evolutionists on the basis of his own geological investigations, having found disturbances which can apparently be accounted for only upon the ground of catastrophe or complete overturning of existing conditions. He first showed the reality of physical disturbances at several epochs in the history of the Cordilleras region, which has been his field of labor. Between the catastrophes intervened the long periods of quiet action, such as is claimed for universal time by the uniformitarians. The same amount of energy would be required to elevate mountainous districts upon either view. The effects of the cataclysms upon life are claimed to be partly extermination; partly destruction of biological equilibrium, thus violating natural selection; and partly the production of morphological changes in plastic species. Marked changes of species are noted in connection with these catastrophes. An illustration is afforded by the supposed genealogy of the American horse, as set forth by Huxley and Marsh, and regarded as demonstration of evolution, or the descent of the several genera from each other. King asserts that in the Cordilleras country, where these relics occur, there has been a catastrophe intervening between each two successive forms of the horse.

After criticising the opinions of Huxley, Lyell, Hutton, Darwin, and others, he recurred to the effects of sudden terrestrial or cosmical changes, and conceived that the effects of these changes would be, first, extermination; secondly, destruction of the biological equilibrium; and, thirdly, rapid morphological change on the part of plastic species. When catastrophic change burst in upon the ages of uniformity, and sounded in the ears of every living thing the words, "change or die!" plasticity became the sole principle of salvation. And plasticity is the key to survival and prosperity. Mr. King concluded his address thus: "He who brought to bear that mysterious energy we call life upon primeval matter, bestowed at the same time a power of development by change, arranging that the interaction of energy and matter, which make up environment, should, from time to time, burst in upon the current of life and sweep it onward and upward to ever higher and better manifestations. Moments of great catastrophe, thus translated into the language of life, become moments of creation, when out of plastic organisms something newer and nobler is called into being."

**The Story of Nebuchadnezzar.**—Among the discoveries made by Colonel Rawlinson, in the excavations of Babylon, we are told, is that of Nebuchadnezzar's hunting diary, with notes, and here and there a portrait of his dogs, sketched by himself, with his name under it. He mentions in it his having been ill, and while be was delirious he thought he had been put to graze, like the beasts of the field. Is not this a wonderful corroboration of Scripture? Rawlinson also found a pot of preserves in an excellent state, and gave some to Queen Victoria to taste. How little Nebuchadnezzar's cook dreamed, when making them, that twenty-five centuries after the Queen of England would eat some of the identical preserves that figured at her master's table!

**The Telephone under Water.**—Experiments have been made lately with the telephone to test its efficiency as an aid to submarine divers. It was found that sounds

could be conveyed by it between the diver and his companions in a boat or on shore, and when some slight necessary modifications shall have been made in the instrument, it is thought that it will much relieve the danger of this perilous business.

## TO A HUSBANDMAN.

HAIL, sunburnt glory of the plow—
The noblest work that Heaven has made—
With clustering gems upon thy brow;
While wielding thus thy scepter spade,
That swarthy palm in mine be laid,
For I would grasp it bravely now,
And see thee stride across the plain,
Scattering those amber showers of grain
That fall like gusts of golden rain
Along the mellow, furrowed sod,
That lies the open hand of God.

Behold the heritage that's thine,
With fretted dome and crystal walls;
Behold the gorgeous lamps that shine—
Sun, moon, and stars—throughout its halls;
Behold its founts and waterfalls,
Its fleecy flocks and gentle kine:
And on its landscape gardens look,
Where nestles many a shady nook
Beside some sweet-toned silver brook,
And would'st thou then—a worthless thing—
Droop in the hovel of a king?

JAMES MC CARROLL.

**Hardy Potatoes.**—Tellier at Passy, near Paris, is said to have produced a variety of potatoes that will stand the cold of winter. The Minister of Agriculture has recognized the discovery, and will aid him in further experiments. If the new article proves altogether satisfactory, and adapted to cultivation on a large scale, it will remove the necessity of considering the housing of an article just now rather sensitive to cold.

**Fluoride of Calcium in Teeth.**—"Fluoride of calcium is so integral a part of the enamel of the teeth that we are inclined to ascribe to its presence (at least in part) the polish and extraordinary hardness of that substance." Berzelius (Alt. Gehlen's Jour., Bd. 3, S. 1,) found 2.1% of fluoride of calcium in the dentine, and 3.2% in the enamel of man's tooth, while the dentine and enamel of an ox contained respectively 5.69% and 4% of this constituent. The presence of fluoride of calcium, in small quantities, has been determined with certainty in the bones of almost all animals. Both Middleton and von Bibra have recognized the presence of fluoride of calcium in the bones of mammals, birds, reptiles and fishes, and even in the shells of mollusks. (Lehmann's Physiological Chemistry, vol. 1. p. 383, 1855; also, Quain's Anatomy, 7th edition, p. 789.)—*Contrib.*

**Good Shoe-Blacking.**—Dissolve one ounce borax in water, and in this dissolve gum-shellac until it is the consistency of thin paste; add lampblack to color. This makes a cheap and excellent blacking for boots, giving them the polish of new leather. The shellac makes the boots or shoes almost water-proof. Camphor dissolved in alcohol, added to the blacking, makes the leather more pliable and keeps it from cracking. This is sold for fifty cents for a small bottle. By making it yourself, a dollar will buy material for a gallon.—*Rural New-Yorker.*

**Street and House Lighting by ELECTRICITY.**—Some very interesting experiments have been made in England lately, to test the practicability of using electricity as a medium of illumination. The London *Telegraph* furnishes the details:

"A trial of another process of lighting by electricity was made the other day, at the Crewe Railway Station, under the direction of Dr. C. W. Siemens. The effect produced was pronounced satisfactory, and it is stated that if the new invention continues to stand the test to which it is being subjected, it will be utilized in lighting signals, signal-boxes, junctions, and platforms. But all previous achievements in reference to electric phenomena appear to be eclipsed by the improvements introduced by M. Paul Jablochkoff, and recently exhibited to a party of distinguished engineers at the West India Docks, Limehouse. The novel invention of that gentleman, who was formerly an officer in the Russian engineer service, has the credit of removing two obstacles which have hitherto baffled the efforts of explorers in the region of electric research. No method had been previously discovered for producing more than one light from a single current of electricity. Moreover, a certain clock-work arrangement was indispensable for maintaining the two carbon points in a fixed relative position to each other, without which the gradual consumption of the carbon would widen the space between them, so that it would be impossible for the electric current to traverse the interval, and the light would consequently soon expire.

"Pursuing the line of investigation begun by MM. Lodyghin and Kosloff, M. Jablochkoff has succeeded in so distributing an electric current as to produce an indefinite number of lights within a single circuit. He has thus made provision for supplying lights of great power suitable for the illumination of halls or warehouses, and also, from the same electrical source, producing a number of lights of less intensity for the use of offices and corridors. In this way the magneto-electric machine would correspond to the gasometer, the wires to the gas-pipes, and the kaolin band inserted between the perpendicular and parallel carbon points to gas-burners. Several lights of strong effulgence required to illuminate an extensive area, may be simultaneously kindled by transmitting to the carbon points the electric stream from a battery; and, if a score of smaller lights were needed for as many different apartments in the same building they may be ignited or extinguished

by simply connecting or disconnecting the wires. A single electric flame, according to the principle of M. Jablochkoff, furnishes light equal to that of a hundred gas-burners, with this important difference, however, that the vastly augmented illuminating power of electricity is not attended with any increase of temperature. A soft, transcendently white, and uniformly steady light is obtained, instead of the yellow and flickering jet to which consumers of gas for the most part are accustomed, while salubrious ozone is developed in process of combustion, instead of the unwholesome vapors with which the atmosphere is to a certain extent invariably poisoned by the product of ordinary gas coal. The kaolin—which is a species of hard clay employed in porcelain manufacture—being a non-conductor, is placed between the two upright sticks of carbon. When the electric current is conveyed by means of wires to the carbon points, the kaolin becomes fused by heat, and gives out the brilliant light already described. The electric "candles" are constructed at present in such a manner that they will only burn one hour, and an appliance is contrived for quickly replacing them by hand before they become exhausted. Ere the invention can be pronounced complete, therefore, some automatic device must be planned in order to meet that deficiency. In a large tent covering one of the squares of the West India Docks four common lamp-posts were erected at the corners respectively. One of these was surmounted by an opal glass globe, which contained an electric light. The electricity used was generated by steam power in a magneto-electric machine of thirty-two magnets, each magnet being composed of six plates. The steam engine, which was worked up to two and a half horse-power, effected four hundred and eighty revolutions of the magneto-electro machine per minute, by which is represented the application of considerable electric force. The smallest print could be read at a distance of from twenty to thirty feet from the lamp. The electric lights were then extinguished, and four lamps, each containing four gas jets of considerable size, were lighted. The contrast presented when these sixteen gas flames were introduced was, as might be expected, singularly dismal. The spectators next passed into a warehouse to observe the effect of the light upon an interior space. The electric candles were placed outside the windows and protected by a tin case, which operated as a reflector, and small type could be read with the utmost ease at seventy-five feet from the lamp. Except where sharply defined shadows of interposing rafters and pillars happened to be projected, every nook and corner in the warehouse was strongly penetrated with light. Great interest was added to the experiment by an incident, which proved that the use of the new light is quite compatible with the discrimination of colors. A card of drapery patterns of various tints was exhibited, and when exposed to the electric rays, 'green, blue, yellow, red, purple, and even the most delicate straw-color, were as clearly distinguishable as in daylight.' The importance of this circumstance to artists, whose labors have always been regarded as conterminous with sunlight, can not be overestimated."

**Manufacture of Mats and Rugs.**—Mats and rugs for carriages, doors, etc, are now made of felt by the following process: A piece of felt of suitable thickness is cut in strips from three-eighths to five-eighths of an inch in width, and as long as the mat is to be wide. These are laid side by side on edge, and holes are made through them, and through these holes cords of fine wires are passed, and the strips are then drawn tightly together and fastened in place at each end of the wires. This gives a fabric as thick as the strips are wide, and of a light, flexible, and elastic character. The strips may be in various colors, and may be disposed in any desirable pattern. These mats are said to be strong and durable, and able to resist heat, cold, dust, and severe usage. The color keeps well, because in dyeing the felt before the strips are cut, a uniform color may be obtained, and when finished, the mats have a good face on either side.

**Lead Poisoning by Bread.**—The people in a populous district of Paris suffered lately from lead poisoning, and Dr. Ducamp traced the cause to the bread used. The baker from whom it was obtained, as well as his family, were equally affected. The flour, water, and yeast used by him were of the same kind as that used by neighboring bakers, and contained no lead, while the bread he sold did contain it. Finally, it was discovered that he had heated his oven with old boards taken from demolished buildings. These boards had been painted with white lead, which, during combustion, was volatilized and deposited all round in the oven. It was then found that the persons employed to dust the bread from adhering ashes, etc., were the first and worst affected, while in one family where an old person ate the soft part and the young ones the crust, the first remained free while the latter were the most severely attacked.

**A Falling Mountain.**—There has been a recent instance of a falling mountain in Savoy, Switzerland, causing the destruction of two flourishing villages. The mountain, for twenty days without cessation, went on dismembering itself, and literally falling, day and night, into the valley below, filling it with piled-up blocks of stone, extinguishing all other sounds by its incessant thunder, and covering the distant horizon by a thick cloud of yellowish dust. Blocks of immense size became displaced with no apparent cause, and descended the sides, a distance of a mile, in thirty seconds, sometimes leaping 1,500 feet at a time, mowing down gigantic pines as if they were so many thistles.


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NEW YORK,
MARCH, 1878.

## CABINET COLLOQUY.—No. 6.

### SECRETIVENESS AND CAUTIOUSNESS.

"I HAVE looked a little into the subject which you illustrate here so extensively," remarked a recent guest, "and must confess myself at a loss, when comparing character and conduct, to discriminate sharply between the influences of Secretiveness and Cautiousness. It seems to me that there are occasions when the effect of one seems to be merged in that of the other. You say, or rather the phrenological authorities, that prudence, foresight, circumspection, belong to the province of Cautiousness; while tact, finesse, policy, astuteness are related to Secretiveness. Now it seems to me that the characteristics of prudence and circumspection are near akin to tact, policy, etc., and the transition is so easy between them—simply a matter of circumstances—that one organ would perform the services attributed to two."

"I think that I perceive your difficulty," was our reply. "It consists in giving to the terms prudence, circumspection, and foresight too wide a significance or range of influence in the mental economy. Both organs belong to the self-protective group, but their provinces appear to me very different. Cautiousness is a restraining faculty; may be considered, if you will permit the seeming incongruity, passively active; while Secretiveness prompts to action."

"I scarcely understand you. Will you please to illustrate the point?"

"Certainly. A man sees a frightened horse running toward him. He is crossing the street, and half over, we will say. At once his large Cautiousness admonishes him to go back and get out of harm's way, instead of pursuing his course. He goes back, notwithstanding that he could as quickly reach the side he had started for. Cautiousness impresses him that the side he started from is the safer, and so he retraces his steps and remains aside until the horse has passed. Another man, with a good degree of Secretiveness, observes the horse coming and thinks to himself, 'I'll catch you, old fellow,' but he does not go into the middle of the street and boldly await the animal's coming. His Combativeness is active, but influenced by Secretiveness he tries a stratagem. A little way below he sees a considerable heap of bricks extending far into the street, and he runs and gets behind it, and there, out of view, awaits the coming of the runaway; and when the horse's head has just reached the margin of the heap on the side of his concealment, he quietly reaches out and grasps the bridle and arrests the horse in his career."

"It was Secretiveness, then, in your opinion, which led the man to hide behind the bricks?"

"No doubt of it. The man of small Secretiveness, with a like disposition to catch the runaway, would rush into the street, and with more or less show of bravery, and what people call 'fuss,' would attempt to stop the horse, but probably be less successful than the man who would resort to the cunning expedient of hiding."

"This seems clear enough as far as it goes. Yet I can not divest the act of hiding of the quality of Caution."

"We must consider the act in the light of the man's motive—must we not?"

"Yes."

"He did not go behind the pile of bricks to get out of harm's way, but the more effectually to accomplish his object. In considering a real occurrence of the sort, you would not think of attributing fear to the actor, but esteem him as a brave, shrewd man."

"Yes, that is true enough."

"Well, Caution, circumspection, and prudence—a rather comprehensive term in itself—include the idea or sentiment of fear. There's danger of some kind in view; they discern it and prompt to measures for its avoidance. Several of the most eminent metaphysicians, not recognized as phrenologists, discriminate between the faculties of Cautiousness and Secretiveness as primitive qualities of the mind. Dr. Thomas Brown and Lord Kames describe the former. Lord Kames says: 'All weak animals are endowed with a principle of fear, which prompts them to shun danger; and fear, the first passion discovered in an infant, is raised by every new face.' Lord Bacon, in his essay on 'Cunning,' very accurately defines the Secretiveness of Phrenology."

"Will not a person whose Cautiousness is large show cunning and shrewdness?"

"Yes, if his Secretiveness be large also. In cunning, the elements of artifice and craft enter largely. Where there is no attempt at concealment, there is no cunning. The French people have a good development of Caution, are prudent and sagacious; but their Secretiveness being moderate, they show little reserve or dissimulation in their affairs. 'The French,' Mr. Combe says, 'delight to live, and even to die, in public; while the Englishman—who has a strong endowment of Secretiveness, as a rule—shuts himself up in his house, which he denominates his castle, and debars all the world from observing his conduct.' Go on 'Change and you will see these faculties in striking activity. Some operators in stocks are known among their speculative brethren for caution, hesitation, timidity, and are the last to purchase or sell; their gains are small; they rarely lose anything. Others are known for their cunning, craft, and duplicity; they somehow make both ways; whether the market rises or falls, they appear to be on the winning side. In the one class it is Cautiousness that predominates; in the other it is Secretiveness."

"Your reference to 'Change, sir, is very happy. I understand it, being somewhat related to that quarter. But some of the most successful men down there are those timid fellows. We feel that we can trust them, as they are not given to any underhand dealings; but those other fellows, who are so sharp and sly, are avoided by the respectable houses, because we don't know how to take them. But it seems to me that the interval between slyness and roguery is but small."

"It is; and you will find that most of those persons who are imprisoned for robbery, embezzlement, fraud, and the like, have Secretiveness well indicated; with, to be sure, a broad head and large base of brain. The man with small Secretiveness and large Cautiousness commits crime only when influenced by some great emotion or excitement."

"I thank you for your attention," said our visitor, as he rose to depart, "and will confess that you have made the subject of my inquiry appear more interesting than I was inclined to regard it when I came in. Good-day to you."

## JUSTICE TO THE INDIAN.

A PROPOSITION was made in Congress not long since to admit the Indian to representation in that legislative body; in other words, to grant him the privileges of citizenship. We are emphatically in favor of it. Why not? The negro has been given the ballot, and he is not superior in mental capability and physical energy to the Indian.

Indeed our military commanders have found him a formidable enemy, skilled in the practices of war; our missionaries testify to his ready susceptibility to intellectual and moral teaching; and humane agents and travelers furnish evidence in behalf of his integrity and trustworthiness.

Those tribes or remnants of tribes, like the Senecas, Cherokees, Seminoles, Chippewas, etc., that have been placed on lands and organized into agricultural communities, have accomplished results which compare favorably with those of the average American farmer in the West. A report lately made to the Society of Friends of Philadelphia, concerning the state of the Iowas of the Missouri, under the management of a committee appointed by the Society, shows "that the Iowas are an industrious agricultural people, whose manner of living and farming compares favorably with that of many of the surrounding settlers; they live in houses furnished in a manner similar to those of the whites. Forty individual families have fields of from ten to fifty acres, well fenced and under cultivation. One of mixed blood has 160 acres inclosed with fence, about 50 of which is farmed, the balance being used for hay. Two of the Iowa women have sewing-machines of their own, which they understand how to operate."

There are 215 of this tribe, and in 1876 they cultivated 880 acres, owned 154 horses, 6 mules, 91 cattle, 176 hogs, and raised 617 bushels of wheat, 10,000 of corn, 350 of oats, 1,200 of potatoes, and cut 600 tons of hay.

There are other communities or agencies which can furnish even a better table of results.

We have through these columns more than once asked the Government at Washington to give the Indian the right of citizenship, to place him on land which he can own and cultivate in an independent manner. The excellent missionary, Bishop Whipple, has said: "The individual Indian must have a title to his land, and that title be made inalienable. . . . . The best incentive to labor is the guarantee of the rewards of labor."

To us it is a glaring mistake to consign the Indian to the charge of our soldiers, and thus to treat him as a savage, as something to be guarded like a ferocious dog, and punished for conduct which in nearly every instance is but a natural response to cruelty and injustice done the Indian by men who wear the insignia of civilization.

## IPECAC vs. WHISKY.

THE age of wonders has not passed (for wonders if you will, substitute miracles). In a late number of the Cincinnati *Medical News* we find the notes of an extraordinary case of drunkenness, which was treated and "cured" by drug specifics. The subject, or patient, had been a drinker of alcoholic liquors, whisky especially, for upward of forty years, and in his mad pursuit of bibulous excitement had sacrificed all the interests which humanity hold dear. The doctor who made the experiment proceeded thus: He put the patient to bed, furnished him with a pint of "good whisky," and told him to take all he wanted. On the following morning the whisky was found to be

about used up, the patient in a lively condition, and wanting more. He was supplied with more during the day, and at night another pint was furnished, this procedure, doubtless, being very satisfactory to him. Then began the experimental treatment. The doctor administered a drachm of Howard's hydro-sublimate of mercury (Anglice, calomel), which is washed down with a tumbler of whisky. The pulse soon after indicates much feebleness (no great wonder), the appetite is also deficient. We judge that in most cases a tumblerful of whisky would disturb any man's inclination for food. Inebriates who have all they want to drink are not remarkable for voracity. The following morning the treatment is continued. The physician administers a drachm of Squibb's powdered ipecac mixed with licorice—to make it agreeable, we suppose—and for a furtherance of the agreeableness more whisky is given to wash it down, and the patient's attendant is directed to let him have all the whisky he wants during the day, besides mush and milk, if he want it—we are not told how much of the mush and milk he swallows; but we are told, however, that his bowels moved four times. Whether such copious action was due to the calomel or the ipecac, to the whisky or the mush and milk, we are not informed. But the motion, on the part of the doctor, in the course of the same day, was to administer more ipecac, to the moderate extent of two scruples. The patient becomes desperately sick at the stomach—an astonishing phenomena under the circumstances! More whisky is ordered. Whether or not that counteracted the gastric difficulty we are not informed. At any rate, on the following day there are indications of more stomach derangement—vomiting being one of them—and the physician urges the patient to take more whisky. The patient seems inclined to think that something was put into the whisky and that made him sick; and we presume that he refused any of that much-desired liquor from the hand of the attendant, for the patient's brother-in-law is sent for, who brings a quart of the best whisky obtainable in that neighborhood; but, strange to say, the patient declines to taste of it. As the hours roll on, this disinclination for the once-beloved liquor becomes stronger, in fact develops into a decided antipathy, and he requests his wife to take all the liquor and liquor-bottles out of the bed-room.

Notwithstanding this disinclination, the doctor, as if doubtful of its permanence, continued the doses of ipecac, administering them every hour, and then stopping them, ordered hot milk and crackers—what sort of crackers we are not informed; and soon afterward notes an improvement in the general condition of the patient, with the exception that he is losing flesh rapidly. For two or three days after the disappearance of the patient's inclination to gulp whisky, doses of ipecac, with an occasional grain of calomel, are given him; then iodide of iron with sugar, and, finally, we are informed, that his recovery is *complete:* that there has been no return of his inclination for alcoholic drinks.

One of the doctor's conclusions from this case is, that reform, by the aid of medicine, has a solid and real foundation in changes of structure, on which appetite depend, which purely moral measures of reform can not produce, and hence they are less permanent.

Our friends who conduct asylums for the reform of inebriates are evidently behind the times with their small percentage of cures. They have yet to learn of the amazing efficacy of ipecac.

## THE RUSSO-TURKISH WAR.

THE hard-won and splendid victory by Generals Radetzky and Skobeloff in the Schipka Pass, on the 9th of January, appears to have decided the result of the struggle between Russia and Turkey, as shortly thereafter negotiations were entered upon which have led to the acceptance by Turkey of the demands made by Russia, as conditions on which the latter would suspend hostilities. These conditions relate to the independence or autonomy of the Christian provinces, Bulgaria, Roumania, Servia, Montenegro, etc., indemnity for war expenses, and naval privileges.

England is greatly excited, apprehending that Russia will secure advantages that may affect disastrously her East Indian interests, and measures have been set on foot for their protection. The neighboring great powers, Germany and Austria, appear to be in sympathy with Russia, and the prospect of a complete settlement of the contest and a return of peace is encouraging.

# Our Mentorial Bureau.

"He that questioneth much shall learn much."—*Bacon.*

## 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.*

WE CANNOT 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—stamps being preferred. Anonymous letters will not be considered.*

GROWTH OF BRAIN.—J. P.—Physiological facts are in favor of the idea that exercise of a part of the brain, like the exercise of a part of the muscular system, tends to enlarge it. Persons who have attained their growth, will, by the exercise of the body, condense and toughen their muscles, and so acquire greater strength, while the absolute size of the muscle is but slightly increased; so in the case of the brain in maturity, the exercise of an organ modifies the character of the nervous matter, imparting to it a different tone and consistency, and renders it more serviceable and influential in the mental economy, while at the same time there is growth or increase, which may not be apparent from the exterior cranium. We have met persons over forty years of age who have declared that certain parts of their head had become enlarged through the exercise of the organs in those parts. One of the best works on Anatomy is that of Dr. Gray; but this is not a special work relating to brain, although its discussion of the nervous structure is thorough. Several treatises on the anatomy of the brain, bearing relation to experiments with regard to its function, have been published within a few years by Ecker, Gratiolet, Turner, Huxley, and others. Could you have access to Spurzheim's "Anatomy of the Brain" you will find a considerable amount of valuable information. This work is very scarce. We can furnish a copy at $5. Ours is the only Phrenological magazine published.

NERVOUS DEBILITY.—F. W.—Avoid all exciting mental relations; cultivate a cheerful spirit; do not permit yourself to be exposed to influences which conduce to morbid thought or imagining; eat good nutritious food, not that which tends to produce congestion or obstruction. A good stomach, a free digestion, will make a clear head, and with a clear head is usually associated a feeling of sprightliness and vigor. Take an abundance of out-door exercise; in a word, live purely—hygienically. We have a little book on the subject which might prove of service to you. Price 50 cts.

STOOP SHOULDERS.—S. G. P.—If you can not maintain the erect posture, you should make use of the aid which simple mechanical instruments will afford. Shoulder-braces would be good, but in connection with them you should

take some form of light exercise for the purpose of developing and strengthening your lung and muscular power.

SPIRITUALITY LARGE.—J. A. B.—Your case is an unusual one, but it does not lack for parallels. We had a subject for examination not a great while ago whose organization is probably similar to yours, and he spoke of visions and extraordinary mental experiences and peculiar psychological capabilities. Your physical health is probably not very vigorous, so that your psychological faculties exercise their function in a comparatively independent manner, and there is a loss of material relation, and consequently the phenomena are inexplicable to you.

MIND-READING.—G. S.—The mind-reader possesses a peculiarly susceptible organization, a quality of very delicate consistency, the mental temperament, of course, being much in predominance. Large perceptives, a good degree of Human Nature, Spirituality, Ideality, and Comparison are essential to success in this department of mental apprehension.

MATHEMATICAL PRODIGIES.—J. B. U.—In the course of the last forty years, during which the PHRENOLOGICAL has been published, sketches of several persons notorious for mathematical or calculating ability have appeared in its columns, either separately or in connection with discussions of mental phenomena. If you have access to a file of the PHRENOLOGICAL, you would probably find in part at least what you need. We know of no work that treats specially on the subject. Some of the more eminent computers, like George Bidder and Zerah Colburn, will be found in the larger encyclopedias.

ORGANIZATION OF A DETECTIVE.—J. F. S.—One to be a good detective should have a robust physique, strong perceptives, a head generally well filled out in the base, good eyes, strong and active Constructiveness, a good degree of Self-esteem and Firmness, with sufficient Caution and Secretiveness to enable him to exercise prudence, policy, and *finesse*. At the same time he should have large Combativeness to give him courage and audacity; he should have large Human Nature, so that he can appreciate the characters of men at a glance, and be able to control those with whom he becomes associated in the prosecution of his trade.

WATER-DRINKING.—S. G. P.—As a general rule, one would find it to his advantage not to drink during a meal, for the reason that water and fluids of any kind interfere with the masticatory and digestive processes. Nature has supplied organs in the mouth which furnish all the fluid necessary for the proper mastication of our food. Dyspepsia is caused in many instances by the habit of drinking while eating. An hour or so after eating, if there be thirst, one can drink moderately with advantage. We do not advise the use of butter, except in a very moderate degree.

CIVIL ENGINEERING—J. L. H.—One who expects to become a good engineer needs a large development of the practical organs of the intellect. He should have also large Constructiveness, good Calculation and Locality, Form, Weight, and Individuality particularly strong. His temperament should have a predominance of the motive to give him physical vigor and endurance.

ORGAN NUMBERS.—In the "Constitution of Man" the organ of Adhesiveness is numbered on the bust by the figure 4. But in the Appendix to the work on "Education," by J. G. Spurzheim, it is there numbered by the figure 8. Is there not some mistake in one of the books? Please explain in the PHRENOLOGICAL JOURNAL, as I am a subscriber. J. S. D.

*Answer:* Different authors have numbered the organs differently. One begins with Individuality, another with Destructiveness, another with Amativeness. The name, not the numbering, gives identity.

PERSONAL IMPRESSION.—J. W. Q.—Temperament has much to do with the impressions which people make upon each other. In the case of the persons mentioned there is doubtless a marked difference in temperament, and also a difference in magnetic quality, this difference resulting in the fact that one is receptive while the other is contributive. Some would say that one was negative to the other's positive condition; hence their individual experiences.

BRIGHT'S DISEASE OF THE KIDNEYS.—L. C.—This disease may be the outgrowth of constitutional diathesis; in other words, inherited; or it may be the result of improper habits. This is the usual manner of its production. Improprieties of diet, and especially improprieties of habit, such as the use of alcoholic liquors, are conducive to the depravation of the kidney structure.

DISEASE.—Is disease natural or acquired? A full and sweeping answer is desired. G. A.

*Answer:* Health is natural; disease is acquired. A great deal could be said about this subject. Some persons inherit a diseased condition, and to them it is natural; some take colds, some breathe malarial atmospheres; some over-eat, some drink, some use tobacco, some break down by other imprudences; but nature intends that trees, fruits, flowers, animals, men, should be healthy, and disease is exceptional or the result

of improper conditions, most of which can be avoided.

VARIOUS.—W. J. P.—The *Merchant's*, now *Banker's*, *Magazine* is published at $5 a year. There are several "Practical Treatises" on Business, from $1.50 to $5. Mr. Beecher, of Plymouth Church, resides in Brooklyn. We can not answer with regard to his lectures. His correspondence is probably too extensive to be considered in that detail which would supply an answer to every letter he receives.

FOR ATTACHING LABELS TO TIN.—First, rub the surface where you wish to apply the label with a mixture of muriatic acid and alcohol; then apply the label with a very thin coating of the paste, and it will adhere almost as well as on glass.

"AN OLD SUBSCRIBER" is informed that if the person is impressed to do as is stated, it must be done by magnetism.

[WE have received several other communications which are on file awaiting attention.]

## What They Say.

POWER OF THOUGHT.—Mighty, though silent, influences are at work moulding and shaping and directing. Each mind is the center of invisible telegraph lines of thought, stretching out on every side. Some lines are unresponsive, 'tis true, and will be until their plane is reached. Others respond feebly; while some are ever vibrating with their weight of thought. Is sympathy the electric motor? It may be. A minister was busy in his study when between him and his subject of meditation came the troublous thought, "Sister Mary is in danger." He tried to put away the thought as unreasonable and the product of a morbid state of mind, but it was of no use; he could not rest. Two days he struggled against these gloomy forebodings, and then he said to his wife: "It is foolish, I know, but I can not endure this any longer. I must go and see what is wrong with Mary." He started on the journey of two hundred miles, and arrived at his destination just in time to prevent his sister, a young lady of twenty, and about completing a course at college, from taking a step which would have involved her in life-long sorrow and regret. This is *true*.

We could give many like instances of the communication of mind with mind, for this we believe it is. Truly, "no man liveth to himself," and if we would make the world better by our influence, we must not only have our actions pure and good, but our thoughts also.

A tiny stone dropped in the water causes a ripple of retreating waves, which merging in the larger ones seems lost. And yet it is not so; no force existing in the realms of nature, when once unloosed, can ever be restrained. So if the eye could follow, it would see ripple succeeding ripple, vibrating atoms lending of their force, and the circle widening till its waves break with sweet music on the farther shore. Thus we find it in life's troubled ways. Each trifling thought, each word or act, so small that we may deem it of little worth, has still its influence, which, rippling, comes adown the wayward current of our lives. CHRIS.

RIDICULE.—Ridicule is a fatal weapon, and although it is in a great many instances the outgrowth of a perverted nature, it generally reaches the heart, and seldom fails to rasp its finer sensibilities. It finds its way into different avenues of our nature, and suffices to render us uncomfortable. One great mistake in the use of this weapon is, it is frequently wielded by the wrong person; and another is, it is frequently hurled at the wrong victim. We would by no means banish this weapon of warfare from our armory. It will do as a desperate remedy in desperate cases; but it should be cautiously used. The man who attempts to fight logic with ridicule makes himself obnoxious; and he seems to live in life-long ignorance of any other method of defense. If the man of letters confines his mightiest energies to this channel, it will gradually widen until his whole life will be swallowed up in an unhealthy warfare that will bring bitterness in the end. If the youthful aspirant sets out to pursue the course we have described, he may as well let his conscience go a begging first as last, for two opposing elements can not dwell peacefully in the same tenement.

W. B. GREGORY.

## WISDOM.

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

EDUCATION can improve nature, but not completely change it.—ARISTOTLE.

IF what has been done is not always rewarded, what has been left undone is seldom recognized.

GOLD is universally worshiped without a single temple; and by all classes, without a single hypocrite.

TALENTS are best nurtured in solitude; character is best formed in the stormy billows of the world.—GOETHE.

THE wealth of a man is the number of things which he loves and blesses—which he is loved and blessed by.—CARLYLE.

ZIMMERMAN (on solitude) says: "Those beings are only fit for solitude who like nobody, are like nobody, and are liked by nobody."

CELEBRITIES are almost always surrounded by nobodies; those who like to show themselves draw near those who are most observed.

THE more enlarged is our mind, the more we discover of men of originality. Your commonplace people see no difference between one and another.—PASCAL.

MANY people are fond of the company of their physician, because he is the only person with whom they dare talk continually of themselves without interruption, contradiction, or censure.

Two things are necessary for true glory: power and bounty; the former without the latter causes terror, the second without the first inspires contempt. Unite bounty and power, and you will win admiration; add power to bounty, and you will win love.

## MIRTH.

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

BRITISH tourist (to fellow-passenger in mid-channel): "Going across, I suppose." Fellow-passenger: "Yaas. Are you?"

NATURE seldom makes a phool; she simply furnishes the raw material, and lets the fellow finish the job to suit himself.—JOSH BILLINGS.

"DOES this razor take hold well?" asked the smiling barber. "Yes," replied the unhappy victim, "it takes hold well, but it don't let go worth a cent."

"I THOUGHT you told me that ——'s fever was gone off," said a gentleman. "I did so," said his companion, "but forgot to mention that he went off along with it."

DISCUSSION between a wise child and its tutor.—"That star you see up there is bigger than this world." "No, it isn't." "Yes, it is." "Then why doesn't it keep the rain off?"

A CERTAIN man asked his groceryman the other day if he could change a ten-dollar bill. "No," said the groceryman, "but I can credit your account." The man with the bill suddenly took with a violent coughing spell, which lasted until he was out of sight.

Grim winter now with measured tread,
And bowed and snow-besprinkled head,
Comes on apace.
Behold the glowing falling leaves—
Behold the garnered golden sheaves—
Behold the stripped and ghostly trees!
And lo! the cheerful buckwheat cake
With lordly grace,
Ten thousand ailments in his wake—
Dyspepsia, boils, and stomach ache—
Takes now its place.

—*St. Louis Journal.*

## 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 physiological science.*

STATE REGULATION OF VICE; Regulation Efforts in America; The Geneva Congress. By Aaron M. Powell. Pp. 127. New York: Wood & Holbrook.

This little volume treats of subjects which have a most important bearing on the moral and physical health of communities. The four papers or essays which constitute the book are entitled "State Regulation of Vice," "Regulation Efforts in America," "The Geneva Congress," "Address of New York Committee." The spirit of these is hostile to the assumption which lies at the basis of legislation having in view the regulation of vice, that man is vicious by necessity, and must be allotted a degree of latitude for indulgence of his passions and appetites. We are informed from official data of the marked increase of immorality and of its attendant diseases in places where vice is legally countenanced, and are also shown through the testimony of observers some of the horribly disgusting features of crime which license acts have sought to cover with a mantle of respectability. The Geneva Congress, in its series of resolutions, the succinct statement of conclusions which had been reached, rejected all systems of police regulation of prostitution, not only on account of their entire want of success in the countries where any have been applied, but also on account of their manifest effect in developing prostitution instead of diminishing it. If any legal measures are to be set on foot, they should have a suppressive effect, and chiefly they should place the men who are immorally given on the same footing with the women who are their unfortunate victims or associates.

FRET-SAWING FOR PLEASURE AND PROFIT. Williams' Hand-book. Price 50 cts. Henry T. Williams.

Two years ago the inventive spirit of our age, stimulated by the growing taste of the masses for home-made decorations, introduced several forms of fret-saws for the use of young and old in cutting out of thin board brackets, shelves, picture-frames, etc., and so extensively have they been adopted in our American homes that the time-honored jackknife must hang its blade in sorrow to find its occupation pretty much gone. We know of young ladies who have been led by the ease with which the fret-saw can be operated, to use much of their leisure in cutting elegant patterns from thin strips of walnut or ash for the manufacture of pretty articles of convenience or ornament. As for our youth, every one of a mechanical turn appears to have the saw and to take delight in its employment. The little manual brought out by Mr. Williams is just the thing for the amateur, supplying information about woods, the different shapes of saws, their frames and attachments, methods of working them, how to make them, and giving a great many patterns and hints on designing. A glance through the book is a surprise as to how much can be done in this direction by a little "gumption" and patience.

THE LADIES' GUIDE TO NEEDLEWORK, Embroidery, etc. By S. Annie Frost. Being a Complete Guide to all kinds of Ladies' Fancy-Work, with Full Descriptions of all the various stitches and materials, and a large number of Illustrations for each variety of work. Price, paper, 50 cts.; cloth, $1.00. Henry T. Williams, New York.

We are quite in accord with the author, that "it is a grievous error to allow girls to arrive at maturity ignorant of the full use of the needle;" and that "fancy-work is a secondary consideration," yet nevertheless of importance in the domain of esthetic culture. As stated in the title, the book is very comprehensive, giving details of procedure in each case, be it a class of embroidery or braiding or applique, or tatting or crochet-work, or whatever else, with that clearness and accuracy which evidence long experience in needlework and the literature of the subject. The patterns which illustrate the text are interesting from an artistic point of view.

THE HARMONY OF THE REFORMED CONFESSIONS, as related to the present Evangelical Theology. An essay delivered before the General Presbyterian Council at Edinburgh, July 4th, 1877, by Phillip Shaft, Professor of Sacred Literature in the Union Theological Seminary of New York; together with the action of the Council on confessions and formulas of subscription. This essay was very cordially received by the Council, and published in pamphlet form in Great Britain, and is now published in America. The aim of the eminent author, as very well made out, is to show the close relation of the different Protestant Churches, that their credal basis is substantially the same, and correlatively the high principles which enter into their religious teachings or theology differ but little.

## PUBLICATIONS RECEIVED.

ORATION. By Rev. Henry Ward Beecher. Delivered before the National School of Elocution and Oratory, upon the occasion of its third annual Commencement, held in the Academy of Music, Philadelphia, May 29, 1876.

THE RAILROAD CONDUCTORS' BROTHERHOOD: A magazine devoted to the interests of railroad conductors; published at Omaha, Nebraska. The engineer, it seems, can guide the pen as well as the movements of the iron horse.

PROCEEDINGS OF THE INTERNATIONAL CONVENTION for the Amendment of the English Orthography, held at the Atlas Hotel, Philadelphia, Pa., in August, 1876.

MONTHLY RECORD OF THE FIVE POINTS HOUSE OF INDUSTRY: A neat little publication, which contains a good deal more of interesting reading-matter than one would infer from its title. Price, $1.00 a year.

THE RAPID WRITER AND TACHYGRAPH, published monthly by the Rapid Writers' Association of Chicago. This indicates the growth of the Tachygraphic system of short-hand in this country.

WHAT ANÆSTHETIC SHALL WE USE? By Julian J. Chisolm, M.D., Professor of Eye and Ear diseases, University of Maryland, surgeon in charge of the Baltimore Eye and Ear Institute. Read before the September Academy of Medicine, June 5, 1877. The author favors the administration of chloroform for the purpose of producing nervous insensibility in preference to other known agents, and adduces a large array of cases to sustain his opinion.

FACTS AND FIGURES FOR MATHEMATICIANS, or the Geometric Problem which Benson's Geometry alone can solve. By L. A. Benson, New York. This is a discussion of the true relations of the circle and the polygon.

LACKS AND NEEDS OF THE SOUTH EDUCATIONALLY. An Address prepared for the National Educational Association Meeting in Baltimore. Delivered also before the Centennial Bureau of Education. Philadelphia, September 1, 1876. By Alexander Hogg, M.A., Principal of Schools, Montgomery, Ala.

GOOD TIMES, No. 1, for December, 1877. A new candidate for a reading constituency. Largely in the interest of advertisers. Price 10 cents.

THIRD ANNUAL REPORT OF THE EXECUTIVE COMMITTEE OF THE ASYLUM OF WALNUT HILL, Hartford, Conn.; also, a Petition to the Legislature. The institution, of which this is a report of its workings for a year, was organized chiefly in the interest of the inebriate. It appears to be efficiently conducted.

VICK'S ILLUSTRATED MONTHLY MAGAZINE, No. 1, January, 1878. This widely-known horticulturist is advancing in his conquering march. He now boldly undertakes a new enterprise, the first number of which is very promising. The price ($1.50) is certainly low for a monthly so neatly made in all respects.

TEMPERANCE LESSON LEAVES, Nos. 1 to 5, by Miss Julia Colman. If enterprise, earnestness, and thorough competence in one's line of effort deserve success, Miss Colman should reap it abundantly. The tracts, of which she is the editor, are published by the National Temperance Society of New York at 60 cents per hundred. The seed that is sown by these leaflets can be productive of naught but good.

NEW MUSIC. Mr. F. W. Helmick, of Cincinnati, O., sends us the following productions of his press: "The White Whale Grand March," by C. A. Noel, price 40 cents; "Mineral Springs Polka," by G. Dolphus, price 30 cents; "Tally One for Me" (base-ball song and chorus), by John T. Rutledge, price 40 cents; "Centennial March," composed by J. Wymund, price 25 cents; "Gone on before o'er the River of Time" (song and chorus), by P. O. Hudson, price 40 cents.

Messrs. Ditson & Co., of Boston and New York, send us Nos. 7 and 8 of their "Musical Monthly"—a collection of popular vocal and instrumental music. No. 7 contains six songs and instrumental compositions; No. 8 (the Christmas number), eight, by some of our most popular composers. Price of each No. 25 cents.

MONTHLY WEATHER REVIEW. Current issues from the office of the Chief Signal Officer at Washington, D. C.

THE MUSICAL WORLD, Nos. 168 and 169, contain much interesting matter on musical topics and several compositions—Christmas themes being in predominance. Price 15 cents each. S. Brainard's Sons, Cleveland, O.

THE ILLUSTRATED ANNUAL REGISTER of Rural Affairs for 1878, published by Luther Tucker & Son, of Albany, N. Y., is filled with facts and suggestions for the edifying of farmers. The valuable papers on the "Construction of Barns," "Rotation of Crops," and "Rural Economy," are especially commended to our rural friends. Price 30 cents.

THE SCHOLAR'S COMPANION is a new undertaking on the part of our friend and contemporary, Mr. Kellogg, and approaches as near to what a publication for school-boys and school-girls should be as anything we have seen in print. It is replete with features drawn from school-life, amusement and instruction being associated in such a way that both must interest, and a high tone of morality pervading every part. We should expect teachers to sustain the *Scholar's Companion* for their own sakes, as it certainly may be made an efficient aid in their class-room work. Price 50 cents a year. Publishing office, 17 Warren Street, N. Y.

## PERSONAL ITEMS.

THE REV. JOSEPH COOK has been made an honorary member of the Victoria Institute, or Philosophic Society, of Great Britain, of which the Earl of Shaftesbury is president.

DR. TURNER, of Minneapolis, Minn., is said by a brother practitioner to have gone forty-two days without eating. Feeling unwell, he concluded to try the abstinence cure. He took walks in the open air, drank water when he wanted it, and lost only eighteen pounds in weight.

ANNE P. SEVER, who died recently in Boston, bequeathed $140,000 to Harvard College, of which $100,000 is to be expended in the erection of a building to be called Sever Hall, $20,000 for a library, and $20,000 unrestricted. She gives large sums for charitable purposes also. When will some friend of humanity remember the Phrenological Institute in his life or death?

MRS. TERRY and Miss Sawyer, of New York, and Mrs. Richardson, of New Orleans, were the first ladies who ever ascended to the summit of Popocatepetl, Mexico, which is 17,880 feet above the level of the sea, and 2,134 feet higher than Mont Blanc. This feat has lately been accomplished by Mrs. Skilton, wife of the United States Consul-General to Mexico, and Miss Bertha Read, of Missouri.

EX-PRESIDENT JOHNSON is to have a monument erected to his memory, at Greenville, Tennessee. It will be twenty-six feet high, with a base of granite and a shaft of Italian marble. Upon the front is a scroll representing the Constitution of the United States and an open book with a hand resting upon it, suggesting the taking of the oath of office. Over the apex is the American flag, and surmounting the whole an American eagle with outstretched wings.

CAPTAIN JAMES B. EADS, whose great works at the mouth of the Mississippi and elsewhere in this country have made him famous, is to make another attempt on a very great scale—a bridge across the Bosporus. It will probably cost $25,000,000, and be of iron and masonry, 100 feet wide and 6,000 long, with fifteen spans, the central one of 750 feet.

THE PHRENOLOGICAL JOURNAL AND LIFE ILLUSTRATED.

VOL. 66. 1878.

NUMBER 4.] *April, 1878.* [WHOLE No. 472.

## JAMES DOUGLASS (BLUE JEANS) WILLIAMS,

GOVERNOR OF INDIANA.

THIS is a strong and striking face, one to arrest attention and to impress an observer. The features are irregular and prominent; the curved nose and projecting chin are indices of remarkable force; the mouth shows firmness, and the brow good perception; while the development of the central organs of the forehead and the expression of the eyes indicate ability to think closely and continuously. The whole ex-

pression indicates ruggedness and strength of mentality, with little or no claim to vivacity or brilliancy.

Governor Williams is six feet three inches in height, and weighs about 170 pounds. The motive temperament largely predominates in his organization; hence he is angular in build and ungraceful in movement, yet he is so natural and strong in face and action that his awkwardness does not offend even a critical taste. Although the motive element greatly predominates over the vital and mental, yet his circulation is tolerably good, the lungs large and healthy, and the brain and nervous system well sustained and vigorous. His head is large—22¼ inches in circumference, and 15 inches from ear to ear over Firmness. He is a close observer of men and things when his attention has been aroused, but his mind is slow in its action, hence not on the *qui vive* constantly. He is a logical thinker rather than metaphysical, and his powers of illustration by comparison are extraordinary. He is lucid, forcible, and humorous as a speaker, but not wordy. He has an almost inexhaustible fund of anecdote and humor, which he uses to the best advantage, and he is apt at repartee, but not rhetorical or eloquent in the usual sense.

He is pacific in disposition, indeed exceptionally slow to anger; cautious, rather retiring in disposition; very firm of purpose, and few men keep their own counsel more guardedly than he. He has a good degree of the religious sentiment, but no bigotry. With him religion consists of a code of morals rather than a system of doctrines. He is a man of sound judgment, if given time for calm deliberation, but not a safe leader in times when conclusions must be formed quickly and acted upon promptly. He is far better as a statesman than as a general; and while possessing many qualities fitting him for the duties of an executive officer, he is much better fitted by nature for the legislative or judicial departments of the public service.

A writer in the *Western Life-Boat* gives the following summary of the qualities of Governor Williams: "He is far above the average in height; quite spare in build; large bones, strong muscles; a dense, tough, active brain and motive temperament. He is firm, but not stubborn; generous, but not prodigal. He has good reasoning powers, is very inquisitive, and a good judge of human wants, and fair and honorable in his intercourse with men."

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James Douglass Williams was born in Piqua County, Ohio, January 16, 1808. His parents were of Scotch-Irish blood on one side, and Welsh-English on the other—an admirable combination for the transmission of strong qualities of both body and brain. His ancestors came to this country about the middle of the last century, locating in Virginia, and adopting the profession of agriculture. George Williams, the father of the Governor, settled in Ohio at an early day in the history of that State, from whence he removed to the State of Indiana in 1818, locating in Knox County, where the Governor still resides. James' opportunities for education were limited to a few winter sessions of the very *common* schools taught by the old-fashioned peripatetic pedagogue, whose scholastic attainments were bounded by the alphabet on one side and simple arithmetic on the other. His means of social culture were equally meager; hence he is not an Addison or a Chesterfield, but a plain, blunt man of strong common-sense, a good representative of the honest, hard-working yeomanry of our country.

The father of Governor Williams died in 1828, leaving a family of six children, of whom James was the eldest; and besides his farm, then but a pioneer clearing, leaving little else. James remained at home until his marriage in 1831 to Miss Nancy

Huffman, the daughter of a neighboring farmer, when he purchased a quarter section of wild land, and, erecting a log-cabin, began the toilsome, yet pleasant task of working a farm and making a home in the wilderness. He still resides on that farm with the wife of his youth and their children, but it has grown, by repeated additions purchased from time to time, till it contains over two thousand acres, and the improvements are of the most substantial sort. Mr. Williams utilized the labor of others quite largely in his farm operations, and does so still; but he always led, instead of driving, his hired men, and did not ask or expect more labor from the best of them than they were able and willing to accomplish. He has the reputation also of being just and even generous in the matter of wages.

He made his *début* on the stage of public life in 1839 as a Justice of the Peace. In 1843 he was elected to the State Legislature, since which time he has been in public life almost constantly, having served seven years in the House of Representatives and twelve in the Senate of his State. He was chosen to represent his district in the State Board of Agriculture in 1855, which position he filled for sixteen years, rising to the presidency of that body and filling this office with marked ability for four years. He was chosen to represent his district—Second Congressional District of Indiana—in the National House of Representatives in 1874 by the unprecedented majority of eight thousand votes—a distinguished mark of confidence in his ability and integrity on the part of those who knew him best.

He served in Congress but one session (that of 1875–6) and made but one speech, we believe. That speech was brief, but full of strong points. It is a fact well known that the Governor eschews broadcloth and wears blue jeans on all occasions; indeed, the newspapers more often speak of him as "Blue Jeans Williams" than by any other title. Mr. Foster, of Ohio, once delivered a sarcastic speech in Congress on Economy, in which he accused the Democratic members of foolish opposition to certain appropriations. Hon. S. S. Cox replied in his characteristic manner, saying, among other things, that certain members thought they were starving if they could not wear purple and fine linen and fare sumptuously every day. At this point Mr. Foster, turning toward Mr. Williams' seat, remarked, "Blue jeans."

When Mr. Cox closed, the tall form of the Indiana farmer loomed up in the background. Expectation was rife at once. Members hastened to their seats, and silence prevailed. Blue Jeans Williams was about to make his first speech in Congress. He began with an anecdote, which elicited roars of laughter; then he proceeded to review the career of Mr. Foster and his party as economists, in a humorous, yet logical and telling manner, and closed by saying: "I am not ashamed of my old-fashioned Kentucky jeans. The people of Indiana are not ashamed of me because I wear it, and I am sure the country would be the better for it if we could get back to the simple habits of our fathers in matters of dress as well as in some other things." He was greeted with a storm of applause, and as he sat down his friends crowded about him to offer congratulations.

The Democratic State Convention nominated Mr. Williams for the office of Governor in the spring of 1876 against Mr. G. S. Orth, the Republican candidate. Subsequently Mr. Orth withdrew from the ticket, and General Benjamin F. Harrison was selected to fill the vacancy. The two parties being almost equal in strength in the State, the personal popularity of candidates for Governor is an important factor, indeed it usually decides the contest.

Personal popularity decided the matter in favor of Governor Hendricks four years before, and it had much to do with the election of Governor Williams over General Harrison in 1876. His name was a power among the farmers and other working classes of the State. Mr. Williams made a thorough canvass of the State, speaking in almost every county; and although the Independent Greenback candidate, Mr. Wolcott, withdrew in favor of General Harrison, Mr. Williams was elected by a handsome majority.

He entered upon the duties of his responsible office about a year ago; hence his career as an executive officer has scarcely been long enough to warrant an opinion on all its sides. His first Message to the Legislature of the State is a brief, but comprehensive document, couched in language plain and terse—a really creditable State paper.

He still wears a full suit of blue jeans, and the opposition journals keep up a steady fire of ridicule and sarcasm at his unfashionable dress and rustic manners, the chief effect of which is to increase his notoriety and popularity. If he were not so old, a persistence in this method of berating him on the part of his political foes might possibly force Indiana's Granger Governor into the Presidential chair, in which event we have no doubt he would continue to wear blue jeans, and thus set the nation an example of economy. T. A. BLAND, M.D.

## SELF-KNOWLEDGE.

A LECTURE DELIVERED BY JAMES FREEMAN CLARKE,

*To the Church of the Disciples, Boston, Dec. 2d, 1877.*

1 Cor. xi. 28: "LET A MAN EXAMINE HIMSELF."

THE subject of this discourse is Self-Knowledge. Is it desirable, is it possible? And if so, how is it to be attained?

"Let a man examine himself," says the apostle. "Know thyself," was the maxim of Thales, the old Greek realist; a maxim thought so divine that the ancients said it fell from heaven. "Search and try your ways," said the Prophet of Judea. Modern Christian teachers have insisted on self-examination as the perpetual and universal duty. "Thomas à Kempis," "Taylor's Holy Living," all books of practical piety, inculcate it without end. "See what your motive is in everything," says Jeremy Taylor, "for the holy intention is to the actions of a man that which the soul is to its body, or the form to matter, or the root to the tree, or the sun to the world, or the fountain to a river, or the base to a pillar; for without these the body is a dead trunk, the matter is sluggish, the tree is a block, the world is darkness, the river is quickly run dry, the pillar rushes into flatness and ruin; and the action is sinful, unprofitable, and vain." Not only religious teachers, but philosophers and poets, have taught the importance of self-knowledge. Burns says:

> "O wad some power the giftie gie us
> To see oursel's as ithers see us!"

And Pythagoras advised that "sleep should not seize upon the region of the senses before we have three times recalled the conversation and incidents of the day," in order to know what we had done or omitted to do.

There is a theory, I know, which assumes that all persons are alike at first, and become different from force of circumstances, or from their own efforts. No father or mother who has brought up a family of half a dozen children will ever believe such a doctrine as that. The little things, as soon as they are born, show symptoms of the traits which they continue to have all their days. One child has a strong will, but is easily guided by his affections; another is cold; one is quick, but changeable; another slow, but persistent; one is reserved, another open; one has a taste for music, so that he sings from his cradle; another a tendency to construction, so that he makes all his toys himself; one, like George Washington, can not tell a lie, and another, poor little thing! finds it hard to tell the truth. Just as a young duck runs to the water, young children run to the work or play, the pictures, the poetry, which they are made for. Every observing father or mother sees this, and laughs at the philosopher who tells him that children are born alike, and made different by circumstances.

No: "every man has his special gift from the Lord: some after this fashion, and some after that," and the point is to find out what we are, what we are made to be and to do.

This sort of self-knowledge prevents discouragement. Children are often thought to be stupid, and think themselves that they are so, merely because they are trying to do something they are not fitted for. Other children are thought infant prodigies, because they happen possibly to possess a fine verbal memory, and can repeat, like parrots, what they hear. So they grow conceited upon their one faculty; and find out, too late, that the memory of words is only one part, and a very small part, of intellectual power. Walter Scott was considered a very stupid boy, out of whom nothing could be made. He was a kind of fruit which ripened slowly; the best kind often does so. I heard Dr. Spurzheim say that a young man had that day said to him, "Dr. Spurzheim, you do not know me, but you were the greatest benefactor to me on one occasion. You came into the school where I was. I was considered the greatest blockhead in the school, and believed it myself, and did not think it worth while to try to learn. You put your hand on my head, and said, 'Perceptive organs small; he does not do much now. Reflective organs very good; when he comes to the studies which exercise those faculties, he will be one of the brightest boys in the school.' This gave me courage, and I found it was really so. When I came to the studies which required thought, instead of mere memory, I went to the head of my class."

But we need a certain general knowledge of human nature in order to gain a special self-knowledge. To know what our particular capacity is, what our special defects are, we need some systematic knowledge of the soul. It is true that, without any such system of metaphysics, we get a knowledge of human nature from life. We also learn a great deal about mankind from history, biography, the drama, poetry, novels. Probably these teach us more, and more truly, on the whole, than any system of moral or mental philosophy. A play of Shakespeare's or a novel by Dickens shows us human life in action—all human faculties at work and alive; metaphysics shows them inactive, and taken apart. The one is like the study of muscles in an anatomical museum; the other, like studying them in a gymnasium. But I think that, as, in order to know the body, we must see it in both ways, so, in order to know the soul, we must not only read history and poetry and see actual life, but it is desirable to have also some methodized system of human nature; for only thus can we be prevented from being one-sided; from laying too much stress on some qualities, too little on others. We ought to have a knowledge of the whole soul while studying its separate faculties.

And of all systematic divisions of human nature into faculties and powers, I think that of Phrenology on the whole the most convenient, merely as the basis of self-examination. I think so for several reasons: first, because it is founded on actual observations of life, and therefore is true in the main. I am not now speaking of Craniology, or the shape of the head, but of Phrenology, or the arrangement of human powers. I like it, though it does not give us the depths and heights of human nature. But it presents a good sketch, for working purposes, of the various powers of the human soul. It has nothing to say of the soul itself; it only speaks of its organs, its faculties, its tools. It has nothing to say of freedom; that is assumed, or not, as you will. The phrenological arrangement of human faculties leaves all these questions just where they were, neither asserting nor denying anything in regard to them.

I recommend the phrenological arrangement of human powers simply as a convenient one in self-study. If a man wishes to know what he is fit for, and capable of, this gives him a useful method of investigation. It divides, for example, all our powers into mental, moral, and passional; intellect, morals, and affections. To the intellectual region belong, first, the perceptive faculties, by which we take notice of outward objects; notice their size, form, weight, and color. Then the reasoning powers, by which we compare objects to see if they are alike or unlike, if they are cause and effect, if they are congruous or incongruous. Then there is the imagination, which makes a picture of the whole while examining the parts. Then, again, come the moral qualities—

sympathy, reverence, conscience, firmness. Then follow the passional and energetic powers, which supply movement and force, as self-reliance, the desire of approbation, the desire for home, the love of family and friends, the passion for battling with difficulties, the passion for destroying evils, the passion for collecting property in all its forms, the desire of construction, which is the basis of all art. Now, this may be, or may not be, the best classification of human powers; but it is, at least, an exhaustive classification. Add, as the basis of it, the soul itself, and its freedom, which is the essence of the soul, and this classification shows well enough what the soul's faculties and powers are.

One advantage of this classification is that it helps us to make very useful distinctions in self-study. For instance, the old mental philosophy made only one kind of memory. A person had a good memory, or a bad one. Now, we know that there are a great many different kinds of memory. One person remembers names, but forgets faces; another easily remembers lines of poetry, but not prose; another recollects single facts and dates with remarkable tenacity, but has little memory for causes, reasons, or arguments. I, myself, can remember ten thousand lines of poetry, but, though I have lived in Boston since I was a little boy, I can not describe the looks and size of the buildings on Washington Street between Milk Street and State Street. And yet I can give you a general picture of any city in Europe which I may have seen during only a few days. Phrenology explains all this by teaching us that every organ has its own memory. A large organ of Time remembers time. A person who has a great deal of this can often tell what o'clock it is without a watch; a large organ of Tune remembers music; a large organ of Language remembers names; a large organ of configuration remembers faces and forms; a large organ of imagination remembers the general aspect of a country, of a story, of a face.

One advantage of this system is that it shows us how every power has its use and its abuse; how God has made everything in us good, but that we can abuse everything by excess. It also shows how one faculty may correct the excesses of another, or supply its deficiencies. Thus what the phrenologist calls the organs of Combativeness and Destructiveness are most important and valuable in their proper sphere. They help us to wage the battle of life, to conquer difficulties, to meet opposition, to resist and destroy evil and wrong; in short, to fight the good fight, and finish the work given us to do. No man can be an eminent philanthropist or a martyr without them. But they can easily be carried to excess, or exercised in a wrong direction. Then they make us quarrelsome, controversial, satirical, vindictive, lashing others with tongue or pen, and striking them with the dagger of sharp, poisonous, bitter, unkind words They make termagants and scolds, fault-finders and Papal inquisitors. On the other hand, the best moral tendencies may be excessive, or misdirected. The lovely power of sympathy, which causes so much happiness, which makes men enter into the feelings of others, rejoice with those who rejoice, and weep with those who weep; which constitutes so much of the sweetness and comfort of life; this, also, may be excessive or one-sided. Then it makes persons weak and false, yielding to the present influence, loving the person who is near, forgetting the one who is absent, neglecting past promises, and so leading to insincerity Therefore this tendency needs to be restrained by firmness, self-esteem, and conscientiousness. But these, in turn, though good, are also easily carried to excess. Self-esteem produces self-reliance, which is one of the most essential features of character. Without it, character can hardly exist. It is the organ of sincerity, of independence, of personality. Yet it tends to dogmatism, to egotism, to assumption of superiority, to overbearing manners which forget the claims of others; and it makes the character hard and cold. A person can be even too conscientious. Conscience may be too irritable, or too scrupulous; it may be always tormenting the soul with questions about imaginary sins; it may make us so afraid of doing wrong that we shall never do anything right. Firmness may become

obstinacy; the love of order may grow into pedantry; the love of home take one away from social and public duties. Even reverence may become a fault. It is the crown of the whole moral nature, and has been therefore fitly placed by phrenologists on the summit of the head. It produces that beautiful modesty which, when accompanying manliness, is so charming; it creates that respect for all that is above us, which lifts the soul; it is the great incentive to nobleness; it is the power which enables us to rise above ourselves in the worship of goodness, whether human or divine. Shakespeare calls it "that angel of the world;" Goethe calls it "the crown of the whole moral nature." It is the power of moral harmony; which makes a concord of all discordant things, by opening the soul to the highest and best of all. And yet even this great and wonderful power may be abused. It may, if not enlightened by reason and truth, lead to gross superstitions and worship of the letter and the form. It may become idolatry. It is essentially the religious organ, but it leads, when unenlightened and unregulated, to the worst abuses. All the cruelties practiced in the name of religion have been the results of an unenlightened reverence. If we reverence a being as God whom we believe willful, cruel, unjust, or partial, then our reverence tends to make us, also, willful, cruel, and partial. The special abuse of reverence is idolatry, which is worshiping the letter instead of the spirit. To worship a form, a name, a letter, instead of the spirit, hurts the soul. To worship the letter of a creed, of a church, of the Bible, injures the spirit. That is why the apostle declares that "the letter killeth."

The great advantage of any self-study which shows us what are our special organic defects and corresponding gifts and powers, is that it makes us both humble and hopeful. Self-conceit comes from a vague imagination of possessing some great genius or superiority, and not from any actual, precise knowledge of what we are. Actual knowledge of one's self will always show us that some temptation besets every success; that some opportunity comes with every failure; that our weaknesses have a strength hidden in them; that our strength has also its weak side. "Every one," says the French proverb, "has the defects of his qualities;" every one, also, has the qualities of his defects. "Our virtues and vices," says Goethe, "grow out of the same roots." And does not Jesus intimate as much in that parable which teaches that, in trying to pull up the tares, we may run the risk of pulling up the wheat too? That is the risk which those run who try to root out and destroy every natural tendency in man, because of the abuses which it occasions. Christ, who did not come to destroy anything, but to fulfill everything, said: "Let both grow together till the harvest." We can not always, hardly ever root out an evil tendency; but we can always grow it out. Give men life, more growth, more sun and rain, more truth and love—these powers of growth will conquer the evils in the soul and in the heart.

These considerations, as I have said, should make us both humble and hopeful. We are humble in thinking that our best success and our highest gifts have their danger. We are hopeful when we see that even the worst thing in us can be turned to good. So God, in His great geological work-shops, makes diamonds out of carbon and rubies out of clay. Man's brain is a self-compensating machine, an automatic, self-correcting apparatus. God has set in it two against two; every power has its antagonist power. He has placed in man a tendency to hope, and another to caution as its counterweight. He has given self-reliance, and also sympathy; He has inspired the wish to battle with wrong and evil; He has added the tendency to reverence and submit to good. He has given us powers which take us outward into the world of things and men; others which draw us inward to the world of imagination and reflection.

But man is not a mere machine, nor is organization the whole. The body, after all, is only the chest of tools which the soul uses. And just as one man with a jack-knife can do more than another with a whole box of tools, so we see some men of comparatively small natural powers accomplish more in the course of life than others of great genius,

who have neglected their gifts or abused them. The power which modifies all organization, and lifts us above the control of matter and structure, is the power of conviction, of a living faith in truth. Self-knowledge is an immense help in progress, but it is a small thing compared with the knowledge of God, truth, duty, and goodness. In the history of the world we have seen the most richly endowed nations sleep on, undeveloped and inactive, through long centuries, and then, inspired by some great conviction, flame up into magnanimities and heroisms without example. So it was with the Arabs in the time of Mohammed; with the Greeks in the age of Miltiades and Pericles. So, in biography, we find vast results proceeding from the soul of some man not very greatly endowed, not very richly organized, but who has been fired by a sublime conviction. The founders of religions, the movers of reformations, have usually been men with some special organic gifts, indeed, but, more than that, men magnetized by a deep conviction.

I recollect that once, when I lived in the West, there came a phrenologist to the town and examined the heads of all the clergymen in the place, and found us all deficient in the organ of reverence. More than that, we all admitted that the fact was so; that we were not, any of us, specially gifted with natural piety or love for worship. Then he said: "You have all mistaken your calling. You ought not to have been ministers." But I, for one, protested against that sentence, for I knew that, though I had no natural tendency to worship or pray, I had come by experience to know that I could not live without prayer. Though I did not pray from sentiment and feeling, I was able to pray from conviction and faith.

The sight of truth is the necessary supplement to the power of structure. Without the sight of truth man is the slave of his organization. Study his head, and you can, perhaps, tell what he may be. But, endowed with truth, he is the master of his organization; he makes it serve him. He is able to see what are its defects and supply them. If he finds himself too hopeful, he studies to supplement his hope by a greater caution; if he sees that he is too timid, he encourages himself to do his work more bravely. If his sympathy runs away with him, he meets this by educating his self-reliance. If his imagination is too active, he supplies the fault by a habit of increased reflection, and by more devoted attention to facts. He is thus like the man who steers a ship, with the compass before his eyes showing which way the vessel is moving; with the chart in the cabin telling which way it ought to go; with the helm in his hand, enabling him to turn it to the right or left as need requires. But the mighty winds of divine truth coming from above; the mighty fires within, of a divinely-gifted organization: these supply the motive-power, and what he has to do is to keep the course in his mind, and to keep the compass in his eye, and to keep his hand on the helm, always steering the ship in the right direction.

This is human freedom, and these are its limitations. We are not free to become anything we choose, or to do anything we wish. We are limited outwardly by circumstances, inwardly by our own organic tendencies. But, if we have any sure convictions of what is true, right, and good, we can steer that way. We can study our complex nature, and when we come to know it, we can encourage and cultivate what is best, discourage what is likely to lead us astray. We can not make circumstances, but we can select those which are favorable. We can make use of the power of habit to fix and solidify all our good qualities. And, above all, if we believe in an ever-present God, and a divine influence from Him, we can trust ourselves to His care, and open our hearts to His inspiration, and so be lifted up into the serene atmosphere of peace and purity out of whatever is dangerous to the soul.

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WHEN assailed by those who disbelieved in special creations—by materialists—Cuvier would quote from Genesis: "Let the waters bring forth abundantly the moving creature that hath life;" adding, "God has endowed the surface of the planet with power to bring forth."

## THE WOODPECKER.

TAP! tap! goes the woodpecker's busy bill,
Tap! tap! on the old oak tree.
He hunts small game
With his tongue of flame,
For a woodman bold is he.

"'Tis the early bird gets the worm," he cries,
As he flies from his nest at morn,
And his note so shrill
Doth the woodland fill
Like the huntsman's bugle-horn.

In their chambers dark,
'Neath the moldering bark
The ant and the worm lie still,
But he hurries them out
With a terrible rout,
And gobbles them up at will.

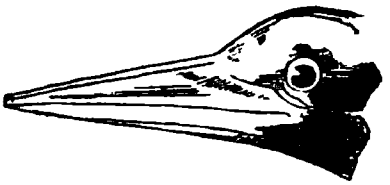
—LAURA J. HAGNER.

MOST persons who are at all familiar with the sights and sounds of country life are well acquainted with the busy little carpenter who plies his hammer so unceasingly upon the barked boughs of old trees, and whose strokes resound through the forest with such "rhythm of labor" that we are inclined to feel a human interest in a bird who, instead of flitting from bough to bough with easy indifference to sublunary wants, not only without care for the morrow, but without business for to-day, like so many of his race, plies the tool with unremitting industry, with no other object than that of earning a living for himself or his family.

The woodpeckers are, indeed, an eminently practical people, with "no nonsense about them." They do not sit idle, pouring out gushing songs at early morn or dewy eve; they are then generally engaged in getting breakfast, or foraging for supper, and the noise they make about it is doubtless intended to extend the benefits of their righteous example to their incorrigible neighbors, who indulge in music and merry-making at unseasonable hours.

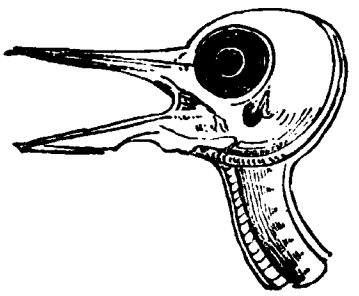
These industrious folk belong to a very extensive family, that of the Picidæ, and

the family to the order Scansores, or climbing birds. The feature in their organization which assigns them to this order is the possession of four toes, two before, and two behind, the outer anterior one being usually directed backwards, the hind toe being on the same level with those in front. The tail-feathers are from eight to twelve. You may suppose that the arrangement of the toes is not a matter of much importance, but, like many of the peculiar claims of pedigree, I can assure you that it is essential to the standing of the family, and fixes their right to belong to the Scansores at all. If you ask the first woodpecker you meet, he will tell you that he can prove by the authority of Prof. Baird, of the Smithsonian Institute, that he belongs to the Scansores, because the arrangement of his toes is *zygodactyle*, and if he be a woodpecker of respectability, that his tail-feathers number just twelve, though there are members of his race that wear ten, but this is a fact that you must delicately ignore.



Head of Woodpecker.

The family of the Picidæ possesses very marked features, and embraces many hundred species. The birds are distinguished by a bill, straight, rigid, and chisel-shaped at the tip, the sides being more or less ridged; wings long, the primaries or feathers on the first joint of the wing being ten in number; the middle tail-feathers are rigid and cuneate, and used as a support to the body in climbing and standing; the claws are high, strong, much curved, and very sharp. The tongue is a most curious and ingeniously-formed instrument, singularly adapted to the use for which it is intended. It is capable of great elongation, and is armed at the tip with an arrow-like point, having reflex spines. When the powerful bill has penetrated the outer bark, and reached the retreat of an unfortunate insect, the tongue is darted forth, and, the prey secured, is instantly retracted within the mandibles. The tip of the tongue is furnished with a thick viscous fluid, to which the smaller insects or larvæ instantly adhere; the larger are caught and drawn forth by the retroverted spines as by a set of hooks, not transfixed, as has been often supposed.



Skull of Woodpecker.

The tongue has the horns of the hyoid-bone greatly elongated posteriorly, extending around the back and over the top of the head, the anterior ends enveloped in a sheath in which they move freely, being attached in advance of the eyes, usually near the opening of the right nostril. The glutinous fluid is secreted by two large glands, whose ducts open near the point of the lower jaw, and furnish a fresh supply every time the tongue is extended. By the force of the muscles attached to these slender bones the tongue is often thrust out a considerable distance beyond the tip of the bill, and by the use of another set of muscles is retracted considerably within it.

The busy "tap! tap!" of his bill upon the bark of some decayed tree has a clear, sharp sound, like the stroke of a small hammer, and the woopecker of Cayenne is appropriately called by the natives "the young carpenter." Indeed, all the tastes and habits of these birds are generally sober and practical.

Woodpecker's Foot.

The nest is what might be expected from the matter-of-fact character of the bird. There is no fairy-like structure of

Feathers and moss and a wisp of hay,

no dainty lining of successive layers of wool and hair, feathers and down, but a simple recess dug out of the heart of a tree.

For this purpose they sometimes avail themselves of a hole which they find in the tree, but more often dig one with care and patience, varying it in size and depth, sometimes only a few inches, and sometimes a foot or eighteen inches. The situation of the nest is chosen with care, just beneath the shelter of some large projecting bough, which may give protection both from observation and the weather. The chips are thrown out or carried away by the birds, except a few purposely left at the bottom of the excavation. These form the not too luxurious couch of the young birds, but the home is commodious, warm, and safe, and forms a suitable cradle for this hardy and industrious race.

The eggs are from four to eight, purely white, without spot or stain. Both parents share in the labors of love required in caring for their young, and are indefatigable in painstaking. Before they leave the nest they manage to take a survey of the outdoor world from the door of their cave, and when they come forth, run about upon the tree before attempting to fly; indeed, to the woodpecker, his tree is his country. There he first sees the light, there he finds his sustenance, there he delights to labor, and there he enjoys the rest from his labor, often remaining in the same tree from year to year, and, after the young birds have flown, using the empty nest as a bed-chamber, to which he retires to sleep at night. If he leave, it is only for a short time, and generally from necessity rather than choice; their flights are not long, and only from one tree to another. Upon the tree the bird's motions are quick and business-like; he runs around the trunk or branch quickly, and his taps are sometimes very rapidly re-

IVORY-BILLED WOODPECKER.

peated, first upon this side, then upon that. After tapping once or twice he will lay his head against the tree to listen if he can discover signs of life beneath. If shot, or in any way wounded, he still clings to his tree, and, instead of flying, tries to elude his pursuer by going around the tree, and even after death the claws will still retain their hold, and the body remain pressed close to the limb.

BLACK WOODPECKER.

Naturalists disagree as to the temperament of the race. Some affirm that they are of a gay, frolicsome mood, and that, though they do not sing, they utter notes of pleasure and delight. Others seem to consider them rather morose, and not at all disposed to gayety. Wilson declares that they excite his compassion, on account of the hard terms upon which they gain their livelihood. But, as a rule, they are generally regarded with friendly feeling, even by those who sometimes suffer by their depredations, as the farmer and fruit-grower soon learn that they can well afford to give them the fruit and corn they eat, in consideration of the quantity of noxious insects they destroy. For, though fond of fruit as a relish, they depend for substantial diet upon insects, or the grubs and larvæ. All woodpeckers resemble each other in a general way, and are much alike in their habits.

The extremes of the family are found in the Ivory-billed woodpecker, and common flicker, which belongs to the same family, but is found at the bottom of the scale of rank, and the difference between this plebeian individual and the distinguished representative of the dignity of the family, called the "ivory-billed" is so great that the most unscientific eyes can discover it without glasses, as a Chinese will distinguish a boat-hand of the wharf from the gold-buttoned mandarin.

The colors worn by these birds are gayer than we should infer from their sober and practical character; for, though the general garb is black and white in vivid contrast, they do not disdain to wear touches of the brightest hues, eschewing only blue, which they never put on under any circumstances. From the names of different varieties, we may infer the gayety of these dashes of color, which relieve the sobriety of their usual costume, such as "golden-winged," "red-cockaded," "red-headed," and "yellow-crested." Indeed, so often is the red cap adopted, that the family has even been suspected and accused of being communists; as if such hard-working folk were likely to be tainted with such opinions.

Of the aristocratic Ivory-billed there are two species, *Campephilus Principalis*, and *Campephilus Imperialis*. They closely resemble each other; indeed, few but naturalists would distinguish them, so slight are the differences which mark them as distinct. But the first is a resident of the United States, the latter of Central America and South-western Mexico. The last is the largest species known, and is figured in the engraving. It is very striking in its appearance, and not without beauty of both shape and plumage. It haunts the deepest recesses of the forest, and builds its nest amid the dark shadows of the Southern swamps, where the hot, humid air is scarcely stirred by a passing zephyr, and where the fiery rays of the sun are shut out by thick curtains of trailing plants which stretch from bough to bough, and add to the density of shade formed by the cypress and the many kinds of sombre-hued foliage which overhang their gloomy depths. There this singular bird lives his strange life of laborious domestic care, raising two broods in a sea-

son, whenever the season is long enough to allow the callow brood to run no risk of exposure to cool weather. The eggs are ivory-white, but the nest is not more luxurious than that of other species. The tuft upon the head looks like a small plume, drooping backward. It is bright crimson, but the rest of the plumage is glossy black, and relieved by patches and markings of pure white.

They are beautiful, noble-looking birds, and much valued by the Southern Indians, who sometimes make entire belts of their crests and claws, which have a barbaric elegance.

The Black woodpecker is the largest species in the Northern States, and is found throughout North America. It is called the "log cock." It is of a dull black in color, having a greenish tinge, with a narrow white streak from over the eyes to the back part of the head, and a wider one beneath. The crest is crimson, and there is a crimson patch on the cheek, the under part of the wings and the chin being white, with a tinge of yellow. We have all seen him at work in the soft autumn days, turning his pretty head this way and that, to examine with both eyes the promising indications of "game" upon some half-dead tree.

The Red-head is of a blue-black, with both head and neck a bright crimson, and has a broad band of white across the wings; from his brilliant head this species is perhaps better known than any other. He is also more popular, as he is not at all shy, and may often be seen at the roadside, running along the tops of fences, and hiding behind some branch or post until you have passed, and then uttering a loud, quick note, as if of triumph at having escaped you so nicely. He is the most light-hearted and gay of any of the woodpecker family; does not trouble himself about work, but prefers to feed upon the result of other people's labor, and helps himself to cherries and all small fruit with a nonchalant indifference to the rights of property, which, in

YELLOW-BILLED WOODPECKER FEEDING.

a crow, would be thought unpardonable. He seems to have no shame about it, for he will sometimes carry off a small apple spiked upon one mandible, as though it were a rightful trophy of skill.

Audubon vouches for the truth of the story that one hundred of these madcap fellows have been shot by some hard-hearted individuals, upon one cherry tree in a single day.

He has another habit, to the evil nature of which a bird's conscience should certainly be sensitive, that of destroying eggs in the nest. For this, we can not apologize. We are afraid the closing words of the little poem from which we have already quoted are quite true:

"A red republican is he,
Who laughs, and steals, and fights,
And from the fruit tree's highest limb
Harangues about his rights.
For 'tis a melancholy truth,
Not in birdland alone,
That those who trample other's rights
Still clamor for their own."

Even Audubon, whose partiality is such that his reluctance to give them a bad character appears in every line, is obliged to admit that they are not to be trusted; while another naturalist, less tender of their reputation, says in plain English, "They are arrant thieves."

The Pileated woodpecker of Audubon is one of the fiercest species. It is extremely shy, and apparently incapable of being tamed. They will destroy a stout wooden cage with their powerful bills in a few hours, and if they obtain their liberty from the cage, only to find themselves still prisoners in a room—to them, only a larger cage—they will fall upon the wooden furniture with fury, and endeavor to tear it in pieces. When taken, they fight fiercely with bill and claws, and their captors are reduced to the alterna-

PILEATED WOODPECKER. YOUNG MALES.

tive of killing them or setting them free. But the limits of this paper forbid more than an outline of the leading characteristics of these interesting birds. If one would become really acquainted with them he must seek their society and observe them for himself. Nor is it necessary to wait until the spring brings back the leaves. Many of these hardy huntsmen do not fear the winter of our northern climate, for they venture even amid the rigors of the Arctic regions. They may often be seen upon dead trees in the midst of winter snow, seeking their food, and hanging in unaccountable positions upon the branch of some vine not quite denuded of fruit. They assume all kinds of positions, and are often noticed clinging (as the one seen in the engraving, p. 185) to the branches of the bush upon which it is feeding, feet upward. In standing upon the tree while at work the tail is used as a bracket, and in supporting the body the feathers are frequently worn and ragged, and sometimes quite short.

The woodpecker is found all over the world, and it is believed that not nearly all the species are yet known, numerous as they already have been found. An Arctic species (Picordes Arcticus, Baird), is an exception to the rule of four toes, having only three. In these high latitudes they find a scanty living in the forests of pine and spruce by tearing open the cones and extracting the seed. C. S. NOURSE.


## LIGHT IN DARK PLACES.

"This mournful truth is everywhere confessed,
Slow rises worth by poverty depressed."—SAMUEL JOHNSON.

### CHAPTER XXI.

#### ANOTHER FAMILY COUNCIL.

A WEEK had passed since the document penned by the young girl had been delivered to the leading officer of the Mission, and no report of the committee's decision had found its way to the Camp household. Sadie was beginning to feel uneasy and anxious about that decision, particularly on account of an announcement that Messrs. Blossom & Gaff meditated the discharge of half their hands because short of work.

"Don't let unpleasant expectations render you despondent, dear child," admonished Mrs. Camp one evening when Sadie had recurred to the subject of the purposed dismissal of so many of the bindery girls, and her fear of being included among the number.

"How can I help feeling downcast, mother, not only on our own account, but because I know that most of the girls there have no other dependence besides their daily work? I am sure that either Betty or I will be discharged. Betty isn't much liked by Briggs, and Mr. Gaff hasn't spoken to me since I refused to go to the Park. I think, too, that he has said something to the foreman about me, because Briggs isn't as attentive to me and my work as he used to be, or else those two new hands, the Smalley girls, are more attractive."

"Beware how you speculate, Sadie; your feelings may betray you into careless gossip and recrimination, even when you think you have good cause for complaint. But whatever may come, let us be brave and hopeful. Think of the many poor creatures almost within the sound of our voices who have but a crust to eat, and not a gleam of

brightness in the future, while there are many resources left to us; resources supplied by our intelligence, and by a certain trust in our Maker. Encourage no tendency to borrow trouble, to live in an anxious, brooding tone of mind, dreading possibilities or probabilities of need and suffering. Don't let that large organ of Cautiousness get the mastery of your practical judgment, my love, but endeavor to master its gloomy forebodings wherever suggested."

"It's hard, mamma, to conquer the gloomy thoughts which sometimes come into my mind. But I try ever so much to look on the bright side, and not to worry about things which have not taken place. Isn't it strange, mother, that we haven't received a word from the Mission?"

"I don't know, Sadie, that it is *strange*. There have been many applications, and it is likely that the committee has not had time enough to examine all of them. The gentlemen who transact the business relating to the management of institutions like the Mission, usually have a world of cares resting upon them, their own business, family matters, and various official connections, so that their time is filled with work of one kind or another, and they can not always respond at once to a call to attend a meeting. So it may be, that in this case engagements have prevented the committee from assembling this week."

"Really, mother, I don't count much on the appointment, after what the Secretary told you about the applications, but I don't like this being in suspense."

"I tell you," exclaimed Norton, who had come in while his elder sister was speaking, "if you don't get that teacher's place, Sadie, it won't be because Mr. Stanley isn't doing something about it. Yesterday when I went to Taylor & Stanley's there was a gentleman talking with him in the office who had a long black coat, and a great stiff collar, and white necktie such as ministers wear; and I heard him say to Mr. Stanley, 'He's got a woman in view, but I'll do my best for that girl.' And Mr. Stanley smiled and patted him on the shoulder, and said something in reply which I couldn't hear. You know he's not a loud talker. The other gentleman spoke very loud, just as most ministers do."

"It is because of the habit acquired by them when preaching or speaking to their congregations," said his mother.

"In a few minutes," went on Norton, "the minister left, and Mr. Stanley came out, said good-morning, and asked me if I knew the man who had just gone out. I said, No, sir. Then he said, 'That's the Rev. Dr. Phillips, one of the head men in charge of the Mission.' I said that I'd never seen him there, and Mr. Stanley told me that he was the pastor of one of the biggest churches in the city, and hadn't much time to spare outside of it on Sundays. And I'm sure that he'd been there to talk about the school."

"My children, don't be quite so ready to think that what deeply interests you other people must be interested in. But mother will be frank enough to say that she believes Mr. Stanley would not be slow to use an opportunity in behalf of Sadie."

"I love Mr. Stanley," said Dell, "he talks so nice to me. Don't you, Sadie and Nortie, love him?"

"You can bet I do," cried Norton. "But, mother, I didn't tell you all he said to me yesterday. He wanted to know if I'd go to school in the winter, and I said that I didn't know; that I studied some at home, mother setting the lessons, in arithmetic, geography, history, and language. Then he asked with a laugh if I could answer a question, and gave me this: 'If a pumpkin and a half cost a cent and a half, what would a dozen cost?' I answered, 'Twelve cents,' and then he said, 'I see I can't catch you.' I told him that I could cipher in fractions, and that you had taught me some short ways for multiplying some compound numbers. Then he asked me to multiply one and a half by one and a half, and I told him two and a quarter. He said: 'How quickly you calculated it! Tell me your method.' Why, I said, I multiplied one by two, and added a quarter. 'Well,' said he, 'multiply six and a half by six and a half.' I told him it would bring forty-two and a quarter, and that all compound numbers up to twenty, of which the fraction is a half, when multiplied by themselves, could

be done the same way; that if he multiplied the whole number by the next higher whole number, and added the quarter fraction, it would be the right product. He said that was a new idea to him, and if I kept on I'd become a great mathematician."

"I trust that you were not trying to appear smart, my son."

"No, mother, I only answered Mr. Stanley's questions, and when he stopped them I said Good-bye to him and came away."

"Nortie, I can say 'Three times one are three' now. Will you hear me?"

"I'd like to live with Mr. Stanley, wouldn't you, mamma?" inquired the little girl artlessly.

"Mr. Stanley lives with his sister, and has two little niece girls who love him," replied Mrs. Camp.

"Yes, mamma, but he has no nice home all his own," persisted the little girl, "and the little niece girls have a papa of their very own. Couldn't I be his little girl, if you, and Sadie, and Nortie, and Mr. Stanley all lived together? I think it would be very nice. And we wouldn't be here in this place."

MR. GAFF AND SADIE IN THE SHOP.

"Yes, Dell," and the little girl at once commenced to repeat that installment of the multiplication formula in such a rattling way that they all had to laugh. Dell, however, went through it, making only one mistake. "Three times eight are twenty-five," and when Norton corrected her, said:

"Oh, yes, I mean 'twenty-four,' but, Nortie, you know the number of Mr. Stanley's store is twenty-five, and when I think of twenty, five pops upon my tongue."

"I guess that we'll have to give Dell to Mr. Stanley," exclaimed Sadie.

"My darling, we can be happy anywhere, if we only accept the lot given us by God. Perhaps ere long we shall have more of the things we think pleasant. Let us wait patiently."

"If sister gets the school, and I get a place, then mamma will be rich enough to live up near Washington Square. I heard a boy say that real good rooms could be got up there in Macdougal Street for eight dollars a month, and a whole floor for twenty. How nice it would be so near that pretty park."

"Could I go into it and play, Nortie?" asked Dell, the thought of out-door enjoyment dancing in her eyes.

"Why, yes, it's a great public square, with big trees, and ever so many seats, and a splendid fountain in the center. I've been through it many a time, and there's most always a lot of girls and boys playing, and having great fun in it."

"Oh, I wish that we did live there! But I guess," the child continued thoughtfully, "if mamma can stay down here and be happy, Dell can too."

## CHAPTER XXII.

### THE JUNIOR PARTNER AGAIN.

THE edict had been published. Mr. Briggs at the close of a day's toil sullenly announced to the weary girls that "next Saturday night one-half of the hands would be discharged; old Blossom had ordered it, as they wasn't makin' enough to pay running expenses."

The next morning, shortly after work had begun, the junior partner came into the shop and walked slowly through the ranks of busy sewers, glancing at each in turn. All instinctively felt that he was singling out those who should be discharged, and eager eyes slyly watched his face as he proceeded. A light remark, accompanied with a smile (although Mr. Gaff's round and florid face usually wore a smile, especially when he was among the bindery hands), was taken as a happy omen for the girl to whom it was addressed. He lingered a moment to chaff with the Smalley girls, asking them his stock question, "Are you sewed fast yet?" and then approached Sadie's bench. Stopping there he remarked:

"I suppose you are sorry about the order Briggs gave yesterday? Well, we are sorry too; but it can't be helped. Business is going to nothing."

"Of course, sir, you must do what is best to keep the shop going."

"Yes. Blossom was at first for sending off all hands till we got in some fresh jobs, but then we considered that we had B——'s magazine and circulars anyway, and they would keep a dozen going two weeks in the month, and the other odds and ends might help float us if we shut down to half the force."

Mr. Gaff's confidential manner was certainly assuring; and as Sadie, like most of the shop girls, never discerned much in the man to command a deep respect for him, especially since his repeated invitations to drive to the Park with him, she replied in a tone which scarcely veiled the sarcasm she intended.

"Indeed you are kind to us, sir, knowing, as you must, that so many here are dependent for support altogether upon the wages paid them. Of course you will consider their circumstances and not discharge all of those who are so dependent."

"Oh, we will do the best we can. We'll keep the best of them; that's for our interest, you know. By the way," he continued, in a manner intended to convey the impression that for her interests he had, at any rate, an earnest regard, "you know Briggs has a good deal to do with deciding matters like this, and I see that on his list he's got your neighbor Betty's name as one to be marked off."

"Oh, I'm very sorry to hear that, sir."

"I knew you would be, and would just say here that if you'll show a little more consideration for the gentleman at your elbow I'll see that she's retained."

"How do you mean, Mr. Gaff?" asked Sadie quickly with deepening color.

"Only show a little acquiescence in my wishes and invitations when I make them."

Sadie made no reply, but her lowered face and trembling fingers indicated her emotion.

"What may I expect for this accommodation?" he insisted.

"I can do only that which my conscience and my mother shall approve, sir," replied the maiden emphatically, although in a half whisper.

"Oh! um!" muttered the junior partner, and walked away, with his hat on one side.

It was a rainy day, and Sadie had provided herself with what she needed for a dinner at the shop, and having leisurely disposed of it in the nooning, she went to

the foreman's little office and requested a few minutes' talk with him.

"Mr. Briggs," she said, "would you think me impertinent if I asked something about the reduction of hands?"

"I guess not," replied that worthy. "I needn't answer what isn't for any of the girls to know."

"Certainly not, Mr. Briggs. But perhaps you would tell me whether Betty Sniven is among the number to be discharged?"

"Well, you're a great friend of her'n, but if you'll say that you won't let on anything about it, I'll tell you what's up."

"You can depend upon me, Mr. Briggs."

The foreman was evidently nettled about something which had lately occurred, and Sadie's respectful demeanor in addressing him quite won him to confidence; so on the young girl's assurance he said:

"We had concluded to drop her 'mong others; but this mornin' Mr. Gaff told me that we'd better keep her on and let somebody else go in her place."

"Oh, I'm very glad, Betty is such a good hand; and there's her poor invalid father, who looks to her for a good part of the family's support."

"I don't know who'll go in her place yet. Gaff's in for sending off most of the fine hands, 'cause we have only coarse work, you know."

"Thank you, Mr. Briggs," said Sadie, and returned to her seat, and picked up a book with which she designed to fill out the remainder of the noon-spell. But she was not permitted to have her way, for half a dozen girls tripped over and eagerly asked:

"Say, who's a-going? Did Briggs tell you?"

"No, he did not tell me, girls, who are going."

"Didn't you ask him about yourself? Oh, I know you did," said a hoyden.

"No, Maria, I did not."

"Come, now, don't be so offish; let's know what he said."

"I merely went to speak to the foreman of a matter that is of no personal interest to any of you," replied Sadie, calmly.

"Oh, she thinks that she won't be discharged, of course," said one of the Smalleys, who had joined the group.

"I guess, Virgeenyer, that's what you're thinking yourself, as Gaff was so sweet on yer this morning!" exclaimed the hoyden.

Virgeenyer tossed her much-braided head and deigned no answer to this insinuation.

An excited cross-fire of personalities ensued, which Sadie interrupted quickly by saying:

"Really, girls, I think that my chances for staying are no better than any of yours; and the prospect is by no means a pleasant one for any of us, as we all need the little we get for our labor here."

"That, indeed, we do," rejoined several at once.

"And as we can't help it," went on the young counselor, "let's be patient, and put our trust in God to help us out of the trouble. Scolding and complaints don't mend a broken pitcher; but I've known mother to mend one my little sister had broken into five or six pieces with some cement, and it held water as well as before."

"Thrue for you," put in a bright, Irish hand; "it's not givin' up, but goin' quietly on and doin' yer best that helps one out of throubles."

"All very fine preachin'," rejoined another; "but I—"

Briggs' bell sounded the hour for resuming work, and the discussion was terminated.

## CHAPTER XXIII.

### SADIE'S LOSS AND GAIN.

THE walk homeward that evening was pursued by Betty and "Sal" (although in company) with very different feelings. The former appeared to have lost a good part of the practical philosophy which it was her wont to display, when the conversation turned on present condition and prospects, so that her allusions to the course of Messrs. Blossom & Gaff were tinctured with bitterness, and she expressed the expectation of being one of the "gals" who would be "counted out" Saturday night. She was "pretty sure of it, and then what

would she do?" Sadie, on the other hand, experienced an elasticity and a freedom mentally which were unaccountable to her, and sought to cheer up her despondent companion, representing the value of her experience to the firm, and her impression, which owed most of its strength to the noon-time talk with Briggs, that the foreman was too wise a man to turn out such a faithful hand. Betty's face, however, wore a rueful air when they parted at the old corner, and Sadie tripped on, and as she ascended the stairs of No. —, hummed a scrap of an air she had learned from the organ-grinder who perambulated that part of Prince Street nearly every night.

"Dell has somethin' for sister Say," was the salutation of the little girl soon after her "big sister" had entered, "and wants two great large kisses for it."

The kisses were given, and the mercenary child produced from under her apron a formidable-looking envelope, on which was addressed, in equally formidable characters, "Miss Sara J. Camp, care Mrs. L. Camp, No. — Prince Street, New York City."

"What's this, darling?" and Sadie hastily turned the document over, scanned the address two or three times, and then picked up her mother's scissors, which were lying with an unfinished article of dress on a chair, and neatly cut off a narrow strip of one end of the envelope and drew out a folded sheet of "legal cap."

"Must be important, mother!"

"Very likely; so much cover and such fine paper," replied that lady in a humorous tone.

"It's from the Mission, mother dear. Listen:

"'DEAR MISS CAMP: The Committee on Education of the —— Mission have examined your application to fill the vacancy now existing in our school, and have directed me to notify you to present yourself at this office next Monday morning at 8.30 A.M., prepared to commence the work of teaching class No. 2.

"E. HAMMOND, *Sec'y.*'"

"Oh, aint I glad, *aint* I glad!" shouted Dell, dancing around the room.

Sadie's large eyes were dimmed with joyful tears, and for a few moments she was unable to speak. As soon as she could command her countenance, she said:

"Mother dear, I had scarcely expected this; had you?"

"No, my love; yet I hoped for your sake."

"Oh!" cried the still dancing Dell, "I know'd she'd get it! I know'd it, for didn't Mr. Stanley say he'd help?"

"You sweet, little mischief, you seem to know more about matters than we who are so much older!" exclaimed the happy maiden, embracing and kissing the child.

"Mother, just think, to-day I had an interview with Mr. Briggs. I went to him to inquire about Betty. She was so dejected on account of the notice given yesterday, that I felt that I must do something in her behalf; and so I asked him if it would be improper to let me know whether or not Betty was to be sent away. On my assuring Briggs that I wouldn't impart the information to any of the girls, he intimated that she would be retained; and from his manner I concluded that there were some doubts about my own seat. Mother! I had made up my mind that if Betty were to be discharged and I kept, I would offer to go in her place, for they will have plenty of common or pamphlet work, and Betty is one of the best hands at that."

"A generous spirit, my dear girl," remarked Mrs. Camp. "I don't know what other prospect for dependence the Snivens' would have, for a time at least, besides public charity, if Betty should lose her place in the shop."

Norton here entered the room in his customary hop-skip-and-jump manner.

"Am I late, mother?"

"Yes, Norton, quite late."

"Well, mother, I've been over to Bumpy's —Larry's— I'm going to call him Larry after this, for that's his name; and I have commenced to teach him writing and arithmetic. I think he'd make a real smart man if he could go to school. Don't you, mother?"

"Yes, my son, I certainly do; and I am glad that you have decided to help him

toward an education. His vicious qualities are mainly due to improper associations and lack of training. But, Norton, don't forget your own habits of punctuality in your interest for Larry."

"No, mother, I wouldn't have been late to-night, but I mistook the time. I looked over at St. John's on the way home with Larry and read half-past five when it must have been twenty-five minutes past six. I'll look sharper next time. But seems to me something's up—Sadie, you look so happy. What is it, Dell?"

"Oh, I know, I know! Dell's going to school next Monday," half sang the child.

"I guess I know too," returned the sharp-witted boy, turning to his smiling, older sister. "Sadie's got the appointment. Jingo!—no, mamma, I didn't mean that—but isn't it good?"

"It is a very happy thing for us, my boy."

"I *knew* it would be so."

"You, too, were very sanguine about it; but, Nortie, it is not always wise to be *sure* in one's expectations when one doesn't control circumstances. It is right to be hopeful and look for good results when we are working toward an object, but over-confidence is not a healthful sentiment for one to cherish."

"But, mother, didn't I know, and didn't you know, that Mr. Stanley was taking Sadie's part?"

"You seem to think Mr. Stanley an all-powerful influence," replied his mother pleasantly.

"Well, he's such a nice man, I don't see how people can help doing what he asks them."

"People generally prefer to act in accordance with their own wishes and interests, and not to do what nice men ask of them," said Sadie sententiously, and with the air of one who knew something of the ways of the world.

"You are right, my love, to an extent," said Mrs. Camp, who observed the young girl's air with some amusement; "but when you shall have become better acquainted with the world, you will perceive that the great majority of people are controlled by a few dominant spirits, and do not practically carry their own wishes and aims into effect. But, Norton, you must be hungry; we've had our supper. You will find yours in the pantry."

"I've scarcely thought of it, mother. Although when I came in I was as hungry as a bear. I guess the good news must have taken my appetite away; but I must have a smell of the pantry."

"Mamma!" cried Dell, "won't you make a fruit pudding for Sunday, 'cause Say's going to teach in the Mission?"

"Yes, mother, do, to cele'rate the 'casion," mumbled Norton with his mouth full.

"And invite Larry and little Mickey—"

"And Betty's sick father. Yes, do, mamma," interrupted Sadie. "Why, mother, Mr. Sniven is actually getting better; has been out two or three times. Betty says it's all on account of the change in their diet. Since he's stopped eating meat, and commenced bathing and rubbing his limbs, the inflammation and swelling have subsided, and he feels like another man. He told me Tuesday morning, when I called for Betty, that he wouldn't give his breakfast of oatmeal and baked apples for all the roast beef and corned pork in the country, and that he believed it was the meat which he used to eat three times a day that kept up the heat in his blood."

"He was not far wrong. Rheumatic people shouldn't eat much, if any flesh meat, or anything that tends to heat abnormally the blood, and so excite the nervous system."

"It's funny that people who are sick will keep doing the very things that made them sick, isn't it, mother?"

"They are unacquainted with the causes, Norton."

"Well, they ought to learn."

"How *can* they learn, Nortie, unless they are instructed by those who are acquainted with the principles of physiology?" remonstrated Sadie.

"See here, Sadie, ain't one's health the most important thing? How's a fellow going to work and do what he should without being well? Then it's his duty to

learn how to keep himself well, and everybody should read about themselves in the books like what mother has; and the doctors and the ministers should teach people all about these things. If you'd see the things boys and men eat at the free lunches, you wouldn't wonder that they get sick so easy. Mother, I just think that the police should stop men from giving such mixed-up stuff to eat. Why, it's real poison."

Norton spoke with all the energy of his impulsive nature, and mother and sister couldn't forbear smiling at his enthusiasm.

"We'll have to make a missionary of Norton, won't we, mother?" said Sadie.

"Yes, a missionary of hygienic reform, which he can be, whatever his sphere."

(*To be continued.*)

H. S. D.

## MY HOME KINDERGARTEN.

No. II.

DEFERENCE and respect for age, learning, and high character were taught Dora in her early youth. A thoughtless or careless disregard of the feelings and opinions of elders and superiors, marks the youth of the present day. During the last century, children were too much repressed, now they are too free. In three-fourths of the homes children hold the first place, instead of being in their natural position of second and subordinate. Petted and unduly indulged, vain and forward by being much noticed and praised, they make extravagant, conceited, selfish men and women.

I began early with Dora to teach her the right. If she had not obeyed promptly in every respect I was grave and distant with her; and, while not treating her unkindly, did not caress her in any way till she fully understood the cause, and how she could be restored to favor. A few such lessons were sufficient. Like all children, she must have some one to love and cling to, and when she felt that her offense withdrew attention and evidences of love, she was willing to ask pardon and refrain from offending. As soon as seemed practicable she was taught the existence of God. And by teaching her His power and goodness in providing for her the good and beautiful things of earth, and His sorrow at our forgetfulness or disregard of His commands, she became so impressed with His grand and lofty attributes and unvarying kindness, that from her sixth year she would think of God's disapproval or pleasure in her, as readily as she thought of her parents; and as this feeling increased with her years she feared doing wrong, and I had no difficulty in controlling her.

As an aid to self-government, I taught the child texts and rhymes embodying lessons of right and fear of wrong. She was never told stories of "naughty" children who were punished for wrong-doing of which she knew nothing, and in which, by the very tale, she would be instructed. But she was always incited to good by hearing of the good. Thus by sowing seeds of moral wheat, omitting tares, in these early years before opportunities of learning evil had come, I trusted to having the right attain a good growth, striking down deep roots heartwards before evil seeds should be scattered and spring up.

It is not possible to calculate how much less evil would exist in the world if all parents paid attention to the moral culture of their children. Christian parents, even, rarely teach their children about doing right, and trying to serve God by obeying them, pleasing one another, and doing to all as they wish to be done by. What is becoming, or fashionable, or expedient, in some worldly sense, is much more dwelt upon and oftener taught the young by those professing to have renounced "the world and its works," than what is just and right.

I continued teaching Dora fine hymns, verses, and poems for several years, till her memory was richly stored with the choicest gems of literature. The habit formed, she continued learning whatever pleased her, and now has a mine of poetical knowledge which she considers invaluable. A mother can make so much of these earliest child-

years, if so disposed; if not, the youthful mind may be left to the chance of being filled with the wild, foolish tales of ignorant servants and the slang phrases of the street.

Dora learned reading without tears or heart-ache, by lessons of a few minutes in length. Many children take a dislike to books and reading by being forced to study and learn what is not comprehended by them, or awakens no interest in their minds. Dora acquired the alphabet in a few days from blocks, by asking her to find A or O, or to pick up and bring M or D, and similar easy devices. Thence was a short step to arranging the blocks into words, names of animals, and household objects; thus, "line upon line," she learned the elements, and the delight of reading stories and finding out something new led on to proficiency. I took great pains, in connection with spelling, to teach the sounds of the letters, daily practicing the vocal elements, difficult consonant combinations, and syllables.

To read well is a noble, though rare accomplishment. All will not read equally well. Some have not, by nature, a melodious voice; others have not the capacity to understand thoroughly and appreciate all writers; some will not undertake the requisite study. But the great reason so few read well, is because they have been taught erroneously. The first sentences children spell out are in fragments; these should be read over to them again by the instructor, and they should repeat till they speak the whole easily and naturally. This course persevered in, though tedious to the instructor, will be successful. When a proper tone is gained, and the subject read is interesting, there will be no further trouble. The child will read as it speaks, and hence must read well.

One rule was invariable, that each bit of knowledge must be mastered before passing to anything else; it saved time and taught thoroughness. Ralph, who came to us two years after Dora's birth, claimed a share of my thoughts and time, but as I managed him in much the same way that had proved successful with Dora, the only trouble was to accommodate myself to the added noise of the nursery, and the additional demand upon my time.

Young children ought never to undertake many branches at once; they should have a necessary variety, but not enough to distract and divide the attention. From five to seven, Dora learned the alphabet, the spelling of some hundred short words, reading in words of one syllable, the notes and a few five-finger exercises upon the piano, and drawing of straight lines. These were given as amusements rather than as tasks, to please "mamma," or to show "papa." In this way the little creature acquired much necessary knowledge, without any irksome restraint or undue exertion of the mind. From seven to nine years of age my daughter had two daily lessons of fifteen minutes each at the piano, and the same time was given to reading music without the instrument. Twenty minutes daily was occupied with drawing, perhaps ten minutes were used in writing, half an hour each morning in reading, then spelling of every word in the lesson, and a talk about the subject read; thus two and a half hours were daily devoted to study. During these hours all save our books was laid aside, and every thought foreign to our occupation was excluded.

At nine years, Dora began arithmetic and composition. The school hours were increased to four.

In order that Dora might become as good a musician as possible, I began when she was but a babe to sing and play for her as long as she seemed pleased and interested; by thus accustoming her to the sounds of the instrument, her natural taste improved and by study she afterward became a correct musician. The custom of hearing music in childhood develops taste very much, and to ensure good fingering, practice is required while the muscles are pliant and easily trained.

Music, as usually taught, is of slight value as a means of intellectual culture. As the majority of girls learn it, it becomes too much an art and too little a science. They learn to finger a score or two of airs, schottisches, variations, and other popular trash, and their musical education ends. They have not sufficiently mastered the science to enable them to learn new music without a master; the music learned "gets old, and

old-fashioned." The piano remains closed for weeks, then months, and finally is disused altogether. The little musical education which their fingers received, and not their minds, slips away and soon they can no more play than the veriest tyro.

I taught Dora the rudiments of music myself; afterward she had a master. As my method succeeded well, I will describe it. First I taught the keys upon the piano. Then drawing a staff, I taught the child the notes upon the treble. And every day she copied it over and over in whole notes, in half and quarter notes, until she knew the line or space to which each letter belonged. During this time she practiced her left hand alone upon a finger exercise. This was done to strengthen the left hand and make it equal to the right.

When my pupil could read the bass and treble notes quite easily, and the left hand had become quite tractable, she played a little lesson of the very simplest finger exercises twice each day, keeping the same lesson a fortnight. This was continued during her seventh year. She had no large, formidable book before her, only a loose page or two, so that she never was discouraged by the amount yet to be learned. During her eighth year she learned something of chords, of reading with flats and sharps, and the easier scales. In her ninth year she began the "Method," and instead of being a dry, hateful task, her lesson was a pleasure and an amusement. After six months' farther practice she took a few easy airs in slow time. Many music pupils acquire bad fingering and utter disregard of time, accent, and expression, by trying to learn quick music before they have gained sufficient control of their fingers.

When she had gotten beyond me, I resigned my charge to a music-master who was competent to teach Mendelssohn, Mozart, and Beethoven, whose noble works elevate, purify, and educate the soul. Trashy music harms and debases the mind and morals equally as much as trashy reading does; and both should be carefully shunned. There are light, graceful, pleasing works of each sort, that may amuse and charm the soul when too weary and sad for anything deep and intricate; but for profit and lasting culture, one goes to the old masters in music, just as we go to the old sages, Shakespeare, Milton, Plato, Goethe, Dante, in books. Two or three terms in music amount to no more than two or three terms in reading would. Years of study in each science are required to give proficiency.

In the same thorough manner Dora learned drawing. The first year she made straight lines only—in every possible direction and combination. The next year circles and curves in all the various forms of leaves, fruit, and flowers, then outlines of the different pieces of furniture in use about the house. These exercises were all drawn upon the child's slate. In the fourth year of progress, Dora was furnished with pencil and paper, and copied drawings with shading, in connection with drawing from nature. When I felt I could no longer aid her, she passed to the instruction of an artist, whose first, last, and only models were made by the Great Artist himself.

The result of this careful training has been to fill our homes with pictures that are a source of enjoyment to all who see them, besides the endless store of pleasure Dora derives from the study of nature in all her various aspects, and the works of true artists. Undoubtedly more money is expended on music and drawing, with less satisfactory results, than upon any other two branches of learning, and this lack of success may be mainly attributed to want of proper elementary training.

The knowledge of drawing which boarding-school misses usually acquire is very slender. Instead of commencing with the straight line, and progressing gradually and surely, they are set to work upon a landscape or figure, and, after drawing and erasing, erasing and drawing, with much assistance from the teacher, they manage to produce some "pictures" which are forthwith framed in gilt and occupy a conspicuous position in "Mamma's drawing-room," and "Jennie," or "Gracie," or whatever "*ie*" she may be, could not, without the teacher's aid, make another passable copy, if life were the stake she worked

against. Such study of drawing is almost wholly worthless as a means of culture.

If drawing were taught in our schools as it should be, and especially in our public schools, where our embryo artisans and architects are educating, we should soon see a change in the designs of carpets and curtains and wall-paper, in the patterns of lawns and chintzes, in the forms of dishes, vases, and furniture, in the architecture of private residences and public buildings. In everything we should note improvement and receive added pleasure from every article of use or luxury. A knowledge of the proper combinations of color should early be taught to all children. Few persons know anything of the harmonies of color. Not one mother or teacher in a thousand ever directs the childish mind to see and appreciate the exquisite coloring of natural objects. The tender, soft, or divine blue of the sky, the golden, amber, and rose tints of sunset, the fleecy white of the clouds, the lovely and unnamed shades of foliage, the blaze of the autumnal hues, the holy coloring of the flowers are unnoted by, and unknown to, the sealed eyes of more than half the world. But a great part of the charm of Nature lies in her unrivaled colors, and as we ought to educate every soul to extract as much pleasure as possible from life, the greatest care should be taken from earliest youth to study, learn, see the gradations of hues, the blending or contrast of tints, the broad fields of color that Nature lays upon sky and wood and sea.

AMELIA V. PETIT.

## INSPIRATION.

Are we but harps, swept by some unseen Hand?
Flutes, hollow and mute before the magic Wind begins,
And after it has ceased, its play?
Organs, with pipes and keys all set to music's use,
But all unchanged from day to day
By any melodies, however grand,
The Master sounds through them?

Or are we conscious players, given the score
Of an unending symphony to learn and make alive
To every listening ear around—
Players whose clumsy fingering at the strings of sense and thought
Grows clear and skillful as the sound
Grows into harmony that more and more
Tunes us to its own key?

Are we not both? Fitted to give forth airs
We neither make, nor mar, nor weave into our conscious life;
But fitted also to run fast
And overtake the song that sings through us, and play its notes
Over and over, till at last
Our common life its crown of music wears,
While in our ears sound melodies beyond?

ANNA C. GARLIN.

## NOVEL-READING.

IT'S quite wicked. People who have never read a novel in their lives say so, and they ought to know. No discriminating in this business; all novels are bad, and all novel-readers reprobates. And yet some of the highest resolves and holiest emotions of our heart were awakened by the pen of the skillful novelist.

"By their fruits ye shall know them." A tale that awakens not the finer feelings, but panders to the groveling tastes of the baser ingredients of mind, is one to be condemned as a bad companion, and its author to be banished from the reading circle.

While such a large majority of books and periodicals belong to the latter class, it does not cancel the fact that we could ill afford to make a bonfire of *all* the "light literature" extant. Some of it is heavier than our wise dissenters think. While with them we would cheerfully destroy ninety-nine popular novels out of a hundred, we would hold on to the hundredth and say, "Lay your fingers on it at your peril!" But we would welcome the day that should witness the publication of a sufficient number of fictitious works of the character of the surviving hundredth to take the place of the

smouldering ninety and nine. While in these novels we would suppress all the demons and adventurers, pirates and wreckers, whose attributes awake the evil of our own natures, we should certainly leave them open to the objection of being "love stories."

Not that love and marriage should be the alpha and omega of the tale, but a kind of golden thread woven in as a matter of course, to make things natural and the story readable. So much condemnation has the great mass of corrupt eruptions from the press called down on the cause of fiction, that many persons, more conscientious than wise, have taken it on themselves to denounce everything of a fictitious character, putting, as a test, the question, "Is it a love story?" I wonder how many people are extant who have no love story of their own to pour into the ear of a bosom friend in a confidential hour? How many people are there whose biography could be exhaustively written without embodying a few private theatricals?

A good novel merits our respect, because on it is employed the highest order of talent; also, as civilized beings are generally supposed to talk and write, there could be no more elegant criterion by which to be guided in these accomplishments than the language of a first-class novel. The graceful conversation of the heroines, the manly and gentlemanly sentiments of the heroes, the sharp wit and apt humor all around, give the reader an enchanting view of the beauties of conversation, excite a spirit of emulation, and give us higher ideals of moral and intellectual excellence than we should ever have dreamed of, had our reading been confined exclusively to prosy essays, history or biographies of "great and good" people, to whose heights it would seem like presumptuous folly for us to aspire.

MINNIE MYRTLE, JR.

## THE LATE POPE PIUS IX.

ON the 7th of February an event occurred which had been long expected, in fact since 1875. We refer to the death of Pope Pius the Ninth, the head of the Roman Catholic Church. He had occupied this high place for thirty-two years, a period replete with events of importance to the religious and political world. For upward of twenty-five years dissension and faction shook the Italian States, until Victor Emmanuel entered Rome as a king of a united country and the hierarchy of the Vatican was entirely shorn of its authority in temporal affairs.

John Mary Mastai-Ferretti, as he would be termed with Anglo-Saxon brevity, or Giovanni Maria Giovanni Battista Pietro Isidoro Mastai-Ferretti, as he was named after the fashion of Italian luxuriance, was born on the 13th of May, 1792, at Sinigaglia, on the west coast of Italy. He was the youngest of seven children born to the Count Girolamo Mastai-Ferretti. While a little child he was saved from drowning by a playmate. At a later day a violent form of epilepsy declared itself and brought him to death's door. Upon his partial recovery from this great infirmity his mother, impressed by the feeling of gratitude to heaven for his deliverance, devoted him to the service of the Church, and his studies were directed to this end. While visiting Rome as a young man he laid aside his clerical dress out of respect to the prejudices of Napoleon Bonaparte, who had just made his kinsman, Pope Pius VI., a prisoner. Napoleon conceived the purpose of forming a "Noble Guard," in whose ranks the aristocratic youth of Italy should be enrolled, and the names of the young ecclesiastic and his brothers appeared upon the list of the chosen. As soon as he was released from military duty he resumed his theological studies; yet his biographers generally have been misled by this circumstance to the assertion that he had once marked out for himself a military career. Being disabled, while pursuing his theological studies, by the frequent recurrence of epileptic fits, it was doubted if the state of his health would ever justify his ordination to the priesthood. But having performed a successful work among the country

folk about Sinigaglia as companion to Monsignore Odescalchi in a missionary tour in that quarter, his ordination as sub-deacon was celebrated, and in 1819 he was raised to the priesthood. In 1823 he accompanied Monsignore Muzi, the apostolic delegate to Chili, as his secretary, and labored to considerable purpose among the Indian tribes of the interior. On his return to Rome he became domestic prelate to Leo XII., and was named as Archbishop of Spoleto in 1827. Three years afterward he gained some notice as a diplomatist by inducing a body of four thousand insurgents to surrender their arms to him and obtaining their pardon from the authorities. In 1832 he was made Archbishop of Imola, and Cardinal in 1840.

His missionary experience in the new world appears to have wrought a marked change in his health, as he was at this time in the possession of a robust frame and showed every appearance of vigor. His character is thus summed up by a writer: "He was careless in the use of money, of kindly temper, charitable to the poor, and inclined to the popular side in the conflicts

of the Italians with Austrian power. Though not in sympathy with revolution, he favored political reform. The Churchman had not wholly suppressed in him the Italian."

Pope Gregory XVI. died in 1846, and before any serious opposition could be brought to bear, Cardinal Mastai-Ferretti was elected to the pontifical office, with the title of Pius IX.

The time was critical. Discontent pervaded Europe, but Italy had griefs of her own. The partition of her territory by the conquerors of 1815, and the restoration of absolutism throughout the peninsula, had deepened in the minds of Italians the hatred of foreign rule and arbitrary power.

Pius, as a member of the moderate party in the Church, was not blind to the abuses that had attached themselves to the administrations of his predecessors, and his work among the lowlier classes of the people, taken in connection with his aristocratic lineage, gave him a view of the various phases presented by every proposed reform. He seems to have entered upon the thankless task of eradicating administrative evils with an enthusiasm born of a conviction of the excellence of his cause, and his first intent was to establish a constitutional form of government in which laymen should have a prominent share, and which should reconcile the claims of both Papal sovereignty and Italian patriotism. But the difficulties he had to contend with were immense, and as serious on the political as on the ecclesiastical side. The people demanded more liberal institutions than he thought it safe for his authority to grant. Indeed the tendency of his own reforms caused him to draw back, and the very council of state which he had himself aided to form became an element of opposition. Matters went from bad to worse, and revolution became the feature of the hour. Within two years after Ferretti's assumption of the tiara a mob had taken possession of the Eternal City and the Pope had been compelled to fly from his palace in the dress of a common priest.

From Gaëta, his place of refuge, he issued letters to the Roman Catholic sovereigns in Europe, reciting his wrongs and protesting against the revolutionary government. The response to these from Rome was the proclamation of a republic and the formal deposition of the Pope from his temporal authority. A French force landed at Civita Vecchia in April, 1849, and marched upon Rome, simultaneous invasions being made by Austria in the northern and by Spain in the southern provinces of Italy. The republicans surrendered the Holy City on the 1st of July, but, though the Papal government was restored, the Pope did not himself return until the following year.

With the re-occupation of his palace and official dignities, Ferreti did not resume the work of reform or liberality which had characterized his official activities, but he disavowed all personal animosity toward the insurgents who drove him into exile, and attested his forgiveness by declaring a partial amnesty; but, realizing that "progressive ideas" were dangerous playthings for a ruler unaccustomed to handle them, he was quite content to transfer the reins of government to the astute Cardinal Antonelli, his Secretary of Foreign Affairs, whose authority thenceforth was paramount.

In 1854 the dogma of the Immaculate Conception was defined and promulgated. The next important step in the ecclesiastical history of the administration was the calling of the Œcumenical Council of 1869–70, which, by a vote of 533 to 2, pronounced in favor of the dogma of Papal infallibility. The particulars of this session and of the defection of the large number of prelates and others, and the formation of the Old Catholic movement which followed it, need not be entered upon here, as their recent occurrence leaves them still fresh in the mind of most readers.

Neither is it expedient to repeat the march of events which gave Rome to the sword of Garibaldi and to King Victor Emmanuel. After the entrance of the King, the Pope, no longer able to exercise a dominant influence at courts and councils of States, withdrew from public notice and became familiarly known as "the prisoner of the Vatican."

During the last five or six years of his long life he suffered much from a disease which exhibited itself in ulcers or an eruption mainly affecting his lower limbs. His lack of physical activity doubtless had much to do with the trouble. It is remarkable that one

who had suffered from so grave a malady as epilepsy during the greater part of his youth should have so far recovered as to enjoy excellent health for more than fifty years. A constitution notably strong by inheritance must have been his, and the change of scene and activity furnished by his life in South America operated beneficially. Besides, we are told that his habits of eating and drinking were abstemiously regulated; that his diet consisted mainly of vegetable preparations, with fruit and very little wine; and this, in itself, would tend to relieve a nervous disorder which was susceptible of cure.

His head shows a fine cerebral organization, with a slight predominance of the perceptive elements of the intellect. There is a considerable breadth and fullness in the lateral regions, showing a large degree of the physico-mental element, and indicating ability to organize measures, energy to put them under way, and a good degree of circumspection and sagacity in their administration. The development of Benevolence appears to be large; so, too, is that of Agreeableness. In accordance with this class of organization his character is said to have been highly sympathetic, kind, and courteous, and many incidents are related which illustrate it. On one occasion a Protestant mother indignantly drew her child back as the Pope was about to bestow his benediction on it. "An old man's blessing," said Pius quietly, "can surely do the little one no harm." A lady who was suffering from a painful disease which her physician declared could be cured only by the amputation of her leg, sent for a stocking which had been worn by the Pope and had not been afterward washed. The precious garment effected, as she thought, a miraculous cure, and as soon as she could go, she hastened to Rome to thank the Holy Father. "The good God," said the old man, with a smile, "is kinder to you than to me. One of my stockings has been enough to remove your infirmity; I, who wear two constantly, am in as bad a plight as ever."

## Literature, Mental Science, and Education.

True philosophy is a revelation of the Divine will manifested in creation; it harmonizes with all truth, and can not with impunity be neglected

## BRAIN AND MIND.

### CHAPTER III.

#### THE STRUCTURE OF THE BRAIN AND SKULL.

THE brain is the organized mass of soft matter which occupies the cavity of the skull; a line drawn from the outer angle of either eye, backward through the opening of the ear, and continued in that direction to the posterior region of the brain, will define practically its lower margin (See Fig. 11). It is composed of two substances, a white or medullary substance, which is fibrous or striated in texture, and a gray or cineritious substance, which enters mainly into the composition of the cortical or convoluted substance of the brain. This arrangement of folds or convolutions appears to be designed to give the gray matter a greater extent of surface (See Fig. 12). Gray matter is found in other parts of the brain and also in the interior of the spinal cord. In certain convolutions of the cortical surface there are three layers of gray matter, but generally there are but two. In the eye of the eagle the nervous surface of the retina is convoluted in form to give it greater intensity of vision, while

in animals of ordinary vision it presents a plane convex surface. In man who possesses the highest order of intelligence the convolutions of the brain are very numerous, but as we descend in the scale of being they become less and less marked, till in the inferior orders they disappear altogether. Even among individuals of the human race, although arranged upon a general plan, there is found a great difference in the number and depth of these convolutions and the quantity of gray substance, and this difference will be found to correspond with the degree of intelligence. From the fact that the extent of this cineritious matter bears a general relation to the intelligence manifested. it is inferred that this portion of the brain is specially concerned in the exercise of thought, while the medullary matter serves chiefly as a medium of communication.

***Hemispheres.***—The brain is divided into two equal portions, called the right and left hemispheres, by the falciform or scythe-shaped process of the *dura-mater*, the membrane which lines the interior surface of the skull. This process extends downward about two-thirds of the depth of the brain, and runs through its entire length. The hemispheres are connected by the *corpus callosum*, a thick stratum of transverse fibers which penetrate into the substance of the hemispheres; and also by the *anterior commissure*, a rounded cord of white fibers. Sir Charles Bell says that "whatever we observe on one side has a corresponding part on the other; and an exact resemblance and symmetry is preserved in all the lateral divisions of the brain. And so, if we take the proof of anatomy, we must admit that as the nerves are double and the organs of sense double, so is the brain double, and every sensation conveyed to the brain is conveyed to the two lateral parts, and the operations performed must be done in the two lateral portions at the same mo-

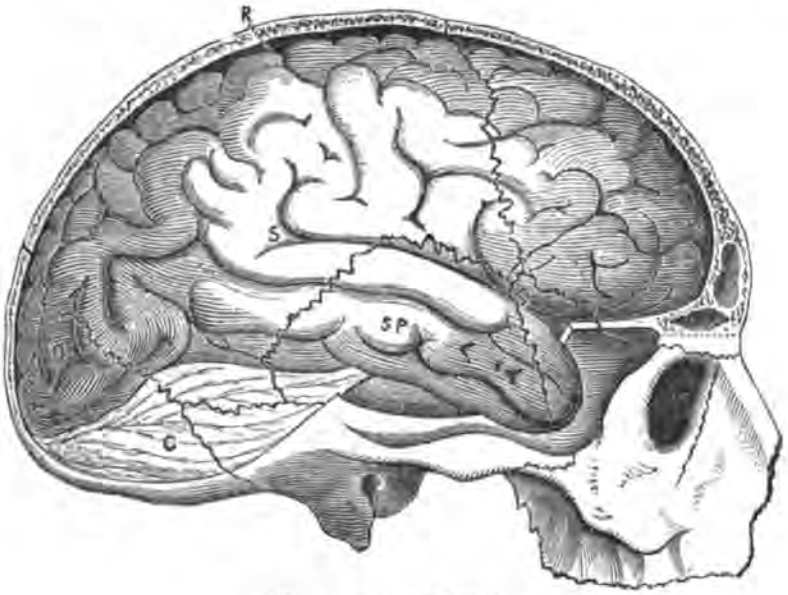



Fig. 11.—Brain in Skull.

Fig. 11.—Position of Brain in the Skull—showing their relations—from Turner. *S*, Fissure of Silvius; *R*, Fissure of Rolando; *S Q* marks the Temporal Region, the letters being on the mid-tempero-sphenoidal convolution; *O*, the Occipital Region; *C*, the Cerebellum. The irregular lines represent the course of the cranial sutures in relation to the brain.

ment." There is a general resemblance between the two hemispheres of the brain, but not an exact symmetry as Sir Charles asserts. Professor Henry Gray, in his elaborate treatise on anatomy, says:

"In the child at birth, before the intellectual faculties are exercised, the convolutions have a very simple arrangement, presenting few undulations." What differences there are, then, in the brains of different men may be assigned to their varying degrees of capacity and culture; and the lack of entire correspondence between the hemispheres of the mature brain, may be assigned to the larger share of exercise which the organs of one, usually the left, has in the affairs of human life.

***The Lobes.*** — Each hemisphere is divided by anatomists into three parts, entitled the anterior, middle, and posterior lobes. The lines of separation between these are well-marked only on the under side of the brain, and extend across the hemispheres. In the anterior lobe the intellectual organs reside, while the greater part of the middle lobe is occupied by the propensities, and in the posterior lobe are the social and domestic feelings. Some of the later anatomists, like Gratiolet, Turner, Huxley, and others, finding the old mapping too indefinite, have adopted a division into five lobes, which are named the frontal, parietal, temporo-sphenoidal, occipital, and central, which are bounded by fissures more or less defined. Four of these come in contact with the skull; the last or central is interior, and corresponds to the region known as the Island of Reil.

***Cerebrum and Cerebellum.***—Beside the e divisions, the brain is constituted of two general parts, the cerebrum and the cerebellum, or the great brain and the little brain, which in the adult head bear the relation in point of size of one to seven or eight. The cerebellum lies directly under the posterior portion of the cerebrum, from which it is separated by a strong membrane proceeding from the *dura-mater*, called the *tentorium*. In some animals these two parts of the brain are separated by a thin plate of bone. The cerebellum is not convoluted like the cerebrum, but its surface

Fig. 12.—View of Brain from above, showing the Convolutions.

is traversed by many curved furrows which vary in depth. The cerebrum and the cerebellum, as well as all other parts of the brain, are united by the *pons varolii*, a broad mass of fibers mingled with gray matter which lies under and between the hemispheres, immediately above the *medulla oblongata*, the capital of the spinal column. From the medulla oblongata as a radial point, the medullary fibers proceed to all parts of the

encephalon, hence this part of the nervous organism is the medium of communication between the brain and the body.

***Organic Development — To Estimate It.***—The different organs or centers of mental function may be said to have their origin in the medulla oblongata, and to correspond in size or development with the length of their fibers. The size, then, of a mental organ may be estimated by the distance of its place in the brain cortex from the medulla oblongata. The greater this distance, the greater the expansion and depth of the organ. A line projected from the

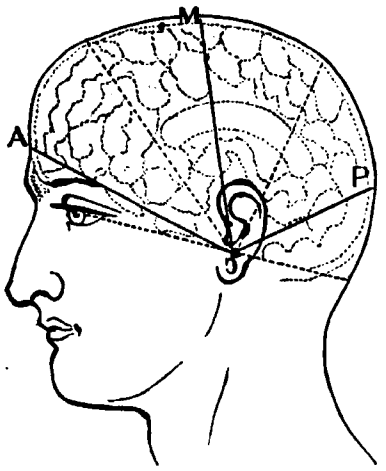



Fig. 13.

opening of one ear to that of the other through the head will pass through the anterior of the medulla oblongata, so that in the living head we may take the opening of the ear as the center or starting point in the measurement of organs. Let *C* in Fig. 13 denote the opening of the ear, then *C A* will indicate the development of the brain anteriorly; *C M* its development in the upper or coronal region, and *C P* its posterior extension. The point *A* being near the lower margin of the perceptive group of the intellectual organs, the length of the line *C A* indicates the size of the perceptive organs as compared with the other organs of the intellect, and also shows the development of the intellectual group as compared with the moral group which may be estimated from the line *C M*, and as compared with the social group of organs which is indicated by *C P*. The breadth of the head and its fullness in the lower lateral regions furnish data for the estimation of the self-protective group. The point *C* being located in the medulla oblongata, imaginary lines may be drawn from it to all parts of the surface of the head under examination, and from their respective lengths the development of the brain parts or mental organs at the outer termini of the lines may be estimated.

The brain, which is the center of all feeling, is itself quite insensitive. If the integuments of the brain were removed, its substance might be taken out like custard; and if care were taken not to press downward upon the *medulla oblongata*, no pain would be experienced.

The circulatory system of the brain is very complete, and adapted to supply it with an unusual amount of blood. According to Haller, one-fifth of all the blood which leaves the heart goes to the brain; Munro, however, estimates it at one-tenth.

***The Membranes.***—Between the external surface of the brain and the internal surface of the skull three distinct membranes are interposed. That next the brain, called the *pia-mater*, is a very thin, transparent, and delicate membrane, which sinks down into the folds of the convolutions and serves as a conveyance for the blood-vessels. Above the pia-mater are two layers of a still thinner membrane, called *tunica arachnoidea* because of its resemblance to a spider's web. From the opposed surfaces of these two layers a fluid secretion takes place which lubricates

them, and prevents them from adhering to each other. The third and outermost integument of the brain is the *dura-mater*. It is a thin, but strong and opaque membrane lining, and adhering strongly to the inner surface of the skull. It is not unlike in appearance and function to the skin of an egg. It secretes the bony material of the skull. If the entire skull of a healthy man could be removed in such a manner as to leave the dura-mater unimpaired, the latter would begin at once to form new bone, and would continue the process until a new skull had been formed. From this it will appear that the hard substance of the skull is subject to the softer parts within it and serves to protect them. The process of absorption and deposition is going on in the substance of the skull continually, and any marked change in the form and size of the brain is indicated usually on the surface of the cranium. The skull adapts itself to the growth of the brain from infancy to maturity, and in old age or disease it suffers a diminution corresponding to the decrease of brain. In cases of hydrocephalus, or dropsy of the brain, when the progress of the disease is slow, so as to allow time for the deposition of bony material, the skull sometimes grows to an enormous size.

***Bones of the Skull.***—The bones of the skull which envelope the brain are eight: One Frontal; two Parietal; two Temporal; one Occipital; one Sphenoid; and one Ethmoid. These bones are united to one another in a very firm manner by a sort of dove-tailing, in which the ragged edges of one bone fit exactly those of the adjoining bone. The seams which are formed by this union of the bones are called sutures. (See Fig. 14.)

The *Frontal* bone forms the forehead a part of the roof of the nostrils, and the orbits of the eyes. In early life it is made up of two principal bones, which gradually grow together. Sometimes, however, it remains double through life. Joined to the frontal bone by the *Coronal* suture, running over the top of the head, are the two *Parietal* (side) bones, which form the greater part of the upper and lateral portions of the skull. The line of union between these two bones is known as the *Sagittal* (arrow-like) suture.


Fig. 14.—Bones of the Skull.

Fig. 14.—Bones of the Skull—lateral view. 1, Frontal Bone; 2, Parietal; 3, Occipital; 4, Temporal, with the Sphenoid attached on its anterior border; 5, Nasal; 6, Malar; 7, Superior Maxillary; 8, Ethmoid; 9, Inferior Maxillary.

The *Temporal* bones are located at the sides of the skull, around the ears, and are joined to the parietal and occipital bones by sutures. The lower back part of these bones forms the projection directly behind the ear, which is called the *mastoid* process. The *Occipital* bone forms the base and back part of the cranium, immediately above the neck. It is joined to the two parietal bones by what is called, from its resemblance in shape to the Greek letter Lambda, the *lambdoidal* suture. In the central region of this bone a pro-

tuberance is found, which is known as the occipital spine.

The *Sphenoid*, or wedge-like bone, is situated in the anterio-inferior part of the basilar region. And the *Ethmoid* (meaning sieve-like) is a cellular bone, situated between the orbits at the root of the nose.

The greater part of the skull is made up of two plates, between which is interposed a honeycomb substance called the *diploë*, through which small blood-vessels course to different parts of the skull. The diploë is of nearly uniform thickness, so that the two tables of the skull are nearly parallel.

Sir Charles Bell observes that "the bones of the head are moulded to the brain, and the peculiar shapes of the bones of the head are determined by the original peculiarity in the shape of the brain." There are, however, certain parts of the skull which are thicker or thinner than other parts, and certain integuments which offer a slight obstacle in the way of estimating the size of some of the organs from the external development. Every skull is thinner at the squamous or scaly portion of the temporal bones, and in the super-orbitar plates which form the roofs of the sockets of the eyes; and it is thicker at the ridges of the frontal bone and at the sutures than at other parts of the skull. The occipital spine and the mastoid processes are also prominences on the skull which are not indicative of the size of the brain beneath; but these ridges and prominences are generally abrupt and angular, and easily distinguished from the broad, rounded swell corresponding to cerebral development. The integuments which cover the skull are of a uniform thickness, except at the occiput and the temples. Experience will enable the practical student to detect and make due allowance for variations in the thickness of the skull, as they depend much upon temperament, and do not form very serious obstacles to obtaining a sufficiently accurate idea of the size of the organs from the shape of the skull.

There are instances in disease and old age, however, in which it is difficult to discover the form of the brain from the form of the skull; but experience and observation on the part of the examiner will guide him safely in dealing with such cases. The bone of the skull becomes thin over organs which are energetically and persistently exercised, and the higher temperature at such portions of the brain, as well as their size, affords a clew in estimating the power of the organs.

***Frontal Sinus.*** — Besides these peculiarities of modification to which the brain and skull are subject, there is the much mooted difficulty of the *frontal sinuses*, which the opponents of Phrenology have made much of as an obstacle in the way of delineating character from the surface of the head. The *frontal sinuses* are small cavities in the frontal bone near the root of the nose, formed by the separation of the two plates of the skull (See Fig. 11). They are deemed by some a kind of sounding-board for the voice, but do not extend up above the base of the brain till about the time that the voice changes. Up to this period they form no obstacle in estimating the size of the organs situated behind them. After this period, however, they extend upward, and may cause some uncertainty in regard to the size of three or four organs located in their vicinity, as they are by no means constant in dimensions, being dependent upon the person's temperament. They should, however, be confined in their influence to the three or four organs located behind them. To argue as some have

done, particularly Sir William Hamilton, that the existence of a *frontal sinus* is an insuperable objection to Phrenology in general is, as Mr. Combe has well remarked, about as logical as to speak of a snow-storm in Norway obstructing the highway from Edinburgh to London. In fact, the difficulties which the frontal sinuses oppose to the exact estimation of the size of the few organs located immediately behind them may be overcome to a very great extent by practice and observation. The voice and the bony structure of the individual afford indications of their size, and where a prominence exists on the skull from a large frontal sinus, the elevations are abrupt and ridgy, and lack the even swell which is indicative of cerebral development. It should be remembered in estimating the extent of the sinuses to obtain an approximate idea of the form of the brain from the contour of the skull, that the difference in parallelism between the external and the internal tables of the skull is usually insignificant when compared with the difference between a large and small organic development. In most of the former cases the difference rarely exceeds one-eighth of an inch, while the difference between a large and small development of the organs and sentiments may amount to more than an inch. The difficulties presented by the sinuses, therefore, do not invalidate the general correctness of the phrenological mode of investigation, since in extreme cases they are practically inoperative. As Dr. Gall was led to the discovery of Phrenology by observing the concomitance of certain strongly marked mental characteristics with an unusual development of certain portions of the brain, so should the mental organs be tested by similar cases whenever the integrity of the system is brought into question.

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## CAPACITY OF GROWTH.

IN the transmission of physical qualities, it is held that no one inherits any disease, but only a tendency thereto which circumstance may bring into action. This is drawing a fine line of distinction; but in studying man in his mental aspect, we may conclude that the child inherits nothing from his ancestors but the tendency and capacity to attain a certain definite degree of mental progress, a point perhaps slightly in advance of the stage reached by the parent; and an ability to acquire speedily the accumulated experience of the race, from the teaching and intercourse of those about him.

A child thrown by himself upon an uninhabited island, supposing him from a variety of fortunate circumstances to survive destruction, would display but few marks of intelligence above those of the animals about him. The capacities which favoring environment would have called into active exercise would lie dormant and only the basic faculties of life be called into play.

The growth of the individual is possible only under the cumulative force of the race exerted upon him, and this force reacts again in pushing on the race. Man, or any small collection of men, isolated from the mass, speedily deteriorates. The higher the development the speedier the deterioration, as the greater the complexity of the molecules the less stable the equilibrium and the quicker the atomic disintegration.

It would be interesting in this connection to study the force and character of such a retrograde development; and, at what point, and through what means it would be arrested, and the normal advance begin again. In such a check, and the consequent returning upward growth, reversion to the ancestral type would be a potent factor; the innate capacity being obscured, not lost. The occurrence in such a community, of an individual possessed of more than the communal mental attainment would form a nucleus, and point of departure, in the development of a new and independent civilization. U.


## CONDIMENTS.

Province of Taste—The Stomach—Over-eating—The Theory of Condimenting—Influence upon Taste—Nature's Seasoning—The Flow of Gastric Juice—True Nature of a Condiment—Desire for Drink.

IT is a prime principle in dietetics, that our food should taste good. This most people will admit. Indeed, we fear that this is the only principle recognized by a large majority. There may, indeed, be a sort of tacit understanding that their food shall not kill them outright, but no guarantee whatever that it shall not kill them by degrees. We have heretofore spoken of the

PROVINCE OF TASTE,

and described the part it plays in the digestion of food. We think it evidently the design of nature that man, by means especially of the organs of smell and taste, as well as by the efforts of his reasoning powers, should be able to make very nice discriminations with regard to the quality of his food. And further, that the taste should be able as a legitimate function to call up the various organs of alimentation and co-ordinate their action so that the saliva shall flow freely when it is wanted; that all the muscles of ingestion shall be ready to give harmonious progress to the masticated and insalivated bolus; that the stomach receive it graciously, and making its best bow, take it around at once on a tour of introduction to the gastric follicles, each of which shall have ready its contribution of acids or pepsine for the new comer, which the muscles shall then wheel one side to make ready for the next bolus. And just here make note, that if there were no pleasant taste in the mouth to detain the next portion, it might come rushing down before the first were properly disposed of. So we see that it is not only allowable that we should take pleasure in the food we are masticating, but it is almost indispensable that we should do so in order to marshal the different processes and the action of the different organs in their proper order. If the man of business forgets to enjoy his food as he eats it, and hurries it down before the orderly stomach is ready to receive it, derangement follows and indigestion results as a necessary consequence.

THE STOMACH

is not a shapeless, lifeless scrap-bag, into which we may throw all sorts of things pell-mell, just when we take the notion. It is far more like an orderly and well-arranged work-shop, with workmen who have a just sense of the importance of their duties and who are ever striving to perform them according to the laws of action in which they have been trained in spite of continual thwarting. The brain, the powerful will can not entirely control it; does not, indeed, have much idea of its motions; and since we can not see them, it is the province of taste to harmonize the voluntary supply without to the orderly motions within. It is really wonderful to see the number and importance of the organs, voluntary and involuntary, which taste thus rallies. Properly, we might begin with the outward organs, the

hands which act, the feet which often run at its bidding; indeed, we might tell of commerce and manufacture enlisted for its gratification in many a case where they are not needed and would not be used to supply mere alimentation. But passing these, we will speak only of its more immediate behests upon glands and teeth, lips, tongue, and œsophagus, gastric juice and follicles, and all the muscles necessary to their successful working, beside the blood supply that must come to them all. And when we consider the engrossing character of the work which precludes almost every other collateral employment, we may well say that for the time being, taste properly controls the man. And if we pay proper heed to its behests for legitimate purposes, it will lead us in very pleasant paths. But if we eat for the sake of taste, we pervert the whole economy of nature and dire confusion ensues. We take our faithful housekeeper from her proper place in the establishment; we trick her out with costly and fantastic drapery; we intoxicate her senses and pervert her judgment so that she neglects her proper work; she consents to take for herself that which should have been taken only for the stomach, regardless of the wants and the welfare of the department which had been placed under her control. But apt as our comparison seems to us, we will leave the reader to carry it out according to his fancy, while we inquire in what way this is usually done. Formerly it was done by

OVER-EATING

of foods in their natural condition. The early races of men were prone to gluttony. They indulged in the pleasures of taste by repetition, and ate to repletion, especially of animal food. Accounts of the quantities which the heroes of antiquity thought suitable to set before their guests as well as the portions devoured by themselves are incredible, if we judge them by ourselves. The ordinary meal of Milo of Crotona was about fifteen pounds of meat and an equal quantity of bread. Athenæus bantered him to try which could soonest devour a whole ox, and Milo completed the task in one day. Theogenes of Thasos performed a like exploit. If he had been fed thus upon the shortened and condimented food of the present day, it would soon have proved fatal. As it was, the race has broken down its ability to perform such feats. Gluttony, of itself, would have that tendency, and the addition of condiments would hasten the result. But as men became civilized, their greediness took new shapes, and it affords another illustration of the fact that refinement in vice does not lessen its viciousness. They found that they could concentrate flavors, get more flavor in proportion to the food, or intensify the sensation by the addition of pungent articles which were not food. They ignored the great fundamental principle that the use of flavor in food was to make it agreeable, acceptable, and digestible. They would have the agreeable without regard to the digestible, for this is

THE THEORY OF CONDIMENTING,

to increase the intensity of the taste. Those who do this, either do not know or do not care that by so doing they destroy the natural properties of food, and its harmonious relations to the human system. If there is any food naturally suited to the needs of man, of course it excites the action of taste to just the degree required by the needs of the system, and under its influence all the organs of digestion and alimentation work harmoniously and produce favorable results. The professed object is to make food relish. Let us see how far this is accomplished.

INFLUENCE UPON TASTE.

At first a natural and healthful taste rejects unnatural flavors and biting condiments. But use soon makes them agreeable, while their intensity dulls the delicacy of the taste so that it can not readily perceive natural flavors, and a return to them becomes difficult. The tendency is to season more and more, until it has come to pass that scarcely any kind of food is taken in its natural condition. Fresh fruits are about the only exception to this degeneracy, though they are very often strewn with sugar, and I have seen musk-melons defiled with pepper and salt.

The question which we are obliged to consider first, is whether this practice of condimenting really increases the pleasures

of taste. The popular conviction is that it does. We hear it in the assurance, "You can not eat that, it has not been seasoned!" We see it in the seasoning of the pap for the smallest infant, "just enough to make it palatable, you know;" and they can not understand the scowl on the tiny face, and the rejecting pout, and so it is again thrust upon the little innocent, and he grows up with a *seasoned* taste like all the rest.

But if enjoyment of the pleasures of taste is the object pursued, the tendency is to increase the quantity or the intensity of the condiment. Hence, we see so many adding salt and pepper and mustard to their meats, devouring horseradish with their bread and butter, or munching radishes, two vegetables so crude and biting that all other animals but man reject them; putting cayenne in their soups and catchups and various other dishes, and using a great variety of strong, biting, and hurtful spices. Remonstrate, and you are met with the assurance that they could not enjoy food without them; nay, they could not eat it, it would be utterly repugnant to them; if they could crowd it down, it would not relish, and they could not digest it.

When it comes to this pass, the infatuated being has more or less of dyspepsia, and will soon be unable to digest anything with pleasure or comfort. Contrast his condition with that of one who uses few or no condiments. Observe his hearty relish and his ready digestion, his clear eye and his elastic vigor. Ask him if he enjoys his food, and he may reply as the Scotchman did about his brose. A visitor inquired what he usually had for breakfast.

"Brose, of course."

And receiving a similar reply to his questions about dinner and supper, he inquired if he did not get tired of oatmeal, having it three times a day. Sandy now began to think the stranger was quizzing, and he called out to another Highlander, "Say, McDonald, here's a mon that wants to know if I'm not tired of my mate!" To him it was a sweet and satisfying daily food, and though we who do not have his out-door exercise and mountain air, might need a greater variety, it does not follow that we need to mix it with indigestibles.

### NATURE'S SEASONING.

If any one would like to know how nature has seasoned our food to meet our real needs, let him cease to add other seasonings for a while, and he will find a delicacy and a sweetness never dreamed of in his highly-seasoned dishes; and, above all, a delightful sense of satisfaction pervading his entire being after a moderate meal of unseasoned food that he never experienced with his highly-seasoned dishes. It is a favorite theory with many, that condiments are necessary in order to excite a ready flow of saliva and gastric juice. But this is a theory that will not bear the test of experience. It is the common testimony of those who have quite given up the use of condiments that the flow of these necessary juices is far more free than it ever was under the old habit; that often during mastication the saliva will pour out in a stream so free and limpid that if the position of the mouth permit, the minute drops can be caught upon a sheet of paper—a phenomenon seldom or never witnessed until they returned to the more normal diet. As to the pleasures of taste, never were they so refined, never had food tasted so good to them, much of which was due to their superior health. Now the strong condiments are repulsive to them. The lesser condiments might be attractive; but if they indulged, it is invariably to their own disadvantage. It is supposed that

### THE FLOW OF GASTRIC JUICE

is regulated by the needs of the system, that just enough is secreted to digest the food necessary to supply those wants. The use of condiments often induces us to take more food than the gastric juice can digest, in which case it sours in the stomach, causing irritation and derangement, and if the practice be continued, serious disease. But if, as some think, and as is possibly true in some cases, condiments do increase the flow of the gastric juice beyond that demanded by natural food, then the organ is overtaxed and afterward suffers for it, or other parts of the system, and especially the brain, suffer from the drain upon the blood,

and the man transfers his vigor from the latter organ to the former. Instead of an intellectual being, he becomes a gourmand, a glutton, noted for the size of his stomach rather than for the activity of his brain. But if it be argued that condiments might be used with advantage temporarily to excite to action sluggish or torpid digestion, it must be truthfully answered that the probabilities are against it. They are much more likely to do harm than good. The demands of the system will call upon this organ to do its duty far more emphatically than any foreign substance could do it.

"What then?" some one will ask; "are we never to mingle flavors or foods?" Really this does not follow. The mingling of wholesome foods may not impair their wholesomeness if we are sufficiently self-controlled not to be led away by variety into greediness.

"But," says another, "I season my sour apples with sweet ones and they make a wholesome sauce." Very likely, but that is not what we mean by condimenting. It may improve their taste; and there are many other ways in which we may innocently improve the taste of wholesome food without putting into it a substance which is unwholesome. The test we would recommend is to see whether you can eat the so-called condiment freely by itself—make a meal of it without bad results. Try this rule on cayenne, mustard, vinegar, oil, horseradish, pepper, all-spice, cinnamon, cloves, ginger, and a host of other things that we use as condiments. A very large share of them would be rejected at once *with tears*, or if forced down, would make us sick. By what rule can we prove that these things are fit to eat? If they are rejected by the organs as hurtful when they come in their own character undisguised, by what right do we disguise them in the garb of what the organs must recognize as wholesome food, and by this unnatural mixture deceive the faithful guardians of the avenues of life?

### TRUE NATURE OF A CONDIMENT.

We do not insist upon this as a criterion with regard to condiments, but we ask you to judge for yourself whether it is safe thus to smuggle into the system that which has been so decidedly rejected as hurtful. You have put it indeed beyond your ken, and how can you say what mischief it is doing? Certainly it is a very ticklish hiding-place. Of one thing you may be certain, if the system could have used it to good purpose, it would not have so persistently rejected it; and now that you have smuggled it in, you have imposed upon the delicate internal organs the difficult task of separating and expelling that which they can not use, and they will be more seriously injured by this task than the external organs are by refusing the raw unmixed material. One curious proof of this comes in the constant

### DESIRE FOR DRINK

of some kind that ever accompanies this use of condiments. One who does not use condiments may easily assuage his thirst and satisfy the demands of the system for fluids with the bland and delicious juices of fruits during a large part of the year, while one who uses condiments freely is often tormented by a thirst which must have drink and sometimes calls for stronger drink than water. There is little doubt that some drunkards are made in this way, and especially as pure water is not always as easily obtainable as alcoholic drinks. But this is only one of many conditions which make it easy for a man to fall a victim to the use of intoxicants; and the greatest of all is that love of excitement and self-indulgence which underlies both the fondness for condiments and for alcoholic drinks. With the mass of men there is little hope that if we can not get them to see the mischief there is in alcohol, they will see the harm done by condiments. So while we seek for ourselves the best conditions possible, let us not neglect to take others where we find them and bring them up step by step to higher and purer modes of living.

JULIA COLMAN.

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SPECKS BEFORE THE EYES.—Cease to trouble yourself about the specks and you will probably not notice them, especially if you find something to do and keep yourself in as good health as you can.

## A NEW EMPLOYMENT FOR AMERICAN WOMEN.

AN article recently published in *Harper's Bazar*, and entitled "Woman's Pedicures and Manicures in Paris," was doubtless read by many with considerable interest, as it pointed to a sphere of employment in which American women might find useful and remunerative activity. The writer sketches the personale and skillful treatment of a feminine pedicure, whom she engaged to perform the services which would be rendered by a professional chiropodist in this country, and who, for the insignificant sum of forty *sous*, furnished her "with a bran-new pair of feet, when she got up and prepared to walk off on them."

Then she proceeds to describe the office and equipment of a "manicure," to whom she went for curiosity's sake and for an item or two.

"After a tedious waiting, my turn at length came, and I seated myself by the manicure's little table, upon which were scattered the tools of her trade. These were scissors and knives of a shape specially devised for the trimming of the nails; files, nail-cleaners, a small basin of rose-water with a bit of soap near it, a tiny towel of linen cambric, a bit of lemon, and various polishing powders and sweet-smelling unguents in the form of ruby-colored pomades. The first step in her proceedings was to wash off the finger-tips carefully, then to dry them, after assuring herself that there were no ink spots or other stain upon them. Then she clipped and trimmed the nails into the approved filbert shape, neither too short nor too long, nor too pointed nor too broad; the 'half-moons' at the base of the nails were gently brought into clear light; all 'hang-nails' were amputated; and after this she rubbed a coral-colored pomade of a delicious odor upon the nails and the upper part of all the fingers. After allowing this to remain a little while she wiped it off again, and scattered upon the nails a golden brownish powder, which she vigorously rubbed with the whole length of her powerful forefinger, occasionally aided by the palm. More pomade, more powder, more rubbing, and then the nails were shown with that beautiful gleam upon them, that pearly pinkness, seen in the interior of some delicate sea-shells. As the pedicure had said, the manicure's manipulations greatly 'advantaged' a pretty hand, but even in a greater degree advantaged an ugly one.

"The manicure, like the pedicure, charged forty *sous* for a sitting, that is, at her own rooms. When she did the visiting, her price was a dollar. That she found her business lucrative was sufficiently indicated by her handsome rooms and her prosperous appearance."

As in Paris, there are many people of wealth and luxurious disposition in our large cities who would readily avail themselves of the attentions of a manicure, and it is in the nature of things that the establishment of such an art in America would have a tendency to improve the manual habits, so far as neatness is concerned, of our people at large.

## HOW DOES BEER WORK?

NO part of the object of this writing is to indicate the fermenting process of beer. The chemist and brewer could better expound that aspect of the "beer question." To indicate and illustrate the resultant *working* of this popular beverage upon the human organism, *is* my purpose. No intelligent mind will question that beers, of whatever name or make, contain alcohol more or less. For this chiefly, if not solely, is beer sought. But for the stimulating or narcotizing effects few would use it. What are its essential ingredients? A witty minister once replied to this query thus: "Ten per cent. alcohol (or devil) and ninety per cent. poor swill." Eliminate the former, and no one will doubt, on trial, as to the insipid meanness of the "ninety per cent."

After much thought, inquiry, and observation, my conviction has become riper

that beer or *bier* is by far the most mischievous and disastrous in its effects of all the alcoholic drinks, (1) because most generally used, and (2) because cheapest and most deceptive.

The Germans, who brought to us the wretched mania for their nauseous "lager-bier," threaten to become the most drunken, as they are the *largest* drinking, part of our population. Already the sad and ruinous effects can be seen on every side. The physiological principle underlying this fact and peril is very clear.

The almost universal use of beers by the Germans—from infancy, with many—forms and cherishes the appetite for stimulants. Who has not seen babes of one and a half years old, or even younger, sitting by their parents in the "gardens," or on board excursion steamboats, with immense "schooners" of lager? These tiny things will drink till literally drunk! Why should not these children, if so unfortunate as to live, become drunkards? Many inevitably will; many have. This result is more certain in this country than in "Fatherland," and for three well-defined reasons:

1st, Climatic influence; 2d, Assimilation to American habits and temperament; and these two almost necessitate the 3d, viz., The increased percentage of alcohol in the beers, and, by degrees, whisky instead of lager. These processes are constantly going on, and the writer has called the attention of German Christians and philanthropists to these facts and tendencies.

Not to enter upon the philosophy of climatic influence, it is well ascertained that climate has much to do with the demand for stimulants and their effects. Whatever may be true of Continental Europe, it is certain that the peoples of the British Isles and of the United States can never be *satisfied* with the milder alcoholics. As surely as cause produces effect, multitudes of the more nervous temperament, and in constantly-increasing numbers, drift inevitably from wine and beer to brandy and whisky. Germans and other nationalities of heavier and more phlegmatic organizations, by the second generation become Americanized, more excitable, more intense.

Go with me on "'Change." It is a day of fluctuating values in stocks. See those two young men among the mob-like mass. Perhaps one a "bear," the other a "bull;" the one a Yankee, the other an Americo-German. Soon they seem lashed into fury by their bids and counter-bids, frantic gesticulations, and shoutings. They get through. What next? Watch them. They both rush into one of the many liquor saloons near by. Hark, now! For what do they call? Is it beer? No—brandy and whisky. This illustrates what intense excitability demands.

An ex-president of the "Board" said to me one day: "Our young men here are going to the devil fearfully fast. Why, then, are a dozen or twenty whisky shops within five hundred feet of the Gold-room? These have been lately fitted up with private lockers. These young fellows rent and fill them with bottles, and put the keys in their pockets. Every time they thrust their hands into their pockets the *feel* of the keys stirs the thirst. The scamps drink five times as much as they used to, and many are drunk before 11 o'clock. What can be done for these boys?" Our reply was: "Mr. H., give up the drink entirely yourself, then try them; no half-way will touch them." Since that something has been done to lessen these "fearfully fast" drinking habits on "'Change," but with little effect. Many for a time tried beer; but very few stick long to beer or wine—indeed not one, so far as I know.

Back, then, to the query, "How does beer work?" The answer, without hesitation is, toward drunkenness, degradation, and ruin. German pastors and missionaries are waking up to the perils of their own people. After careful consideration in visiting gardens and saloons, they have candidly, though sadly, been obliged to admit the facts and their perils. One very earnest and devoted German pastor said to me recently: "I am convinced you are right, sir; I *know* it is sin! I preach Christ to my people, and if I can not preach beer out of them they can't be saved!" Others have replied in like terms and emphasis.

There are scores and hundreds of facts to

prove the position in regard to the perils of our German population and their descendants. Just before I sat down to pen this article, there came to my office a poor, stricken man, a German. He sat by my side and told me his sad, sad story. His wife had become utterly abandoned to the drink curse. There had been three children born to them. Two of them had been killed by the mother's cruelty when drunk. The only one left, a child of three years, is very sick and near to death. The mother is off on a drunken spree, and Mr. S. is trying to find some one to care for his little one. He had not seemed to see till now the folly and wickedness of his own beer-drinking. Such aid and direction were given as the case required. There are hundreds of similar cases in this city alone.

The advocates of wine and beer—some, perhaps, very clear and very learned in some things, but fearfully mistaken and deceived men—are sowing "dragon's teeth." The disastrous effects of their utterances, example, and influence can be seen too often. Many young men who have accepted their theory are drifting with appalling certainty toward the fearful end of the drunkard. S.

# NOTES IN SCIENCE AND AGRICULTURE.

**Change of Earth's Polar Axis.**—"Where the Continents now are, there they have ever been." This, from a noted scientist of the present era, pronounced in the heavy and measured dictum of dogmatism, we could not pass without comment. Now that the central liquidity of the earth's contents is questioned, it is in place to compare some data which would show how groundless the quoted assumption is. Volcanic action, in its highest intensity, produces Himalayas and Cordilleras. This is as likely to occur at or near the poles as elsewhere. That there is water at the present poles, does not prove the impossibility of a different status having existed. The arrangement of the water on the surface of the earth is in obedience to the law of *motion* as well as gravitation. This accounts for the seeming "flattening" at the poles, which may have been at or near the Himalayas and Cordilleras at some time previous to their emergence. The results of such emergence would be to induce glacial action of the extent to make the earth slightly egg-shaped. Then, in obedience to the law of motion, the longest axis seeks the line of greatest motion, bringing these stupendous glaciers under an equatorial sun, flooding former Continents; making "faults" in mines, leaving débris of marine action upon the highest mountains, as is the case, accounting for the exhibitions of hydraulic and dynamic forces, which are now subjects of speculation. F. M. SHAW.

**Proposed Ship-Canal**—An inquiry. *To the Editor.* SIR: The late terrible disasters to the steamers *Huron* and *Metropolis* have suggested to my mind the inquiry, whether the many dangers of ocean navigation around the Carolina coast might not be in a great measure avoided by means of a ship-canal. I am not familiar with the topography of that country or the coast, but as it appears on the maps a canal from some point on Albemarle Sound to Pamlico Sound would be feasible, with a length of only fifty or sixty miles. By such a canal, Cape Hatteras and much of that dangerous coast in the vicinity of where the *Huron* met her fate would be avoided. Then, again, a canal of still greater length—say two hundred miles—from the vicinity of Norfolk to Beaufort, may be practicable; and if so, nearly all the perilous navigation of the Atlantic coast, between the mouth of the Chesapeake and Charleston, might be escaped.

It does seem to me, that if either of these canals is practicable, the interests of commerce and the great saving of human life that would result from its construction, render the matter a subject of high national importance. I am not aware that the scheme has ever been broached; indeed, in my ignorance of the country, it may be entirely impracticable; if so, no harm can be done by calling public attention to it. There are, doubtless, among your readers many persons sufficiently cognizant of the facts to fully answer the inquiry, and give force to the scheme, if deemed necessary. T. G.

BANKS OF THE MISSISSIPPI, *January*, 1878.

**A Savant's Death.**—The death of Henry D. Ruhmkorff at Paris, on the 20th of December last, has been announced. He was born in Hanover, Germany, in 1803, and but little is known of his early life. In 1819 he wandered to Paris, and obtained a position as porter in the laboratory of Prof. Charles Chevalier, at that time one of the leading French physicists. Here he displayed a remarkable fondness for electrical apparatus, as well as ingenuity in its arrangement, and was enabled shortly after to start a modest manufactory of physical apparatus. In 1844 Ruhmkorff brought out his first invention, a convenient thermo-electric battery. Soon after he turned his attention to magneto-electricity, especially the production of the

induced currents, discovered by Faraday in 1832. A long series of experiments resulted in the appearance, in 1851, of the famous "Ruhmkorff coil," with its later modifications, the most important piece of apparatus in this branch of physics. The invention was rewarded by a decoration and medal at the Exhibition of 1855, while in 1858 it received the first prize of 50,000 francs at the French exhibition of electrical apparatus. Personally M. Ruhmkorff was of a quiet, dignified appearance, and despite the disadvantages of his early life, he enjoyed the friendship of the leading Parisian *savants* and was an honored member of the French Physical Society. M. Jamin delivered an address over the grave, in which he stated that Ruhmkorff died almost a poor man, because he had spent all his earnings on behalf of science and in works of benevolence.

**A Tarantuln's Home.**—One of the most singular curiosities in nature that has ever come under our observation is the nest of a tarantula, a species of spider whose bite is supposed to result fatally. It is constructed of clay and small stones, and is about four inches long and two inches wide. A hole three-quarters of an inch in diameter passes through it lengthwise, one end of which is closed by a trap-door, beveled on the sides and top, and fitting so perfectly that when closed scarcely a sign of the opening is visible. The door is rounding at the top, perfectly straight on the bottom, and works on a hinge constructed on the same principle as the joints on which a door hangs. The nest is lined with a soft gossamer substance, and is as round as if bored with an auger. It is said that the tarantula, when attacked, crawls into its nest, and closing the trap-door, secures it by inserting one of its legs through a staple scarcely discernible to the naked eye.—*Galena* (Ill.) *Gazette*.

**Theory of Land Drainage.**—It appears somewhat paradoxical that drainage should be beneficial to vegetation, since water is so essential to the well-being of plants. But really, more water passes through a drained than an undrained soil. A party of gentlemen were throwing doubts upon the advantage of draining a particular clay field. "What is the use," they said, "of draining such land as this? Not a drop of water is running from the pipes." The reply was sagacious: "I don't drain so much to get water out of the land as to get it into the land." The work of the drainer consists in giving a free passage to water, thereby securing the passage of the entire rainfall through the body of the soil. It must be evident that, of a yearly rainfall, say of twenty-eight inches, upon a tenacious and wet (undrained) piece of land, part soaks into and through the soil, part finds its way as best it can into ditches, and part starves the soil by its evaporation once more into the air. But on a drained field, which is never surcharged at the surface, the whole of the rainfall passes into the land, thus proving the truth of the remark just quoted. By the above idea a flood of light is thrown upon the subject of drainage. Undrained land is surcharged with water for a great part of the year. By this is meant that the pores, or interstices, of the soil are completely full of water; and since two substances can not occupy the same space at the same time, it is evident that, while this state of things exists, neither fresh water nor air can gain admittance. The land is full of water, but it is stagnant or stationary. After drainage, the land may still be full of water at times, but it is in a condition of movement.—*Agr. Text-Book.*

**Electric Lamp-Lighting.**—The *Iron Age* thinks that the days of the lamplighter are numbered, and the time is at hand when he will exist only in story. Electricity is certain to take his place, because it can work more cheaply. It has been tried for the purpose of lighting and extinguishing 220 street lamps in Providence, R. I., scattered over a district nine miles long. One man attends to the whole business, and does it in fifteen seconds. The method has now been on trial for some months, and a saving of $10 per lamp per year is reported.

**Teeth of the Races.**—Dr. E. Lambert, of Brussels, has made a careful study of the teeth in the various races of man, and has arrived at some interesting conclusions. He finds very distinct characteristics in the dentation of the white and black races, especially in the molar teeth, for while in the former race they decrease in size backward, the last or wisdom tooth being the smallest, it is the reverse with the black race, the last being the largest.

Again, in the white race the molars have usually four cusps; in the black race the more usual number is five.

He observes also in the black race a slight diastema not met with in the white, and with the former the inner tubercle of the premolar is less developed than the outer, as with the anthropoid apes.

The dentation of the yellow races is more closely allied to the white than to the black race.

The red or native American race was unexpectedly found to present very nearly the same dentary characteristics as are shown in the black race.

**The Evolution Theory Old in Japan.**—A Japan correspondent says that he saw wrought in inlaid wood on a door in the great Temple of Ligmoto, a scene first showing a monkey, then an ape, then a gorilla, and so on up by gradual development, until the final one of the series was a perfect man surrounded by elephants and curious birds. The door was several hundred years old, whence it appears, if the above is correct, that the evolution theory in regard to the origin of species, though of recent date among us, was known in Japan centuries ago.

It is not the first time that we have found

instances where these Orientals, as well mentally as in practical arts, were far ahead of us during the period which we rightly call the Dark Middle Ages, and from which we only escaped by a fortunate coincidence of circumstances.

**Plow Improvement.**—Mr. J. M. Basset, of Athens, Ga., it is said has invented a plow, so constructed that the standard can be easily adjusted to give any pitch desired. The branches of the standard in which the plow beam rests are secured to the beam by a clamp formed of a bow and a bolted yoke. By loosening the clamp the standard can be easily moved. It will prove a very acceptable instrument to farmers.

**Beware of Old Smoking-Pipes.**—Nicotine is not the only poisonous substance in tobacco. It has been found that in old smoking-pipes two other poisonous compounds are collected, namely, pyridin and picolin. The cause of the investigation was the death of a child which had been blowing soap-bubbles from an old, dirty pipe. It was first put down as a case of nicotine poisoning, but further investigation showed the correctness of the researches of Vohl and Eulenberg in regard to the poisonous effects of what they call the pyridin series, a product of the dry distillation of tobacco, which acts by paralyzing the respiratory nerves, and causes death by exhaustive convulsions, terminating in total asphyxia; so it was concluded that the child did not die from nicotine, but from pyridin.

This now may be all the same to the public, but it is not the same to the physician and chemist, whose duty it is to ascertain the correct causes of disease and death, in order to profit by this knowledge for the benefit of mankind.

**Straw-Fuel.**—The Mennonites, who emigrated from Southern Russia and came over into our far western States, are teaching the people of that section still another lesson in this matter of thrift. Prof. Butler writes of them from Nebraska, that he had recently eaten a dinner among the Mennonites which was cooked with grass, and he says he has examined straw furnaces in the house of the Bishop and the men of his flock. The house in which the Bishop lives has been built two years; it is forty-eight by twenty-six, and there has been no freezing in it yet. Yet he has used nothing for winter fuel but straw, and his furnace, the iron-work of which cost but five dollars, is heated only three times a day. As the writer expresses it, what Nebraska has wasted now warms a thousand Muscovites. These Russian furnaces are being set up in the houses of Yankees.—*Col. Farmer.*

**Tar-Water for Insects.**—For the last five years I have not lost a cucumber or melon vine or cabbage plant. Get a barrel, with a few gallons of gas tar in it; pour water on the tar; always have it ready when needed, and when the bugs appear give them a liberal drink of the tar-water from a garden sprinkler, or otherwise, and if the rain washes it off and they return, repeat the dose. It will also destroy the Colorado potato beetle, and frighten the old long potato bug worse than a threshing with a brush. Five years ago this summer, both kinds appeared on my late potatoes, and I watered with the tar-water. The next day all Colorados that had not been well protected from the sprinkling were dead, and the others, though their name was legion, were all gone, and I have never seen one of them on the farm since. I am aware that many will look upon this with indifference, because it is so cheap and simple a remedy. Such should always suffer both by their own and their neighbors' bugs, as they frequently do.—*Chicago Tribune.*

**Ravages of Insects.**—A remarkable statement occurs in a report by one of the Government naturalists on the injurious insects of the West; namely, that in the United States, the loss of agricultural products through the ravages of insects amounts to "probably more than $200,000,000 each year, and that from one-quarter to one-half of this sum might be saved by preventive measures."

**Be Gentle when you Milk.**—The advantage of kindness to cows has been frequently insisted on in these pages, and is well illustrated by the following anecdote: A man had a fine cow that, week after week, was milked alternately by a couple of hired men. He observed that the amount of butter he carried weighed about a pound more each alternate week. He watched the men and tried the cow after they had finished milking; but always found that no milk had been left in the teats. Finally he asked the Scotch girl who took care of the milk, if she could account for the difference. "Why, yes," said she. "When Jim milks, he says to the old cow: 'So; my pretty muley; so!' But when Sam milks, he hits her on the hip with the edge of the pail, and says: 'H'ist, you old brute!'"

**Want of Force and Health.**—There are many men and women who are ill from want of brains. They suffer a voluntary decline because they do not possess the brain-power that can offer the blood any inducement to circulate. The blood does not want to be rushing about when there is nothing going on in the man or woman that owns the blood. Why should the heart or lungs be toiling all day and all night when the person who owns those machines has no use for any new stock of tissues or blood? Pluck is a wonderful agent in throwing off disease. A walk of five miles would cure many an occupant of the lounge. Will-power will surpass pill-power in nine cases out of ten, if not in every one. To hold a bottle of smelling salts in the hand on account of a headache may be just the thing at times, but to fling a pound of fruit cake out into the alley, and then walk a furlong as a reward for not eating the compound, is nearly always a much better thing


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NEW YORK,
APRIL, 1878.

## GENTLE MEASURES WIN.

A CERTAIN class of pharmacists are given to using the poetic figure of Una and the Lion as a symbol or trade-mark, accompanying it with the words, "The mild power subdues." How true this principle in every-day life! Really effective work, that which promotes our ends in a physical and moral sense, and conduces to our happiness individually or collectively, is not accomplished by great blows, by harsh and noisy instrumentalities. The ponderous steam-hammer may forge the shaft into a rough form, but it is the quiet, steady movement of the lathe and the gentle tamping of the workman's light hammer that impart to it the finish and perfection which are necessary. The sculptor may boldly and heavily attack the rough block of marble, but when he aims to give to form an expression of grace and beauty he uses the small, delicate chisel, and lightly taps with his wooden mallet.

In the moral world we must be gentle, would we gain thoroughly our ends. Especially is kindness potent in efforts to reclaim those who have fallen into ways of vice and dissipation. Not long since we were riding in a car, and had for our neighbor-passengers an elderly gentleman and a young man, who were chatting pleasantly. We heard the elder remark in the kindest manner: "You still smoke, James?" "Yes," the young man replied. "I'm sorry," returned his companion. "You know, my dear boy, that it is hurtful to you." "Well, I like it; I enjoy it, and really, Mr. ——, I can not think that it hurts me, for I have no disagreeable feelings from it." "Ah, James! you may not experience much, if any, unpleasant results from smoking now, but in time, with the growth of the habit and the deepening of its poisonous influences, there will come sickness and troubles which might have been avoided by just giving up your cigar."

"But, Mr. ——, there are a great many people who have smoked for years and yet appear healthy and strong. There's Mr. —— and Mr. ——."

"Yes, my boy, they smoke; but did you know what the practice has cost them, not only in money, but in the way of nervous discomfort, ill-temper, inconvenience, and so on, you would wonder that they hadn't given it up long ago. I think that they would tell you that they had tried to do so, but weren't able. I am sure that neither would like to have his son learn to smoke. I never, James, knew a man who felt kindly toward having his boy use tobacco. How pleased your mother would be to have you drop it."

"I know that, sir."

"How beautiful in a son to respect the wish of a loving mother, especially when that wish has reference to what is altogether unnecessary, if not injurious."

The gentleman's voice indicated strong emotion, and the young man replied:

"Well, Mr. ——, I shall think about this."

"I hope you will, James. I want to see

you growing into a noble strength and lofty manhood, assuming the character which is yours by nature. You have done so well, so nobly already, I am anxious that you should continue to go forward."

The conversation was maintained in a low tone, and the above is the purport rather than its literal rendering, as now and then a word or a phrase was lost to us in the noise of the train. At a way-station the young man got out, leaving the elder, to whom we remarked, as the train went on:

"You will excuse me, sir, if I intimate that I was much interested in your conversation with that young gentleman. The manner in which you referred to his use of tobacco impressed me deeply."

"Yes," replied he, "I am anxious to have him give up his smoking. One year ago he was an habitual drinker, a sot; I have found him lying in the street filthy and almost unconscious, and have taken him home. You see what he is now. But the work is not done until he has thrown away his cigar, and I hope to succeed in that."

"I think that you will. 'The mild power subdues.' You know the saying, and you certainly appreciate its significance."

## HATS AND BRAINS.

A FRENCH scientist of some eminence, Dr. Gaetan de Launey, well-known as a popular writer on scientific themes, published an article in the *Tribune Medicale*, entitled "Des Chapeaux" (Some Hats). In this he discusses the relation of the shape of a hat to the intellectual or brain development of its wearer, and derives some conclusions which are remarkably like those which students in Phrenology are accustomed to derive from similar examinations. Dr. de Launey believes in experimental methods, and does not discuss philosophical problems without having some basis of his own procurement.

"Having made examination in the shops of the manufacturers and dealers in hats, it is demonstrated," he says, "that certain families evolve like individuals, that is to say, they have a period of growth during which they develop, a period during which they remain stationary, and a period which leads to their substantial extinction. In families whose tendency is that of growth, the head expands generation after generation. The citizens who contributed to the revolution of 1789 had heads much larger than their fathers. On the contrary, in families on their way toward extinction, the head diminishes from the father to the son. The sons of families belonging to our upper classes have heads so small that they are obliged to have their hats made to order, hats ready-made being too large for them. Among certain families recently risen from the masses, the head is growing. Those hats with large rims which the republicans of 1830 and 1848 wore, had a very large opening (crown). . . . . In general, large heads belong to persons who give themselves to intellectual studies, but it is important to distinguish among these studies. For instance, the members of the Academy of Sciences have larger heads than their associates in other sections of the Institute. According to my researches, the Polytechnicians have a larger head than the St. Cyrians. In the same way, the pupils in the Normal School have a head greatly more developed than the pupils of the school of St. Sulpice. Indeed, the hats of the first have an 'opening,' that is the technical word, of five points, five and a half, six, and six and a half points, representing fifty-eight, fifty-nine, and sixty centimeters in circumference, while those of the second have an 'opening' of four, four and a half, five, and five and a half points, or from fifty-five to fifty-eight centimeters of circumference. Pupils in the Normal School have, then, a mean circumference of two and a half centimeters larger than the St. Sul-

piceans. Moreover, the opening of the hats of the high form, made at Paris, is from four and a half points to five and a half, fifty-six to fifty-eight centimeters, with a medium of five points, or fifty-seven centimeters. This medium is superior, then, by a quarter of a point to the medium of St. Sulpice, which is four and three-fourths points, which proves that the Sulpiceans have not only a smaller head than the Normals, but smaller even than the people at large. In general, this smallness of the head is prevalent among religious people, as the hatters in the quarter of St. Sulpice and of the Faubourg Germain have assured me that they fit only fine heads. The quarter where we find the largest heads is that of the schools. Indeed, the head-coverings which one finds among the hatters in this quarter, have a mean of five and a half points to six and a half, fifty-eight to sixty centimeters. According to some researches made by M. Brocetre in the hospital of Bicetre, the medical attendants have much more fullness of head than the invalids. M. Lacassaque, professor in the Val de Grace, having measured, with the assistance of a conformateur, the heads of two hundred doctors of medicine, pupils of the Val de Grace, and of two hundred soldiers, found that the latter had much smaller heads than the former.

"To those who think that this study of the volume of the head, made according to the capacity of the hats, is not a serious matter," asserts this *savant*, "I will say that the conclusions to which I have arrived, will be verified by the study of the capacity of the cranium, and of the weight of the brain."

We are very much in agreement with Dr. de Launey, as we know that the form of the crown-opening of a hat which is fitted well to the head indicates the cranial contour at the line where the hat rests upon the head, which line usually passes within an inch of the ear. Thus the basilar organs of the side- and back-head and of the middle of the forehead are comparatively shown, and may be estimated as to power with tolerable correctness.

## MEMORY AND DREAMING.

AMONG the wonders of mental activity, the memory, as revived in dreams, is not the least. The property in mental life called Memory is that by which we may be said to live over past occurrences; and it is this continued possession of former consciousness which constitutes in us the knowledge of continued existence. He who should be conscious only of the present, forgetting entirely the past, would have no idea of continued duration; although he might live forever, he would not possess the sense of prolonged existence. Memory, then, would seem to make man conscious of immortality; and without memory, *now* would be the all of life, even though it were immortal.

One curious phase of dreaming is that it rarely brings back and repeats the pleasant facts of life, but almost always those which were troublesome or undesirable.

This may, perhaps, be accounted for by the fact that experiences which constituted the average current of daily life made no special impression upon the mind, whereas those occurrences which were remarkable and impressive by their offensiveness, anxiety, care, or cost, made a vivid impression, which left, as it were, an ineffaceable scar.

We are very apt to remember the errors and mistakes of ourselves or others much more vividly than their excellencies or the average current of experience. How the recollection of an awkward blunder in company, or a careless, ill-advised remark will send a chill of shame and regret through the system! A faithful horse may carry his rider a hundred miles without a misstep, but a round stone concealed in the sand may betray the step of the horse and bring him to his knees, causing the rider to give him a bad name as a saddle-horse, forgetting the

million steps securely taken, and remembering only the one failure, and even in that case overlooking entirely the adequate cause of the misstep. And this is a good analogue of human character or conduct. One may live half a century a model of correct deportment, and a single act of impropriety be recorded as more than an offset to all that was commendable.

More than fifty years ago I was employed in weaving on a fly-shuttle hand-loom, and even now in my dreams I am often weaving and get the shuttle caught in the web and break down threads, or the shuttle fails to go clear through, and I must push it to its destination by hand. I never dream of dashing on freely and pleasantly with the work; only the troublesome part, or the incomplete motions are revived in my dream-memory.

Over forty years ago I was connected with paper manufacturing, and my work consisted in running the machine which formed the paper. As we had no dryer, the paper run from the press-rolls, and was wound upon a reel or "lay-boy" in the wet state. Sometimes the paper would break and wind around the upper roll, and if allowed long to wind on, it made a kind of wet pasteboard, which must be broken at one side and peeled off by the hand as the roll revolved. This required a very dexterous and energetic effort, and it was one of the troublesome things about the work; and just this process I often perform in my dreams. It is not the smooth running of the machine, hour after hour without a break, except when one full "lay-boy" was to be removed and an empty one put on, that haunts my dream, but it is the incidental breaking of the paper.

Moreover, I dream of driving, not on a smooth road at an exhilarating speed, but with a toppling load and on a sidling road. I am driving over a defective causeway-bridge, or through a deep and rushing stream: phenomena which, in my early experience, constituted an exceptional and unpleasant fact.

I once forgot, on a rainy Sunday, to feed my horse until nearly night, and fifty times since that time I have dreamed of neglecting to feed a horse for two or three days and nights, waking with thankful joy to find that it was but a dream.

Will the memory of past misdeeds be the undying scourge of those whose life is misdirected and wicked? S.

## WE MUST BE AMUSED.

MAN is organized for amusement, for avocations of a light and mirthful character. Into the processes by which amusing results are obtainable, the whole intellect and most of those faculties which are classified among the graver elements of mind may enter and actively operate. The grade or quality of the things which amuse us differs in accordance with our individual organization, its co-ordinate relation and development. Hence some persons find enjoyment in ways which to others appear absurd or contemptible, while some find diversion in what to most people appears serious and devoid of every essential of mirth. To be amused habitually by vicious or impure display, either in conduct or language, indicates a perverted mentality or an undeveloped moral organism.

In youth diversion is a necessity, as one of the means which nature employs for the growth of mind and body; and if a proper field for the requisite diversion be not available, it will be sought in channels more or less reprehensible. The parent who frowns upon the light amusements of the social circle, the merry song and lively game, the

concert and entertainment where laughter-provoking quip and joke and repartee fill up the measure of the hour, is not likely to inculcate in his children a love of home, that principle so essential to the integrity of the domestic relation and to communal prosperity. That community which permits its young members who are without the settled relation of home and family to float around from one drinking saloon or low place of amusement to another during the hours of release from labor, instead of providing a place to which they may repair and find a variety of facilities for pleasurable recreation, must expect a growth of the immoral element, and an increase from year to year, while such a condition is permitted, of the demoralizing rendezvous.

In this city there are several drinking-saloons to which their wily proprietors have added large and airy halls fitted up attractively, in which musical and dramatic performances are given. No charge for admission is made, and nightly these halls are filled, mainly with young men of the working classes. What they pay for the supplies of liquor, eatables, and cigars which are proffered by ubiquitous waiters, sustains these enterprises; and, in most cases, the proprietors make large profits, and are becoming rich. If Christian benevolence in large communities would operate successfully upon the masses, it must adapt its instrumentalities to their plane, and include in its scheme the best moral features of the drinking-saloon's concert-hall.

## IGNORANCE AND ABUSE OF AUTHORITY.

THE newspapers of late have given much of their space to accounts of mismanagement and cruelty in several of our prisons and insane asylums. While every case which has been brought to the light reflects shame on all related to it officially and appeals to our humanity in behalf of the sufferer or sufferers, we can not but discern ignorance as the fundamental cause of the wrong doing. Were those vested with the function of appointment acquainted with the principles of phrenology and physiology we would find fewer incompetents intrusted with the keeping of offenders against law and order, and with the oversight of the unfortunate who have lost their reason. Ignorance is the parent of abuses.

A few days ago a gentleman possessing refinement and culture fell into the hands of certain New York sharpers, who, in the furtherance of their villainous scheme, procured his arrest and confinement in one of our district jails. The gentleman being but little known in this city, was unable to obtain bail at the high price demanded by the court having the matter in charge, and in his grief and shame became suddenly insane, and so violent that it was found necessary to send him to a hospital for the insane. The man who was taken to the jail, "a proud, handsome fellow, the very embodiment of health and strength," was transformed in a few days to a "gaunt and haggard wretch, with shaggy hair, sunken eyes, and wan features."

It is said that the poor fellow complained of pain in his head, but there was no one at hand to note the symptoms and intelligently diagnose his malady. We are of opinion that had this case been submitted to a good phrenological physician much distress would have been saved the unfortunate victim.

But this is scarcely more than an illustrative example of the point which must be clear enough to every observant reader, and to which we intended merely to refer, as in

the beginning of this item, that ignorance of the laws governing mind and body is the salient cause of the abuses which afflict our public institutions, and that a reasonable consideration for human rights and the welfare of our communities demands that only those who are fitted by organization and training for it should be authorized to have the personal charge of those whom the law has deprived of liberty.

# Our Mentorial Bureau.

"He that questioneth much shall learn much."—*Bacon.*

## 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.*

WE CANNOT 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—stamps being preferred. Anonymous letters will not be considered.*

DOES NOT WISH TO BE FAT.—E. R.—The disposition to corpulence is a systemic or dietetical one, and is based upon a good digestive capacity. In this country, where dyspepsia is so prevalent, he or she should be deemed most fortunate who possesses a good stomach, and care should be taken to preserve that stomach. People who are able to digest "anything from oatmeal to india-rubber," are likely to impose upon their gastric power, and give the stomach unnecessary work by eating irregularly, and doing things which tend to impair the digestive force. In the course of time the stomach will rebel very emphatically, and if they have not the good sense to be warned, and to adopt a different line of gastronomic habit, they will find themselves ere long in a condition of acute disease, or chronically dyspeptic. We would say to you, take care of your stomach; eat good nutritious food, avoid sweets, eat little or no butter, or greasy or fat food. Eat brown bread, mainly; little or no milk; do not drink much; very little fluid is necessary for health. The juices of good food are sufficient for healthful nutrition. Eat plenty of fruit, stewed plainly, with little or no sugar. Take abundant out-of-door exercise. Reading, study, thought upon earnest subjects tend to use up the products of digestion rapidly. Students are generally thin, as you know. The book on Digestion and Dyspepsia furnishes some hints with reference to kinds of food adapted to a case like yours.

THE EAR.—I have noticed that the height of the ear measured by a horizontal line drawn from the outer corner of the eye, varied in different persons, after making allowance for the difference in the size of the ear. What, if any, indication of character does this show? F. H. R.

*Answer:* Why did you not measure in relation to the opening of the ear? Some ears are very small and some very large, and an estimate of their difference in size is very uncertain; while the opening of the ear is anatomically a fixed starting-point. The middle lobe of the brain is sometimes low down, and this indicates strong animal and selfish propensities. In this case the opening of the ear is low as compared with the eyebrow. One may have a small anterior lobe of brain and a weak intellect, while the middle lobe is only of full size; then the eye will be high as compared with the opening of the ear, and propensity, though not too strong in fact, is relatively too strong for the intellect to be consistent with harmony of character. See February PHRENOLOGICAL JOURNAL for definition of "Phrenology" in article entitled "Brain and Mind."

TENDENCY TO DESPOND.—You should avoid all relations which suggest morbid ideas. Bring to bear in your every-day life the stronger elements of your character. Take a real, practical view of affairs. Consider the expediencies and fitness of things. Endeavor to be a little sordid; not cynical, not splenetic, but practical and matter-of-fact; consider the uses and profitable adaptation of things. Brace up your Firmness and Self-esteem, exercise your Approbativeness, Friendship, and Continuity. Be more combative, assured, and courageous. Have an aim

—everybody can have an aim in life—and keep that aim in view, and push toward it earnestly, striving to forget, or disregard, side influences, and those who doubt and speculate upon your capability and your judgment.

INFLUENCE OF SURROUNDINGS, ETC.—*Question*—(1). Have not the climate and surroundings much to do with the physical and intellectual development of man? *Answer:* Yes, very much. (2). Will every country in the world produce men of genius? *Answer:* Such has been the history of the past. All countries which have a record, have produced men who were geniuses to them. (3). Can a person control his own belief or his own opinion? *Answer:* So the advocates of free agency maintain, and we are inclined to think that the true man can.

PERSONAL MAGNETISM.—L. B.—This element in human nature is dependent largely for its strength upon organization and temperament. Those who have good health—are strong and active, possess, as a rule, more magnetism than the weakly; therefore, if you would obtain more magnetic force, improve your health, and cultivate a better condition of the mental faculties, especially those which relate to social life.

GALL AND SPURZHEIM, ETC.—W. E. S.—Your questions will be pretty fully considered in the course of the articles on "Brain and Mind," which see as they proceed.

QUESTION AND ANSWER.—A. P.—We think that you were treated very shabbily in the matter to which you refer. Your question about the horses was certainly not answered, in the generally accepted sense of the term "answer." You received a *reply* for your money, but not an *answer*. It would have been the part of honesty to return your money. Be very particular in your treatment of advertisements of the sort mentioned, as there is a great deal of "fishing for fools" in that way.

TECHNICAL EDUCATION.—F. C. R.—The Cooper Union classes in this city are free, so that your expenses would be chiefly in the way of board, and that you can obtain now at a very moderate price, from three to five dollars a week, according to accommodations. In the Cooper Union you can obtain instruction upon almost any subject. The art department is admirably furnished.

ROUND SHOULDERS.—D. W. C.—When one possesses large shoulder-blades and well-developed tissues, there is necessarily much roundness of the shoulders; yet if such a one possess a capacious chest and stand erect, such posterior roundness contributes to his physical symmetry. We do not admire flat backs. Keep your shoulders well back and your head up, whether walking, standing, or sitting. There is a little instrument sold in this and other cities which supplies a very simple method of exercise for those whose lungs are weak and muscles flabby. It is merely an india-rubber tube about two feet long. Using this daily will help to straighten you and bring your shoulders more into line.

PLASTER CASTS.—C. G. O.—From time to time we have had much to say on the subject. An article of considerable length was published in one of our Annuals a few years since. You will find it in a volume entitled "Combined Annuals," or in the separate issue for 1872, price twenty-five cents.

PHYSICIAN.—M. M. M.—A knowledge of the classical tongues is not essential to a medical education, but some knowledge of Latin is always very useful. In general, however, we would say, the more thorough one's education, the better will be his success. You should certainly have good health. It is a great drawback to one who expects to become a physician to be sickly or invalided. It is in your favor that you are not a user of tobacco or in any way indulgent in alcoholic beverages. The prevalence of such habits among physicians is a serious obstacle to them as concerns reputation and popular confidence.

[WE have received several other communications, which are on file awaiting attention.]

## What They Say.

THOROUGHNESS.—We hear much said about a thorough education. College catalogues and normal school circulars all claim to give their pupils thorough drills in the respective branches they teach.

What is thoroughness in education? If it were possible to educate every one so that he would have a complete knowledge of all the branches of mental investigation, then we might truly call that person a thorough scholar. But this is evidently impossible. There have been but few men as thorough scholars as John Quincy Adams, yet there were in his time many lines of investigation of which he was completely ignorant. No one can be a proficient in everything. A universal genius has never been found. The field of human inquiry is too large. You all know what the great scholar Isaac Newton said after he had explored and weighed worlds,

and analyzed the sunbeam, and plunged as deep as any man of his time into the ocean of science. He said he was like a little child on the sea-shore picking up a few bright pebbles while the great ocean of truth lay unexplored before him.

But our point is this: Instead of trying to master the details of every branch of knowledge, would it not be better to try to gain the general principles of every science, and then follow out some one branch such as our organization best adapts us to pursue? To a believer in the science of Phrenology this will be apparent. In order to follow any one branch of science successfully it is necessary to have a general knowledge of all the sciences. There is an intimate interrelation of the branches of knowledge. To pursue the science of Geology, one must have some knowledge of Language, of Botany, of Chemistry, of Physics, of Mathematics, of Geography, of Astronomy, etc.

It is true there are some examples of persons who lack almost totally in certain faculties, though they may be well developed in all the others, yet such cases are comparatively rare. George Combe was deficient in the faculty of Calculation, yet he had a full development of the other faculties, and was a great scholar. The general principles of every science may be taught to almost every one, and every one has a special adaptation to some special science.

The general principles of a science are not difficult to acquire. We teach children the fundamental principles of Mathematics, of Geography, of Astronomy, of Language, etc., with little difficulty. There are problems in all sciences that are exceedingly difficult of solution. We need more specialists, and they need a general knowledge to begin with. If our educators were better versed in the science of Phrenology they would change their mode of teaching in regard to the matter taught. Our schools and colleges are doing a great work. They are turning out a vast amount of efficient working material. They are fast advancing the work of converting the nations from barbarism to civilization, of making the desert blossom as the rose. But there is yet vast room for improvement. Take it in our common schools, for example. The child is taught the names of places of little importance, thousands of miles from his home, while the fundamental ideas of geographical science are not impressed upon his mind. He is taught to spell thousands of words the most of which he will never meet with outside of some technical work, while he can not when he leaves school write a simple letter to his grandmother without misspelling half the words. A schoolboy's letter is a sad commentary on the thoroughness of our teachers. There are certain principles which are of more importance because of every-day use. There are others which are of importance, but being of a special nature should be made subsidiary. Children are crowded through too much, and not sufficient stress is laid upon that which is fundamentally of the most practical importance. School is the place to learn general principles, and life-work is needed to acquire the details of one science.

> "One science, only, will one genius fit,
> So great is art, so small is human wit."

Nearly all the great discoveries have been made by specialists, men who devoted their lives to some one branch of inquiry. That school which sends out its pupils having a knowledge of the most important principles of all branches of knowledge, and directs them to pursue some special branch adapted to their physical and mental organization, having at the same time taught them how to study, how to discriminate the most important from the less valuable, is the school which gives the most thorough education. The teacher should have a knowledge of Phrenology so that he can tell what his pupils are best adapted for; and while he should try to encourage the faculties that lie comparatively dormant, he should not repress those intellectual faculties which are especially active by trying to make all his pupils run in one educational rut.

A division of labor is necessary in mental work as well as in physical work. It is the province of Phrenology to assign each laborer his field. The future triumphs of science and art will be made by men who, being particularly adapted to some pursuit, follow it with untiring zeal and perseverance.

G. DALLAS LIND.

LET THE CRITIC OF MORALS BE CAREFUL IN HIS LANGUAGE.—"*Editor* PHRENOLOGICAL JOURNAL, *etc.*: I recently became a subscriber to your valuable JOURNAL and take much pleasure in reading it. But I must enter my protest against the language used by your contributor (Mr. E.) in the article on 'The Use of Tobacco,' at page 154, line 20; in which he calls a smoker a '*filthy fool*.'

"That smoking is a bad habit, and offensive to those who do not use tobacco, I willingly concede; but because I smoke and Mr. M. does not, I deny his right to call me either 'filthy' or 'a fool.' He (Mr. M.) may be a very wise man, he may be a gentleman, but his language is certainly not courteous. 'Who is a wise man, and endued with knowledge among you? Let him show out of a *good conversation* his works with meekness of wisdom.'—James iii. 13. Yours respectfully, SMOKER."

[We very willingly give an audience to the smoking side in this matter, as excessive zeal in a good cause is not a tolerable excuse for improper epithets.]

# 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.*

THE AMERICAN ALMANAC AND TREASURY OF FACTS, Statistical, Financial, and Political, for the Year 1878. Edited by Ainsworth R. Spofford, Librarian of Congress. Pp. 420. New York and Washington: The American News Company.

This is certainly a compact and comprehensive reference book. It contains the essential features of reports concerning public lands, finance, the post-office, the revenue, currency, patent-office, army and navy, etc., thus representing a vast amount of hard work in selecting, arranging, and condensing valuable material. To the editor, statesman, writer, and to all who are interested in public affairs, this volume is a great convenience. Some features which appear to us of special value, we will note, viz.: A list of notable persons, arranged alphabetically, from Solon to Jacob Abbott, giving their birth, date, and time of decease; an article on "Free Homesteads;" Curiosities of Statistics; Table of American Libraries containing ten thousand volumes and more; the Commercial Crises of the Century; the Silver Money Question; the Capital of the United States, etc. We welcome this volume as a very useful accessory to our bookshelf.

THROUGH A NEEDLE'S EYE. By Hesba Stretton, author of "Bede's Charity," "The King's Servants," etc. 12mo, cloth, pp. 433. Price, $1.50. New York: Dodd, Mead & Co.

A picture of English country life is unfolded to our mental gaze in the course of the fifty-one chapters which compose this new story. The plot appears to be, in brief, this: An old landowner, Herford by name, dies, and a step-son, who had been acting as vicar in the parish embraced by the estate, succeeds him as heir by virtue of a will which had been made when old Herford was angry with his own son, who was given to a vicious and disorderly life. Justin Webb, the step-son, appoints a worthy minister in his place as vicar, and commences the administration of the affairs of the estate, and shows so much business tact and sagacity, that in a few years the property is rendered doubly valuable, and Justin is regarded as a rising star in county affairs. The former vicar realizes his own conviction that he was not "cut out" for a minister, but for a business man. His step-brother, who ran away from home shortly before the death of his father, and had gone, nobody knew where, after an absence of ten or more years, returns penniless and foot-sore to his father's house. Justin then insists upon making over the greatly improved estate to him as the rightful heir, alleging that his late step-father had destroyed by mistake the will he intended should stand, and in that will so destroyed he had constituted the prodigal his sole heir. Justin's scruples of conscience are only satisfied by a complete surrender. And taking his only child, Pansy, he goes to London, where he finds employment as a missionary. A year or so elapses and he is summoned to Herford, his old home, to find his step-brother a helpless invalid, from an accident sustained while out carousing with one like-minded with himself. The estate is restored to Justin, whereat the villagers are greatly rejoiced. And now with a mind at peace, he resumes his interrupted administration of its affairs. His scrupulous conduct in the giving up the property awakened suspicion in the minds of friends and cost others deep pangs, even the health and life of his beloved Pansy, but he persisted in going "through the needle's eye" and performing to the full measure his convictions of duty. The volume points an excellent moral, and is high in tone and attractive in style.

HOW TO CONDUCT A PUBLIC MEETING, or the Chairman's Guide for conducting meetings, public and private, according to the best Parliamentary Rules. Paper, price 15 cents each; $1.20 per dozen. New York: S. R. Wells & Co., publishers.

The American being a talker, can not exercise his faculty without finding people to talk with, or to, and for the more effective exercise of his energetic organ of Language, forms societies and co-operative enterprises so that it may be convenient for him to talk, debate, and recite. All organized effort for the exercise of language needs direction. A society which has a set Constitution works all the more efficiently if such Constitution be wisely prepared and well arranged. Aside from the mere Constitution, there is need for an Order of Proceedings, or rules for governing the conduct of a society's meetings. When people speak by rule, what they say has more point, directness, and effect. Loose and slouchy talk doesn't accomplish much in the way of persuading others, and therefore lacks effect. The pamphlet which is noted above has been published to meet the need of societies, public and private, literary and otherwise. It contains the excellent order and rules for parliamentary practice which were published in the work entitled "Oratory, Sacred and Secular;" and has been prepared in response to a demand for a low-

priced publication which would furnish a very comprehensive manual for the use of the people. A list of appropriate questions for debate in lyceums, literary associations, etc., is included. Many of the questions are appropriate to the thought, scientific, moral, and religious, of the present day, and are therefore fresh and vital.

ELOCUTION SIMPLIFIED, with an Appendix on Lisping, Stammering, Stuttering, and other defects of Speech. By Walter K. Fobes, graduate of Boston University School of Oratory. With an Introduction by George M. Baker, author of "The Reading Club Series," etc. pp. 94. Price 50 cents. Boston: Lee & Shepard.

This little manual seems to combine nearly all the essentials of a course in elocution. There are many among our readers, doubtless, who would be willing enough to study the principles of vocal gymnastics, but have been heretofore deterred from doing so by the supposed cost of text-books. Most of those authors with whom we have been familiar—like Bronson's and Comstock's, whose value is indisputable—are rather costly, and so have not been widely circulated. Mr. Fobes has the advantage of the best training, and that in two or three different schools. The physiological suggestions are valuable, and in that respect the book is a kind of missionary for the good of humanity, when it says: "Avoid all stimulants, or tobacco, or anything of the kind. Obey the laws of life as to exercise, rest, pure air, good food, and temperance in all things." It seems to us that all the textual instruction which the average student would need, is comprehended within the covers of this volume.

THE ACTION OF ALCOHOL ON THE BODY AND ON THE MIND. By Benjamin W. Richardson, M.D., F.R.S. New York: National Temperance Society and Publication House. Paper, price 25 cents.

This pamphlet embraces two addresses by Dr. Richardson, the first delivered at Oxford, on "The Action of Alcohol on the Body;" the other at a meeting of the Cambridge Church Temperance Association, on "The Action of Alcohol on the Mind." The position of this medicist with reference to the use of alcohol as a beverage is well known; he is its determined antagonist, and one of the champions most highly respected by temperance reformers. The two addresses are condensations of physiological fact, and we commend them to all who stand in the valley of indecision with reference to their course in considering the temperance question. Within the space of fifty or sixty pages this pamphlet contains the gist of volumes.

THE RAPID WRITER AND TACHYGRAPHER. Published monthly by the Rapid Writer Association of New York. Price $2.00 per year.

The writer of the first article claims that tachygraphy is superior in the facility of its acquirement to phonography, and instances Mount Union College in Ohio, Bryant Commercial College in Chicago, Amherst College, and other places, as being the theaters of its comparative trial with phonography, and showing as a result, that whereas only a few persons in a hundred mastered phonography, nearly all succeeded in acquiring a practical knowledge of tachygraphy. The writer says: "Now, if you find that practically only ten persons in a hundred succeed in mastering phonography, and ninety-five persons in a hundred succeed in mastering tachygraphy, is not this a great gain in favor of tachygraphy? If you find that tachygraphy is vastly more legible, will not this add to its value?" To this we must answer, yes. If so, and so be so, why, such and such must follow!

## PUBLICATIONS RECEIVED.

THE MONTHLY WEATHER REVIEW of the War Department, for January, notes as the most prominent events of the month: The high temperatures of the Missouri and Upper Mississippi valleys and the Lake region; the high pressures over the same region; the severe storms of the 11th and the 31st on the Atlantic coasts, and of the 14th to the 16th and the 24th to the 28th on the Pacific coasts; the excessive rain-fall in Northern California; the remarkable measured wind-velocities of 120 miles per hour at Cape Lookout and 186 at Mount Washington; the forward state of vegetation in the western and northern sections; the aurora of the 23d.

PRO AND CON OF SPELLING REFORM. By Prof. O. E. Vaile, of Woodward High-school, Cincinnati, O. The ground taken in this essay is favorable to simplifying our common orthography, reducing words to the simplest form, and spelling in accordance with phonetic principles.

SOME WAYS of Strengthening and Extending the Total Abstinence Movement. By Henry C. Potter, D.D. This paper was prepared for one of the "Parlor Conferences" held by the National Temperance Society. It is worth reading, as it brings into strong light many of the reasons for the total abstinence view of the temperance question. Dr. Potter, as rector of Grace church, New York, occupies a prominent position in society, and his reasoning will be listened to with deference.

GOOD WORDS for the Working-women of New York. By Justice Davis, Dr. W. M. Taylor, and other gentlemen of reputation. Published by the Working-women's Protective Union. A most worthy charity, one of whose special objects is the protection of the working-women from the frauds and impositions of unscrupulous employers.

THE PHRENOLOGICAL JOURNAL AND LIFE ILLUSTRATED.

VOL. 66. 1878.

NUMBER 5.] *May, 1878.* [WHOLE NO. 473.

## TOWNSEND HARRIS.

ON the twenty-fifth of February last, a gentleman died at the age of seventy-five, whose career had been, in many respects, remarkable. This gentleman, Mr. Townsend Harris, had filled many positions of eminence in the political and social walks of life, and had acquitted himself with much credit.

Our portrait represents him as he appeared when in the fullness of manly vigor. He had a large and active brain, a temperamental organization approaching the harmonious, and abundantly supplementing the vigorous intellect. The base of his brain was large, the perceptives being prominent, and contributing to his ready appreciation of facts and practical subjects in general. He possessed also a ready intuition which enabled him to master subjects without severe toil or study. The conformation and expression of the face indicate culture, that the mind had been rendered active in the direction of philosophy and reflection, and in the comprehension of esthetic detail. Language is shown by the fullness of the eyes.

The social nature was fully developed, and this, co-operating with his intellect and intuition, and with his sympathetic feeling, rendered him genial in disposition, affable, and winning. He was remarkable for his power to adapt himself to the customs and usages of others, to conform to the mannerisms of strangers or foreigners. The faculty of Agreeableness is well indicated in the portrait, and this assisted in a marked degree toward rendering him acceptable to friends and strangers. The head shows height in the coronal region, and coincidently indicates firmness, ambition, self-reliance, and personal force. He was well qualified for taking places of responsibility in business or in education. He had the qualities for the orator, the teacher, the lawyer, and the merchant.

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Townsend Harris was born at Sandy Hill, New York, where he received the rudiments of education in the ordinary district school, and such training as was deemed sufficient for a youth who looks to commercial life as his sphere of activity. At the age of fifteen he came to New York, and took a clerkship in a dry-goods store, where he remained a year, when he obtained a situation in a large china house having an extensive foreign trade. In this he remained until he was taken into the firm as a partner. In the course of time he became sole proprietor of the business. While engaged in the conduct of this business he found time to give attention to public matters, particularly education. For several years he served as a trustee or commissioner; was twice elected President of the Board of Education, and while holding that office suggested the idea of establishing a Seminary of a higher grade than the common school, the benefits of which should be free to all scholars who had passed the lower branches of the public school curriculum. Out of this suggestion grew the Free Academy, or New York Free College. Its establishment cost Mr. Harris a great deal of labor and earnest advocacy with pen and tongue.

When in 1848 the new empire of Japan opened up to the trade of the Pacific, and California gold attracted the business man and adventurer, Mr. Harris purchased a vessel, loaded it, and sailed around Cape Horn. After several years had been occupied in traversing the Pacific Ocean, visiting different countries, he reached China in 1854, where he received from the Government of the United States the commission of Consul at Ningpo. In 1855 he returned for a brief visit to New York, and while here received the appointment of Consul-General to Japan. This appointment was entirely unsolicited on his part, and the subsequent administration of the office by Mr. Harris proved the sagacity of the State Department in selecting him for it. Through his able diplomacy important benefits were secured to this country from the then exclusive and suspicious Japanese. He was also appointed commissioner to negotiate a treaty with the empire of Siam, and by its successful consummation, another new mart of trade was opened to the commerce of the United States at Bangkok. To Mr. Harris' tact, courage, and suavity, the establishment of amicable commercial relations for some of the Christian nations of Europe with Japan were largely due.

Mr. Harris was a large, portly, impressive

man; very cordial and winning, yet resolute in manner. He spoke several languages with fluency; was able even to converse in Japanese without the aid of an interpreter. It is said that when Mr. Harris entered upon the duties of his Japan consulship scarcely any progress had been made toward obtaining facilities social or commercial. American coin was received only at a depreciation of more than one-half, no article of necessity could be purchased except through the medium of an agent expressly appointed in each case, and this appointment could only be obtained from Jeddo, the capital. Mr. Harris was admitted to the presence of the Emperor in July, 1858, less than two years from the time of his arrival at Japan, the result of his tact, courage, and pleasing manners.

He had prepared materials for a history of Formosa, and was also engaged on a similar work on Japan.

## THE STUDY OF HUMAN NATURE.

HUMAN responsibilities are seldom estimated at their proper value. It is not enough for us that we make our degree of knowledge the measure of responsibility; our duties lie much farther than this. Not only the knowledge we have, but the latent abilities which we leave to slumber unused, and the neglected opportunities for bringing such abilities into exercise, have claims upon us which we have no right to ignore. For the buried talents, be they one or ten, we must assuredly give an account. The possibilities of the human mind are far beyond our present conception. Each succeeding age reveals capacities and mental resources of which the preceding age had but a faint foreshadowing.

Not very long ago Phrenology was but as a single taper, pointing upward by a narrow path; now, however, it is like the flame of a lighthouse, high upon the rocks, illuminating the dark sea of human life, so that the breakers may be avoided.

The science of Phrenology is as an open door to the hidden chambers of the soul, and when once we have passed through its portals, we can have no sufficient excuse for remaining in the antechamber of knowledge, for every door of the mind is easily accessible from this broad vestibule. Still the doors of wisdom will not swing back noiselessly without touch. Effort is essential for every achievement. Not that effort which, when one great point is gained stops and cries: "See, how wise I have grown! This is enough!" but that continuous endeavor which from each summit attained, moves onward toward the heights beyond, until at last the great panorama of human thought, motive, and will is spread like a landscape beneath.

A careful, honest, and spiritually-minded investigator may become an expert in the study of human nature. He may reach a point where he can deftly trace action back to motive, and no mask can prevent him from reaching the sources or mainsprings of conduct. To such an expert, the clasp of a hand, the glance of an eye, the characters which the fingers may have traced upon paper, or even the atmosphere with which an individual surrounds himself, are sufficient clues by which he may be able to trace the undercurrent of thought, and make a just estimate of character. In fact, those of us who claim no special culture in this direction can but have observed some manifestations of this power in ourselves. How often do we find ourselves instinctively drawn toward some strangers and repelled from others. We sometimes experience something akin to an exaltation of spirit in the presence of one whose soul has been purified by suffering, even though at the time we had never interchanged with that person a word. Again, we sometimes feel a repugnance to some stranger so strong that we are impelled to change our seat in the cars, or pass to the opposite side of a room in order to rid ourselves of his unpleasant influence. Now these experiences are but the manifestations of this disposition calling upon us for recognition. It demands to be recognized as an undeniable factor in the make-up of

human beings, and as such it is as much entitled to analysis, exercise, and culture as any which we possess.

Indeed, is it not because this power to discern the character and quality of human beings has been so long ignored that we find mankind, with all their wondrous gifts, still submerged in an overwhelming sea of fraud, deception, and wickedness? The exercise of this faculty must of necessity do away with hypocrisy and crime, because they could no longer remain concealed.

The faculties of the human spirit are all equally God-given, and are equally entitled to recognition. Yet there seems to be a superior Divinity in this one—inasmuch as it "searches the heart and the intents thereof," and points unerringly to the line which divides truth from falsehood, light from darkness, and strength from weakness. This power is sometimes called Psychometry, and it really is but an extension or amplification of Phrenology.

There are many who have given careful attention to this subject, who can trace the character of persons by sitting in the room with them, or even by holding in the hand, for a few moments, garments they have worn or letters they have written. In one instance the writer was present when a gentleman, wishing to test this power, gave to an expert a letter inclosed in a blank envelope. After holding it a few moments, he commenced giving a description which was so marked, that the gentleman begged him to desist lest others who were present should be able to recognize the identity of the writer from his faithful analysis. The delineator was a man of fine culture, with a clear head and pure heart. Indeed the exercise of this faculty is of itself a refining process. It establishes a habit of mental scrutiny, a habit of distinguishing at once good from evil, and the contrast between these two being so constantly kept before the mind it comes instinctively to follow the true and reject the false. As the trained eye of a skilled artist at once discovers the genius displayed in a fine picture, or the crude pretensions in a poor one, so does the expert in character-reading detect at once the genuine from the counterfeit.

We are gathering the history of this world as we pass through it. The men and women who jostle against us on the crowded thoroughfares leave upon us the impress of their real value. We also daguerreotype our moral and mental status upon all with whom we come in contact. We are as sensitized plates, upon which are stamped the moral features of our surroundings, and a due degree of attention given to this method of studying human nature will enable us to bring out into distinct outline these historic pictures.

In the moral, as in the physical universe, there can be no waste, and these pictures we paint along life's way must endure so long as spirit endures. First, we know that this power to fathom human nature exists. Second, we know that no power or faculty is given us to be left unused or uncultivated. Third, we know that if the masses of men could once be brought to recognize this fact, viz., that it was impossible for them to hide impurity and deception, so that the truly cultivated minds could not unerringly trace their wickedness to its source, they would soon "cease to do evil and learn to do well."

If the youth of to-day could feel certain that they were leaving ineffaceable traces of themselves wherever they went, which the clear-eyed student of human nature could readily trace, how soon would they discard all unworthy and unclean thoughts and motives. Because the world does not recognize this faculty of soul-reading, or because men may sneer at it as something visionary and unreal, are not sufficient reasons for ignoring facts which are patent to every close observer. All truth receives recognition only after it has been born of pain and persecution.

HELEN M. SLOCUM.

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GRATITUDE!—A correspondent of the New York *Evening Post* writes of some incidents which have come to his knowledge. They are so suggestive in their nature that we publish a part of the communication:

A little girl whose mother keeps a candy shop, was passing the Brooklyn Athenæum one most inclement day recently, and found

a wallet stuffed with bank-bills. She immediately concluded it had been dropped by some one attending the entertainment then going on in the building. Notwithstanding the cold, and mayhap the temptation, she waited for the crowd to come out, in order to find the owner. Among the first, two ladies handsomely dressed came down the staircase together, and as they passed so near the little girl as almost to overturn her basket, she heard one of them exclaim, "How unfortunate! There were $300 in my wallet." With flushed face the little girl stopped her, and said: "I found the money. I have been waiting to find the owner." While by-standers looked on, the lady serenely remarked, "That will do, little girl; I am sorry I haven't a penny to give you," and walked on.

As a counterpart of this, with a humorous complexion, a story is told of a young man in this city [New York] who found a pocket-book containing a considerable sum of money, and advertised it. The wallet was identified by some one living a short distance out of the city, and the young man dispatched it to the owner. As his fellow clerks in the office were acquainted with the circumstance, there was an expectant group about the young man a few days later, as he was opening an express package coming from the place where his correspondent lived. The general expectation received a most comical shock as the torn wrappings revealed a paper box, and the box uncovered displayed a pound or two of common candy, which the grateful owner of the wallet begged the honorable young man "to accept as a slight," etc. No allusion was made to refunding the cost of advertising.

## AN AMATEUR'S RULES OF PHYSIOGNOMY.

IN reading a book, a good teacher recognizes the fact that a correct expression of the passage under study by a pupil, is more easily imitated by another, than if the teacher himself read it, and asked the pupil to render it as he had. The teacher has so much science that the art for common practice is obscured to undeveloped minds. In the same way, I think, the outgrowth of my little science with my every-day art may be helpful to other unscientific learners. To study Physiognomy in its full sense, as a more or less developed science and philosophy, requires all the culture that makes a first-class sculptor or painter; he must know Psychology, Physiology, Anatomy, and their union science—Phrenology. There is another and more popular way of studying Physiognomy, either as is done distinctively by a man or by a woman, by observation, or by sensation. Given a person with a woman's sensibility and a man's analytical observation, especially if he has the culture above described, and you have the ideal physiognomist.

Too much of the popular idea of human nature is founded on mere arbitrary opinions or Ephraimite judgments—"cakes not *turned*." An excellent lady I remember, never liked a man with a thick back-neck. She was sound in her judgment, but only as far as she went, for it left out the fact that such is occasionally joined with a good front and top-head, whereby its indicated tendencies could be controlled. Those who follow arbitrary opinions or partial rules are apt to consider the observer who judges from a line, complexion, curve, or form, more arbitrary and partial than themselves; but science backs the art, so teaching and experience prove both true. Lavater, who was a discoverer, and had both sensibility to human nature and observation of its sculpturing, always studied a *whole subject*. By knowing what was *on* man, he soon learned to know what was *in* him, and *vice versa*.

Here are our Amateur Rules:

1. The first look should be a *constitutional* one. Man, by constitution, is more than in a mere condition, to which sense the word is most frequently applied; for constitution, rightly understood, teaches of the natures of the man. Every one has either two or three natures. If he is a Christian, he has a spirit, soul, and body. If unregenerate, he has only a soul and body. The

former is a *person*, the latter is only the highest of *individuals*. Try to see whether the man is recreated into God's image and in accordance with His likeness (Glory—revealed plan), or is only a soulish man. This will settle the question, whether he is a God-aided man or only one dependent upon psychical force for his character and conduct. In the first case, you can generally predicate the predominance of his spiritual faith expressing nature. In the latter, the soul will be more likely to express his bodily sense nature.

2. See, of what *race* is the man? It is the ethnological look. History tells certain truths of Physiognomy, which can be best learned from it, as to race and national tendencies. A Norwegian writer, for instance, says that malice is a dominant trait of his countrymen. Philology says the Persian has no word for gratitude; and if it is not in his language, it is not in his heart. A Persian's highest compliment is for the man who catches him in a *lie!* Remember that, since Adam failed to reach the "Tree of Life," *color* is not a lesson of trait, but *complexion* may be. The "black" and the "freckled" man only mark a distinction of grade, not of difference of color. Complexion, in Physiognomy, is not a racial mark, but a constitutional *condition* mark, and the contrast is not based on black and white, but upon red and white. Blood, as a life, is *one*—not of one man, but of one kind. There was a constitutional difference of *kind*, but there is only a conditional difference of *men*, except as grace re-divides humanity.

3. Take *two* looks at every face; a front and a side view. You get the lines and power from the front face, and the angles and force by the side. By one you can see many characters hidden in the other. By brow lines, for instance, you may learn of the subjects *inertia*, or "mushiness;" but by his angles you can learn his want of capacity.

4. Ask yourself, has the face grown proportionally? Is there an infantile chin, or a "crushed" brow? Does the head seem to have been pressed in from above and below at the expense of the nose? Is the face, etc., in proportion to the body? Is it infantile and associated with a vast brutal or sensual body? The vilest woman of this San Juan region is so grown.

5. Is this man or woman an abnormal? Is he feminine, or she masculine? To what animal have they been degraded? I once said to a companion whom I was visiting: "Oliphant, look at that fox!" His reply was: "His name is Fox, and he is the biggest rascal in the country!" In the sexually abnormal you must look for contradictory traits. In the animal, bird, or fish man, or woman, expect typal traits.

6. Distinguish between the sexes, both generally and particularly. Some people class men and women on the principle of the man who thought that what was good for a horse was good for man. The Roman is the extreme man. The Greek is the middle man, between the sexes. A woman with more than a Greek nose, for instance, is to be judged much as you would a man. Strength, straightness, and squareness are masculine, as also is convexity; but a woman should have beauty, the curve, and roundness, as also concavity.

7. Read "New Physiognomy," and look at the *separate parts*, especially of the face of the subject. The face is the concentration of the whole man, as man is of the whole cosmos. Redfield points out one hundred and fifty-seven parts in the face, and Lavater has twenty-six rules for the brow alone. I have tried many of Lavater's rules, and always proved them. After one reading of the "New Physiognomy" I saw ten times as much in every face as I had ever seen before.

In this article I have laid emphasis upon the face and upon trait marks, more than upon *expression*, that wide domain which is best judged by sensibility to human nature, which sensibility being actually a trait of many, is to me a good proof of such an organ as that of human nature. Each one must follow the style of investigation best suited to them, and on the line in which they apprehend the quickest, or on which they have been longest at work gathering data. There is great need of specialists in Physiognomy. There is, for instance, need at present for a specialist on *neck lines*, etc., a pillar whose inscriptions no known physi-

ognomist has ever read. They are nearly as varied as the face lines. Who will take man by the throat and tell us his name? (Revelation). As a new use for that part of him, I recommend it to all lovers and enemies.

ALEX. M. DARLEY.

## A CLUSTER OF SIMPLE FLOWERS.

EVERY lover of nature esteems flowers, and ranks their culture among the more desirable employments of human life. Their growth, beauty, and perfume, contribute more to human gratification than most of us think. After the frosts of winter have been melted by the genial breath of spring, and meadows and gardens begin to put on a mantle of green, the dullest of us are cheered by the sight; the first daisy which blooms in the meadow is hailed with joy, and we feel that the triumph of life is complete. The purpose of this article is not an ambitious one; it is not intended to present an array of rare and costly plants, but to suggest a few of those simpler flowers which any one can cultivate and bring to gratifying maturity. There are many plants, like the aster, candytuft, cockscomb, phlox, etc., all certainly beautiful, which are so generally known that we have thought it scarcely worth while to include them among our illustrations. In nearly every village garden

Fig. 1.—SWEET ALYSSUM.

by the road-side such flowers are to be seen. Doubtless many which we shall mention are familiar to the reader, but as their fitness for popular use is unquestionable, he will not protest to their appearance here. First we name the Alyssum; or, as it is commonly called, Sweet Alyssum, whose little white flowers win our approval at once, not only on account of their dainty shape, but also because of their fragrance. It grows freely from seed, either under glass or in the open ground, and is, in maturity, about six inches high.

The Amaranthus, which in its different varieties goes by several names, like Sunrise, Love Lies Bleeding, Prince's Feather, and many others, is a valuable plant on account of its ornamental foliage, the leaves being highly colored and graceful, and the growth tall, being upward of two feet. The engraving shows the variety called Sunrise, one of the best of the class; its top is a brilliant crimson. The Amaranthus belongs to the half-hardy plants. If the seed be sown early, when the weather has become decided, say in May or June, and in soil tolerably rich, it will make a rapid growth. This flower is adapted to the centers of beds or mixed flower borders.

Fig. 2.—AMARANTHUS.

Fig. 3.—AQUILEGIA.

It is a beautiful addition, on account of its height, to a bed mainly composed of plants of low growth.

The Antirrhinum, otherwise known by the popular name of Snapdragon, is considered one of our best half-hardy perennials.

It is a showy and useful border plant, succeeds in any good garden soil, blooms early the same season, if protected a little at first, and continues to flower until after frost. If not too much exhausted, the plant survives winter, and flowers well the second summer.

Fig. 4.—Balsamina.

The Aquilegia is the old and well-prized Columbine, in its varieties combining flowers the most curious in form, with colors the most striking and beautiful. It flowers early in the spring, the seeds being sown in the open ground. The plants can be increased by dividing the roots. This plant grows wild almost everywhere, and is called by children the Wild Honeysuckle.

The Balsamina is one of the most beautiful and popular annuals. Like the Aster, it is an old favorite with those who are given to varied horticulture, and gardeners have paid so much attention to it during the past quarter of a century, that the stock has been immensely improved. With fair treatment, plants and flowers of the most gratifying excellence may be produced. The seed should be sown in a frame or bed, or in pots if large specimens are desired. The soil should be very rich. The flowers produced by the Balsamina are gorgeous masses of brilliant color, usually variegated. The variety which appears to be the most highly prized is called Smith's Prize, and resembles in many respects the Camellia.

Fig. 5.—Catchfly.

Fig. 6.—Centaurea.

The Catchfly, which is the prettiest of the Silenes, has small white, red, or rose-tinted flowers, rising up independently from the stem. It is admirably adapted for spring and summer blooming n beds, rock-work, etc.

Fig. 7, Convolvulus Minor.

For this plant, as with most of the others on the list, the ground should be prepared by digging to the depth of eighteen or twenty inches, and if it be not rich and loose, plenty of leaf-mould and thoroughly rotted manure should be added so that the surface shall be fine and smooth. As a general thing, the seed should be sowed thinly and lightly covered with soil. If the weather be dry and warm, it will be well to shade the ground and keep it moist by watering with a fine sprinkler. As soon as the plants appear they should be thinned out to a proper distance,

Fig. 8.—Collinsia.

Fig. 9.—Delphinium.

and the flowers should be removed as soon as they begin to fade; otherwise the plant loses strength, and its blooming period is shortened.

The Centaurea, often called Basket Flower or Bachelor's Button and Corn Bottle, is perfectly hardy, and succeeds well in any common garden soil. The variety represented in the engraving is the Centaurea Americana, or Basket Flower, because the caylx has the appearance of a basket filled and overflowing with its hair-like petals.

Fig. 10.—GAILLARDIA.

The Morning-Glory of our childhood may be said to have its representative in the Convolvulus Minor, of which our next engraving furnishes a good showing in what might be

Fig. 11.—MIMULUS.

called an improved form. This is a dwarfish plant of trailing habit, each one covering a circle two feet or more in diameter. The flowers are about two-thirds the size of those of the common Morning-Glory, and when grown in a bed, forms a beautiful mass of bloom. The flowers close in the afternoon. It is not necessary to state that it grows freely in almost any situation, producing a splendid effect on rock-work, stumps of trees, banks, rough fences, etc.

Fig. 12.—MESEMBRYANTHEMUM.

Our next engraving represents a variety of Collinsia, an annual like the last mentioned, and a free flowering, popular plant, very attractive in beds, mixed borders, or ribbons. It grows to the height of one foot; does not require special treatment, the end of April or early in May being time for sowing the seed outside.

Next we have the Delphinium, generally known as Larkspur. The varieties of this plant differ greatly in habit of growth. Some produce magnificent spikes of flowers, while others are dwarfish and completely covered with bloom. The double varieties are very beautiful. The color is chiefly blue, shading off, while all are more or less marked with some other tint. The Delphinium prefers a cool soil, and the seed should be sown in the autumn or very early in the spring. The branching varieties, like that represented, grow two feet in height, and should be planted ten inches apart.

Fig. 13.—HEDYSARUM.

Fig. 14.—PERILLA.

The Gaillardia, or Blanket Flower, is a good bedding annual. It is a constant bloomer throughout the whole summer; a hardy plant, thriving in any light, rich soil. The specimens should be set from twelve to eighteen inches apart.

Fig. 15.—PETUNIA.

The Hedysarum, of which nearly all the

varieties produce handsome flowers of an attractive pea form, in mannner of growth bears some resemblance to Scarlet Clover, but it is a much bolder and handsomer flower, and desirable as an ornament to a garden

Fig. 16.—PHACELIA.

plot. Perfectly hardy, the seed may be sown early in the open ground.

The Mesembryanthemum is a half-hardy annual, and a great favorite in households where plants are kept in variety. Its delicate, succulent, and almost transparent branches and leaves have given it the com-

Fig. 17.—ROCKET.

mon names of Ice-Plant and Dew-Plant. It is of drooping habit and so adapted to basket and vase work. Flowers of the Ice-Plant variety are small and white; those of the Dew-Plant are pink. It needs a warm, sunny situation, and succeeds best in a dry, loamy soil. Its origin is the Cape of Good Hope.

Fig. 18.—SALVIA.

The Mimulus or Monkey flower is a profuse bearer of singularly shaped and brilliantly colored flowers. It is tender looking, with almost transparent branches. Seeds sown in the spring make fine bedding plants for summer blooming; when sown in the autumn they produce very effective early flowering, green-house, or window plants. It succeeds best in moist soil. The Musk Plant belongs to the Mimulus genus.

The Perilla, one of the best ornamental leaf plants, is of comparatively recent introduction, and deserves the attention of those who like variety in the arrangement of their garden beds. Its habit of growth is neat

Fig. 19.—TROPAEOLUM MINUS.

and shrubby, while its foliage is of a deep mulberry or blackish purple, forming a fine contrast to the silver or light-hued plants. It grows to the height of ten inches or more, and is very desirable for the center of a bed of ornamental leaved plants, and suitable as a low screen or hedge. It grows freely in any rich soil, and belongs to the half-hardy class of annuals.

The Petunia, which is familiar enough to the reader, requires no special description, having grown into particular favor during the past three or four years. The brilliance and variety of its colors, combined with the duration of its blooming period render it invaluable. It succeeds in any good soil. To be sure, one can not rely entirely upon the

Fig. 20.—VALERIANA.

product of good seed, as they are inclined to sport; yet the result, so far as bloom is concerned, is usually effective. The seed may be sown in a cold frame, hot-bed, or upon ground. They do well if the soil be moderately rich.

The Phacelia is a hardy annual, its flowers

being blue and white, adapt it as a border plant, and render it very effective in bouquet making. The variety represented has whitish flowers, with long black hairs. Most of the varieties produce blue flowers.

The Rocket can not be said to be an unfamiliar plant by any means, yet is deserving of more extensive cultivation in the gardens of the people, being a very hardy biennial, and bearing clusters of single flowers, which are fragrant during the evening. The best colors are purple and white. With fair culture, the Rocket will grow to the height of eighteen inches. The seed germinates readily in the open ground. The engraving is a representation of the Sweet Rocket.

The Salvia, a shrubby plant, commonly known as Flowering Sage, grows freely in any light, rich soil, and from eighteen inches to two feet in height. It is one of the best bedding plants; the kinds with which we are most familiar being loaded with spikes of scarlet flowers from July to October. By planting the seed in a hot-bed they will get a good start for planting out when the weather has become warm. Thrifty plants may be potted in the fall for winter blooming.

The Tropaeolum or Nasturtium is a half-hardy annual, profuse as a bloomer, with a climbing habit, and for ornament, the green-house or conservatory, or for covering trellises, verandas, and bowers, out of doors, or for bedding purposes this plant is scarcely surpassed. When used for bedding the plant should be carefully pegged down. The Tropaeolum is easily cultivated, and comes into flower the first season. It is a half-hardy annual, growing freely in light soil which is not too rich. The Tropaeolum Minus is a dwarf which grows about a foot high. The Tropaeolum Majus is prominent among the climbers.

The Valeriana, of which the improved garden varieties are beautiful, is well adapted to borders. It bears large corymbs of small flowers, scarlet, white, and red, and grows from two to three feet in height. It may be planted close to the house or on shady lawns, as it does not need the sun for good development.

The cost of the seed of any and all the plants we have mentioned is trifling, and it may be procured from any good florist. For the excellent illustrations which accompany this article we are indebted to the kindness of Mr. James Vick, the well-known seedsman of Rochester, New York.

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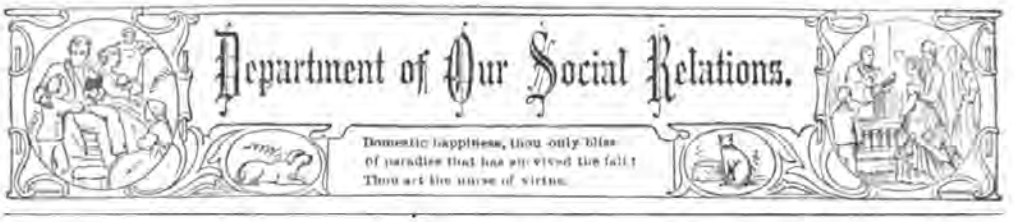
THE POTENCY OF HIGH DILUTIONS.—From French sources we derive the following incident: Madame de X——, feeling rather poorly, sent for her doctor, a homeopathist, and asked him to give her a "potion" which might make her able to go the same evening to a ball. The "Æsculapian" wrote his prescription, and the servant was at once sent to the chemist. On his return, as he met Monsieur de X——, he gave him the potion. That gentleman, whose father was an allopathic doctor, dislikes Hahnemann's pupils, and thought it a rare opportunity of correcting forever his wife's mania for the principle of "*Similia similibus curantur.*" He threw away all that was in the bottle, and filled it with fresh water. Madame de X—— drank with confidence the contents of the bottle, felt herself much better (or at least thought so, for *c'est la foi qui sauve*) a few hours afterward, and finally went the same evening with her husband to the ball, for which she had been longing so much for some time. The homeopathic doctor had been also invited. As soon as he saw M. de X—— he took him aside and told him: "Now, awful unbeliever, will you dare any more in future to deny the prodigious effects of our medicines?" M. de X—— began to laugh so loud that all the persons present asked him the reason of his hilarity. As, although the two gentlemen differ on medical matters, they are, however, on very good terms, M. de X—— thought the best was to relate his fraud. The homeopathist, without being disturbed in the least, answered: "My dear sir, you must have shaken the bottle; one drop was left, very likely, and it was quite enough to operate the cure."




## ONCE AGAIN.

Once again earth's breast is throbbing
With the quickening pulse of spring.
Once again the wind's wild sobbing
Hushes, and the robins sing.

Once again the leaves are peeping
From their somber hiding-place;
Once again the flowers late sleeping
Waken each with smiling face.

Once again our footfalls meeting
Lies a velvet carpet green.
Once again we pause, repeating,
"Fairest pattern ever seen."

Once again the violet catches
On its lip the kiss of sky.
Once again some blossom matches
Each rare color set on high.

Once again the breezes linger
Cradling soft the odorous air.
Once again writ by God's finger
Is His evidence of care.

Once again He proves immortal
All His power doth create;
And this footstool by the portal
Seems a blessed place to wait.

S. L. OBERHOLTZER.

## "THE LITTLE FOXES THAT SPOIL THE VINES."

SOLOMON, in his "Song of Songs" (that one divine love-ditty allowed in our English version of the Bible by the grave and learned bishops of King James), breaks forth with a poet's enthusiasm in the following words:

"For lo! the winter is past, the rain is over and gone.

"The flowers appear on the earth; the time of the singing of birds is come, and the voice of the turtle is heard in the land.

"The fig-tree putteth forth her green figs; and the vines, with the tender grapes, give a good smell! *Take* us the foxes, the little foxes, that *spoil* the vines, for our vines have tender grapes."

This description of spring is so concise, simple, and vivid, that, like the Twenty-third Psalm to the devotional soul, it has a way of spontaneously recurring to the memory of trained Christians with each renewal of the budding season of the year; as if no other language could be so pertinently suggestive of the laughing blue skies, succeeding winter's leaden ones; the vernal sunshine following upon the outskirts of snow-clouds; the putting forth of delicate leaf and blossom in the footfalls of long-continued rains.

Many a morning have we sought the woods and climbed the hills, luxuriating in the "sweet look that Nature wears," in this, her resurrection time; our hearts swelling with a feeling of restored possession, as if the loved and lost had come back to our yearning arms, and the grave had, indeed, given up our dead, looking at us with the dusky eyes of violets, the white surprise of snow-drops, the shining promise of crocuses. And then with the increasing warmth of early June, with what delight have we observed the young fruit among the leaves, and perceived the "good smell" of the tender grapes; oh, how good! as delicious a fragrance as that of pine-apples or ripe strawberries! But some day we discover both our vines and their prospective harvests spoiled; they are bruised and battered, lying on the ground, the tender clusters broken or utterly destroyed.

Such a misfortune was very common to the ancient Israelites in Judea; and it appears that not even the closely-walled and well-guarded vineyards of the mighty King

Solomon were exempt from such happenings. We can imagine the sapient monarch trailing his purple robes in the dust, in his eager endeavors to discover the perpetrators of these cruel injuries to the prized vines; brought, mayhap, along with ivory, gold-dust, asses, and peacocks from Ophir and far-distant isles of the sea. His close scrutiny seems to have detected certain *tracks*, betraying the nature and name of the depredator; though, no doubt, the cunning creature had striven to cover them well up; and this, the first proverbial philosopher of Hebrew history, impulsively commands: "Take us the foxes, the little foxes that spoil the vines," let them be searched out, hunted down, and forever excluded from our inclosure of precious plants.

Whether or not this wisest of men, with all the potencies of empire at his back, succeeded in his project of extermination or exclusion, does not appear from the context of the sacred writer; but of this we are certain, that *fox-spoilers of vines*, under different names and forms, all actuated by the identical spirit of detraction (or a disposition to take from others in order to add to, gratify, or aggrandize themselves), have continued to roam in all parts of the world from that day to the present; creatures eager to pluck up by the roots or cast deadly blight on any specially-gifted or highly-esteemed person or thing. I believe this is no novel application of the language of Solomon; many others before me have considered it typical of the spirit of detraction, which has for its particular weapon the tongue of the envious, envenomed with the sting of slander. The wounds from these poisoned arrows rankle deepest in the purest hearts, and transfix with most poignant despair the whitest souls. Such an one was the poet Keats, a victim to the wholesale detraction of harsh critics; whose spleen was excited by the independence of the political sentiments expressed by a poor, unknown author, the son of a livery-stable keeper. That exquisite poem, "Endymion," "a thing of beauty and a joy forever" to all lovers of musically-embodied thought, was denounced with such bitterness, that Keats gave up all hopes of fame, and yielded to his "untoward fate." Robert Tannahill, the maker of the loveliest Scotch ballads, sung now throughout the world wherever there are Scotsmen, and widely known to many who never heard the author's name, drowned himself in Maxwalton Burn, in his thirty-sixth year, for a similar cause. That remarkable genius, Edgar A. Poe, resorted to the intoxicating cup, urged thereto by the detraction and envious opposition that pursued him. He was, indeed, a Goethe, unfitted for the realities of a struggling, money-getting existence; and happy would it have been for him had he been the pet of such a luxurious and literary court as that of Weimer. As it was, in life he was hardly able to earn bread to keep soul and body together. Nor did his tomb seal the lips of calumny; though within a year or two some generous and appreciative persons have erected a monument to his memory. But how shall time suffice one to speak for the many; the voiceless, whose lives the poison of slander has embittered and shortened? A mere hint, an innuendo may have been its starting point.

"A soft, light tone, and low,
Yet barbed with shame and woe;
Ah! might it only perish there,
Nor further go!
But, no; a quick and eager ear
Caught up the little meaning sound,
Another voice has breathed it clear;
And so it wandered round
From ear to lip, from lip to ear,
Until it searched a gentle heart
That throbbed from all the world apart,
And that it broke.
Ah! hearts that break and give no sign
Save seamed brow, and fading tresses,
Till Death pours out his cordial wine,
Slow dropped from misery's crushing presses."

"He or she that lends a ready and credulous ear to calumny," saith a philosopher, "is either a person of very ill morals, or is little better than an idiot;" and that he is right in so estimating the receiver as well as originator of slander, I hope to show from the very nature of detraction.

In the first place, it is bred of evil thoughts; and, of course, as the offspring partakes of the character of the parent. The suspicious soul is conscious of its own inherent meanness, for "unto the pure all

things are pure;" or, as the motto of the noble Order of the Garter hath it, "Evil to him who evil thinks."

The slanderer is always unjust; inasmuch as he gives his victim no chance for self-defense, stabbing him in the dark, behind his back, whispering his evil communications, invariably prefaced by the strict injunction: "Now, for Heaven's sake, don't let him or her know that I said so!"

The slanderer is ungenerous; he plants his serpent-fangs, not in the rich man rolling along in his carriage; not in the strong, who can strike back; not in him who wields the rod of power, or holds high position; but the poor, the helpless, the wronged, the betrayed, the heart-broken. How cowardly to steal unawares upon the victim like an assassin at midnight, or like the poisoner subtly distilling corrosive sublimate into the cup proffered in the name of hospitality! Oh, how treacherous this snake in the grass, this cobra de capello, dealing death to the unsuspecting, whom his sly malice dares not face with open enmity! Why, this is the very nature of the warfare waged by the most brutal savages. Thus do the Sioux and the Cheyennes ambush their victims, and snatch the bleeding scalps of defenseless women and children.

The same spirit of envy that breeds slander withholds words of cheer from the despairing; encouragement from those ready to stumble, weary with fruitless striving. We have Scripture authority for the strongest denunciation of the scandal-monger. One of the sacred writers likens him to a "madman scattering fire-brands, arrows, and death." St. James, in his general epistle, devotes a chapter to him, saying after this fashion, "The tongue is a little member, and boasteth great things: it is a fire, a world of iniquity; it setteth on fire the course of nature. It is an unruly evil, full of deadly poison. Therewith bless we God, and therewith curse we men which are made after the similitude of God. If ye have bitter envying and strife in your hearts, glory not, and lie not against the truth. Where envying and strife is, there is confusion and every evil work."

"Confusion and every evil work," how aptly descriptive of the neighborhood infested by a tale-bearer, going from house to house, eagerly gobbling up every little crumb of slander, rolling it under his tongue as a sweet morsel, exuding the same envenomed, magnified, until the pigmy becomes a giant; the mole-hill of a surmise the mountain of declared scandal.

Well might the poor exciseman poet, who knew by bitter experience the "random fits of daffin," exhort us thus:

"Then gently scan your brother-man,
Still gentler sister-woman,
Tho' they may gang a kennin wrang,
To step aside is human.
One point must still be greatly dark,
The moving, why they do it;
And just as lamely can ye mark
How far, perhaps, they rue it.
Who made the heart? 'tis He alone
Decidedly can try us;
He knows each chord, its various tones;
Each spring, its various bias.
Then at the balance let's be mute,
We never can adjust it;
What's done we partly may compute,
But know not what's resisted."

VIRGINIA DURANT COVINGTON.

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"A ROLLING STONE GATHERS NO MOSS."—This proverb is only the assertion of a fact that is not very remarkable. Moss is by no means a necessary adjunct to a stone. The mossy condition is not the normal state of a stone. The moss is no more necessary to the stone than the stone is to the moss; indeed, the stone is more *stone-like without* the moss than *with it*. So, a carving-knife that is kept in active use gathers no rust. So, an individual who has moved about over the face of the globe, and borne the attrition of life is free (or ought to be) from the many prejudices which cling to and choke the growth of one who has spent his life on the side of some obscure hill, seeing no one but some dozen persons similar to himself. I have seen some of these mossy creatures so completely covered by this vegetable growth, as to be themselves little better than plants. They could not see or hear, or comprehend anything beyond their circle. Let the moss grow over the decayed trees and barren places, but let the rolling stone keep on, on, bright and clear, and free from all incrustation.

G. H. P.

# LIGHT IN DARK PLACES.

"This mournful truth is everywhere confessed,
Slow rises worth by poverty depressed."—SAMUEL JOHNSON.

## CHAPTER XXIV.

### THE NEW TEACHER AT HER POST.

THE nine o'clock bells of Monday morning found Sadie in the school-room of the mission, and the focus of forty pairs of eyes belonging to forty urchins, whose multiplicity of complexion, feature, and costume would have supplied material enough for the study of an anthropologist during a month or more. To Sadie the first introduction to a variety of childish character, so marked and extensive, was almost bewildering, and her embarrassment was by no means relieved by the information that as this section had been dependent upon the teachers in the other sections for care, the last regular incumbent of the desk having withdrawn a month previously, there was a lack of organization which she must supply in the outset. Whoever has been a teacher knows that it is in the primary department that the most tact and patience are requisite for successful management.

Little Dell had accompanied the young preceptress on that morning of her entrance upon the new sphere of duty, and to the quiet demeanor of the child much of Sadie's success in her first attempts to introduce order and method was due, for some of those half-wild children, accustomed to the freedom of the streets, and to scenes of disorder and rebellion in squalid homes, looked with surprise, and even awe, upon "teacher's little sis," and imitated her conduct to an extent quite gratifying to Sadie.

The day passed away quickly, and when three o'clock came, and the school was dismissed, the young teacher felt that she had crossed the threshold of a new world; had taken up a heavy burden of responsibility.

What true spirit, appreciative of the essentials of life, when first introduced to a new and important sphere, has not experienced a like sentiment?

The Secretary-manager met her at the door.

"Well, Miss Camp, what think you of your motley charge?"

"Oh, sir; I scarcely know what to think."

"Haven't got into it far enough yet," rejoined he, smiling. "No, I suppose not. You've done well, very well, for a beginner at any rate."

"Thank you, kind sir, for such encouragement," exclaimed Sadie. "But it's hard to keep order among so many different sorts of mind and temperament when one hasn't been accustomed to them."

"I think you'll manage them well enough after a few days. Good-bye."

"Good-day, sir," replied Sadie. "Good-day, sir," echoed Dell, who held tightly her sister's hand as they passed out of the building.

"Different sorts of mind and temperament," mused the Secretary as he sauntered back to his office. "I never heard a teacher, young or old, say that before. A world of philosophy lies under it. This chit of girl is already a student of mental philosophy, and the passive attention those Arabs gave her to-day was due more to her knowledge of human nature, I am sure, than to the novelty of her presence."

He wasn't far wrong, for Sadie's organization was of the type which adapts one to sympathetic association with children, enabling her to understand theirs, and bring to bear controlling or subordinating influences. Many a golden precept, drawn from her mother's experience, came freshly to mind to aid in prosecuting the work she had boldly, yet doubtingly, entered upon, and by showing kindness and the disposition to win their trust, she had, during her first day, accomplished far more than she knew. The pensive air with which she returned home was understood by her mother, who said with that assuring smile which was always a potent stimulus to Sadie, if inclined to depression:

"Ah, my love, you find teaching a different work from sewing printed sheets!"

"Yes, indeed, mother."

"How does my Dell like going to school?"

"It's real nice, mamma; only some of the boys and girls come with such dirty faces and hands, and ragged clothes, that I'd be almost afraid to go near 'em. But sister Say got along real good. She didn't have to slap one of 'em."

"You expected sister Say to slap the naughty ones then, Dell," exclaimed the young pedagogue with a laugh.

"Why, Larry said that where he went to school last winter the teacher kept a strap, and was hittin' somebody most of the time, to keep 'em still."

"Well, mother, I never saw such a mixed lot of children in all my life, and they kept staring at me or Dell nearly all day, as if we were some great curiosity, so that I didn't have a great deal of trouble to keep them quiet. The hardest part of it is to find out what they know, so that I can arrange them in classes."

"I am much pleased, my child, that you have made so good a beginning. Don't be too anxious to get along in the matter of book-study. If you succeed in inculcating some practical notions of order and neatness in such children, you will have done an excellent work. Be moderate in your demands upon their intellect."

"Yes, mother, I shall endeavor to follow your counsel, for I know that we can not, or should not, expect much from little ones organized and associated as they are. I shall not attempt to force them, but to draw them, just as you, dear mother, have drawn us toward everything right and beautiful by your patience and example."

Stooping to kiss the pink-hued cheek of her daughter, Mrs. Camp rejoined:

"Now let us go out for a short walk. You need it, my child, to relieve the excitement which this day's novel experience has caused in your nervous system. Every day it would be well for you to walk awhile in the sun and open air after school hours. If teachers, generally, did this, instead of hurrying from their pent-up school-rooms to the almost as closely-bound atmosphere of their homes, there to study or lounge the remainder of the day, we should find fewer pallid cheeks and wasted forms among them."

"I think it is part of a teacher's duty to look well, and be well; don't you, mother?"

"A teacher should endeavor to be an example in everything to her pupils. The most important parts of education are not embraced in reading, writing, and arithmetic only, but also in neatness of dress, demeanor, and the habits which relate to health. The teacher should be as solicitous about giving sound instruction in the latter as in the former; and in so doing she would improve herself and strengthen her influence. I knew a lady a few years ago who was teaching in the —— street school. She understood the sciences of physiology and hygiene well; and although the authorities did not allow the use of text-books on those subjects, she was in the habit of dropping hints and suggestions daily to her class about food and dress and cleanliness. She was the main stay of a family of four or five persons, and had to do a great deal of domestic service out of school-hours, yet she always appeared to have excellent health, and was a model of neatness. People who sent their children to that school called her the best teacher in it, and the children in her section were loth to leave it when promoted or taken away."

"How nice it must be to have such a reputation," said Sadie. "I'm going to make my children, poor things, think everything of me, if I can. Oh, dear; they need so much done for them to make them look nicely!"

"It's very difficult to accomplish much in your place, my love, on account of the unfortunate home-belongings of your little ones; but a steady influence will do something in the way of improving some—the more happily organized. You may produce an impression here and there which in after years will bear good fruit."

Mother and daughters went out together, and walking briskly, their tongues keeping time with their pace, an hour of the clear, crisp, autumn afternoon was employed profitably.

On returning to their apartment, Norton

was found at the doorway, eagerly awaiting them, his face radiant with excitement.

"Home early, my boy!" saluted his mother.

"Yes, mother; I've got a place, too."

"A place! What is it, Nortie?"

"It's a nice place, I can tell you, and $3 a week, too." And the boy hopped around the room, first on one foot and then on the other, in his delight.

"Oh, isn't it good? isn't it good?" cried Dell, who threw her hat on the table, and ran to take her brother's hands and join him in his pirouette.

A minute sufficed to relieve him of this physical ecstasy, when he went on:

"Thursday I was up at Mr. Stanley's, and he asked me if I had found anything to do for the winter besides looking around for scraps and errands, and I told him no, and that I was pretty tired of such work. I'd been to insurance offices and banks, and the Western Union, and a great many places, but they were all full, and didn't want any more boys. Besides, I told him that I'd rather go into some place where I could learn a trade. 'Yes,' says he, 'I remember you said once that you would like to learn carpentry or cabinet-making. Do you still incline that way?' I said yes; and that you thought it was best for boys to be taught a good trade. 'Well,' says he, 'that's sound, I'm sure, and if you'll come into the office for a few minutes I'll give you a letter which will introduce you to some furniture manufacturers, and it may help to secure a place.' He wrote a letter recommending me as a steady, honest, persevering boy, with good f-fac—"

"Faculties," suggested his mother.

"Yes, faculties for mechanical work, and some other things, and gave me a list of four or five furniture-makers he was acquainted with. Friday I went to two of them, and they didn't want any help or 'prentices. Saturday I went to two more, and in the last place the man said they didn't need any help exactly, but a boy they employed was sick with the measles and hadn't been down for a week. He liked my looks, and said he would think over the matter, and if I'd come in Monday at 3 he'd know whether to take me or not. So to-day I went there at 3, and sure pop he said that they'd concluded to have me."

"How sly you were about it, Nortie!" exclaimed the new school-marm.

"Well, you were so full of the mission business that you didn't notice a feller, and I thought I'd just keep it to myself until it was settled."

"Where is the place, Norton?"

"It is Carringford & Muller's, mother; over in Rivington Street near the Bowery. A fine, large store, with a big shop in the rear. I'm to be errand-boy and to help in the finishing-room. Mr. Carringford hired me, and I think I shall like him."

"I am pleased that my son has succeeded in his effort, but had he acquainted me with it before—"

"Dear mother, I thought that you wouldn't object to what I did when I had Mr. Stanley's advice, and, you know, you said if I found a place—"

"Yes, my ardent, ambitious boy," interrupted Mrs. Norton, smilingly, "mother knows what she has said, and believes that her Norton acted only for the best, and meant to do only what I would approve; but mother is very jealous when her children seem to keep anything from her, even if they are sure that their action is in accordance with her judgment."

"And the naughty boy," put in Dell, turning up her lip in feigned indignation, "didn't even tell *me* anythin' 'bout it. Anyway, I'm goin' to kiss him for being so naughty."

"That's a funny way to express indignation!" exclaimed Sadie, with a burst of laughter. And then continued, "Mother, dear, they say 'misfortune never comes single.' It appears to me that it's just as true that *good* fortune never comes single."

"One may be accepted as readily as the other, I think," replied Mrs. Camp. "There is also a saying to the effect that 'Success begets success,' which perhaps is a good complement to that about misfortunes. Do you go to your new business to-morrow, Norton?"

"Yes, mother."

"What have you done about the matters

you have been in the habit of attending to?"

"Oh, Larry is my successor, as they say in business. I've taken him around and introduced him to the people. Mr. Stanley, you know, knows him already."

"So it's all arranged. Well, let's have supper. Good luck makes hungry mouths."

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## CHAPTER XXV.

### A COMFORTING VISIT—AN OLD SCHOOLMATE.

Two months have passed since the events related in the last chapter, and winter, with its ice and snow, its changes of thaw and freeze, fog and clear, has fairly set in. How much dreaded is winter by the poor, especially the poor of a great city like New York! To them it brings a time of scarcity—lack of employment, lack of means to procure the food demanded by the sharpened appetite, and to obtain the clothing and fuel necessary to withstand the frost-laden atmosphere. Our friends, the Camps, are still residing in the Prince Street tenement. Sadie has become settled in her school, and Norton has earned the designation of a "valuable help" in the furniture warehouse. Mrs. Camp no longer applies for sewing at the shops. Her frugal management of the earnings of Sadie and Norton keep the wolf from the door, and she finds leisure to visit poorer or less discreet neighbors, and minister to their needs from her scantily-furnished pantry, or from her well-stored fund of counsel and experience.

One cold morning in holiday-week she was summoned to the bedside of a poor girl sick from destitution and lung-fever, in one of those miserable hovels which disgrace the Eighth Ward. Taking her little satchel with a few articles which she knew would be needed by the invalid, Mrs. Camp hastened down the street, and soon arrived at her destination, a low, dilapidated building on Thompson Street. She found the poor girl in that condition which needs those ministrations especially which nourish the spirit and conduce to that mental peace which can wear a smile while the body may be tortured with pain. With a heart overflowing with tenderness, the lady bent over the low couch, bathed the fevered brow with cool water, adjusted the scanty bed-clothes to render, if possible, the girl's posture more nearly comfortable, meanwhile addressing her in a low, cheerful tone concerning those holy things, heaven and the love of Him who created man, of which too many people professedly religious only speak as a matter of duty, and then with constraint and awkwardness; but Mrs. Camp found enjoyment in religious conversation, and her quick apprehension of our invalid's mental tone and spiritual yearning enabled her to adapt her line of remark very happily to them.

It was a beautiful picture that miserable apartment in the Thompson Street hovel presented that morning. He whose cultured moral sense could take in its spiritual significance would have pronounced it such. There lay the sick girl, her large eyes gazing with a fixed steadiness on the face of her kind visitor, one hand clasped in that of Mrs. Camp. At times a flush of animation lighted up her thin features, and a smile parted her thin lips, and her weak voice would essay an exclamation of grateful acceptance of what was said, or an inquiry for a clearer understanding of some remark. A little back of Mrs. Camp stood the invalid's decrepit father resting upon his crutch, his sad and haggard face turned toward his daughter while he listened earnestly to the evangel's testimony. At the foot of the bed, with her hands clasped and her eyes fixed, now for a few moments upon Mrs. Camp, then upon the invalid, stood the latter's younger sister. But twelve years old, yet her face, through sorrow and want, was prematurely old in expression. Despite that it was an interesting face, so quick to reflect its owner's feelings, so earnest and pathetic the light which shone in the great brown eyes.

They did not possess much education, those poor souls, but they had much of that culture of the heart which appears sometimes among people in out-of-the-way places, where it would not be expected by most of us, and stamps them with a true refinement. Hence such a nature as Mrs. Camp's could enter into a close and sympathetic re-

lation with them, and in ministering to the sick one she gave much of solace and encouragement to the others, and felt a return of strength and intelligence to herself.

The time she had to spare in this pure missionary work having passed, Mrs. Camp bid the family a fervent good-morning, and descended the creaking stairway to the street. While proceeding up Broome Street an elegant carriage, driven by a liveried coachman, came abreast with her. She noticed the smartness of the equipage, but her mind was too much preoccupied to observe a sudden movement on the part of the only occupant of the carriage, a lady, who thrust her head against the glass of the door and scrutinized the person of Mrs. Camp with an earnestness such as an unexpected recognition and the revival of old memories excite in one. The carriage rolled on, then stopped close to the curb, and the coachman sprang to the sidewalk and, opening the door, assisted the lady to alight. A moment later Mrs. Camp had reached the place and naturally glanced aside at the richly-habited figure standing by the carriage.

"'Tis she, I'm sure," ejaculated the waiting lady in an undertone, yet loud enough for Mrs. Camp's quick ear to catch.

"Madame," cried the unknown.

Mrs. Camp stopped, and with an air half of surprise, half of doubt, inquired:

"Am I the person you would address?"

"I knew it, Alma Seaton; how do you do? And what in the world are you doing here?" asked the lady with vehemence, at the same time extending both hands.

"Cora Price, an errand brings me here, and," continued the widow, taking the lady's gloved hands and warmly pressing them, "what brings my old-time schoolmate within the precincts of my domain?"

"The very same Alma, I declare, that I knew twenty years ago. But get into my carriage and let us talk. I'll drive you home. Where is it?"

"Only a few blocks from here."

"Well, you must ride a little while, at least, with me. I do so want to talk about those old times."

Mrs. Camp suffered herself to be persuaded to enter the snug carriage, and her new-found schoolfellow taking the seat by her side, broke out—

AT THE BED-SIDE OF THE SICK GIRL.

"I have been wanting to see you so much, Alma, all these years, and I wonder that you can recognize me at all, I am so changed."

"You are changed, Cora, but your eyes and voice are quite the same. I knew you at once by them."

"You can not say that I have improved," rejoined the representative of wealth and *society* with a hollow laugh; "but I must say that you have improved somehow—and poor, too?"

"Yes, poor, my friend, if one judge by the differences in our dress. But, Cora, do you reside in this city?"

"Yes, Mr. Price likes New York; two years ago we removed from Philadelphia and took a house on Park Avenue. We have four children, three girls, two of whom are at Madame Paratti's Seminary finishing their French and music. The others are at home. Have you any family?"

"Yes, I have three, two girls and a boy."

"Dear me! How I should like to see them."

"You may if you will drop in some evening at No. — Prince Street."

"What! Alma Seaton, you astonish me! Do you live in such a neighborhood? The times have been hard indeed with you! Mr. Price complains a great deal of not receiving the interest on his bonds and stocks promptly, and even threatens to sell our house and move into the suburbs. You know, men will complain of hard times from mere habit, especially these bankers. But what's your husband's business? and you haven't told me your name."

"It is Camp, and Lawrence, my husband, is no longer with me. During the late war he was shot, and is now in the better land," replied the widow in her calm, sweet voice.

"Oh, you poor, dear child!" cried Mrs. Price, with a sob and half embrace. "Didn't he leave some property, something or somebody to take care of you and the children?"

"Lawrence's salary had not been large, but sufficient to maintain us very comfortably, and when his regiment offered its services to the Government, my husband was too loyal a man to resign his lieutenancy for the sake of avoiding the necessity of going to the field. His death occurring but a year and three months afterward left me little in the way of money or effects which were available, and I did not think myself warranted in applying to Lawrence's friends for aid."

"And so you have worked and struggled on alone. What a brave, strong woman you are, Alma! Why, such a calamity would have killed me. I couldn't have stood it, no, indeed!" said Mrs. Price, gazing at her companion with admiring eyes.

"We do not think how much we can endure, Cora, until we are tried. You know, my friend, that our Almighty Father promises to lay no heavier burdens upon us than we are able to bear."

"Ah, there it is, Alma Seaton. You were always different from us girls in the spiritual sense. You appeared to be able to find the practical application of Bible precepts in your every-day life, while somehow I was always doubtful about meanings, and am still—looking at religion as something above common coarse every-day affairs, and not so adapted for people who work and drudge as for those who live in quiet, retired, refined walks."

"My friend, I believe that the precepts and comforts of Christian doctrine are most serviceable to them who are called to meet the storms and perform the hard work of life. The mariner who sails in tempestuous and unknown seas needs the chart and compass more than he whose course lies in quiet waters."

"Very philosophical, but I haven't the brain for argument. You know I never liked to argue, 'twas too tiresome," said the lady of society. "Tell me about yourself, what you have been doing all the years since we parted at the old Cliffside; about your marriage, and everything."

A running interchange of remarks concerning their respective life-experiences ensued, in the course of which Mrs. Price exhibited a voluble confidence. As in their school-days she was wont to pour into the ear of her good-natured associates, who would listen, her doubts, complaints, aims, and intentions, and then deemed Alma Seaton the most discreet of confidants, so now she rejoiced in this discovery of an old and esteemed school-fellow as in the acquisition of a long-desired opportunity to relieve her heart of a pent-up burden of unsatisfied longings and cherished grievances. She felt instinctively, as she sat by the side of Mrs. Camp, that here was a woman whose experiences were more real than visionary, and in whom caprice had long ago been suppressed by practical discernment, and yet there was so much of gentle consideration for the weaknesses of others, that she

could be trusted with the inner feelings of one's heart, and offer good and appreciative advice. In fine, the school-girl relation during that half-hour's interview was re-established, and when, at Mrs. Camp's insistance, the carriage was stopped at the door of No. — Prince Street, the lady of wealth had obtained the widow's consent to visit the former in her up-town home.

"I have so many things to show you, and so much to ask you about, my dear Alma, that you must come, and I shall send down for you soon," were the parting words of Mrs. Price as her coachman closed the carriage-door after Mrs. Camp had alighted.

H. S. D.

(*To be continued.*)

## PUT YOURSELF IN HIS PLACE.

"Open thy mouth, judge righteously, and plead the cause of the poor and needy."—BIBLE.

Put yourself in the place
Of the men who strike for bread!
Of the men with the toiling wives—
And the babes who wait to be fed.

Put yourself in their place
When they rise to the morning meal;
To a meal of stale, dry bread,
And think how yourself would feel!

Put yourself in their place
As the time for supper draws nigh;
With nothing to please the palate—
With nothing to please the eye!

Put yourself in the place
Of the men who work by your side;
These men are not paupers, you know,
For they daily your labors divide!

It is true, that you are the head—
And that they are the hands and feet;
But without these humbler parts,
Is the body politic complete?

Ye who are Christian men—
Who are called to love one another;
And who yield a ready assent,
To the truth that "each man is your brother?"

Ye who, while down on your knees,
Each week, are told, over again,
Your neighbor to love as yourselves,
While you breathe out your fervent "*Amen.*"

Put *yourselves* in the place
Of those sharing your labors and pains;
To a fair division of labor
Give a fairer division of gains!

GRACE H. HORR.

## A HOME MISSION.

SING your pastoral poets never so sweetly of the quiet delights of rural life (and verily they *are* great), and charm your sentimentalists never so wisely regarding the superior inducements and helps to pure, high, intellectual attainments therein contained—one who has had practical knowledge of the lives of the *hard-working* class of the "back-woods" will still maintain the existence of discouraging circumstances attendant upon such a life of daily, unintermitting toil in the interior of a farming district, remote from the saving influences of institutions of learning and refined, cultivated society. That secluded, toilsome life holds in itself any seeds of coarseness—who believes? But that those who live out such experiences from the cradle are often little more than animated machines—who shall deny?

It would seem, indeed, that one could not dwell within the circle of Nature's magic, and listen through a life-time to her "psalms and hymns and spiritual songs" without feeling his soul uplifted and broadened; and *his* life would seem most free from temptations and polluting influences. But the curse of unconsciousness follows many a soul through an existence which else might be a perpetual delight to himself and a wonder to others. Many eyes are "holden," as in the olden days, and, often, the finer sense of hearing is entirely dull. To such the "tongues in trees" are dumb, or speak

only an unknown dialect. The "sermons in stones" are all unheeded; and the "books in brooks" show only uncut leaves. He looks upon the world of nature—spread so richly before him—only as the great mill from which he wrests by hard, unending grind, his daily bread. The finer feelings are wholly or for the most part stifled and blunted within him, and where an imaginative, refined person would experience keenest pleasure, he finds only the bare, prosy, commonplace events, and scenes which make up the sum of his life from day to day and from year to year. This state of things is not an inherent necessity of his *mode* of life, but the unlovely outgrowth of generations of uncultured folk who give themselves over to drudgery, and never learn the great, sweet, saving principles which should underlie and pervade all labor, whether of hand or brain. Saintly George Herbert knew whereof he spake when he declared:

> "A servant by this clause
> Makes drudgery divine,
> Who sweeps a room as for God's laws,
> Makes that and the action fine."

But how many, both in country and town, make the fatal mistake of allowing their *work* to degenerate to mere drudgery, and tread their daily round of distasteful toil with scarce a hope or thought beyond its mechanical completion. Often while the body is actively toiling, the mind lies idle; or, perhaps, for a time, hungrily craving; and the finer nature, starved and unsatisfied, is daily crucified and trampled into the dirt. What wonder, then, that little remains save the bare, dreary prose of a work-a-day life? Cultured Christian men and women may take much blame home to themselves on account of this existing state of things. Sons and daughters of the *poor* farmers (by far the larger class in the newer States, themselves untaught, despising "book learning" and chary of its acquirement by their children) soon come to feel themselves avoided, or, at best, looked upon with good-natured condescension by children of the few wealthier, educated persons whom they sometimes meet, and, disheartened, gradually allow themselves—*and are allowed*—to settle into unthinking, uncaring ignorance, or bitter passive endurance. Their finer perceptions, crude and undeveloped at the first, are soon deformed and blunted, and, from long intimacy with the rough side of their hard lives, unlighted by gleams from the bright sun of science, and uncheered by the beautifying rays of pure sentiment, gradually become coarse and unlovely as was the barren soil at their feet before the hand of the master-workman had caused it to bloom with beauty and teem with wealth.

Young men and women who cherish philanthropic feelings of the "common humanity" of God's creatures, and burning with high hopes and desires for a good work *somewhere* in the big, busy world, is there not at your very doors a field so extensive, and labor so noble as to call forth your best powers, and test to the utmost your patience and love? If cultivated people keep—exclusively—themselves *to* themselves, pray how are the ignorant and unrefined ever to become their fit associates? Farmers' girls are often as well endowed by nature as are those who look upon them as coarse, and unfit companions for them; but this same exclusiveness alone has prevented the acquirement of those graces of mind and manner which mark the refined and well-bred. Circumstances and training have far more to do with the position and real worth of men than they often like to admit. While it is a fact that some possess "natural" endowments entirely beyond and above those belonging to others, the fact remains that he who has little, may, by judicious culture, make that little more; it is the old story of the talents; and he is not wise who says of his rude neighbor: "See how ignorant and low is *he;* how learned and exalted *I*." In that despised one's being may slumber undeveloped germs of greatness far beyond the power of the other to see, or to comprehend if seen. Like the Angel in the Block, his soul may be only waiting for the chisel of the Master to cut away the sharp corners, to smooth down the abrupt angles, and develop the wondrous thing of beauty imprisoned within. Self-help is undoubtedly best; but how many lack the knowledge that in themselves lies this power; and often a fitly-spoken word here, a judicious hint there,

will call to life this dormant sensibility, and enable the awakened recipient to carry on the work of development to its perfect end. There are various openings for missions this side of India, and the benighted ones are not confined, by any means, to the Sandwich Islands. Ignorance and vice stalk before our very doors, and we persistently look past them for our work, to the distant port of China.

That families of farmers—even those most remote from educational privileges — are often intelligent, and cultivated beyond their neighbors of the distant town, is no argument against the actual existence of a great amount of coarseness and ignorance among that class, but rather shows these concomitants are *unnecessary* to their mode of life, save as outgrowths, abnormal and ugly, of their narrow, unaided lives of toil and isolation. That thousands of such families *do* live—even in this era of cheap literature and free schools — in the coarsest ignorance, many know. That to most of these is never extended such help and inducement to a higher, broader plane of living as their repressed natures *must have* in order to start into growth—many also know. Can nothing be done to brighten these dull lives, and waken the slumbering seeds of a better ambition? In a general, rambling, inefficient way something *is* done. Circuit preachers, often as rude as their sleepy congregations, are sent to convey the "benefits of the Gospel" into their midst; and district schools, taught by one of their own number who has gotten sufficient knowledge of "reading, writing, and ciphering" to instruct the rising generation in the same invaluable branches, are distributed pretty widely throughout the rural sections. But how much these groping souls are lifted, how largely these untutored minds enlightened and drawn out—who shall say? This picture does not belong to the far removed past; it exists *now*. Can not you, fair, fortunate, accomplished daughter of wealthy parents, give to these untaught daughters of toil, of your wealth of grace and charm of manner, and impart in the thousand subtle ways sure to present themselves to a sweet, womanly, helpful nature, from your abundance of womanly knowledge, some hints for beautifying and ennobling their less fortunate lives? Can not these girls be taught to seek their recreation elsewhere than in the vulgar rabble always attendant upon the country dances so well known in the backwoods settlements, where the chief elements are coarse brutality, bad whisky, vulgar oaths, and the devil? Can not they, with kind, loving tact, be taught to improve their minds, and beautify their homes, and render them more attractive to fathers and brothers than the village tavern and grog-shop? Tasteful surroundings exert a wonderful influence over the nature of mankind, and two-thirds of the coarseness of unrefined toilers is due to the bare walls, uncarpeted boards, and utter dearth of beautiful and tasteful things in their homes.

And you—her ambitious, high-minded brother, with heart full of the great work you mean to do in your world which lies all fresh before you—can not you find large opportunity for the bestowment of your powers among these rude toilers about you—the very playfellows of your childish years? You can, at least, waken and foster in *some* soul a desire for something more than he has hitherto known. Remember, "To many a haven of desire our *yearnings* ope a portal."

Then, if he that saveth a soul hath great reward, how shall your crown show forth its jewels? For who shall say that soul is not saved which is lifted from the sluggish pool of Inanition and placed on the firm Rock of Manly Endeavor? Still, think less of the reward than the accomplishment of the work.

Remember, too, that to reach a higher plane of life is not always—perhaps not often—to work in a different line. A farmer has greater need of scientific knowledge than an editor or a lawyer, for he is to bring forth the material for working the brains of both. A farmer's wife needs as high culture as a minister's. Her children have the same questioning, groping souls, and to her should fall the duty of answering and directing them. Let the Fiji Islanders roast each other if they will. Perhaps the Lord, in His good time, will attend amply to them. He

has given *us* inhabitants of these United States; plenty of work within their limits. Let it take shape and form, and result in practical, individual good. So shall we, in giving of *our* fullness, be abundantly filled from the unfailing source of knowledge and goodness, and in earnest, heart-full work for others, find our truest, most grateful rest.

FANNIE SHOVE.

## BRAIN AND MIND.

### CHAPTER IV.

### CLASSIFICATION OF THE FACULTIES.

IN his discoveries of the functions of different parts of the brain, Dr. Gall was directed almost entirely by observation. He did not previously map out the skull, as some have supposed, and distribute the organs upon it in accordance with some theory or scheme which he had previously conceived, but the locality of each organ was discovered as the result of careful and extended study, his attention being drawn in many cases by a passing incident to the concomitance of certain mental characteristics with certain configurations of the head. Many of the organs were discovered separately, and without any reference to their correlated functions, and subsequently it was found that there was a natural order in their locations by which organs possessed of related functions are associated or grouped in the same region of the head. It is to Dr. Spurzheim's highly philosophical intellect that the first presentation of Phrenology as a classified system is due.

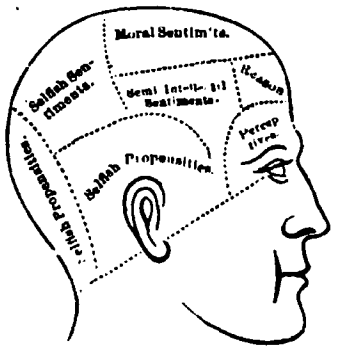


Fig. 16.—GROUPS OF ORGANS.

He recognized the normality of the arrangement of the organs and divided them into two Orders, which he entitled (1). Feelings or Affective Faculties, and (2). Intellectual Faculties. The first Order he divided into two Genuses: (1). Propensities; (2). Sentiments. The second Order he divided into three Genuses: (1). External Senses; (2). Perceptive Faculties; (3). Reflective Faculties.

We regard it as more convenient to arrange the organs under three general heads or orders, assigning them to corresponding regions of the brain, viz.: The region of Propensity, which lies in the lateral and posterior parts of the brain; the region of Intellect, which corresponds with the forehead; and the region of the Moral Sentiments, which occupies the upper and coronal parts of the head. There are, however, several faculties which can not, strictly speaking, be included in any one of these three classes, but form subdivisions, being related to two of the general classes, or even to all three.

The Propensities, according to Dr. Spurzheim, are the sources of impulses which incite only to certain actions. The Sentiments are the sources of other feelings, not limited to inclination alone, but which have an emotion of a peculiar kind superadded.

***The Propensities*** may be divided into two sub-groups, the Domestic Propensities and the Selfish Propensities.

***The Domestic Propensities*** are grouped together in the postero-parietal and occipital portions of the head. They are Amativeness, Conjugality, Philoprogenitiveness, Adhesiveness, and Inhabitiveness. See Figs. 16 and 17. This group constitutes man a social and domestic being. It is the foundation of his attachment to family, home, country, and friends.

***The Selfish Propensities*** are located at the sides of the head in the lower parietal and temporal regions, around the ears. They are Vitativeness, Combativeness, Destructiveness or Ex-


Fig. 17.—Relative Relation of Organs.

ecutiveness, Alimentiveness, Acquisitiveness, and Secretiveness. (Figs. 16 and 17.) These organs are related to the maintenance of individual existence. They lead the individual to make provision for his animal wants, and to assert and defend his rights of person and property.

***The Sentiments*** may be divided into three sub-groups, the Selfish, Moral, and Semi-intellectual Sentiments.

***The Selfish Sentiments*** are located in the middle and upper back parietal region, just above the Domestic Propensities. They are Cautiousness, Approbativeness, Self-Esteem, and Firmness. It is their function to manifest those feelings which are known by the terms prudence, ambition, independence, and stability of character.

***The Moral Sentiments*** are grouped together in the superior frontal and superior parietal region; in other words, at the top of the head and forward of the Selfish sentiments. They are Conscientiousness, Hope, Marvelousness, Veneration, and Benevolence. See Figs. 16 and 17.

These constitute man a moral and accountable being, giving him the disposition to be of service to his fellow-man, to worship his Creator, and to expect a future state of existence.

***The Semi-Intellectual Sentiments*** are located in the forward part of the side-head, below the Moral sentiments. They are Constructiveness, Ideality, Imitation, and Mirthfulness. These faculties supply the love of the beautiful in nature and art, and the ability to construct whatever is essential to our comfort, or ministers to the conveniences and elegancies of life. They are self-perfecting and elevating in their tendencies, and adapted to co-operate with the Moral sentiments in ennobling human nature.

***The Second Order.***—By some writers, Human nature and Agreeableness, whose place and function are of comparatively recent designation, are classed with the Semi-intellectual faculties. We, however, are inclined to assign them to an intermediate place in correspondence with their evident properties. Sublimity, also of recent designation, having been set off from the Ideality of the early phrenologists, may be included with the Semi-intellectual sentiments of faculties.

***The Intellectual Faculties*** may be divided into two genera, the Perceptive

and the Reflective faculties. The Perceptives bring man into direct communication with the external world, and give him a knowledge of the existence, the qualities, and the singular relations of the things which exist around him. The Reflectives compare and classify the

Fig. 18.—Alimentiveness Large.

facts collected by the Perceptives, trace out their more remote relations, and supply the power to reason.

***The Perceptive or Observing Faculties*** are Individuality, Form, Size, Weight, Color, Order, Calculation, and Locality. The organs of these faculties are located in the lower frontal region of the brain over the eyes, and their extent in general is indicated by the prominence of that region. Their functions relate to the properties and qualities of external objects. As a sub-class we have:

***The Semi-Perceptive or Literary Faculties,*** situated in the medio-frontal region, are Eventuality, Time, Tune, and Language. (Figs. 16 and 17.) These enable us to treasure up and communicate the facts collected by the Observing faculties, and give the idea of duration in time and harmony in sound.

***The Reflective or Reasoning Faculties,*** situated in the upper portion of the forehead, are Causality and Comparison. Their function has already been described.

Besides the faculties which have been enumerated, there is Continuity, which is accepted as an organ distinct from Inhabitiveness by many Phrenologists, as bearing some relation to the whole mental organism, and which can not be strictly included in any group. Of this we shall have something to say hereafter.

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## CHAPTER V.

### THE PHYSICO-PRESERVATIVE OR SELFISH FACULTIES.

In our analysis of the mental organs and faculties, we will begin with those which relate to the maintenance of individual existence.

#### ALIMENTIVENESS.

This organ lies in the anterior of the convolution lying at the base of the middle lobe, and corresponding with the antero-inferior part of the temporal bone of the skull. In the diagram (Fig.

Fig. 19.—Alimentiveness Small.

17, which shows the relative position of the different organs) it is located at, and in front of, the upper portion of the ear. When large, it gives breadth and fullness to that region of the head. See Figs. 18 and 19.

It is the function of this organ to give a desire for food and drink. The newborn babe makes the requisite exertion to obtain nourishment from its mother; the chicken picks up seeds as soon as it is out of the shell, and the young of

Fig. 20.—VITATIVENESS LARGE.

all animals are impelled by an innate impulse, each in its own way, to take nourishment. If hunger or the organic need of the body alone impelled animals to take food, they would have no desire for food when the natural wants of the system were satisfied; and it would be difficult to explain the great enjoyment which some men derive from the pleasures of the table, and which impels them by an irresistible desire to surfeit themselves with eating, though they have learned by repeated experiences the injurious effects of such indulgences. The love of eating is sometimes characteristic of whole families; others, again, are never tempted to gluttony.

It is in striking confirmation with the phrenology of Alimentiveness, that the olfactory nerve takes its rise in the center of the convolutions where this organ is situated.

Many instances of voracity are recorded by medical writers, occasioned by the abnormal activity of this organ. The illustrious Charles V., of Germany and Spain, was disposed to inordinate eating, and ruined his constitution by his excesses in this respect. The marble bust of him, which still exists, shows a remarkable fullness in the part of the brain allotted to Alimentiveness. A woman, called Denise, is recorded by Mr. Combe as possessing the organ

Fig. 21—VITATIVENESS SMALL

enormously developed, and such an insatiable appetite for food that in infancy she ate four times more food than other children of the same age. As a schoolgirl, she devoured the bread of all the scholars; and, later, when at the Salpétrière, eight or ten pounds of bread were daily needed to satisfy her habitual hunger. Besides this, she was seized two or three times a month with special

Fig. 22.—COMBATIVENESS LARGE.

attacks of hunger, during which she devoured twenty-four pounds of bread. Happening one day in the kitchen of a rich family when a dinner party was expected, she devoured, in a very few minutes, the soup intended for twenty

guests, along with twelve pounds of bread. On another occasion she drank all the coffee prepared for seventy-five of her companions at the Salpétrière. Other cases of voracity are given, which were accompanied with pain or heat in the locality of Alimentiveness, and where the organ was found diseased after death.

VITATIVENESS

occupies a position behind the ear, nearly corresponding with Alimentiveness, which is in front of it. Anatomically, the organ is situated in the part of the brain adjacent to the mastoid process of the temporal bone. See Fig. 17, space E. It is the function of this organ to manifest a love of existence for its own sake, irrespective of the advantages or disadvantages which attend it; and by the strong desire to live which it gives, it often furnishes a powerful aid in resisting the encroachment of disease, weariness, and suffering.

That there is a great difference among men in regard to the strength of the desire for existence is a matter of common observation. Some love life so earnestly that they look upon death as the greatest evil which can befall them, and tenaciously cling to life even when they have little to hope from its continuance but unhappiness and pain. Others, again, are unable to appreciate this intense love of existence; they look upon pain and the parting from friends as the only evils attendant upon death. These opposite characteristics appear in men of the most different characters in other respects. The religious, who look upon death as the vestibule to a life of unending joy, often possess the desire to live even more strongly than those who fear, but possess no hope for the future, and who look upon death only as a leap in the dark. See Figs. 20 and 21.

The Hindoo skull is remarkably narrow in the region of the organs which have reference to the maintenance of existence, and it is said of that people, that their indifference to life is so great, that if fatigued on a journey or march, they ask no greater boon than to lie down and sleep, even at the risk of being devoured by wild beasts, or overtaken and slain by the enemy.

The function and location of this organ have been determined chiefly through the investigations of American observers.

COMBATIVENESS.

This organ is located backward from the opening of the ear in the second temporal convolution, according to Ecker's mapping, or more precisely, at the postero-inferior angle of the parietal bone, and adjoining Vitativeness. See Fig. 17—6. The history of its discovery by Dr. Gall is interesting, but as the scope of our present work precludes us from entering into that branch of the subject, we can only refer the reader to the general literature of Phrenology as elaborated in the works of Drs. Gall, J. P. Browne, Bruyéres, and others. Its function is to manifest the spirit of opposition and defense. It gives the tendency to resist all encroachment upon our rights of person and property, and the courage to meet and overcome whatever opposes our progress. Such a faculty as this is clearly essential in a world where courage and energy of character are needed to meet the difficulties which surround us on every hand, and in which it is often necessary even to fight to maintain ourselves in existence. The pugnacious brawler, the courageous soldier, the bold controversialist, and the fearless reformer, are sustained by the spirit which proceeds from a large development of this organ. The direction of its manifesta-

tion depends altogether upon its combination with the other faculties. If an individual with large Combativeness be possessed of a low and strongly animal organization, he will be a natural brawler and fighter. If the intellect be well developed in combination with large Combativeness, the person will be disposed to engage in intellectual controversies and discussions of an intellectual character; and if the Moral sentiments are active, large Combativeness will give him the moral courage to contend for what he deems to be the right. Fig. 22.

Where the organ is small the individual will be pusillanimous, and inclined to shrink from those situations in which it may be necessary for him to oppose the prejudices, and encounter the hostility of others. In Fig. 21 the organ is seen to be small.

Fig. 23.—Destructiveness Large.

Pinel mentions a case of disease in the region of this organ in which the patient who, during his lucid intervals, was mild and even timid in his manners, became, during the fit, extremely pugnacious, and manifested a disposition to irritate and fight with uncontrollable violence all who approached him.

This faculty is clearly manifested by the lower animals. The bull-dog and the game cock are, perhaps, the best examples of pure Combativeness. They will fight against any odds, so long as they have the power to show resistance. A great difference exists between the width of the heads of the greyhound and the bull-dog in the region of this organ, and their dispositions correspond with their developments. Dr. Gall says that the first interview he ever had with a devoted amateur of cock-fighting, the latter thought he was imparting a great secret when he pointed out to Dr. Gall as the distinguishing mark of good fighters, a great breadth of the head, a little in front of the ears. The military recklessness of Charles XII., of Sweden, finds a confirmation in the recognized portraits of him, the indications of Combativeness being marked in point of its large size, while Cautiousness, on the contrary, is very small. Of George Washington, it was said by Jefferson, that he was insensible to the influence of fear, but with a large organ of Combativeness, Washington possessed a good development of Cautiousness and other faculties which contribute to prudence and discretion. The cast of Dean Swift's head shows Combativeness very large, and that celebrated author's life and writings were replete with episodes of boldness and intrepidity.

Fig. 24.—Destructiveness Small.

DESTRUCTIVENESS OR EXECUTIVENESS.

This organ is situated in the temporal convolutions immediately above the ear, and when large, gives width to the head

at this point. (See Fig. 17—7.) Its function is to give the disposition to destroy or overcome that which is noxious or harmful, to inflict pain if necessary for self-preservation, or to the carrying out of our purposes. In other words, it contributes thoroughness and executive energy—the spirit to accomplish. According to its development, and its combination with other faculties, it imparts to character the disposition of cruelty, harshness, severity, and executiveness. It is adapted to place man in harmony with the order of nature, by which death and destruction are necessary for the perpetuation of whatever exists, or for the maintenance of the desirable. The birds of the air, the fishes of the sea, and the beasts of the field have among them carnivorous classes destined to prey upon weaker species, and appropriate their bodies for food. Constituted as nature is, this arrangement is essential, not only to the existence of the weaker animals, which would otherwise multiply beyond the sustaining power of their natural food supply, but also to the existence of the carnivorous animals themselves. Man, whatever his original habit, is now practically carnivorous; and there are many varieties of animals whose flesh is esteemed nourishing. He is also surrounded by ferocious beasts, which it is often necessary to destroy in order that he himself may not be destroyed. It seems essential, therefore, that there should be a mental power to place him in harmony with this condition, and this power is found in the organ of Destructiveness.

But it has a wide sphere of activity beyond this, inspiring, as it does, energy, executive ability, sternness, and severity, which are absolutely essential to success in many important enterprises incident to human life. We can not conceive a great and influential character without a good endowment of this faculty. Combativeness gives courage to engage in difficult undertakings; Destructiveness, thoroughness in their execution.

This organ is always large in deliberate murderers, and in the pictures of the cruel soldiers and blood-thirsty characters of history we find an unusual width of head, at the location of this organ. In the antique busts of the inhuman Nero and Caligula, and also of the insatiate Sylla, the part of the head lying contiguously to the ear, is conspicuously protuberant. Such is the case, also, in the best representations of Henry VIII., of John Knox, the fiery reformer, and Oliver Cromwell. We have but to contrast the heads of these men with the accepted portraits or busts of such historic characters as Melancthon, Robert Owen, Fenelon, Bishop White, and the poet Crabbe, to appreciate from an organic point of view, the wide differences which existed in the characters of the former as compared with the latter eminent names of history.

*(To be continued.)*

## INSTINCT—NO. II.

"Then vainly the philosophers aver
That reason guides our deed, and instinct theirs;
Nor can we justly diff'rent causes frame,
When the effects entirely are the same."

A FRIEND who has drank deeply at the fount of science, and who has been good enough to give a portion of that knowledge to mankind through the medium of his many valuable works, in speaking of instinct, seems inclined to the opinion that it is the same as reason. Although I advanced my humble idea in the last October number of the JOURNAL, perhaps it will be best to define my position more clearly.

At the close of the aforesaid article I spoke

of the instinct of birds. If we take into consideration the essential unity of the two classes of phenomena, we shall readily apprehend them by comparing their final purposes, which are in all their essential points alike. It makes no difference whether we take the operations of simple "vitality," so called, or those of palpable externalized "instinct," in the popular sense of the word; all have reference either to the temporal welfare of the individual itself, or the reproduction of its species. Protecting itself against injury and the reproducing of its kind are the two grand purposes for which the mediate or physiological expression of life is communicated by the Almighty to all His living creatures. I will admit that people have long remained in ignorance of this subject, because it is "a tender thing to handle," but if the people who are competent to impart the necessary knowledge were less cautious, public opinion would soon change, and writers would deem it worthy of their investigation. From the first moment of the existence of any animal or plant, it is actively employed in sustaining, extending, and reproducing the formative fabric, unless, however, it is hindered by some extraneous obstacles. In nearly every subject of the two kingdoms with the multitudinous subdivisions to which they are both susceptible, we find that a portion of the vital forces are simultaneously directed to such activities with regard to surrounding objects as shall complement those occurring within this fabric. No new principle is employed in the effectuation of these activities; on the contrary, they are but the application of one characteristic law and method of life for the furtherance of the same common designs, only on a grander scale, and hence with organs often specially provided. Right here I would add that one very good way to ascertain the order of all animal life is by the functional power; the more limited the functional power, the higher the order of the animal.

The two kinds of phenomena, taken together, form the system of vital economy by which the organism and the species alike endure. Doubtless man may turn and train the usages of instinct to a different purpose, but whenever it is undisturbed by the influence of human reason, the predetermination is essentially to one or the other of the two offices that have been mentioned. This force, then, called by its proper and right name, is the life of the Divinity that stirs within us, and but for whose continued influx into every organ and cell of plant and animal, they would instantly dissolve. Truly it was said by the philosophers of old, *Deus est anima brutorum*—God is the life of the brutes and no less so of the lilies of the field. The immortal Virgil does not swerve much from the truth when he says that the very bees have in them a portion of the Divine mind. If "in Him we live and move and have our being," how much more the helpless creatures of the plain, whose dependence we should do well to note as an infinitely greater truth than their independence. I would not be understood, in this connection, as considering these creatures mere cups, into which life is poured despotically though benevolently. Admitting that all creatures are dependent on Him, they are still required to co-operate with Him. The Creator may do His part, the other is appointed to the creature to effect as of itself. Everything endowed with life and instinct is put into certain relations with the external world, and the whole of the external world has an express relation with every living creature.

The instincts are not played forth purely from this source, nor does it sway and rule them arbitrarily. They always act in strict accordance and conformity to certain stimuli from without. There is perhaps no living creature but what every day experiences those impressions made upon the organs of sense, or on peculiarly sensitive parts of this fabric of which we speak, which induce *muscular* acts, sometimes exceedingly complex, and absolutely independent of the will. Often it happens that such impressions give rise to actions which are not only involuntary, but are performed unconsciously. Referring to that ably written work of Mr. Griddon we find this passage, which at the time it was written was questioned considerably: "The vital activities, which constitute instinct, whether interior or externalized, are

referable identically to the same origin; they are grounded, that is to say, in the process designated by the physiologist, remote sympathy." "The extremities of the nervous filaments," he says in another place, "which terminate chiefly on the surface of the body, receive impressions calculated to excite them; thence those impressions are communicated, by a succession of nervous influences, to the muscular organs, which acknowledge them, and reply by performing certain movements on a definite plan." To be brief, then, particular impressions, conveyed by nerves to the nervous center they have peculiar reference to, call forth particular acts seemingly deliberate, but in reality unconscious. What these acts shall be, and what purpose they shall subserve, has long since been settled by physiological writers. If the errors of some of the orders of animal life be noticed, which are committed when guided by instinct alone, we shall have abundant proof that the proximate source of at least the externalized acts of instinct is the remote sympathy alluded to.

The sensational stimuli of the instincts, both in brutes and mankind, may be seen fully described in many works, among which may be mentioned those of J. A. Unzer. But it matters not from what stand-point we view it, or what authorities we consult, we shall find that the final summing-up of the whole matter will be that instinct is referable to four great classes: Self-preservation, Self-defense, Propagation, and Love of Offspring, each one of which I may have an opportunity to discuss in subsequent papers.

J. F. ELSOM.

## LEO XIII., THE NEW POPE.

VERY speedily the cardinals assembled in Rome, after the death of Pius IX. had been announced to the world, for the purpose of electing his successor; and very speedily did they arrive at a determination, Gioacchino or Joachim Pecci receiving thirty-six votes out of the sixty-one deposited by the cardinals at the first ballot, and thereupon Cardinal Franchi, one of the candidates for the Papacy, and his followers more than made up the requisite two-thirds by offering their support to Pecci, and electing him after the manner known as "by adoration." Cardinal Pecci had been Camerlengo, or Chamberlain to the late Pope, and has been long recognized as prominent on the moderate or liberal side of Catholicism in Italy.

His elevation to the Holy See appears to give great satisfaction, particularly to the Roman Catholics of America. His career in brief is said to be as follows: Descended from noble ancestry, he was born at Carpinetto (Papal States) March 2, 1810. He began his academical studies at the Roman College, whence he entered the Ecclesiastical Academy reserved for the education of persons of noble rank who are about to pursue a clerical career. Here he attracted the notice of Gregory XVI., who made him Prelate of his Household and Referendary at the Vatican. Soon after, he intrusted the young ecclesiastic with the position of Delegate at Benevento, a town in the Papal States. He was subsequently transferred, with the same rank, to Spoleto and Perugia. In his capacity as delegate, he was remarkable for zeal, firmness, and administrative ability. At Benevento, his energies were brought into play in suppressing brigandage which infested that city, owing to its proximity to the kingdom of Naples, where highway robbery was carried on without restraint.

In 1843, much to the regret of the people, Gregory XVI. recalled Mgr. Pecci from Perugia, appointed him Archbishop of the nominal See of Damietta, and sent him as Nuncio to Brussels—an important post for an ecclesiastic only thirty-three years old. Mgr. Pecci was received with great favor at the Belgian court and in society. But the climate, and possibly the cares of office, impaired his health, and thus necessitated his return to Italy, where Gregory made him Archbishop of Perugia in 1846. In that place he founded an academy of St. Thomas Aquinas for the advancement of theological studies. Meetings were held weekly in his

episcopal palace at which he presided in person. While there that portion of the States of the Church was seized by the King of Italy. Like his colleague in the Sacred College, the late Riario Sforza, Archbishop of Naples, he rose superior to party conflicts, and administered the affairs of his diocese without coming into collision with the civil authorities.

On December 19, 1853, he was created a cardinal by Pius IX., and would, it is said, have received several other marks of favor from that Pope, in consideration of his piety, and talents, had it not been for the interference of the late Cardinal Antonelli, who regarded him with sentiments of jealousy. But the death of Antonelli changed the aspect of things, and Perugia lost its Bishop. The doors of the Vatican flew open before him. Once admitted, he soon assured his footing, and the venerable Pius IX. hastened to make amends for past neglect of things.

Last December Cardinal Pecci was appointed by Pope Pius IX. Chamberlain of the Holy Roman Church. In virtue of this position, he became, at the death of Pius IX., head of the Sacred College, the executive of the Government, and was honored with the attributes of a *quasi* sovereign.

The new Pope is the youngest of four brothers, the eldest of whom, a bachelor, is eighty-four. The second, now seventy-six, is married, and has four sons and two daughters, who all live at Carpineto. The third brother is a learned professor of theology, once a member of the Society of Jesus. There are also two married sisters. In appearance Leo XIII. is tall, with a fine head, high forehead narrowing at the temples, long face and straight features. He

has a large mouth, prominent chin, cheerful expression, and large, well-formed ears. His temperament is strongly mental, inclining, as we infer from the portrait, to excitability. He has the elements of taste and refinement in large measure, and an intellect which is naturally disposed to study, and literary avocations. The physiognomy indicates energy, ambition, and not a little tact. He should be highly capable as an administrator of affairs, securing his ends without noise or turbulence, conquering opposition by argument, and quiet, prudent, dignified insistance.

It is said that he chose the title Leo, because his election to the papacy occurred on St. Leo's day, according to the calendar of the Roman Church.

As an evidence of the new Pope's liberal sentiments, we are pointed by a contemporary to a pastoral letter written by Cardinal Pecci but a year ago, when he occupied the Archbishopric of Perugia. In this letter he carefully explains the nature of modern civilization, and shows more the spirit of the enlightened economist than of the conservative theologian. He says, for instance:

"A celebrated French economist (Bastiat) has grouped and shown us as in a picture the multiplied benefits man finds in society, and it is a wonder worthy of admiration. Consider the humblest of men, the poorest laborer—he has wherewith to clothe himself, well or ill, and shoes for his feet. Think how many persons, how many agencies, had to be put in motion to furnish this clothing or these shoes! Daily every man places a morsel of bread to his lips; behold here what labor; how many hands it has taken to reach that end, from the husbandman who painfully turned the furrow to confide to it the seed, to the baker who converted the flour into bread! Every man has rights; he finds in society lawyers to defend them, magistrates to make them sacred by their sentence, soldiers to compel respect for them. Is he ignorant? He finds schools, men to write books for him, others to print and publish them. To satisfy his religious instincts, his aspirations toward God, he finds those of his brethren who, laying aside all other occupation, give themselves up to the study of sacred lore, renouncing business, pleasure, home, the better to discharge these lofty duties. But this is enough to prove to you clearly that society is indispensable in order that our wants, which are as urgent as varied, may be satisfied. . . . .

"Society, being made up of men essentially perfectible, can not remain at a standstill; it makes progress—perfects itself. One century inherits the inventions, discoveries, and improvements of its predecessor, and thus the sum of physical, moral, and political benefits grows marvelously. Who would compare the miserable huts of primitive peoples, their rude utensils, their imperfect tools, with all that we of the nineteenth century possess? Nor is there any more comparison between the articles produced by our ingeniously constructed machinery and those toilsomely wrought by the hands of man. There can be no doubt that the old highways, unsafe bridges, and long and disagreeable journeyings of old times were not the equals in value of our railroads, which, as it were, fasten wings to our shoulders, and have made our globe smaller, so near to each other have they brought its nations. Is not our era, by the gentleness of its manners, superior to the rude and brutal days of barbarism, and are not reciprocal relations on a more friendly footing? From certain stand-points, has not the political system been improved under the influence of time and experience? No longer is private vengeance tolerated, or torture, and the petty feudal tyrants, the wrangling communities, the wandering bands of free companions—have they not all disappeared? It is, then, true that man in society goes on perfecting himself as concerns his physical comfort, his moral relations with his fellows, and his political condition. And the different degrees of this successive development to which man in society attains are civilization; this civilization is new-born and rudimentary when the conditions under which man grows more perfect in this threefold sense are but partially developed; it is great and high when they attain a larger development; it would be complete were all the conditions perfectly satisfied."

Men nearly seventy years of age are not likely to change their views on fundamental principles, and we scarcely expect the environment of the Vatican, potent as it is, to alter very materially in the Pope the opinions of the Cardinal.


## HEROIC REMEDIES.

ROGER BACON, the "Marvelous Monk," who seems to have anticipated many of the heretical tenets of his great namesake, ventures the remark that, "according to his honest conviction, a benevolent and absolute monarch could not do his subjects a greater service than to expel from his dominions all physicians and druggists, *furca et tridente*," at the point of the bayonet, as we would say nowadays.

It is probable that such an exodus would throw many honest tradesmen, herb-gatherers, almanac-printers, and bottle-manufacturers (not to mention undertakers) out of employment; but it is rather doubtful if the statistical records of the absolute monarchy would not gradually reconcile the inhabitants to their bereavement. Even in the century of Friar Bacon a shrewd observer might have noticed the suspicious circumstance that patients could be dieted and drugged after the most contradictory methods without producing a perceptible change in the death-rate; and the recent experiments of the hydropathic, homeopathic, and vegetarian schools have demonstrated the still more suggestive fact that they can recover just as well without any drugs at all.

That something must be wrong is therefore a conjecture which amounts to what lawyers call a violent presumption, but which ought not, for all that, be construed into a justification of the Baconian proposal. The belief that there must be such a thing as an art of healing is too universal, too natural, and too old to be altogether unfounded, and ought rather to be strengthened by the reform than defied by the subversion of our medical science; for the history of the sciences shows that very rational pursuits may become wedded to irrational systems, and that the futility of the means does not disprove the legitimacy of the end. Astronomy, Jurisprudence, Chemistry, and even Theology have been improved rather than impaired by the exposure and elimination of their spurious elements, and the private opinion of the ablest physicians encourages the hope that the science of health might survive its divorce from pharmacy.

"If I reflect on the immunity of hard-working people from the effects of wrong- and over-feeding," says Herman Boerhaave in his blunt way, "I can not help thinking that most of your fashionable diseases might be cured *mechanically instead of chemically*, by climbing a bitterwood-tree, or chopping it down, if you like, rather than swallow a decoction of its disgusting leaves." "I can not see how rational physicians nowadays can keep a drugstore and a conscience at the same time," he says in his "Aphorisms," "and if I am not much mistaken, our medical system has reached the eve of a great change." In still plainer

language a famous modern physician confesses the necessity of such a change. "To risk another man's life is rather an inferior type of heroism," writes Claude Bernard, M.D., "and to speak of 'heroic cures,' in referring to those homicidal doses of hemlock and arsenic, which the medical juggler-guild of the middle ages pleased to call by that name, seems an abuse of nomenclature. I think there is a more heroic method: To honestly tell a patient—at the risk of losing his good-will and your fee—that you can do nothing for him, unless he reforms his diet or his habits. It is indicated by indisputable facts—scattered facts, but a sufficient number of them to form a respectable system—that diseases which can be cured at all might be cured in a very inexpensive way, by remedies which every civilized or savage human being might apply for himself without the aid of a medicine-man."

Till we can elaborate that system, it might not be amiss to record some of those "scattered facts," which stand as landmarks on the road to reform, and in the absence of a beaten highway may serve, at least, to indicate the right direction.

Of all the natural remedies which might be advantageously substituted for an infinitude of nauseous nostrums, open air is the most inexpensive, and not less certainly the most innocuous, though its application on a cold day might require some heroism on the part of the patient too; and among the diseases which it will infallibly cure or arrest in their progress there is one which was long thought to be almost, if not quite incurable, viz., pulmonary consumption. A tendency to consumption, nearly equivalent to an inevitable doom, may be entailed by a tuberculous disposition transmitted from both parents; but that its original cause is nothing else but the breathing of vitiated air, is proved by evidence which approaches the completeness of mathematical demonstration. The atmosphere of our school-rooms, factories, and workshops, besides being almost devoid of oxygen, is surcharged with dust, fatty vapors, metallic motes, and other substances which are just as *indigestible* to our respiratory organs as mercury and arsenic are to our stomachs, and by cloying and irritating the delicate tissue of our lungs produce those virulent ulcers which discharge themselves in the act of expectoration.

Deficient ventilation, especially in winter-time, converts our crowded meeting-houses, barracks, prisons, and city tenements into as many hotbeds of disease; and the evil is aggravated by the circumstance that the breathing of foul air, like any other unnatural habit, may become a second nature, a besetting sin, in fact, like dram-drinking or the opium habit. There are millions of city dwellers who detest a draught of cold, pure air, as the Bavarian beer-worshiper detests a draught of cold, pure water, and actually befuddle themselves with miasma as he does with lager or schnapps. But what we call accustoming ourselves, *i.e.*, adapting our nature to an abnormal habit, means in reality to evolve a chronic disease from its acute prototype. The laws of nature can not be outraged with impunity; the full penalty is exacted sooner or later with inexorable strictness, either in the form of life-long suffering or of an early death. So with the miasma habit, which is not made less anti-natural by becoming a "second nature." Before long, morbid symptoms make their appearance, and we send for the drug-doctor. But his remedies can only palliate the evil, *i.e.*, either dull our senses against the feeling of pain or postpone the crisis by suppressing the symptoms. The process of pulmonary putrefaction takes its course; a catarrh changes into a chronic cough, the cough into a rapid decline, and the patient dies in spite of magic syrup, sal-ammoniac and codliver oil.

Still consumption is not an incurable disease. The records of the dissecting-room have established the fact that hundreds of persons who died at an advanced age of some other sickness, bore in their lungs the evidence of tubercular ravages that had somehow been arrested in their progress, pulmonary wounds that had cicatrized and left the rest of the lungs intact. But whenever the pathological record of such persons was inquired into, it was found that they had adopted some open-air pursuit after leading a sedentary life for a longer or

shorter period. Sicknesses are always abnormal—always the consequence of the infringement of some natural law; and to ascertain the habits that have produced special diseases, means to ascertain the remedy-reform of those habits.

"If I should undertake the cure of a consumptive," says the anatomist Langenbeck, "I should commence by driving him out into the woods, and prevent him from entering a house for a year or two." "There *is* a cure for consumption," says Dio Lewis, "though I doubt if it will ever become popular. Even in its advanced stages the disease may be arrested by *roughing it*—I mean by adopting savage habits and living out-doors altogether, and in all sorts of weather."

The cure referred to would become popular if it were generally known that there is no other, for it is happily within every man's power to apply it. "Roughing it" is not expensive; and on our side of the Atlantic cheap and pleasant homesteads may be procured in a climate resembling that of Italy and Southern France. The only difficulty lies in overcoming a confirmed habit of indoor life. It may not be very pleasant, even for a mechanic, used to hardships of a different sort, to leave his snug city quarters, within easy reach of a popular saloon or a favorite church, perhaps, and commence a wigwam-life in the Southern Alleghanies; renounce the society of sybaritic friends; renounce his "wholesome and exhilarating stimulants," his daily paper, and even his accustomed food for a couple of years, and reconcile himself to the companionship of the chipmunks and woodpeckers; but the patient has to ask himself if his life is worth such a price? If he feels sure that it can not be purchased on less heroic terms, the question will be reduced to the simplicity of Hamlet's alternative.

Physical exercise deserves, at least, the second rank among the remedies by which countless physical and mental diseases might be cured "without the aid of any medicine-man." "Have you ever noticed how frequently hothouse plants and trained vines decay in spite of the most careful nursing?" asks Father Jahn, the founder of the *Turnerbund*. "The reason is that they can not get rid of their withered leaves and twigs, which rot on the stem and corrupt the sap of the whole plant. Out in the woods the storm-wind shakes those things off, and the tree is all the better for a good drenching and shaking. Our bodies, too, suffer from the accumulation of effete matter, which might be got rid of by a good shaking up of our limbs."

This is the philosophy of mechanical hygiene in a nutshell. Our bodies were never intended for the languid repose which our sedentary habits inflict upon them; our system stagnates; the current of our life-blood, which ought to be a rapid river, has become a sluggish pond, encumbered with scum and decaying organic matter. Our physical torpor alone can explain the wonderful physical superiority of our heroic forefathers to their pseudo-civilized children. They drove the engine of life at full speed—at a dangerous speed, perhaps; but it is better that an axle now and then should kindle with the swiftness of motion than that the entire machine should rust with inactivity.

We are troubled with innumerable rust-diseases which were unknown to the athletes of ancient Greece and the lusty cavaliers of the middle ages. Dull headaches, hysterics, hypochondria, dyspepsia, languor, insomnia, nervousness, nausea, spleen, ennui, and all those nameless negative ailments which collectively may be defined as a want of vital energy and vital strength, are as decidedly the products of modern civilization as wooden nutmegs or the Chicago Bible Society.

The victim of "six days of sedentary life and one Sabbath in bed," sends for the drug-doctor and gets a prescription—an antiseptic that represses the symptoms for a day or two, or an "exhilarating tonic," some poisonous stimulant that goads the weary system into a feverish and abnormal excitement, which is accepted as a sign of returning vigor, till reaction sets in, and the Beelzebub of Dyspepsia comes back, reinforced by a legion of alcolohic blue devils. Either the dose is then repeated, or the patient surrenders at discretion, and resigns

himself to the prospect of awakening with a dull headache on seven mornings in the week, and paying for every dinner with an hour or two of gastric agony.

As Claude Bernard says, there ought to be a more heroic method than that. Unless the evil has degenerated into a cankerous affection or into heart disease, health, with all its blessings, may be recovered within a month by remedies which every man may apply in his own room or in a convenient woodshed, with a member of the next *Turnerbund* for his physician and a manufacturer of dumb-bells for his druggist. Greek physicians used to prescribe a course of gymnastics for various diseases, and, as Aelian assures us, had invented a special system of athletic exercises which never failed to cure obesity. They must have been familiar with a secret which only a few of our most advanced pathologists have partially rediscovered, viz., that the functional vigor of our digestive organs depends on the activity of our limbs. By accelerating the circulation of the blood, athletic exercises stimulate the activity of all those internal organs whose functions conjointly constitute the process of life. Hence the comparative healthfulness of Northern nations whose climate necessitates a good deal of hard work, and of mountaineers who are obliged, by the exigencies of locomotion, to exert themselves more than other people. The neighborhood of a good-sized hill is a real blessing to a cityful of dyspeptics, for mountaineering is the most unobjectionable as well as the most agreeable form of bodily exertion.

Not all who would enjoy it can afford horseback exercise; circumstances may prevent others from enacting Olympic games in their room, and many persons object to the military discipline, the political sideshows and the lager-beer orgies of the Turnerhall, but the poorest as well as the most fastidious may enjoy a mountain excursion and return with a week's supply of health and buoyant spirits. Physical exercise is almost a panacea, for in the long list of functional disorders there are few which are not aggravated, and hardly any which are ameliorated by sedentary habits.

With a moderate share of passive heroism, the cheap, but somewhat dreary remedy of *fasting* may be turned to good account. The process of life is a process of combustion, and by stinting its fuel we may oblige the vital flame to consume those troublesome adipose deposits which are accumulated by a life of luxurious ease. Benjamin Franklin used to say that "nobody ever repented of an underweight dinner;" and it is distressingly probable that a vast deal of grievous repentance is caused by overweight dinners. Who would know, on what cheap terms a man may hold the tenure of life, should read the autobiography of Luigi Cornaro, a Venetian nobleman of the fifteenth and sixteenth century (for he prolonged his life to fivescore and ten years), who enjoyed health, vigor, and happiness on a little *aguamiel* (honey-water) and twelve ounces of solid food for his daily ration.

As an exercise in heroic firmness, the moral value of *dietetic non-conformity* is almost as great as its hygienic value in these times of boarding-house hash, strawberry shortcakes, and pork mincepies. To most people the assurance of acting or voting with a great majority is an elating proof of the justness of their cause; and the consciousness of voting or acting with (if not *as*) a hopeless minority exercises some of its depressing influence even on the most independent spirit. It is not easy to decline a cup of after-dinner coffee offered by a fair hand, nor to dine at *table d'hôte* and confine yourself to the dessert and such sandwiches as can be constructed with the available ingredients, while the rest of the company devote themselves, and, as they think, do justice to the entrées, ragôuts, and made dishes. But the reflection that the generality of an opinion proves nothing whatever in its favor, may sustain even a feeble resolution.

"The infallibility of a dogma," says Descartes, "does not precede, but follow its general acceptance. Things are not generally believed because they are true, but they pass for true because they are generally believed."

F. L. OSWALD, M.D.

# THE USES OF SALT.

No. I.

We all Use it—Trying to Prove a Negative—Proofs in the Affirmative—A Fact—The Demand for Salt—Madder as a Necessary condiment—Tobacco as a Human Ingredient.

OUR talk about condiments brings us inevitably to the salt question. Salt is not only allowed to be a condiment, but it will answer the test to the full. Even he who eats it most freely with his food could hardly manage to chew and swallow so much as a tablespoonful by itself. If I pause here but a second I am overwhelmed with exclamations, till it seems as if everybody is asserting the propriety of eating salt, and so great is their unanimity, that I hear only the one consentient utterance, "We all use it." Yes, I am quite aware of the fact, and to most people this is a reason sufficient why we should use it. It is but natural to think that whatever has universal consent must be correct. We can not stop to analyze every mouthful before we eat it, nor every action before we perform it. Still, we ought to have broad and well-understood principles, and when our attention is called to a violation of these principles, we should make a careful examination, and not consider it sufficient to say, "Everybody does it, and therefore it must be right." If what the majority do is to decide our course, then we have no need to ask what is right and what is wrong, but, "What does the majority do?"

It requires no argument to show that this, in many cases, would simply lead us to run with the multitude to do evil; and the greater the number of wrong-doers, the safer we would feel, instead of feeling, as we should, a greater desire to correct their errors. It is also true that we may not be to blame for what we do in the darkness, when we never have seen any light. For example, in the old days, when everybody drank alcoholic liquors, and thought them good, no doubt many sipped innocently, but when the light shone in, and they saw that they had been deceived, then it was not enough to say, "Everybody does it." I do not say this to compare alcoholic liquors with salt, but as an illustration. We may be doing ourselves some injury by our use of salt, and we should not refuse to examine the facts because so many people use it.

### TRYING TO PROVE A NEGATIVE.

Nor do I intend to try to prove that it never does any good. That is a fallacy some people fall into on food questions. The fact is, it belongs to those who assert that any given substance is good for food, to show that it is so. When they bring forth their reasons, if the negative can show the fallacy of these reasons, the negative carries off the palm. The negative may show from analogy reasons why their own position is probably correct, but they always have a right to throw the burden of proof on the affirmative. When, therefore, physiologists and other men of science agree in saying that salt is the only mineral used for food, that no other mineral is digestible, and that this is not only digestible, but indispensable, then we have a right to ask them to prove their assertions. When they further acknowledge that it is never sought by itself to appease hunger, that the shipwrecked mariner starves to death with salt all around him, and that water with salt in it only increases his sufferings without relieving either hunger or thirst; when they say that taken by itself, even to the extent of but one spoonful, it causes vomiting and purging, we have sufficient cause for action, and we call upon them to give

### PROOFS IN THE AFFIRMATIVE,

that we may see whether they will bear the test of reason. Fifty years ago there had not been much investigation or argument about it. Johnston, who wrote in 1853 a "Chemistry of Common Life," which brought in for large consideration most of our grains and fruits, and no less than thirty poisons in the line of stimulants and narcotics as among the presumable adjuncts of common life, has not a word to say about salt directly as an article of diet. There have been, indeed, for a much longer time traditions and

stories, one of the most popular and "convincing" of which was the statement made by Lord Somerville, in an address to the English Board of Agriculture, that one of the capital punishments of Holland was to keep the convicts "on bread alone, unmixed with salt, as the severest punishment that could be inflicted on them. The effect was horrible; these wretched criminals *are said* to have been devoured by worms engendered in their own stomachs."

Rather slender evidence, that "said to have been" (the italics are ours)—hardly worthy to be received as a scientific statement in these days of careful scrutiny. No doubt, some criminals in these days would be glad enough to get off with a similar penalty, especially if the report of their death could pass with a "said to be." It has been suggested that their bread may have been wormy, but the statement that the worms were "engendered in their own stomachs" is not rendered probable by the present experience of either animals or men.

We are also told by several respectable authors about wonderful things that are done in Africa for salt. He is called a rich man who can "use salt to his food." Among the Assingis ten pounds will buy a slave, and there are tribes where a husband will sell his wife, a brother his sister, and parents their children for salt. These facts prove that salt is scarce and highly prized. We remember something of the kind in the history of tobacco. If it were worth the while, we could look up a story quite as authentic as any of these, which tells how many pounds of tobacco would buy an English girl in the early days of the Jamestown settlement in Virginia, but time would quite fail us to tell how many slaves of all colors were bought and sold for tobacco in these United States up to the time of Abraham Lincoln's Proclamation of Emancipation. Who knows in what light we shall go down to history, or who will yet be proving by these undeniable facts that *tobacco* is an indispensable food to the whole human race! Many a man in the United States at this present time would gladly sell his wife and his children for alcoholic drinks, and many do worse than sell them, but we never yet have heard that adduced as proof that alcohol is *food*.

Further, we find this in a book which pretends to scientific accuracy: "Du Chaillu *thinks* that the ulcers and diseases of the skin to which these people (African negroes) are subject, are largely caused by deficiency of salt." We will offset this by the statement of a competent observer, that the negroes in America attribute their frequent scurvy sores and the bad blood which shows itself in the difficulty of healing wounds, to the excessive saltness of their diet at times, and they commonly call them "salt sores," and account for them by saying, "It is the salt in the blood." Their poverty and improvidence often leave them destitute of fresh vegetables, and make salt pork a large occasional ingredient of their diet, and they recognize these symptoms as results.

The very same authority which gives us these overwhelming facts, by which he pretends to prove his initial statement, that "common salt is the most universal food of man," closes up his argument by admitting—"It is not very complimentary to the state of the science of physiological chemistry to be obliged to confess that the function of an agent so indispensable as salt is not understood. When we have stated that it aids in the digestion of other food, and in the processes of absorption and secretion, we have said all that we know, and perhaps more than we know." Keeping this in mind, we shall be surprised to see the confidence with which some writers make statements which are after all mere theories, not capable of proof, and which are frequently offset by statements of men of equal authority, and the loose manner generally in which the subject is treated.

### A FACT.

To begin with, we will admit the claim that most authors make, that there is some necessity for common salt in the animal system, *i. e.*, that it is used there for some purposes, or that its ingredients are. There is soda in the blood, and there is hydro-

chloric acid in the gastric juice, and the claim is that these articles are obtained from chloride of soda, or common salt. Another reason given for supposing salt to be necessary is that it is found as an ingredient in many articles of food, *in an organic condition*. In this condition there is no doubt the system could take it, or its constituents, and make use of them. But the extent of

THE DEMAND FOR SALT

is an important item in the discussion. Most authors allow that we get some from the food we eat, but usually add that this source being quite inadequate, we are obliged to supplement it by the addition of salt in its mineral form to our food. And by what do they judge of the amount we need? Simply by the amount they find in the system of salt-eaters on dissection. The mineral salt in small quantities taken with our food is one of the things of which the system tolerates the presence. That is, it is not entirely and immediately sent out with the excretions, though much of it does pass off in the urine. It is, however, very rapidly and continuously expelled by secretion in the sweat, tears, and mucus. Of course, it reaches these through the blood, and as we are continually taking more, it happens that there is a large and constant supply in the blood. This is made quite a plea. Pereira says (Food and Diet, p. 107), "Saline matters are essential constituents of the blood, of the organized tissues, and of the secretions." In saline matters, however, he includes phosphate of lime, which builds up the bones and the teeth, forming 55 per cent. of the bones and 65 per cent. of the teeth. It also forms 4 per cent. of the cartilages and 2½ per cent. of the muscles. And with all this, we never take phosphate of lime in addition to what is in our food. It is true, there is more of it in our food than there is of common salt. Now let us look at the demand for the latter. Salt is found in the blood to the extent of four and a half parts in a thousand, or less than one half of one per cent.; in the bile, three and a half parts in a thousand; in the mucus, six; in the bones, two and a half, and in the cartilages, two and eight-tenths. All these are trifling amounts, and nobody knows what they do in these several parts, yet most writers maintain that because they are there, therefore we ought to eat enough to keep them there.

MADDER AS A NECESSARY CONDIMENT.

Let us pursue the same logic with regard to other substances. Suppose anybody used madder, and the doctors in dissection should find the bones colored red, and that this red coloration was due to madder. Therefore, they would argue, on the same ground, as madder is a constituent of the bones, and it does not exist in our food, we must add it to our food to keep up the necessary supply to color the bones, even though nobody can tell with any degree of certainty what good it does. Moreover, in that case they would not be obliged to surmount the anomaly of its being a mineral, and thus making it an exception to the otherwise well-established dietetic rules, that all substances used for food must be taken in an organic form, and that minerals are not food.

TOBACCO AS A HUMAN INGREDIENT.

Lest the above should sound quite too absurd, we will change the supposition to tobacco. Let us suppose there might have been connected with some of the early Spanish-American expeditions some doctors who were curious enough to analyze the bodies of some of the natives killed, and finding all the tissues containing tobacco, should announce that therefore tobacco was necessary to life and health to these Indians, and that was the reason they used it so largely. And if they were no more astute than some of our modern logicians, they would make this a reason why everybody should use it; for if salt is found in all the tissues of a salt-eater, therefore everybody should eat it; so if tobacco is found in the tissues of a tobacco-user, therefore everybody should use that. The same logic would hold good with alcohol, too, for all the tissues of the drunkard contain alcohol. We use tobacco and alcohol in these illustrations, not to intimate in the least that salt should be classed with them in hurtful effects, but

because this saturation of the system with either of these intoxicants is well known, and yet, as that should not constitute an argument for their constant use, neither should it in the case of salt. We are constantly told that it is found in tears, sweat, and other secretions. Very well. No one contends that we would be any more sad if, when we wept, we should not weep briny tears. Perhaps even we would weep more softly and refreshingly if the tears were more bland. It is even believed that sweat would be less offensive and more refreshing, and certainly it would be more easily cleansed out of the apparel by the washerwoman if it were not so heavily laden with saline matter. It is even possible that the internal machinery would work more easily if there were less brine. Men who have tried it say so. In another number we will make some further explorations of the subject.

JULIA COLMAN.

# NOTES IN SCIENCE AND AGRICULTURE.

**New Cannon.**—It appears to be by no means unlikely that the celebrated Krupp gun, with which the whole of the German artillery is at present armed, will be superseded before very long by another weapon. Experiments have been lately made in the foundry at Spandau with bronze-steel, prepared by the Uchatius method, and these have been so successful that, according to the Berlin correspondent of an Austrian military paper, the inspector-general of the German artillery has definitely decided to adopt it as a material for the manufacture of ordnance, and has ordered several siege guns to be made of the new compound, the secret of the preparation of which appears to be now very generally known. The guns which are to be thus manufactured are to have a calibre of twelve centimeters, but will be superior to the Austrian pieces with the same bore, as arrangements will be made to allow a larger charge of powder to be used. The construction of these guns is regarded as the first step toward the complete substitution of bronze-steel for steel ordnance in the German army. Meanwhile, exceedingly satisfactory experiments have been made on the range at Steinfeld, near Vienna, with two recently constructed fifteen-centimeter bronze-steel guns.

**Music in Insanity.**—A series of experiments have been recently made to ascertain the effect of music upon the insane patients confined in the Woman's Asylum, Blackwell's Island, N. Y. These experiments were witnessed by a number of physicians, and it was concluded, from the phenomena noted, that suitable music temporarily tranquillizes the violent, soothes the nervous, and makes the stolidly melancholic cheerful and chatty; and it was thought not at all improbable that these beneficial effects might be made permanent by continuous treatment adapted to the individual cases. The intention now is to repeat the entertainments as frequently as possible during the year. They will certainly make agreeable breaks in the wretched life of the inmates of our public asylums, and afford them momentary enjoyment, even if they prove to have no lasting sanitary effect.

**Choosing a Scythe.**—The disposition of steel in a scythe is best understood by seeing one which has been broken across the blade. Sometimes tools of this class are steeled "naked," so that all the steel shows itself at once on the top side of the blade, but this plan is not to be recommended. It is better to have iron on both sides of the steel which just shows itself along the edge, and runs in toward the back to stiffen the blade and to form a constant cutting edge as the tool wears away. Now, in buying a tool, bear in mind that the most steel may show in the one steeled naked, because all of it is in sight, but in the other case there would be a great deal more steel useful for carrying an edge, although it would show less because the bulk of it would be hidden between the iron. It will not do, then, to be deceived by appearances. The best plan is to depend on a good maker for good steel and sufficient of it.

**New Polar Expeditions.**—The Naval Committee of the House of Representatives has reported favorably upon the Howgate Polar Expedition bill. We extract the following from the report: "It provides for a long stay, which will give ample opportunity for observations and the conduct of scientific inquiry under the most favoring circumstances. It provides that an intelligent system shall be pursued under the direction of the National Academy of Sciences. We have ascertained to our satisfaction that the results yielded by prior explorations in the Polar seas have incalculably benefited the whole world; that the knowledge acquired by experiment and discovery in that region can be obtained in no other way and in no other section of the globe; that such knowledge is an important factor to the regulation of commerce which is absolutely dependent, so far as decreasing the perils of the deep and enlarging boundaries of navigation are concerned, upon the knowledge of physical laws. There has never before been an opportunity

afforded so promising in results as the one which now presents itself. To make such explorations entirely successful, it is essential that simultaneous observations be had at different points within the Arctic Circle, and for continuous periods of time. England, during the present year, will fit out two vessels, under the explorer Nares, on a Polar expedition via. east coast of Greenland. Sweden, in 1878, under the auspices of Prof. Nordenskjold, will explore the Polar regions via. Norway across to Behring's Strait. Holland has determined upon another. Germany, under the direction of the Arctic Exploration Society, has an Obi expedition, commanded by Captain Wiggings, now on duty. Russia, during the coming spring, will push forward an ethnological expedition to the Obi and Irtysh."

**Farmers' Breakfast.**—The *Agriculturist* comments judiciously on the improper breakfast habits of farmers thus:

"A bad custom is prevalent in many families, especially among farmers, of working an hour before breakfast, attending to 'chores,' hoeing the garden, cutting wood, mowing, etc. This is convenient on many accounts, but is not conducive to health. The prevalent opinion is that the morning air is the purest and the most healthful and bracing; but the contrary is the fact. At no hour of the day is the air more filled with dampness, fogs, and miasma than about sunrise. The heat of the sun gradually dissipates these miasmic emanations as the day advances. An early meal braces up the system against these influences. Every one knows the languor and faintness often experienced for the first hour in the morning, and this is increased by exercise and want of food We do not agree with the boarding-school *regime*, which prescribed a long walk before breakfast as a means of promoting health."

**Chimpanzee Brain.**—A large and distinguished audience gathered Monday evening, March 4th, at the rooms of the Neurological Society, to examine the brain of the chimpanzee which died recently at the New York Aquarium, and was dissected by Drs. E. C. Spitzka and Robert Taylor.

Previous to the demonstration of this brain, Dr. Spitzka read a paper entitled, "The Study of Insanity a Branch of Neurology, and the Relations of the General Medical Body to that Branch." He showed in this paper, that the scientific side of insanity was rarely studied in asylums; that most medical superintendents were little better than jail-wardens. He stated that in order to obviate at least the medical abuses in our asylums, the general medical body would have to take the matter in hand, by insisting that superintendents should be appointed on grounds of scientific proficiency, not for political or social reasons. He also claimed that insanity should be more thoroughly and generally taught at our medical schools, and by competent teachers, not by lecturers occupying asylum positions, whose lectures frequently presented evidence of having been memorized from text-books.

After an interesting discussion of the paper, the brain of the man-like ape was described. He first called attention to the base of the brain, which exhibited a striking similarity to that of a human infant, especially the olfactory lobes, usually so large in the lower animals, were noticed as being no larger than in the human species. The optic chiasm, pituitary body, the crura, pons and origins of the cranial nerves, were quite undistinguishable from the human. It was remarked that the angle formed by the inflection of the peduncular axis was nearer that of the human peduncular axis than that of any other known animal, the orang-outang and gorilla excepted. This angle is but the result of the vasi-sphenoidal angle of the bony skull, an angle which becomes the more acute the higher we ascend in the animal scale, and which is most acute in those mammals which occupy the erect posture. It is obtuser in the chimpanzee than in the Negro, and obtuser in the Negro than in the Caucasian. This angle is consequently made an important gauge of cerebral development, and of such importance in settling racial, ethnical, and zoological affinities that the great English anatomist, Huxley, stated that every skull in anatomical museums should be bisected to exhibit this angle for purposes of comparison.

The doctor further stated, that great and suggestive as was the resemblance between this brain and the human brain, that there were fundamental differences which should not be overlooked. The brain of the chimpanzee was richly convoluted; it had a large Island of Reil (in this specimen possessing four gyri operti), and a high development of the olivary bodies in harmony with the preponderance of the lateral lobes of the cerebellum, but we observe the absence of a first transition convolution, the concealed position of the second transition convolution, and the development of the large occipital lobe into an operculum. The orang-outang has a much less marked operculum, and in this more nearly approximates the human being than does the chimpanzee. The orang, like the human being, possesses superior transition convolutions which the chimpanzee does not possess; and in this respect, also, more nearly approaches man. This operculum is altogether absent in some South American apes. The development of an operculum depends on the relative size of the occipital lobe, which is larger than in the human brain. Recently Dr. Benedict, of Vienna, claimed that the moral sense was situated in these occipital lobes, because he found them rudimentary in several criminals. This Dr. Spitzka deemed a "relapse to the old errors of Phrenology," for if the moral faculties depended on the size of these lobes, the chimpanzee would have a far higher moral sense than we possess, and we should look up to the surviving specimen in the aquarium as a model to be followed, if not adored. (The

worthy doctor must be quite unacquainted with the Phrenological system to make such an inaccurate representation concerning it. If he will merely glance at the distribution of faculties in any text-book on Phrenology, he will find that the moral sentiments are located in the supero-central and supero-anterior regions of the brain, the occipital lobes being occupied by the social instincts. Dr. Benedict was in the main right, but somewhat confounded the moral sentiments with the social feelings.—Ed. P. J.)

Another peculiarity in regard to the chimpanzee's brain, one which it shares with the brains of other man like apes is, that it is early arrested in growth, so that if you compare the human infantile brain with the anthropoid infantile brain, the dimensions are far less different than between the respective adults. But even here the chimpanzee only presents us with an exaggeration of a peculiarity of the Australian and Guinea Negro's brain which is arrested in growth at puberty, while that of the chimpanzee is arrested at the second dentition.


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# NEW YORK,
**MAY, 1878.**

## WHY CONTEND?

THE spectacle exhibited by the European powers with reference to the adjustment of the late struggle between Russia and Turkey, is eminent for its kaleidoscopic play of national jealousy, cupidity, and pride, qualities which are influential to foment petulance, bickering, and conflict; and have thus been the chief instigators of the wars which, in the course of the past half century, have drenched the soil of Europe with blood.

From our side of the Atlantic, we scan the exciting dispatches which the telegraph transmits to us daily, and anxiously await the culmination of English, Austrian, or German discontent in another offering to the horrid rage of Mars, in the arrayal of army against army; of men in their flower, strength, and manhood, to be the prey of the bayonet and bomb. In view of the dreadful age-lasting consequences of a war between two strong nations, questions like these naturally come to every reflective humane mind: Why should it be? Why can not the representatives of nations settle the differences arising between them calmly, and in a spirit of moderation? Is there not enough of pretension, arrogance, and intimidation in the disputes of individuals? And ought not the unhappy results of such conduct in private differences to instruct the minister, and admonish him to be courteous and gentle in bearing a part in national disputes?

A nation being but an aggregate of individuals, we may be told that the same propensities, feelings, and passions dominate in the one as in the other. This we can not accept in general terms, for we regard the nation as a better moral expression than the individual. The purpose of its organization is the improvement of the individual by associated effort in thought and manual labor. Social refinement means the subjection of propensity and appetite to the moral and intellectual nature in the mental organism of the men and women who constitute the society. Where this subjection is thorough, we find the highest refinement and the most desirable order in private and public affairs. The relation of such a community with its neighbors is usually that of harmony and friendship. It is not only at peace with them, but admired, esteemed,

and sustained by them. "When rulers do not put the rein upon their passions," said Telemachus, "they sap the very foundation of their power." It is unfortunate for a people to have for its ruler one like Henry VIII., or George III., who makes his own opinion his chief rule of action. It is equally unfortunate for a country when the ruler takes for his guidance in emergencies the declaration of an excited, disorderly populace.

We hope that the European prospect is less threatening than it appears; that the statesmen who control the destinies of these great nations will bear in mind the precept of the wisest of monarchs: "The slow to anger is better than the mighty, and he that ruleth his spirit than he that taketh a city." A forbearing spirit might cost England a few square miles of territory—we do not think it would a foot in this case—but if it saved the lives of a thousand of her best people, would she not have great reason to congratulate herself? And would not the great and good in every land hold her in higher esteem for choosing the wise and humane part?

## "IF YOU LOVE THE YOUNG LADY, MARRY HER."

IN the April number of that sprightly paper, the *Cricket on the Hearth*, we find in the department given to answers to correspondents, this advice:

"You are old enough to marry, provided your resources are such as to allow you to incur such a responsibility. If you love the young lady, marry her, and don't trouble your head about Phrenological nonsense."

If the writer of that advice be well informed on the subject, and of course he ought to be to give such sweeping advice, then many people who think that they understand the subject are laboring under error. Let us examine the question under consideration.

Is *love* all that is necessary to constitute an appropriate and happy union between parties? Is it possible for a man to love sincerely and continuously a woman whose mental and physical constitution is utterly unfit for companionship? It is said that love is blind, and the way in which love-matches are sometimes adjusted, it would really appear that nothing is more blind than love. When we remember that a human being has reason, moral sentiment, and the elements of prudence and wisdom, as well as the power to love, and that love may be strong while the other elements are weak, and *vice versa*, it is a matter of serious inquiry whether or not the advice of *The Cricket* is sound. If its editor will study temperament, he will learn that a marriage between two persons, each being healthy, may be very disastrous in respect to the health of the children born to them. No prudent man would willingly make a hospital of his house, or weary the life of his wife and himself in a fruitless endeavor to rear scrofulous children, if such a deplorable condition could be easily avoided. If the editor will spend half an hour some fine day with one who understands Phrenology and Physiology, at a front window on Broadway, he may have pointed out to him scores of healthy-looking men and women of a given temperament, who, if united in marriage, would never raise a healthy child, though they might have a dozen. He could have persons pointed out to him of a peculiar temperament who never could live happily together, being too much alike. They might love each other as unmarried persons, but the honey would turn to vinegar by the sure working of time and intimate acquaintance. Our contemporary, however, says: "If you love the girl, marry her." We ap-

peal to thousands of intelligent men and women who may remember a pair of sparkling black eyes, or blue eyes, which, at twenty-one or earlier, they thought were essential to their happiness. They loved ardently, but something happened which prevented marriage, and ten years afterward, when time had ripened and matured the persons in question, it was seen that the marriage once regarded so important and essential to happiness, would have resulted in precisely the reverse.

Our advice, generally, to young men, is, if you do not love a girl, do not marry her, no matter what graces, or genius, or wealth, or culture she may have; but we can not, by any means, say to all, if you do love a girl, marry her, *unless* she have the qualities which, combined with yours, will give a reasonable prospect of prosperity and happiness. Sensible, moral people have other considerations besides the blind impulse of love, when the subject of marriage is presented to their considerations. If young people would read twenty-five cents worth of Physiology instead of twenty-five dollars worth of novels, they would know far more about the practical significance of marriage than they generally do.

The sober realities of life soon teach far too many young couples that they have wrongly related themselves, and that neither is properly adapted to the other. Does the reader doubt this statement? Then let him or her contemplate domestic life as it exists around us, and consider the vast array of suits for divorce which crowd the calendars of the courts. Dime novels, idiotic "Boys' and Girls'" papers, and "Ladies'" magazines tend to foster and inflame the love elements, and not one in a dozen gives any solid advice as to what constitutes a substantial and sensible matrimonial union.

Some years ago the writer examined the head of a young man who had won the affections of a lady. Having heard that I had made the examination, she came to me in confidence, to ascertain the fact, and ventured to ask my opinion of him. Looking her squarely in the face, I asked if she were personally interested in knowing. Like a true woman, she answered that she was; that the young man had offered himself in marriage, and expected an answer the next Sunday night. I then told her that he had a violent temper, and if she were my sister, I would advise her never to unite her destiny with his, lest in a fit of anger he should do her serious harm. Tears fell from her eyes; but, grasping my hand in both her own, thanked me heartily. That very Saturday evening, having obtained his week's wages, the fellow went with some young men to the next town, became intoxicated, quarreled with the landlord, and broke half a dozen mahogany chairs over the sitting-room stove, leaving matters in a state of wreck. The news of the occurrence might not have reached the young lady at all, or if it did, not until after the Sunday evening when her answer was expected. She loved the young man, and doubtless would have said yes to him had she not received our counsel. As it was, she asked another week for consideration. The story got out, meantime, and she wisely declined his suit, having thus a good, ostensible reason—a reason, indeed, which backed up the truthfulness of the advice we had given her.

Love is the prime essential of marriage, and should always exist between the contracting parties, but there are other considerations which are essential, and without which marriage can not be happy. When intelligent people know scientifically whom they ought not to marry, they are not likely to permit their love to concentrate in an improper direction.

## AMERICAN LONGEVITY.

IT is said to be a habit peculiar to women, when looking over the daily newspaper, to consult with special care the column devoted to marriages and deaths. Some of the "stronger sex" characterize this habit as a weakness, and are disposed to make it a matter for badinage or ridicule. If it be a weakness, then many of the masculine "persuasion" should confess to it, and we are willing to be among the first thus penitentially minded, as we generally glance down the death roll soon after the newspaper comes into our hands.

This practice has demonstrated to our satisfaction that the number of old and very old people among us is large, and will compare favorably with their number in foreign communities of similar extent. If a skeptic in this matter will pick up any one of the daily newspapers of large circulation, and note the funeral list, the aggregate of those mentioned whose ages exceeded seventy years will surprise him. A half-dozen New York dailies are lying with the mass of literary débris on our table. We take up one. It is the *Sun*, of February 5th last. There are twenty-four notices of death and funeral ceremony; of these, seven mention ages from seventy-five to eighty-nine, while seven mention no age at all.

Here is another, the *Herald*, of March 2d. Its long mortuary list numbers thirty-eight items, in ten of which the ages vary from sixty-six to eighty-three, there being three of the latter age. The age is not mentioned in ten instances, in nine of which the names are feminine.

The *World* also offers its testimony. A copy of the edition for March 19th is at hand. Its funeral notices are generally complete, giving the day of the death and the time of the interment. Of seventeen decedents, four are noted with ages ranging from seventy-five to eighty-eight, while of three we are not told the age.

The *Sun* for March 20th has a list which is extraordinary, and evidently as respects the most of its items a compilation. The fifty deaths are mentioned as having occurred on various dates from March 9th to the 19th. Of these, nine range from ninety to ninety-six years; twenty-two from eighty to eighty-nine; ten from sixty-nine to seventy-nine, the majority being over seventy-five.

## A MAL-APPLICATION OF TALENT.

A FRIEND and correspondent writing from Texas, relates an incident generally accepted as fact in that State, which shows how Phrenology may sometimes be turned to vicious account when the exponent of it suffers himself to be made a tool or cat's-paw by corrupt men.

A Mr. Hurley, of whom we have heard before, had many years ago some reputation as an examiner in Phrenology. This reputation was particularly high in the State of his residence, Texas. Near the close of the late war he was taken by certain politicians to Austin during a session of the Legislature, and it was made his business there to measure the integrity of different members, and report to his employers the sum of money which, in his estimation, would be sufficient to buy them over to the advocacy of certain measures. Having reported, his employers—lobbyists probably—would give him the money and he would apply it in the direction specified, buying a man's vote for three hundred, five hundred, one thousand, or more dollars, as the case might demand. The Phrenologist made this work profitable to himself, as it is said that he returned home at the close of the session with a stock of goods worth $20,000.

While this incident is a strong illustration of the extensive range belonging to the practical application of Phrenological principles, it can not be regarded as a high and noble use of them, and the Phrenologist who stoops so low as to pander to chicanery and villainy, deserves the hearty censure of the whole moral world.

## BASHFULNESS AGAIN.

MR. ALEY writes once more on this subject, as follows: In your short comment on my criticism on Combe in the December number, you say that Combe meant that "Bashfulness" proceeded from a deficiency of Self-Esteem, and that his views were not adverse to my own. Will you grant me a small space for a short explanation and another criticism? Combe says, on page 34 of his Lectures: "I have before stated that bashfulness is principally an affection of Self-Esteem." This is certainly very plain; and, to an average comprehension, implies the origination of the affection we are discussing in Self-Esteem.

But, admitting that he meant it was due to a deficiency of Self-Esteem, another valuable point is offered for attack, which must discover either a mistaken error, or an inconsistency, which last may comprehend both. On page 186 of his Lectures, he says: "Fear can not be the absence of courage, for it is a positive emotion which the negation of a quality can not produce." Now one of these sentences or quotations involves an error, and it certainly will not be found in the one last selected. Bashfulness is surely as positive an emotion as fear, and if the latter can not proceed from the deficiency of an organ, certainly the former can not. The cases are parallel, and almost identical, and can lead to but one conclusion.

Mr. Combe, in speaking of Self-Esteem in his "System of Phrenology," says: "When the organ is too small, a predisposition to humility is the result. In such a case the individual wants confidence and a due sense of his own importance. He has no reliance upon himself; if the public or his superiors frown, he is unable to pursue even a virtuous course, through diffidence of his own judgment." If we take Mr. Combe's meaning, when using the term "affection" in the "Lectures" to be deficiency, it seems to us that he is not inconsistent. But our correspondent probably will not accept such an attempt in explanation, on account of Mr. Combe's customary precision in the use of words having a technical significance. Then, if we rigidly interpret "affection" as an attribute or property, we are forced to arraign the great theorist for inaccuracy in this instance. Our correspondent was right in stating, as he did in his former letter, that in the great majority of cases Bashfulness arises from small or moderate Self-Esteem and Combativeness with large Cautiousness and Approbativeness.

## INJURY TO THE BRAIN AND ORGANIC DERANGEMENT.

WE have received from Mr. C. A. Halley, of Nashville, Tennessee, a brief account of a recent occurrence in his neighborhood which appears to have a direct Phrenological application. A boy who had exhibited first-rate capabilities in arithmetic, but was far from remarkable in other studies, while running on an errand, stumbled over a log in which there was a large projecting nail. He fell in such a way that the left side of his forehead, just between the organs of Tune and Constructiveness, struck against the nail, and a deep gash was cut downward over the organ of Number, the bone itself being injured by the nail. Mr. Halley himself had an opportunity to examine the wound, and speaks from personal observation. Since the accident, the boy has shown a lack of readiness in the study of arithmetic, his former capability being greatly modified. Now, when asked very

simple questions in mental arithmetic, he becomes embarrassed, and must resort to pencil and paper, and laboriously work out the problems, and then his analyses are much mixed up and lacking in clearness. Mr. Halley is of opinion that the organ of Number being injured, occasions the derangement of faculty, and also that Tune and Constructiveness share in the derangement. And he is, doubtless, right. It is our opinion that the attention of a skillful surgeon should be called to the case and the boy's head examined. He certainly should have relief. It may be that the anterior plate of the cranium was fractured at the time of the fall, and some spiculæ of bone press upon and irritate the brain tissue of the parts composing the organs exhibiting derangement. Mr. Halley has our acknowledgment for his kindness in reporting the case.

# Our Mentorial Bureau.

"He that questioneth much shall learn much"—*Bacon.*

## 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.*

WE CANNOT 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—stamps being preferred. Anonymous letters will not be considered.*

ILL-SHAPED NOSE.—P. U. G.—A few years ago we published an article from a warm friend of Phrenology, with the title "How I Changed my Nose." In that article the writer stated, that in early life she possessed a somewhat irregular, disagreeably-formed nasal appendage; but that by endeavoring to live a proper life, cultivating her mind and refining her nature, her nose underwent, in the course of years, a considerable modification; and was at the time the article was written tolerably respectable. It once had a tendency to turn up, somewhat after the manner of our correspondent's, we presume; but had been made to approach the Grecian outline by the mental influences aforesaid. We do not believe in any machines for modifying the nasal contour; think that they would have an effect quite the opposite from what was desired, just as tight shoes injure the feet and detract from their natural symmetry. Brace yourself up in self-reliance and personal worth, and pay little attention to the shape of your nose.

BRADLAUGH.—A. P.—We have not published a sketch of Charles Bradlaugh, the English agitator and liberal. We had Ingersoll on our list, but the very poor exhibition of himself which he has lately made in the East has served to dampen public consideration. He is certainly a speaker of peculiar abilities, highly rhetorical, and very fascinating to a mixed audience. In his late lectures, however, he has shown a sad lack of logical acumen and fair interpretation.

MAGIC WAND.—H. W. S.—We have heard a good deal with regard to the wonderful properties of a twig—usually of witch-hazel—for discovering subterranean veins of water; but we have not been able to ascertain the nature of the force which produces its alleged movements. They may be due to unconscious action on the part of the operator, just as the mind-reader is said to be influenced when endeavoring to discover some hidden article. Perhaps some reader who has experience in the matter can enlighten the inquirer.

FONDNESS FOR PETS.—G. A.—The foundation of love for pets is Philoprogenitiveness. The influences which determine a special direction of the fondness are due to other organs. One with large Friendship and Destructiveness will incline to pets of a strong and vigorous nature; one with large Benevolence will incline to objects of a weak, dependent nature. We take it that one with large Secretiveness will incline to pet animals of the cat sort; one with Imita-

tion large, and a strong sense of the ludicrous, will probably incline to pet monkeys.

DANDRUFF.—T. C. D.—The careful application of a good brush to the scalp will do as much toward removing dandruff from the hair as any process which may be named. Keep your diet as clean as possible, so that the blood shall be clean; then there will be less excrementitious emanations from the skin. If the scalp be perfectly healthy, there is necessarily some matter thrown out by its millions of pores. Where this matter appears excessive, the excess may be due to a partially morbid or clogged state of the cuticle. Wash the head frequently and thoroughly with tepid water, in addition to the use of the brush. Avoid all nostrums which are offered through the papers as cleansing agents for the hair.

DYNAMITE.—G. H. I.—This wonderful explosive, which is superseding most of the old materials used in mechanical processes, is composed of finely pulverized silex, or infusorial earth, most frequently the last, saturated with about three times its weight of nitro-glycerine; thus constituting a mass resembling Graham flour.

SPIRITUALISTS.—J. M. D.—We can not give you even an estimate of the number of spiritualists in the United States. There are many different schools or societies of them, and many are in the common denominations of Christians; their number probably runs into the millions. The number of inhabitants of the United States at the present time is estimated by some at about 45,000,000. According to the census of 1870—as you probably know—it was at that time 38,500,000. The population of New York City is set down at 1,000,000; it probably exceeds that by a little.

OATMEAL AND ECZEMA.—J. W. H.—The complaint of the use of oatmeal causing disease of the skin, is by no means new. We have used oatmeal in our family the past ten or fifteen years with no such effect; and we know children who may be said to have been brought up in great part upon it, and who have never exhibited any skin complaint; but, on the contrary, have been remarkable for the clearness of their complexion and smoothness of the cuticle. We think that people who have troubles in the way of eruptions on the skin, owe them to improper dietetic habits, the use of too much carbonaceous matter, like sugar, molasses, gravy, sauces, etc. Oatmeal is a most excellent food, but its good effects may be considerably offset by the use of too much sugar, syrup, or molasses in connection with it. The trouble you speak of may be due to this indiscretion.

OYSTER.—The oyster is an organized animal, lacking, however, what we generally term a head. It has, nevertheless, a nervous system, circulatory apparatus, stomach, etc., pretty much as you have learned elsewhere. The oyster is somewhat carnivorously disposed. Its food is mixed, and so is deemed by hygienists a rather impure bolus, and not fit for the human stomach.

We do not deem the bots, if you mean that malady, necessary to the health of horses, any more than we believe that a disease of any kind is necessary to health.

FORGETFULNESS.—J. C.—Your difficulty may be due to physical depression, nervous debility. The brain not being well-nourished, lacks its full measure of power for vigorous function.

BEER-DRINKING.—J. F. F.—If our correspondent be not pretty well answered by the article on "How Beer Works," in the April number, we will add, that we do not deem beer fit for any mortal stomach. It is usually a corrupt concoction, aside from its alcoholic property. We would not advise you to drink while eating. Cold water is not essential to the process of mastication, and tends to interrupt and hamper the process of digestion. An hour or so after eating a meal, if you feel thirsty, you can drink moderately with benefit.

LUNACY.—J. M.—We would advise you to obtain the assistance of a physician of experience in cases of insanity. It may be that the lady's trouble is due to a low condition of the system, lack of nourishment, etc.; it may be a phase of hysteria.

COLDS.—Y.—At this season of the year colds are very frequent; in fact, so numerous that in some localities they appear to have an epidemic character. One of the chief causes of colds in spring is a repleted condition of the system. When people have been feeding on strong carbonaceous food during the whole winter, they find that on the coming of the warm season the carbonized blood is sluggish, the liver inactive or slow, and the skin clogged. Such a condition must be modified, or the person will find himself the subject of fever. The simplest way by which the system may be relieved is by changing and reducing the food supply. Eat but little flesh-meat—none for a few days would be beneficial—using instead plain, unstimulating vegetable preparations; drink plenty of cold water on rising and on lying down. The legs and feet should be kept warm, and in the course of time it may be expected that an agreeable change will be wrought. One who is particular in his diet in the winter does not find it necessary to make any special effort to relieve his system in the spring.

COMBATIVENESS AND DESTRUCTIVENESS.—[illegible] L.—No; one may have moderate Combativeness and small or moderate Destructiveness, and *vice versa*.

## What They Say.

CULTIVATION OF THE MEMORY.—From an intellectual stand-point, the memory is unquestionably one of the most essential functions of the brain. What is the use of endeavoring to learn, if we have not the power to remember that which is learned? As the farmer always prepares the soil previously to sowing his seed, so let us prepare our minds for the reception of knowledge by cultivating the memory. The one great secret of memory is *trying to remember*. Whenever an event takes place, or an occurrence comes under your notice, try to impress it upon your mind. When you read, read slowly, and try to remember all the ideas and particulars of what you do read. Strive earnestly to retain everything. At night when you have retired from your work and all is quiet, try to recall what has happened during the day, all that you have said, done, or acquired. By adopting this habit of thinking over the past, you will, of course, be exercising and cultivating the organs and faculties, and will soon have greater ability than before to retain in the mind whatever comes to you through the senses. JOHN W. LOWE.

MIND-READING.—*Editor* PHRENOLOGICAL JOURNAL:—I read in the February number the following question: "Can you explain why it is that four or more persons joining hands around another person who is blindfolded, their finger tips lightly touching the subject's waist, can, by steadily thinking of a certain object, cause the person to go toward and find the object, although he may have no previous knowledge as to where or what the object is?" to which was answered: "This is one of the unsolved problems of psychical life," etc. As the question is interesting to a large number of people, please allow me space to venture to explain the phenomenon.

Several years ago, I saw for the first time this mind-reading feat performed, and becoming interested, tried it myself with the aid of a few friends. The result was a complete success. I took my friends into a large field, and placing myself where I could not see or hear them, told them to hide a key in the grass somewhere. They then, after whirling me about until I was dizzy, encircled my waist with their hands; and, although blindfolded, I went immediately to the place where the key was, and easily found it. This was repeated many times, but always with the same result. The thing was done in a perfectly honest way, with no secret understanding. I did not have any supernatural knowledge of the place where the key was hidden, but started off in total ignorance, going as I felt inclined to go until there was no inclination, when I would stop, reach down to my feet, and pick up the key. Once after going until there was no inclination, I continued on, but had scarcely gone a step, when I felt an inclination in the opposite direction; nevertheless, I pressed forward for a considerable distance, and then, letting myself be guided by the "psychic force," went and picked up the key as usual. My companions told me that I had stood over it, gone away from it, and come back again. After a little thought and practical observation, I concluded that the inclination was caused by my companions unconsciously pushing me with their encircling hands in the right direction until I came to the key. I told them not to push; at which they were quite indignant, and loudly declared that they did nothing of the kind. It was known to them that they must firmly believe that I would find the key, that they must keep their minds upon the place where it was hidden, and that I would be guided by a certain inclination; and in the exercise of those beliefs, aided by their anxiety not to incline me in the wrong direction, caused an involuntary nervous action of their muscles, which gave me the aforesaid inclination. That this is the true solution is shown in several ways.

If there are too many persons, or the encircling hands touch the subject's waist very lightly, he may have great difficulty in distinguishing any particular inclination, and if he wear a loose jacket, so that the hands are not felt, he will be totally unguided in his movements. Again, if those who join their hands are ignorant of the situation of the hidden object, there is no inclination, and the mind-reader is utterly nonplussed. By this principle of involuntary muscular action can be explained the working of the planchette, the phenomenon of table-talking, and many other mysteries.

A short time ago, I found that Dr. William B. Carpenter has treated of the subject in an exhaustive manner in his late publication, entitled "Mental Physiology." If a person wishes a clear and elaborate exposition of the principle which I have enunciated and its practical application, he will do well to read the book. But if a person will select a sufficient number of other persons, all having large Hope and Spirituality, and attempt mind-reading himself, he will need no further explanation of the question.

Respectfully, ROBERT B. CASE.

[Our correspondent's statement is clear and

worthy of attention, and in close agreement with what Dr. Carpenter, Dr. Beard, Mr. Irving, and others have said on the subject. We, however, do not think that the nature of this psychic force has been fairly elucidated yet, although the doctors have let in considerable light with respect to some of its modes of action.—ED.]

## PERSONAL.

MARIO, the celebrated tenor singer, is living at Rome in a state of almost complete destitution. Time was when his name was a household word in Europe. Thousands have forgotten their cares and troubles in listening to his voice.

LARKIN TURNER died recently in Merriwether County, Ga., at the age of 110 years. When he felt the approach of death he settled himself in his chair, refusing to lie down, and died without a struggle. He was never sick, and never took a dose of medicine until he reached the age of 100.

MR. WILLIAM WELSH, a brother of Hon. John Welsh, United States Minister to England, and a man very greatly respected in his own State, and widely known throughout the country for his great personal worth and constant religious, benevolent, and charitable activities, died suddenly on the 11th of February. He was a native of Philadelphia, and about seventy years of age.

REUBEN FIELD, of Sharpsburg, Ky., is a natural mathematician who knows not one figure from another, yet correctly solves intricate problems in his mind, without hesitation, computes the time of day almost in an instant, and tells how many revolutions the driving wheel of a locomotive will make between given points. He can not read or write. Time and Number very large.

MR. OLIVER WENDELL HOLMES is thus described in *The Cincinnati Gazette:* "He is a brisk, witty man, who dresses in the most charmingly old-fashioned style, always with a drab waistcoat, and a coat that seems too small for him. He looks like a cross between a Yankee and a Scotchman, and has a dried-up appearance, very much like an autumn leaf. But he has a keen eye, that laughs when he laughs. And he enjoys laughing, and wakes you up with his fun."

JUDGE GUILD, of Nashville, who was one of the militia officers who received Lafayette in that city in 1824, says Lafayette was a stout, well-formed man, about five feet ten inches high, with a large head, a hazel eye, sallow color, a large, fleshy nose, a mouth well-formed, denoting firmness and constancy, and large, elephant-looking ears. The statues we have of him are scarcely veracious according to this.

## WISDOM.

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

"As the message is sent, so deliver it; if you vary it, the sin is your own."—*African proverb.*

"A LAUGH to be joyous must flow from a joyous heart; but without kindness there can be no true joy."—*Julius Hare.*

RISE early, if you wish to become rich and conquer an enemy.

"THANKSGIVING is good," said the venerable Philip Henry to his children; "but thanks-living is better."

SPEAKING of dancing, a clergyman hits the nail on the head with the remark that "people usually do more evil with their tongues than with their toes."

"LOVE virtue, and the people will be virtuous; the virtue of a great man is like the wind; the virtue of the humble is like the grass; when the wind passes over it the grass inclines its head."—*Confucius.*

"TRUE taste is forever growing, learning, reading, worshiping, laying its hands upon its mouth because it is astonished, casting its shoes from off its feet because it finds all ground holy."—*Ruskin.*

## MIRTH.

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

WHY are balloons in the air like vagabonds? Because they have no visible means of support.

A CONFECTIONER, who twelve months ago taught his parrot to say "Pretty creature" to every lady who entered his shop, is now a millionaire.

AT a recent dinner of shoemakers, the following toast was given: "May we have all the women to shoe and the men to boot."

A BOOK canvasser, the other day, talked half an hour to induce a lady to buy a book. Then she handed him a slip of paper, on which was written: "I'm defe and dum!"

"A TRAMP called at a house on West Hill the other day and asked for something to eat. He was so thin, he said, that when he had a pain he couldn't tell whether it was a touch of the colic or the backache."—*Burlington Hawkeye.*

"ANNA, dear, if I should attempt to spell cupid why could I not get beyond the first syllable?" Anna gave it up; whereupon William said: "Because when I come to c u, of course I can not go further." Anna said she thought that was the nicest conundrum she had ever heard.

# 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.*

THE UNIVERSE OF LANGUAGE. Uniform Notation and Classification of Vowels, adapted to all Language. By the late George Watson, Esq., of Boston, Mass. Edited and Prepared for the Press, with Preliminary Essays, etc., by his daughter, E. H. W. 12mo, extra cloth, pp. 338. Price, $1.50.

In many respects this is an important work, furnishing, as it does, the results of long and careful study into the nature of language, and formulating theories which, if not perfect or consistent in all respects, may serve as aids to later philologists in their effort to formulate a science of language which shall have a general application.

Part First consists of essays on the nature of language, prepared by Miss Watson, in the course of which reference is made to the views of the best philological authorities with respect to the origin of language, its unity and diversity, use of a uniform notation, alphabets, a system of consonants, and vowel systems. Part Second is devoted to the structure of language, and here the method of Mr. Watson is brought into notice. Its object as stated in the author's introduction is "to classify the vowel sounds, and so to facilitate the acquisition of the pronunciation of all languages by a universal method of notation, by which the same sounds in all of them are indicated by the same exponent; and as a natural result the introduction of a systematic mode by which to simplify their orthography. Mr. Watson first calls attention to the primary vowel sounds of the five leading tongues of Europe, and indicates their similarity in tables. Next he considers diphthongs, occasional sounds, etc., and tests them by comparisons drawn from different languages. In the "Practical Application of the Phonetic Table," the principle laid down in the previous chapters is very happily illustrated, and though a proficient in German, French, Italian, etc., would be likely to except to the exactness of some of Mr. Watson's associated sounds, in some groups of words, yet the approximation is close enough to be of great practical assistance to the young student in such languages.

Much information is furnished concerning the structure of ancient tongues like the Sanskrit and Zend, which it is not the average reader's fortune to meet with but rarely outside of works specially treating of them. Mr. Watson was an advocate of a simpler orthography than now boasted by our language, and devoted a large part of his work to the discussion of methods for its accomplishment.

RIPLEY PARSONAGE, with more about the Mackenzies. A sequel to Mr. Mackenzie's Answer, by Faye Huntington, 16mo. pp. 351. Price in cloth, $1.25. New York: National Temperance Society and Publication House.

A cursory examination of this new production of our temperance friends leads us to consider this an unusually interesting book, in its line. It is a portraiture of clerical life in the main, but the treatment is not of that stiff, stilted sort which is customary in attempts to represent ministerial character. While the morality is high, the tone is liberal, and easy without being commonplace. The Rev. Mr. Anderson works earnestly for temperance prohibition, but does it with no assumption of superior virtue. He is consistent in his profession; does not present temptation under the cloak of sacred ceremonial; deems water as potent a symbol for the communion celebration as wine could be, its purity and freedom from vicious or propensative influences satisfying him of the correctness of his conduct, in offering it to his parishioners. We are reminded here of the consistency of the Mormon priesthood, in their avowed antagonism to the use of intoxicating drinks. In the frequently occurring ceremonial of the eucharist, at their religious gatherings, they use water only. And this fact inclines us to think leniently of their conduct in those other respects which may appear reprehensive to Gentile eyes. We have known of cases of lapse from a long and successfully maintained course of conflict with appetite, brought about by the simple taste of the communion cup. We know one or two cases in which a young man has been sent "across lots" to death by the minister, who at the altar handed him the cup containing the memorial wine, and in sacred language invited him to drink thereof. Men who will reason like Brother Page are obstacles to reform. When asked by Mr. Anderson, "Would you offer the intoxicating cup to a reformed drunkard?" he replies: "If you mean the Lord's cup, yes; I believe that the God of all grace would not suffer one who is really His child, to be overcome. I have never heard of such an instance, and I am an older man than you are, Brother Anderson." Mr. Anderson, further on, at the risk of being called a fanatic, says: "I have felt that I never could dispense the intoxicating cup again. What I would shudder to do in my own house must I do in the house of the Lord in Christ's name?" This query comprehends the

true Christian view of the matter, and upsets a world of sophistry employed by the religious pro-liquor men.

VIEWS OF OUR HEAVENLY HOME: A Sequel to "A Stellar Key to the Summer-land." By Andrew Jackson Davis. 12mo, cloth, pp. 290. Boston: Colby & Rich.

We have in this new volume another earnest utterance by one of the foremost of those who advocate the spiritualistic philosophy. In opening he has somewhat to say with reference to his reason for writing the book, that "he here presents a volume devoted mainly to 'building up' by means of a revelation of facts and principles existing in the inmost constitution of nature. A *new* heaven and a *new* universe are now offered in place of the old and erroneous, which, however tottering and untenable from base to turret, are still occupied by numerous talented and learned families."

Here we have the assertion of a lofty confidence. The author believes himself conversant with the facts of the future, to have indubitable knowledge of the world beyond the grave, and to be able to communicate that knowledge to others. He tells us, however, in his first chapter, that to understand the character of the spirit life, the mind must be developed into a certain "superior condition," and "then the will is pure and under its direction, and the eyes of the immortal may be unclosed."

The author, in Design No. 1, gives us his conception of the locality of the "Summer-land," assigning it to a belt in the Milky Way; and occasionally he introduces a somewhat rhapsodical description of the beauty and glory of its nature and surroundings. In Design No. 5 we are presented with a view of the "Summer-land" as it appears to the inhabitants of Mars. And certainly the spiritual vision of Mr. Davis has suggested a very attractive picture of wood and meadow, grove, fountain, and stream. One of his highly poetical descriptions of the life there, occurs in "Reality of Life in the Summer-land," and runs thus:

"Through the boundless dome forever sweep the dazzling comets, enveloped in glowing splendors, like the flaming angels of God; like a glorious dream arise the fragrances of millions of the loveliest flowers. A delightful crystalline light, subdued by the shadows of overhanging trees, spreads everywhere from the bosom of the rivers. Broad and grand is the landscape on every side. Mountains filled with immortal splendors, among them the homes of unnumbered Brotherhoods. Stars rise and set like suns and moons, over very remote lands. Beautiful birds, bright representatives of affections, pour their music through the soft summer air, making even the sweet-breathed roses tremulous, and sending musical throbbings through the fragrant hearts of whitest lilies. Mounts and streams glow with the warmth of overflowing love, and the laughing rivers shine with the deathless light of Divine wisdom."

Here and there the author makes some startling remark, but not one, it seems to us, is more startling than this—notwithstanding the strong flavor of dogmatism which runs through it—which occurs in the admonition to the suicide:

"Remember! only the full grown human life is happy after death." Such language must be a cold poultice to many spiritualists, particularly those who hug the theory of complete restoration.

THE KIROGRAFIK TEACHER. Adapted for use as a Text-book in Common Schools, High Schools, Academies, etc. By John Brown Smith, author of "The Stenografik Teacher," etc. Second edition.

We have had occasion to allude to Mr. Smith's new method recently. And in bringing this neatly-prepared second edition to the notice of the reader, have only to say that, if this new addition to short-hand literature shall aid in bringing about a more simple method of spelling, and do away with the present clumsy long-hand writing, it will be a benefit to the human race; but we can not see that it possesses advantages over the well-established systems of Phonography which should justify us in commending it in their stead.

A NEW METHOD OF HORSEMANSHIP; including the Breaking and Training of Horses, with Instructions for obtaining a good Seat. Illustrated. By F. Baucher. Translated from the Ninth Paris Edition. New York: Albert Cogswell.

An excellent little treatise on the training of horses, furnishing much valuable counsel, drawn from the experience of leading continental horsemen, on how to subdue vicious horses, render them gentle and obedient, and how to improve their appearance. It contains within one hundred and thirty pages or so the gist of much larger volumes. Price $1.00.

THE WINES OF THE BIBLE. By Rev. C. H. Fowler, D.D. Paper, pp. 35; price 10 cts. Published by the National Temperance Society of New York.

This is a brief, yet very comprehensive, discussion of the question, "Bible Wines." Dr. Fowler aims to show that in Scripture the use of intoxicating wine as a beverage has no sanction. He considers the different kinds of wines mentioned by the sacred writers, quotes eminent authorities, and also furnishes evidence—of which there is certainly enough in every large community—that the drinking of intoxicating liquor is baneful and an obstacle to progress, individual and collective. Dr. Fowler has been moderate in his quotations of Scriptural language from

those passages which denounce the drinking of wine and the course of the inebriate; yet makes out a case which is beyond refutation.

TOBACCO: ITS PHYSICAL, MENTAL, MORAL, AND SOCIAL INFLUENCES. By Rev. B. W. Chase, A.M. 18mo, pp. 90. Fancy cloth, price 50. New York: W. B. Mucklow, Publisher.

This little book is a fresh resumé of the arguments and facts against the use of tobacco, written in easy, pleasant style. Tobacco's physical effects are carefully and somewhat minutely discussed, while a brief consideration is given to the mental, moral, and social influences of the habit. The book is calculated to be productive of benefit, and we hope that it will be very extensively circulated.

ALCOHOL: ITS NATURE AND EFFECTS. Ten Lectures. By Dr. Charles A. Story, of Chicago. 16mo, cloth. Price, $1. New York: The National Temperance Society and Publication House.

After what has been said by Drs. Edmunds, Richardson, Lewis, Trall, and other eminent physicians, on alcohol and alcoholic-drinking, it might be thought that there is no more need at present of books in the same line; but a glance at this of Dr. Story's satisfies us that it is seasonable, and by no means a supernumerary. He plunges at the beginning into the heart of the matter, and discusses the scientific nature of alcohol in simple language and in an attractive, colloquial style, just as we suppose the lectures were delivered to his audiences. He describes technical processes in untechnical language, which every reader can understand, unless one takes it up who doesn't know how to boil an egg. He calls things by their true names; tells the people that fermentation means decay and rottenness, that alcohol is a principle of death and decay, and is only found in dead and rotting matter; and illustrates his points by anecdotes and stories from every-day human life; although easy, simple, and flowing, he is, nevertheless, logical and careful in argument, and very abundant in citations from the best authorities, showing that he has been very thorough in his study of the books, as well as closely observant of the alcoholic habit in society. The ten lectures, indeed, present a very complete survey of the subject it considers, and commends itself most favorably to us as a powerful missionary effort. We hope that it will find its way into every community. Lyceums and societies everywhere should place it on their reading-table.

## PUBLICATIONS RECEIVED.

SELECTIONS for the Practice of Students in the reporting style of Burnz Phonetic Shorthand. By Eliza Boardman Burnz, teacher of Phonography and English Phonetics at Cooper Institute, and the New York School of Phonography. A neatly prepared little book. The phonographic characters are clear, the contrast between the thick and thin strokes being well defined.

THE QUARTERLY JOURNAL OF INEBRIETY. Published under the auspices of the American Association for the Cure of Inebriates, of which Association Dr. T. D. Crothers, of Hartford, Ct., is Secretary. The treatment of inebriety by scientific methods has assumed a position in this country as well as in Europe, which requires expression in a special way, and the *Quarterly Journal* is the medium of such expression. There are now in this country upward of twelve asylums in which inebriates receive enlightened and considerate treatment.

SEVENTH ANNUAL REPORT of the Board of Trustees of the New York Ear Dispensary, incorporated May 8, 1871. The six or seven years during which this charity has existed have proved very useful to the many among our poorer classes who suffer from disease or weakness in the organs of hearing. Good treatment at the hands of gentlemen specially skillful in aural treatment is given at this institution.

ONE HUNDRED YEARS of Progress in the Business of Banking. Address of the Hon. Elbridge Gerry Spaulding, at the Meeting of the Bankers' Association, at the International Exposition, Philadelphia, Pa., May 30, 1876. Published at Buffalo, N. Y.

REPORT of the 19th and 20th years of the New York Sabbath Committee, 1875–1877. This report shows the results of efforts made in the past two years toward improving the moral observance of Sunday in the city of New York.

THE HAPPY CHRISTIAN: A Didactic Poem. By Clinton L. Harlan, of Alta, Iowa. This verse shows a very earnest spirit, and contains some happy thoughts. We do not find, however, in it the germs of a Cowper or a Pope.

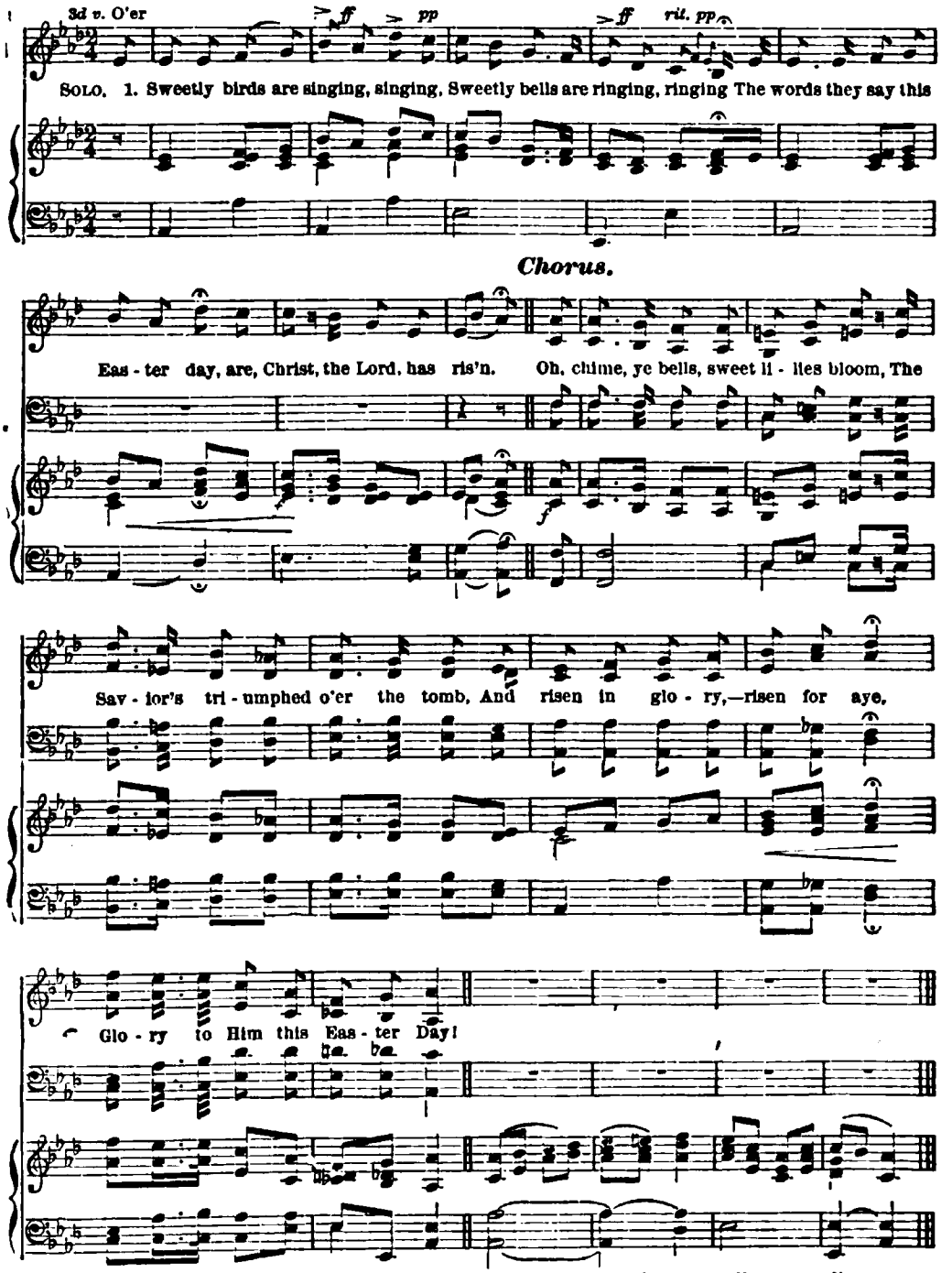
THE PLUMBER AND SANITARY ENGINEER: Considering the matters of Water-supply, Drainage, Heating, and Lighting. Mr. Chas. F. Wingate is editor of this new trade candidate for honors literary.

JOHN SAUL'S CATALOGUE of Rare and Beautiful Flower-seeds for the spring of 1878. Mr. Saul is nurseryman, seed-grower, florist, etc., having his garden and warerooms at Washington, D. C.

PROCEEDINGS of the Teachers' Institute of the City and County of Philadelphia, for the year 1876.

# "Glory to Him this Easter Day."

Words by H. S. DRAYTON. Music by A. J. GOODRICH.




2 Easter buds are growing, growing.
Easter flow'rs are blowing, blowing,
Bright Spring is here, crown of the year,
And Christ, the Lord, is risen.
CHO.—Oh, chime, ye bells, &c.

3 O'er land and sea spreading, spreading,
Gospel truth is shedding, shedding,
Its joy and peace on every soul,
For Christ hath risen for the whole.
CHO.—Oh, chime, ye bells, &c.

4 Now our voices raising, raising,
Let us all be praising, praising
Our Savior, King, Redeemer, Lord,
Whose perfect work fulfills His word.
CHO.—Oh, chime, ye bells, &c.

THE
PHRENOLOGICAL JOURNAL
AND
LIFE ILLUSTRATED.
VOL. 66. 1878.

NUMBER 6.] *June, 1878.* [WHOLE NO 474

## HORACE A. BUTTOLPH, M.D., LL.D.,

SUPERINTENDENT OF THE NEW JERSEY ASYLUM FOR THE INSANE.

THIS gentleman has inherited his organization in great part from the mother's side, which evidently was distinguished for long life and enduring power. There is a

certain smoothness in his organization, an ease of working in its different parts that promotes long-continued action and remarkable endurance. We may say here that endurance depends as much upon the easy, harmonious working of different parts as upon their essential strength. A wagon wheel built symmetrically, its members being fairly balanced so that there is no stiffness on one side to counteract or oppose the elasticity of the opposite, will wear evenly and last longer than a wheel whose parts are unequal in regard to elasticity and strength. That which is true of the body in reference to the freedom and harmony of its mechanism, is true of the brain. Some men have so much Combativeness that they are always in a fever, or so much Caution that they are always in dread, or so much Reason that they are continually struggling with some problem, and they are thus rendered uneasy and fidgety, and they live, move, and work with more friction than is compatible with great endurance and large accomplishment.

Here we find large lungs, good digestion, and a fair circulation. These physical elements contribute to the harmony of the mental action. He should be known for firmness; for the disposition to pursue with earnest directness a chosen course; though he may be compelled to stop in his course by some unlooked-for obstruction, he can adapt himself to the contingency, and when the obstruction has been removed, go on to the completion of the work.

He has enough of Combativeness and Destructiveness to back up his Firmness, and in certain relations might be inclined to show strong feeling or temper—not that of a boisterous sort, but in the way of increased energy and a more emphatic earnestness. Were he performing an operation in surgery, he might sympathize warmly with the suffering patient, but would use the knife with a strong and steady hand, and be thorough in its performance. When placed where severity is absolutely essential in matters of discipline, he is not the man to hesitate to apply it.

His Secretiveness enables him to conceal his purposes, and to maintain good control over his feelings. He has Caution enough to be watchful, guarded, and provident, and this element in his composition enables him to preserve his tranquillity. He believes in justice; it supplements strongly his firmness and forceful qualities, and so gives sanction to his purposes. He may be considered exacting at times, particularly where questions of integrity and faithfulness are concerned. He would be likely to take more pains to pay five cents than most other men would to pay five dollars which was due another.

His love of praise or sense of appreciation is exceedingly strong. He feels criticism and censure keenly; yet he has a good degree of Self-esteem, which enables him to preserve a dignified bearing if thus assailed; his Conscientiousness working with his Approbativeness renders him anxious to maintain a good reputation before the world.

We do not find the evidences of much credulity; he is inclined to hold new, strange, and wonderful things at a distance; to demand evidence for what is pressed upon his acceptance.

He is a good reader of character. His impressions of strangers are generally well-founded. He has large Constructiveness; is a natural inventor, planner, and organizer; would have done well as an architect, machinist, or manufacturer. Had he taken up some specialty in surgery, like the treatment of the eye or ear, he would have shown superior skill; would have made discoveries and acquired reputation.

His large perceptives qualify him to gather knowledge and hold it until it can be applied to use. He has an excellent memory of particulars; can carry complex affairs very clearly in mind. With that large Constructiveness and that specializing intellect and discriminating judgment, he is well adapted to the superintendence of an extensive manufacturing establishment, with its world of associated machinery—he could carry all its details clearly in mind without confusion. His power and success are largely due to his mechanical and inventive talent, which not only enable him to understand material affairs, but also the complicated relations of human disposition and character, thus enabling him to govern and control people.

His Language is large enough to make him a good talker—not one very fluent or copious in the use of words, but one able to express himself with clearness, precision, and comprehensiveness.

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HORACE A. BUTTOLPH was born on the sixth of April, 1815, in the township of North-east Duchess County, New York. His father, Warren Buttolph, although a native of New York, was of German descent, the founder of the American branch of the family having emigrated from Germany when quite young and settled in Boston, Massachusetts. His mother was of Irish lineage. When Dr. Buttolph was but a youth his father moved to Pennsylvania and settled within four miles of the present thriving city of Scranton, which was then known as Slocum's Mill, a sparsely inhabited region. The family did not remain long in that place, but in a few years returned to Duchess Co., New York, where Horace attended school until he was fourteen years of age. He subsequently became an inmate of the family of a maternal uncle, Dr. Charles McAllister, of South Lee, Berkshire Co., Massachusetts. While residing with his uncle he became a pupil of the Stockbridge Academy, where he completed his early education.

Having resolved to devote his life to the medical profession, he commenced its study under the preceptorship of his uncle, and, meanwhile, in order to defray the expenses incident to his medical studies, he taught school. In this way young Buttolph sustained himself almost from the beginning of his career; his self-reliant nature declining the assistance of others. He attended three regular courses of lectures at the Berkshire Medical College, and was graduated from that institution in 1836. Returning to his father's house he began at once the practice of his profession, but remained in Duchess County for a brief space only, going to Sharon, Litchfield Co., Connecticut, which was his place of residence for five years. He then came to New York city and attended a course of medical lectures in the University, giving special attention to surgery.* Some time previous to this he had become deeply interested in mental science and in the treatment of insane patients, looking into these subjects with much care. When the asylum at Utica, N. Y. was about to be opened in the winter of 1842 Dr. Buttolph offered to become one of the medical staff. With this position in view he visited the leading asylums of New England, and after returning from the tour, was appointed assistant to Dr. Brigham, who had been called to take charge of the Utica institution. This post of duty he occupied for about five years, leaving it to take the superintendency of the New Jersey State Lunatic Asylum at Trenton. Before accepting this responsible position, however, he visited many of the leading asylums for the insane in Great Britain, France, and Germany—in all, thirty institutions—so that he was enabled to prosecute his work at Trenton with a very complete understanding of the methods to be pursued. From the first he gave much satisfaction, and during the

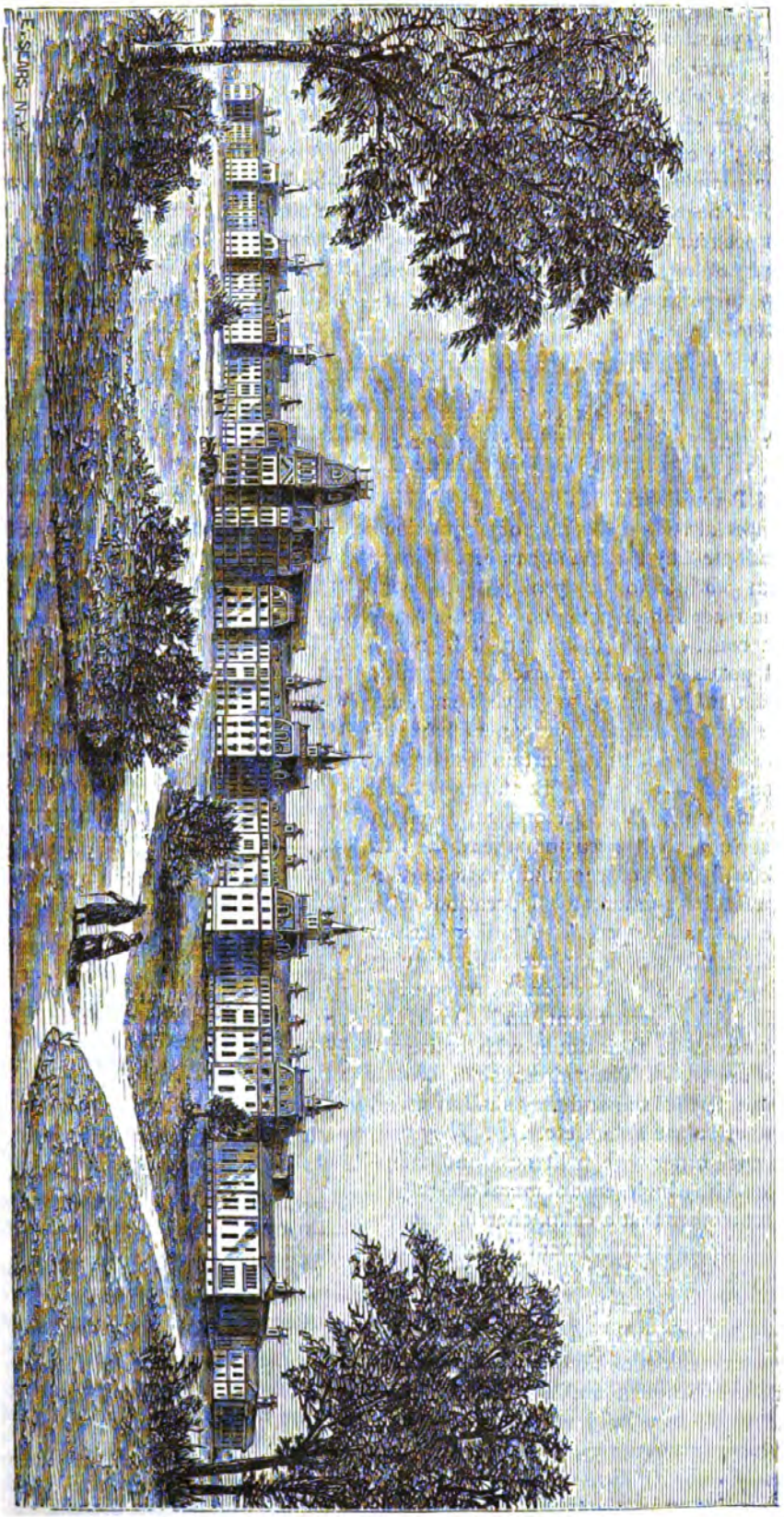
* It is fitting to mention that while Dr. Buttolph was in New York at this time, finding Mr. O. S. Fowler suffering from an attack of small-pox, he volunteered his assistance at the bed-side, and to his personal watching and care all of one night when the disease had reached its most critical stage, Mr. Fowler has often acknowledged his recovery from the fell malady.

twenty-nine years that he was connected with that institution, it can be said without any attempt at flattery that Dr. Buttolph contributed more than any other man in the State to the introduction and development of the methods and facilities which are in use there for treating the insane.

In April, 1876, he was called to take charge of the new State asylum at Morristown, to which he had been elected in June, 1875. He had been appointed some years before by the Legislature of New Jersey a member of a commission created to select a site, and to prepare plans for the building, arranging, and furnishing of the colossal institution over which he is now superintendent. The work of erecting this building—or, rather, series of buildings—was begun in 1872, and about two and a half million dollars have been expended upon it.

As shown in the accompanying engraving, this institution is very imposing in appearance, especially when viewed from the front, which stretches out in a continuous line from east to west over 1,270 feet, each subdivision receding until the rear of the two extreme wings, which inclose a square court, are about 600 feet distant from the front line of the central projection. All the buildings are fire-proof as far as stone, brick, iron, and slate can make them. The principal stairways in the wards are of iron and slate. The buildings are generally five stories high, including the basement, the upper story being finished with a Mansard or French roof ornamented with turrets and cupolas. The central edifice is trimmed with Pictou and Nova Scotia stone; the wings with freestone from the Newark quarries—the whole presenting a very substantial and imposing appearance. To describe appropriately the buildings in detail would occupy far more space than could be afforded here. They must be seen—both inside and outside—to be appreciated. Every contrivance or facility known to science has been brought into requisition for the proper warming, ventilating, feeding, and lodging of the patients. The asylum in its present condition is intended to receive eight hundred patients with their attendants. The departments are heated by steam, for the supply of which, as well as the power needed to run the machinery of the shops, laundry, etc., are eight large boilers in a suitable building, placed at some distance in the rear of the central structure. It may give some idea of the great extent of the edifice to say that there are nearly eight acres of floors, over thirteen miles of base board, two thousand doors, twenty-five hundred windows, and an area of plastered wall somewhat over thirty-three acres. There are between four and five thousand radiators and about three thousand registers connected with the heating apparatus, together with something like eight miles of iron pipe for the conveyance of steam, water, and gas. The gas used is made on the premises in a separate building. The visitor who passes through the many passages of the basement and views the lines of iron pipe, will be at first bewildered by their apparent complexity; but after a few moments of examination, especially if he be conducted by the superintendent, whose comprehension of the building with all its infinitude of detail is perfect, he will be astonished to perceive how simple the system is which has been brought into use.

Corridors connect all the sections or departments. Every ward has been planned so that an abundance of sunlight is obtained through large windows directly to every chamber. Besides, these windows command views of open courts or extensive stretches of lawn and meadow planted with trees, supplied with seats, summer-houses, etc. The front windows overlook an extensive scenic panorama which at this season of the year is most charming. A beautiful chapel seventy-one by thirty-seven feet, with a ceiling thirty-six feet high, stained glass windows and elegantly embellished, is one of the chief features of the internal arrangements. Besides this there is an amusement hall fifty-nine by forty-seven feet, fitted up with stage and scenery for tableaux and other representations. There are also reading-rooms, pianos, and games; in fact the whole interior shows that judicious hands have provided for the moral and esthetical wants or teaching of the un-



VIEW OF BUILDINGS OF THE NEW JERSEY STATE ASYLUM FOR THE INSANE.

fortunate inmates as well as for their common physical necessities.

Dr. Buttolph has devoted himself to his profession with enthusiasm; and, as has already been shown in our brief biographical sketch, the care of the insane has been a life-long study with him—indeed a sphere in which he has found enjoyment because of his peculiar adaptation to it, and the large measure of success which has attended his efforts to restore diseased minds to a normal condition.

In 1872 he was honored by Princeton College with the degree of LL.D. He has been twice married, his present wife being the daughter of the late John Syng Dorsey, M.D., Professor of Anatomy in the University of Pennsylvania.

A special code of by-laws or regulations was adopted by the managers of this new asylum previous to the opening of its doors for the reception of patients. One in reading it could not fail to be struck by many novel points which it embraces, and which are admirably adapted to prevent such unhappy occurrences as newspapers have of late reported concerning certain institutions for the insane in New York and elsewhere. One rule runs, "All persons employed in the asylum shall accustom themselves to speak well of the officers and the institution and treat the former on all occasions with politeness and respect." Another section contains, "In the first place self-respect is enjoined upon all. Each one is responsible in his or her department, and should be ambitious to do their duties with entire acceptance. . . . . Their dress shall always be neat and clean, and they shall avoid all coarse or vulgar habits, etc. . . . They shall treat each other with politeness and attention, cherish a high sense of moral obligation, and remember that a calm, cheerful deportment befits their employment." Again, "Attendants are enjoined to treat the patients with uniform attention and respect, greet them with a friendly salutation, and exhibit such other marks of kindness and good-will as denotes interest and sympathy. They shall speak in a mild and persuasive tone of voice, and never address a patient coarsely or by a nickname. When attendants receive insults and abusive language, they must keep cool and forbear to recriminate, threaten, or dictate in language of authority. *Violent hands shall never be laid upon patients under any provocation, and a blow shall never be returned.*"

A considerable proportion of the patients —both male and female—are employed in the different branches of labor incident to the asylum. The visitor will see men actively serving in the garden, on the grounds, in the bakery, laundry, or shops; he will see women efficiently assisting in the laundry, kitchen, sewing-rooms, etc., and may not at the first glance discover that they are reckoned among the patients. Indeed, the nicely-adjusted system which thus utilizes abilities which even those with unbalanced minds possess often in a marked degree, is one of the most efficient of remedial agents.

Dr. Buttolph accepts the composite structure of the brain and appreciates the necessity of varied employments for the exercise of the different organs and faculties of the mind. In his report of the first year's work in the new asylum, dated November 1st, 1876, he states: "Back of the consideration of mental and moral causes, however, which may be in a given case very important or extremely trivial in their character and influence, it should be known and admitted, in order to a right understanding of the subject and the expression of enlightened views in regard to insanity, that the brain is not only in a general way the organ of the mind, or the agent by or through which its faculties are manifested in this life, but that its regions and parts are related through their functions to classes and individual faculties of the mind; and that all attempts, while denying or ignoring this cardinal fact or relation between the two, to profit greatly by pathological inquiries into the condition of the brain, will be greatly disappointing or even futile and worthless, as it regards an improved or better adapted system of medical, mental, and moral treatment of the disease."

We are not aware of any other person whose record as a physician to the insane entitles him to a higher place in the world's esteem then Dr. Buttolph, and the State of New Jersey has reason to be proud of the magnificent edifice which she has erected for the care of her unfortunate citizens who have lost their mental balance, and of the man who presides over the vast array of instrumentalities, moral and physical, which have been marshaled therein.

## BRAIN AND MIND.

### CHAPTER V.—*Continued.*

#### SECRETIVENESS.

THE organ of this propensity is situated in the region of the brain, bordering on the central part of the inferior edge of the parietal bone, immediately above Destructiveness. (See Fig. 17-10). As its name implies, it gives the disposition to conceal within the mind, its thoughts, feelings, and purposes. In its normal activity, this faculty exercises a judicious restraint upon the other faculties, until the intellect shall have had opportunity to judge of the propriety of their manifestation. Every faculty tends involuntarily to activity, on the presentation of its natural stimulus. Thus, Amativeness, Combativeness, Self-Esteem, and Love of Approbation, becoming active, give rise to their appropriate feelings; and if outward expression were allowed to these on all occasions, society would be disfigured by a muddle of rude and disgusting improprieties. "A fool," says Solomon, "uttereth all his mind; but a wise man keepeth it till afterward." In the common affairs of life a reasonable endowment of this faculty is essential in almost every undertaking. It confers the prudent disposition of keeping our affairs to ourselves, when nothing would be gained by communicating them.

Where the organ is small, the individual will be frank and outspoken, and characterized by a deficiency of tact. He will say many things, on the spur of the moment, which he will afterward wish unsaid, and frequently be otherwise embarrassed by his openness.

On the other hand, when the organ is unduly active, it gives a love of intrigue and concealment for their own sake. Such an individual will be sly, artful, treacherous, and deceitful, if the faculty be not held in check by compensating sentiments. It is usually large in thieves, its ill-regulated activity producing the capacity for sly cunning, which distinguishes that class of rogues. It was large in the woman Gottfried, who is quoted by many authors, and co-operated with her large Destructiveness; she murdered by poison—a mode of committing the crime usually employed by secretive offenders against law and humanity—both parents, her children, two husbands, and six other

Fig. 25.—SECRETIVENESS LARGE.

persons; and she still further manifested the activity of this faculty by feigning the most poignant grief at the bedside of her victims, while she was in reality gloating over their protracted suffering.

It was very large in Warren Hastings of East Indian infamy. In diplomatists and statesmen of eminent sagacity it is large, while in men of marked philanthropic disposition it is usually small. In Fig. 24 it appears small.

This faculty is well shown in the broad heads of many of the lower animals, especially the feline, among which

are the cat, fox, tiger, etc.; giving them the slyness which they possess in the mode of taking their prey. The fox is noted for his cunning, and his head is very broad in the region of this organ.

ACQUISITIVENESS.

This organ is in the temporal region of the brain, its place corresponding with the antero-inferior angle of the parietal bone (See Fig. 17-9). It lies directly in front of Secretiveness. By taking the middle of the top of the ear as the starting-point, and moving the finger vertically about an inch, and then forward an inch, its position on

Fig. 26.—Acquisitiveness Large.

the living head will be ascertained with a good degree of accuracy.

Animated nature has many members below man, which, like the squirrel, the bee, and the ant, are distinguished for their instinct to accumulate and hoard what serves them as food. So man, as the microcosm, possesses an innate faculty which is analogous to that instinct. In Acquisitiveness we have the mental organ which is adapted to man's needs in a world where provision for his daily physical wants is not supplied by nature continuously; but where it is necessary to store up during the time of harvest enough to supply his wants, while the earth is wrapped in snow, and can yield him no support. He is also liable to casualties and sickness, which disable him for making individual exertion for his maintenance. Old age, too, if he live, will bring upon him weakness and infirmities; and unless he makes proper provision for these times of incapacity, he will be subjected to much suffering. In its normal activity this faculty leads to the storing up of the surplus after present wants have been supplied. It prompts to frugality, diligence, and economy, and is thus the source of wealth and all its attendant advantages. It is, however, a mere propensity to acquire and accumulate. What direction it will take depends upon its combination with other faculties; it may manifest itself in a disposition to make collections of books, works of art, or specimens in natural history; but as wealth is the means of gratifying the greatest number of our most active desires, it is usually manifested in the accumulation of property.

When unduly active, it produces the niggardly, parsimonious spirit, which refuses all calls of charity, however urgently expressed, higgles over every expenditure, and stints itself in the use of the comforts of life, that it may heap up treasures far beyond its capacity to use or enjoy.

When deficient, on the other hand, it leads to prodigality and improvidence. The individual will then live from "hand to mouth," spend as he goes, and take no thought for the future. If he have abundance, he will be wasteful and extravagant, and if he be stinted, he will accommodate himself as best ne may to his circumstances. He will be dependent all his life long upon his daily labor for daily bread, and in the feeble-

ness of age will come upon his friends or the town for support. In Figs. 24 and 31 it is small.

From finding this organ uniformly large in thieves, Dr. Gall unfortunately named it the organ of theft. But it is only when combined with large Secretiveness and deficient Conscientiousness, and lacking other moral perceptions, that it produces the thievish character. Giving an instinctive desire to possess, the strength of the desire will be measured by the size of the organ, and where there is a deficiency of the moral and restraining powers of mind, this propensity may manifest itself in taking the property of another, wherever it may be found, without any regard for right or justice.

Kleptomania doubtless arises from the inordinate or diseased activity of this organ. There are not a few persons, if we credit the criminal reports published by our daily newspapers, who are, to use the language of Dr. Rush, "moral to the highest degree as to certain duties, but who nevertheless live under the dominion of some one vice." In this connection, he relates an instance of a woman who was exemplary in her obedience to every command of the moral law, except one—she could not refrain from stealing. What made this vice the more remarkable was, that she was in easy circumstances, and not addicted to extravagance in anything. Such was the propensity to this vice, that when she could lay her hands on nothing more valuable, she would often at the table of a friend fill her pockets secretly with bread. She both confessed and lamented her crime.

Men distinguished for business capabilities and the acquirement of wealth have large Acquisitiveness. This was the case with Mr. Girard, Mr. Astor, and Mr. Stewart. George Peabody also possessed a conspicuous development of the organ.

In the lower animals this faculty is very clearly manifested by some, and by others not at all. The squirrel stores up provisions in the hollow of a tree, that he may have the means of sustenance when the natural sources of his food supply are sealed up by the frosts of winter. Our domestic animals, on the other hand, make no provision for the winter whatever, and would starve during its continuance but for the providence of man. If a quantity of corn were thrown down to a squirrel and a hen, the latter would eat of it until her

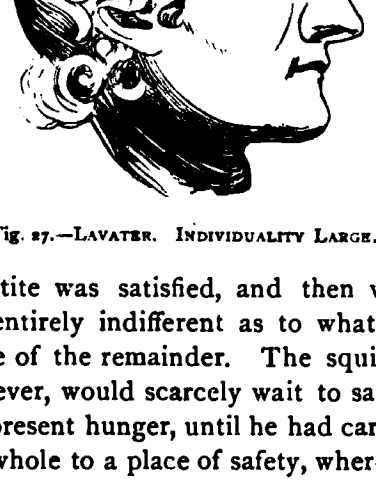


Fig. 27.—Lavater. Individuality Large.

appetite was satisfied, and then walk off, entirely indifferent as to what became of the remainder. The squirrel, however, would scarcely wait to satisfy his present hunger, until he had carried the whole to a place of safety, where he could draw upon it in the future. The squirrel thus distinctly shows a faculty of which the hen is destitute, and which instinctively prompts it to store up for future use the surplus of the present.

Among the extreme instances of the morbid development and activity of this faculty among men, are those of Burke and Hare of Edinburgh, who murdered people for the sake of selling their bodies to anatomists. In the case

of Burke, the organ of Benevolence is fairly developed, being conspicuous in a moral organization generally low; and it is said that he could not bring himself to the point of killing his victim, unless excited by alcohol. In persons eminent for charitable labors and self-sacrificing philanthropy, Acquisitiveness is usually small.

## CHAPTER VI.

### OF THE INTELLECT.

THE faculties composing this order take cognizance of the existence, qualities, and relations of external objects.

Fig. 28.—FORM LARGE.

They correspond with the "knowing faculties" of the metaphysicians. First, we would call the reader's attention to the Perceptive group, of which one of the most important elements is

### INDIVIDUALITY.

This organ is situated in the first frontal convolution, at the anterior extremity of the frontal lobe, and lies contiguously to that part of the cranium immediately above the root of the nose. (See Fig. 17-1). It imparts the disposition to examine things as individual existences, without any reference to their qualities or purposes. Dr. Gall first named it the Sense of Things, and Dr. Spurzheim subsequently called it Individuality. It is the specializing faculty, taking cognizance of things—a tree, a house, etc., as a simple existence. The other perceptives give us our notions of the qualities of objects, as their form, size, weight, color, etc. Individuality may be termed the *noun*, or object faculty; while Eventuality is the *verb* faculty, and specially concerned with the movements, changes, and history of objects.

The great differences in the power of observation exhibited by men, de-

Fig. 29.—FORM SMALL.

pend chiefly upon the development of this faculty. Some are able to give an accurate description of objects which they have seen in their daily movements; and others can scarcely afford an hour's entertainment in recounting the things which they have observed in a month's travel.

Through its power of individualizing, this faculty is an important element in a practical character, supplying the disposition to attend to the details and minutiæ of a subject. Those writers and artists who have it

well developed, are able to give a distinctness and vividness to their conceptions, which never fail to command attention. Robinson Crusoe and Gulliver's Travels may be instanced as books remarkable for distinctness of detail in narration; and in the heads of De Foe,

Fig. 30.—Size Large

Swift, and also of Dickens, this organ was greatly developed.

When large, Individuality imparts projection and breadth to the part of the forehead between the eyebrows, and in those persons who have it small the eyebrows are near each other, and the centre of the forehead appears compressed. In Fig. 21 it is of moderate size.

FORM.

The place of this organ is contiguous to the *crista galli*, directly below Individuality, just over the inner angle of the orbits (See Fig. 17–F), and its size bears relation to the space between the eyes. When large, the eyes are wide apart, and the eyeballs appear to be pressed downward and sidewise.

Dr. J. P. Browne, of Edinburgh, says, "There may be a great distance between the eyes, with no great development of the Form, because the ethmoid bone is sometimes very broad, and the eyes consequently much separated; but in such a case the indications of brain development in that region differ in such manner that the phrenologist who is conversant with cranial anatomy, can generally determine the true condition."

It is the function of this organ to take note of and remember shapes and configurations. Dr. Gall named it the organ of Knowledge of Persons, because he invariably found it large in those who possessed a special aptitude for remembering faces. In his own head this organ was very deficient, and he could with difficulty remember the countenance of a stranger who had sat next to him at table, so as to recognize him afterward.

It is said of Cuvier, that the form of an animal or a bone, once seen, never left him, but was always present in his mind for comparison with objects of a similar nature which might afterward come under his observation. He was thus enabled to make his wonderful discoveries in comparative anatomy.

Fig. 31.—Size Small.

This faculty is essential to the draughtsman, portrait-painter, the designer, and to all occupations which have to do with a knowledge and judgment of shape. In Michael Angelo it was extraordinarily large; in William

Cobbett, the English author, it was small, and but moderate in Byron.

The Chinese are remarkably endowed with this faculty, which corresponds with their well-known mechanical dexterity and capacity for mastering a language which has a different character for nearly every word.

Fig. 32.—WEIGHT LARGE.

In animals this faculty gives them the ability to distinguish their masters, or those who have been kind to them, and to remember them even after a separation of years. All the animals of a herd know each other, and it is said that when a strange bee undertakes to introduce himself into a hive, composed of from twenty to eighty thousand bees, he is recognized, and driven out or killed. Children with large Form learn to read much more easily than those in whom the organ is small, and are better adapted to the ordinary mechanical trades than the latter.

### SIZE.

The size of a thing is obviously a quality very different from its form. Two eggs, for instance, may be exactly alike in form, but differ greatly in size; and as one of these kinds of knowledge may exist without the other, it is not unreasonable to suppose that they may originate in different cerebral organs. This fact has been demonstrated by numerous observations, which have established the location of an organ, called Size, adjoining Form, on each side of Individuality, at the internal extremity of the arch of the eyebrow. (See Fig. 17–S). Its function is to give the idea of dimension, distance, and space in general. It is essential to the landscape painter and the draughtsman, and to skill in all occupations which have to do with dimension, distance, and perspective.

A tutor in the family of Sir George Mackenzie once said to Mr. Combe, while looking at a landscape: "That seems to me a plane surface, exhibiting difference of light and shade. Now, I am told that to some people different parts appear at different distances, and that to them it appears to have a fore and back ground." He attributed his inability to see the landscape as other people to his want of mathematical education; but an examination of his head, revealed the fact that the organ of Size was decidedly lacking.

On the other hand, in Mr. Douglas, a landscape painter, this organ was very large, and when a mere child, he was so struck with the apparent difference in the width of the near and far ends of the ridges of a plowed field, that he crawled across it, before he could well walk, to measure the actual distance with a stick, and was greatly surprised to find that no difference existed.

In the casts from the heads of Newton, Herschell, and George Law, this organ is conspicuous; and it will be found well marked in the foreheads of men who have acquired reputation as engineers and builders.

### WEIGHT.

This organ lies next to Size in the frontal convolutions, and its place

on the superciliary ridge is about one-third the length of the ridge, outward from the root of the nose. (See Fig. 17–W). It is to the reasoning and investigation of Dr. Spurzheim that the discovery of Weight is due. When large, it gives an overhanging appearance to the brow at this point. The weight of bodies is a quality quite independent of form and size, since objects may be alike in these respects, but differ greatly in their specific gravity. Man and the lower animals possess an instinctive capability for adapting their movements to this force, so that whether walking or running they are able to preserve their equilibrium; and this capability arises from this organ. Hence, its function may be defined as the sense of force or resistance, exerted by, or belonging to, external objects.

The organ is always large in acrobats, rope-dancers, and good skaters, as well as in those who have a natural aptitude for constructing and managing machinery in motion. It is essential to the billiard-player to enable him to adapt the force with which he propels the ball, to the effect which he aims to obtain; to the sculptor, that he may correctly estimate the power of his blows upon the marble; to all artisans, indeed, whose success depends upon bringing power to bear with precision and delicacy.

As an instance of the diseased activity of this organ, Mr. Simpson refers to the case of John Hunter, the celebrated anatomist, as it is recorded by his biographer, Sir Everard Home. "From great anxiety of mind," says he, "Mr. Hunter had a severe illness. It attacked him on a journey, and his first sensation, it is well worthy of remark, was that of having drunk too much, although he had taken nothing but a little weak punch. On going to bed he felt as if suspended in the air, and soon after the room seemed to go round with him very rapidly. This ceased, but the strange sensation of being lifted up continued; and on being brought home in his carriage, his sensation was that of sinking or going down. The symptoms of whirling and suspension increased; and his own head, when he raised it from the pillow, seemed to move from him to some distance with great velocity. When he became able to stand without being giddy, he was unable to walk without support; 'for,' says Sir E. Home, 'his own feelings did not give him information respecting his centre of gravity, so that he was unable to balance his body and prevent himself from falling.'"

### COLOR.

The situation of this organ is next to that of Weight, and at the middle of the superciliary ridge. (See Fig. 17–C). When large, it gives an arched and projecting appearance to both lower sides of the brow. It is a matter of common observation that there are great differences among men in the ability to perceive and appreciate colors. Where a deficiency of this sort exists, it is referred by some metaphysicians to a want of association, or early habits of inattention. Others conceive that it arises from some defect in the retina, or in the humors of the eye. But it is difficult to conceive how early habits of attention and inattention should cause the great diversity which exists in the power of judging colors; and so far from its being referable to the eye, it is remarkable that deficiency in the power of distinguishing colors exists with acute vision and a correct appreciation of the other qualities of material objects. Phrenologists have observed that the power to discriminate colors

bears a direct relation to the development of a certain part of the brain, which is indicated externally, as above described. The function of the ear is limited to the reception of sounds; but the organ of Tune takes cognizance of their discord or harmony. So the eye perceives external objects merely as such. By means of the organ of Form, we receive our notions of their shape; by the organ of Size, our idea of their magnitude; and by the organ of Color, our conceptions of their hue.

Many persons are so constituted as to be unable to perceive any difference

Fig. 34.—Color Large.

in color between red or pink flowers and fruit, and the green leaves which surround them. Others confound orange with green, red with brown, blue with pink, and indigo with purple. Mr. Combe mentions the case of Mr. Milne, a brass-founder of Edinburgh, who in early life was apprenticed to a draper, but was obliged to give up the occupation on account of the many mistakes he fell into in regard to colors. At one time he was selling a piece of corduroy, and the purchaser requesting strings to match, he proceeded to cut off what he thought corresponded in color. The customer, however, stopped him, saying that the colors were not the same. Mr. Milne requested him to choose for himself, and he did so, selecting a different piece. So confident was Mr. Milne that the customer had made a wrong selection, and that his own was right, that he cut off pieces of the cloth, and the strings, which he and the customer had selected, and carried them home to his mother. She immediately told him that his ribbon was a bright scarlet, while the color of the other ribbon and of the cloth was grass-green. Fig. 31 shows the organ small.

The organ is generally larger in women than in men. Painters, and those who excel in selecting and arranging colors, invariably have it large. The portraits of Durer, Rembrandt, Vandyck, Reynolds, and West show it large. Some artists excel in drawing, but are poor in color, and their efforts to excel in painting are hampered if not rendered futile by this organic defect. In those who were born blind Color is usually quite small. Mr. S. R. Gifford and Mr. E. Johnson, well-known artists in America, have the organ well marked. So, also, has Millais, the English painter.

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Color Blindness.—Color blindness is still the subject of much discussion in Europe, with somewhat surprising results. On one French railroad 1,050 men, from 18 to 50 years of age, were examined from July, 1873, to October, 1876, on objects of color—violet, green, blue, yellow and red. 98, or nearly ten per cent., mistook at least one of these colors. The errors made: Concerning violet, 78; blue, 50; green, 54; yellow, 14; red, 10. 29 gave correct answers "after repeated hesitations," and eight corrected mistakes afterward. Only 11 of the whole number were rejected for color blindness. If the scientific gentlemen will bear in mind the relation of this infirmity to the brain their investigations will be of important service.

# LIGHT IN DARK PLACES.

"This mournful truth is everywhere confessed,
Slow rises worth by poverty depressed."—SAMUEL JOHNSON.

## CHAPTER XXVI.

### IN THE HOUSE OF WEALTH.

"SHURE an' ye didn't mate that sewin' gurrl who's afther comin' here so often?" asked Mrs. Moriarty, accosting the widow as she ascended the steep stairs on her way to her apartments.

"You mean Betty Sniven, I suppose?"

"Yis; but it's meself thinks ye didn't, bekase she was here twinty minutes an' more since."

"Did she wish to see me about anything in particular?"

"Shure an' the poor gurrl towld me that she'd been discharged and had no worruk at all at all, for two or three days."

"I'm very sorry to hear that."

"Yis, I was meself, for she's a good crather, and them's that's depindin' on her will be findin' its a hard case. But she was afther sayin' that she'd come to you for a word of advice, and she know'd she'd git a bit of encouragement; shure an' its thrue enough as I'd go bail for mesilf."

"I sometimes feel like despairing, Mrs. Moriarty, when I hear of the thousands who are without employment and entirely destitute and friendless. The poor Snivens, I must try to think of something in their behalf."

"Ah, that indade ye can, Mrs. Camp. It's a wonderful way ye have uv thinkin' for other people. She said she'd be in agin, and tell ye about matthers, hersilf, this evenin', maybe. But I'll not kape ye any longer; shure an' it must be on the stroke ov twilve, an' ye have yer dinner to git, an' mine is not half riddy, an' me ole man 'ill be here purty soon."

Mrs. Moriarty bustled up-stairs and left the widow to pursue her own course with respect to dinner and the other matters of her household.

That evening Betty came and consulted with her friends, for as such she regarded them, especially as the withdrawal of Sadie from the bindery had made no change in the cordial interest of the latter toward her old shop companion.

"I do not see any other course just now for you but to apply to the Guardian Society," said Mrs. Camp, after Betty had recounted with what utter want of success she had applied at many shops and stores for work. I will give you a note certifying to your worthiness."

"Thank you, Mrs. Camp. Indeed I'm just ready to do anything. If I could get a place in a family I'd do it, ter wash or scrub, or anything, ruther'n be dependent on charity."

"I know it, Betty. You have an honest, workful disposition, and it pains me to see you and yours suffering, when so many lazy, careless people who appear to detest sober, productive labor, are lolling in comfort and profusion."

The widow spoke in a tone of so much emphasis that Sadie looked at her with surprise, and remarked: "Betty likes children, you know, mother dear. Perhaps a place might be found where she can be a nurse and seamstress."

"Yes, marm, that I'd like. Me manners are a little rough, I'll confess, but I'd try hard to do me duty."

"There can be little doubt on that score, my good girl. Something may offer in the way of employment sooner than you expect. Keep your eye and your thought on the sunny, hopeful side of your condition."

"I'll try to, Mrs. Camp."

Bidding her friends good-night, Betty went home, but not empty-handed, for with the widow's cheering words she carried a jar of apple-jelly and a dozen of fresh biscuits.

Two days afterward Mrs. Price's coachman rapped at the door of the Camp apartment, and handed to the lady who opened to him a dainty missive inviting her to come at once to the aristocratic mansion

which served as the home of the Price family. Mrs. Camp rapidly perused the note; and deciding to go, bade the coachman attend to his horses while she occupied a few minutes in assuming her out-of-door costume. They were good roadsters, those dark bays of Mr. Price, and made the distance between Prince Street and Thirty-sixth, near which the banker resided, in twenty minutes; and a trifle later the widow was seated in a tastefully-ornamented boudoir, awaiting her host, who had not yet completed her afternoon toilette. Rich laces and hangings depended from heavily-carved cornices, shrouding the windows so that the light from the broad day without lost half its brightness and freshness in the struggle to penetrate the folds of curtain and lambrequin. Dainty bits of porcelain, statuettes in bronze and bisque, and a variety of the trumpery called bric-a-brac, were arranged or scattered about the room, on table, mantel, bracket, and hearth. After a brief survey of her surroundings, Mrs. Camp picked up a copy of Keats, which lay upon an ottoman, and for a few moments scanned the warm measures of Endymion. The air of the room was hot and close; to the widow, accustomed to daily exercise in the free air, and to apartments whose temperature was kept at a moderate degree, it became oppressive and sickening, and she instinctively dropped Keats and went to a window and lowered the upper sash. At that moment Mrs. Price entered.

"Why, Alma, are you so warm? One would think that after your cold ride uptown, you would wish to go to the register."

"I did feel a little chilled when I came in, Cora, but I soon found this room too warm for comfort, so I lowered the sash. I could not breathe an atmosphere like this, day after day, and keep well. How can you, Cora?"

"Why, I actually feel chilly now. Mr. Price says I keep the house too hot for him. He brought home a thermometer once, to show me how high the mercury would rise if I were allowed to manage the furnace, but I didn't pay much attention to it. I want to feel warm. Indeed, I caught a horrible cold the day I saw you. See how inflamed my right eye is yet. Dr. Cluchley said it was occasioned by the malarious emanations in your part of the city, and I ought not to go there again."

Mrs. Camp smiled and said: "Do I look, Cora, as if I suffered from those malarious emanations? At this season of the year, Dr. Cluchley would not find any difference indicated by the most delicate chemical tests between the air of Prince Street and the air in front of your house. I haven't been troubled with anything like a cold for more than a year."

"What! It's perfectly amazing! And how do your poor, dear children stand it down there?"

"Very comfortably. Seldom or never ill in the slightest degree."

"How *do* you manage? Why Dr. Cluchley says he has so many children with croup and sore throat that he scarcely has time to eat his meals, and he attends the best families in our neighborhood. There isn't a week scarcely that he isn't called in to look at Clarence or Lena, poor things! they are so much troubled with sore throats or tongues, or something. But you must see them (Mrs. Price here rang for a servant). The day I met you in Broome Street I was in search of a nurse, my old one having left me to go home and take care of a sick brother. So she said. You can't place any dependence upon servants nowadays, anyway. I make a change about every month, of either the cook or the chambermaid, or the waiters. Oh, dear, they almost torment me to death."

The servant having now responded to her call, Mrs. Price ordered her to bring up the children. "Please, ma'am," said the girl, "Clary has been making candy on the range, and his hands and face are all daubed up."

"Then wash him and bring him and Lena up at once. That's just the way they do, Alma; they are at something all the time."

"Do you let them eat candy when they like?" inquired the widow.

"They have some every day, chiefly molasses. That won't hurt them, you know. And then they do so enjoy themselves in making it."

"I think that if you asked your physician

whether this candy-eating were healthful or not, he would emphatically prohibit it. Cora, the atmosphere itself of this house is sufficient, in my opinion, to account for your children's liability to illness and your own colds, throwing entirely aside the injury done to stomach and liver by swallowing bits of concentrated molasses daily."

"It can't be. Surely Dr. Cluchley would have advised me on these matters. He's one of the best physicians in New York, and so kind," exclaimed the lady of *ton*.

"There are many well-informed and skillful doctors," rejoined the widow quietly, "who deem it their business to deal with sickness as they find it, and not to advise with reference to its causes."

"Mercy, I can't trouble myself with causes and medical philosophies. I leave them to the doctors. I suppose you are quite a doctor yourself, Alma. You speak so scientifically. But don't practice medicine, I beg of you. I think women doctors are just horrid. Dr. Cluchley says that they are *so* superficial."

"Did you ever try one, Cora?"

"No, indeed, and I don't know any one who has, although they say Mrs. Lang, who resides up a little way on Thirty-fifth Street, employs one. She's a very intelligent and wealthy lady, so Mr. Price says. I am not acquainted with her."

"Changing the subject for the nonce, did you find a nurse to your satisfaction, Cora?"

"Oh, dear, no. Such objects as one meets with in responding to advertisements! I called at five different houses, mounted ricketty stairways to third and fourth stories. Sometimes I thought I'd never reach the apartments I was in search of. Oh, such miserable dens! and such shocking, dirty-smelling places! How *can* you live in that neighborhood, Alma? Some people seem to be made to endure anything. But excuse me, I'm not answering your question quite. I did engage one of the objects, and she came yesterday. I knew she wouldn't suit, but what could I do? I must have somebody. Don't you know of any one in whom I could place confidence? Some girl with just a little neatness and taste, and who will have a particle of regard to the duties she is hired to perform? Really, the girls I have had lately seem to care for nothing besides their wages.

MRS. CAMP IN HER OLD SCHOOLMATE'S HOUSE.

They don't appreciate you, no matter how many favors you allow them."

"Having lived a good deal among the class that supplies most of the labor in our domestic service, dear Cora, I am of opinion that its character is in the main but a reflection of the treatment accorded by the employing housekeeper. I know, personally, a

half-dozen of worthy young women now without employment who, in considerate hands, would prove efficient household assistants."

"Do you know a good nurse? I would be ever so much obliged to get one whom I could trust," cried Mrs. Price.

"I know an honest, earnest working-girl, a good seamstress, who loves children, and has a good share of practical judgment."

"I want one who can sew, of course; I wish you would send her up to me. But, Cora, if you had my experience with girls, you would think—" At this moment the two children came shyly, half sidewise into the room. "Well, come at last, my darlings. See, this is mamma's old schoolmate, Alma Seaton, now Mrs. Camp. She wants to see you, and talk with you."

"Yes, my little ones, Clary and Lena, come here to me," said the widow, with her sweet smile, which always went straight to a child's heart.

The children looked at her for a moment, then tripped over to her chair; and, one on each side, leaning confidingly against her knees, while she patted their cheeks and smoothed their hair.

"I declare, Alma, the poor things love you already. Did you ever see such a wan and bloodless creature as Lena? I have a hard time to bring her up, you may believe; sick from her very birth."

"The dear little ones," replied Mrs. Camp, half to herself, "need pure air and good, nutritious food, mainly, I think. Wouldn't you like to see my Sadie, Norton, and my little Dell, dearies?"

"Yes I 'ud," chimed in the children.

"Perhaps mamma will bring you down to see them. Sadie and Dell are home after three o'clock."

"I'd much rather have them come up here," said the fashionable lady. "Suppose I send down James for the girl you spoke of day after to-morrow, and bring up the children at the same time? To-morrow will be New Year's Day, you know."

"Thank you, Cora, for your kind interest. I shall let Betty know your wishes—and if Sadie have no engagement—did I tell you that she teaches? She sometimes has some extra duty on Saturday; they will be delighted to come up. Dell and you, my dearies, will have a fine frolic."

"Won't it be nice, mamma?" cried Clary. "We've sca'cely anybody to play with, and 'e girls they's so cross."

"Its getting late, nearly sundown, and I must be going."

"No, no, no," said Mrs. Price and the children in chorus.

"Yes, Cora, and my little dears, Sadie and Dell will almost think their mamma has run away from them. I am home, as a rule, when they return from school, and now it is half-past four."

The hall bell rang, and shortly afterward the waiter announced, "Mr. Stanley is in the parlor, ma'am."

Mrs. Camp was standing in the attitude of departure when the waiter entered, and at the mention of "Mr. Stanley," turned with a heightened color inquiringly toward her friend.

"Oh, Mr. Stanley is an acquaintance of Price's. He is a committee-man or something in the church—Dr. Phillips', where we attend. Mr. Price likes him ever so much, and will have him come up to dine with us occasionally. You and he would get on famously together, I think. Your ideas about living are somewhat alike. Will you have an introduction?"

"No, thank you, not to-day; I mean it's too late, and I *must* go. I can take a car right down."

"No, Madame Camp, you shall wait for the carriage."

## CHAPTER XXVII.

### AN UNEXPECTED MEETING.

BUT the parlor door was open, and Mr. Stanley, the very same Stanley to whom we have given a not inconspicuous place in the events related in previous chapters, heard the half-protesting tones of the widow, and the emphatic response of the hostess, and when the ladies appeared in the hall, he walked toward them.

"Pardon me, Mrs. Price, for interrupting your tête-à-tête, but I heard you mention the name of Camp, and as I am interested

in that name, I felt authorized to announce myself. You have given me the unexpected pleasure of meeting one whom I am proud to reckon in my list of acquaintances," continued the gentleman, as he shook hands with one and the other; "and were it not for the imperative demands of a certain little family down-town upon her attention at this hour of the day I would join Mrs. Price in urging a longer stay."

"So you are acquainted. Dear me!" said their excitable hostess. "I'd like to know how it came about. Quite an episode, really!"

The color deepened on Mrs. Camp's clear face, as she replied: "Mr. Stanley can tell you how it occurred; and it is not so wonderful, for Mr. Stanley has been engaged in some good work in our quarter, and is interested in the Mission where the children and I have attended on Sundays for a long time, and where Sadie now teaches; and then —"

"Let me interrupt, please," said the gentleman. "What does it matter how we became acquainted? That we know each other; that Mrs. Camp permits me to stand in the relation of an acquaintance—of a friend," added he, with a glance of entreaty toward the widow, who instinctively responded to it: "Yes, a friend indeed"—"is enough for me."

"Quite romantic, I must say," exclaimed Mrs. Price, whose fondness for peering into whatever seemed mysterious in the affairs of her friends, was one of her besetting sins. "Alma, you *must* tell me all about this. I don't expect to get much from this staid bachelor. He has a most exasperating way of treating one's curiosity, and Price usually joins him in what he calls 'heading me off' when I want to gossip a little about doings in society. But some gentlemen I know are just as fond of gossipping over their wine as we poor women are over our Young Hyson."

"Yes, in that I agree with you, Mrs. Price," said Stanley; "they lose their heads in their wine-cups, just as the ladies do in their tea-cups. But there's the carriage; I presume that it is waiting for our friend here. Mrs. Camp, it would give me great pleasure to accompany you, but these good people—"

"Thank you, thank you, indeed. I shall go very well alone. Good-evening, Cora, I shall not forget the nurse," said Mrs. Camp, somewhat hastily, and walking toward the hall-door, which Stanley had opened. As she passed out, the gentleman accompanied her, and thinking her manner toward him might have been considered abrupt, she remarked in a low tone, and with blushing cheek, "I certainly appreciate your kindness, sir. I hope that you did not think me rude?"

"Rude! My dear madam, it is not in your nature," he replied earnestly, adding as he assisted her to enter the vehicle and closed the door: "Believe me, I am deeply grateful for your consideration. I am proud to be so kindly regarded by you."

"I would like to know what you two were talking about down there," said Mrs. Price, when Stanley joined that lady in the parlor.

"'Tis a great mystery," replied he quizzically.

In the course of the dinner that evening, Stanley evinced so much vivacity and light hearted cheeriness that Mrs. Price affected to think him excited by champagne, and bantered him for inconsistency to his high temperance principles. Stanley, however, playfully responded to her sallies, and now and then stimulated her curiosity to a higher pitch with the remark: "'Tis a great mystery."

When the widow reached the door of her humble apartments, three pairs of arms and hands hastily and closely enfolded her, and a common exclamation of "Where have you been so late, mother?" revealed how anxiously those children had waited for her coming, and how deep was their affection. The wave of sweet emotion which thrilled her heart made her forget poverty, surroundings, and the impressions which her old schoolmate's affluence had so recently made upon her sensitive, esthetic consciousness.

"My darlings," said the happy mother, as they drew her into the room and led her to

a chair placed near the fire, and with many caresses assisted in the removal of her bonnet, shawl, and gloves, "I have been up to see Mrs. Price. Mother told you about her yesterday, you know."

"Yes, mother mine," said Norton; "Mickey told me that you'd gone away in a fine carriage, the same that he'd seen here day before yesterday; but when five o'clock came, and no mother, Sadie and Dell began to think you were lost."

"We t'ought mamma was run'd away with, and then it was so dark and sister Say was a'most 'stracted," cried Dell.

Mrs. Camp clasped the little one to her breast and kissed her still anxious face.

"Mother should not have stayed so long, my own dearies, and she did not intend to do so, but one thing and another detained her until it was so late, and then it is so far to Mrs. Price's. But let us have some supper. My Sadie, I see, has prepared everything. How nicely the table looks! And such tempting charlotte russe! Where did you get them?"

"A boy brought them here, mother, about two hours ago. See, here are some more, too, and some beautiful oranges;" Sadie opened the pantry door; "all packed so nicely in the basket. I only took four from the top. The boy said he was to leave basket and all. Here's the card that was pinned on the napkin. See, your name on one side, and on the other, 'Please accept with a New Year's greeting from a friend.'"

"A New Year's present. Some one thinks of us very kindly, and wants us to have a taste of a delicate bit of cookery once in a while. I was very fond of charlotte russe when a girl, and after we were married your dear papa and I often went to a restaurant in Boston, while we lived there, and had some with fruit in lieu of tea; but come, my children, you must be very hungry. I know Nortie is, for he's been biting his thumb the last three minutes. Let's have supper, and I'll tell you about my visit at Mrs. Price's."

Very pleasantly that evening, or what was left of it, sped with the Camps, and the neighboring church clock tolled ten ere they were all snugly ensconced in bed.

## CHAPTER XXVIII.

### WHAT A HOLIDAY BROUGHT.

CHEERY "Happy New Years" were exchanged the next morning between mother and children, long before the car of Phœbus lighted up the east. Holidays are prized by the poor, as all know, and are observed in the homes of penury with even a keener zest than by the well-to-do. So, in that tenement on Prince Street every one was astir early, and there were loud and hearty greetings and merry expressions of good-will passing to and fro, as neighbor met neighbor in the narrow halls. In the different apartments a warm glow of affection lit up haggard faces as simple, cheap gifts or good wishes were exchanged between father, mother, sister, brother. The money value of the gifts had little consideration with most of those poor folks. They were received and prized as so many representatives of affectionate regard and sympathy, as something above mercenary calculation, and thus they contributed a pure and profitable element of enjoyment to the holiday which brought, by its associations and renewal of hopes so often disappointed, a fresh gleam of sunshine to those poor, weary laborers and sufferers.

Breakfast passed off merrily with the Camp family. Norton and Sadie had the holiday for their own devices, and they discussed sundry plans for its use. Mrs. Camp was no blue Puritan, and far from prescribing "rules and regulations" for the enjoyment of her children. When an opportunity came, like a holiday, she allowed Sadie and Norton to choose for themselves how they would employ the hours, trusting to their native judgment and training to guide them in the matter of propriety. Recreation, intervals of relief from the grave, vocations of life, she knew were essential to health of mind and body in every stage of life, and were specially necessary in youth to preserve the elastic balance of the temperaments.

Norton said that he "guessed" he would go over to Larry's and give him a lesson in the morning, and then go up to the park and see the skating. Larry and he would have a good time sliding on the ice, if they

couldn't skate. Sadie said that she had a nice book which she wanted to look over; then she'd do a little sewing, and then, if there were time before dinner, she would go and call on Betty, and the family of one of her scholars who had not been to school that week on account of illness.

"What is Dell going to do?" asked mamma, after the older children had indicated their intentions for the morning.

"I dess I'll read the little book with the pretty pictures Mr. Hammond gave me for my Christmas. Oh, mamma! 'spose I go up-stairs and bring down little Mickey, and show him the pictures, and tell him some of the nice stories about them?"

"Yes, my darling, you may, if you wish."

"And mamma, may I — may I give him one of those lovely cookies in the basket?"

"Why, yes; the poor little fellow will so enjoy it. That reminds me, Norton, that if it will not take too much of your time, I would like you to go down to that dear, sick girl, Miss Lind, and ask how she feels to-day."

"I can stop there on our way to the Park, mother. It will be only a few blocks farther."

"Some of those charlotte russe would, no doubt, please her weak, broken appetite. Can you spare two or three of them, children?"

"Why, mother," replied the generous Norton; "a whole dozen was sent to us. I guess we can spare three or four easy enough." Going to the pantry he took down the basket and brought it to Mrs. Camp, who removed the napkin.

"See there, mamma," cried Dell, who was gazing wistfully at the tempting display; "Some of the oranges have little pieces of paper on 'em."

"So they have," exclaimed Sadie, who had drawn near too. "I wonder what it means."

"We shall soon know," replied their mother, who selected three of the cakes and packed them in Sadie's lunch-basket, with two of the oranges, and then took out the specimens of golden fruit which had the slips of paper. "There are four of them marked, you see, children. One for each of us."

"There's your name, Dell, and there's mother's, and mine, and Sadie's. I wonder what it means?" cried Norton.

"P'r'aps we was to have only four, Nortie, and to give t'others away," said Dell.

"Oh, it must mean something else, Dell Don't you think so, mother?"

"Well, we'll know at dinner. We'll have them for our dessert. Won't we, mother?"

"Yes, Nortie. Let's try to keep our curiosity in check till then. Now you can go to Larry's as soon as you like, and take the basket for Miss Lind so that you will not have to return here for it."

Half-past twelve found the Camps assembled at their frugal dinner. Norton had witnessed several amusing incidents on the skating ground, and related them graphically. Sadie had some neighborhood gossip to tell, which she had picked up while out, and Mrs. Camp contributed a good share toward the family entertainment by telling of the calls she had received in the course of the morning, from three or four of her co-tenants who wished to exhibit in a particular manner, by the aid of their tongues, their esteem for the widow. The time was thus consumed quite hilariously. When the oranges were distributed according to the named slips, the young folks were in a high state of excitement, and interchanged many exclamations of wonder and expectation, and yet they knew not why.

"There's something in the bottom of mine," cried Norton; and breaking apart hastily the thick rind, he drew out a folded paper.

"It's heavy. A five-dollar gold piece, mother! and here's some writing: 'Will my young friend accept this? He wants a drawing book and some instruments, I know.' Isn't it glorious? I can get them now."

Dell had seen her brother draw forth his prize, and with gleaming eyes and almost breathless, tore asunder the already loosened peel of her orange. "I've got one too," cried she; and running to her mamma, placed on the table before her a small white packet.

"Open it, my darling, yourself." The child did so, but something escaped her anxious fingers and fell to the floor. Sadie exclaimed:

"It's a ring. A ring!"

"Oh, how pretty! how pretty!" shouted the delighted Dell, picking up the golden circlet; "and see what a bright little blue stone, mamma. Oh, may I wear it?"

"Yes, my darling, mamma thinks that you may."

"Sadie, have you got to the bottom of yours yet?" asked Norton, who was admiring the bright coin he had just found.

"There's something nicely set in mine, mother dear, and I am almost afraid to take it out."

"Oh, hurry, do, and let's know what it is. Here, I'll help to dispatch that big fellow if you're so afraid;" and the eager boy reached over toward his elder sister's plate.

"No, I'll show you. It might be something delicate," said the girl, as she displayed a small packet of about the size of a silver dollar, and with trembling fingers unfolded it.

A small, neat watch attached to a bit of blue ribbon revealed itself. Sadie burst into tears; and, running to her mother, laid the watch in her hand. "Oh, I can't take it; I can't take it," she sobbed.

"Why not?" asked Norton, in some embarrassment, because of Sadie's unexpected tears. "I guess we can soon tell who sent us these things. Can't we, mother?"

"We may be able to learn, Norton. Sadie feels that she can not accept so valuable a gift without knowing that it would be entirely proper."

"Seems to me very funny that sister Say cries over such a bootiful watch."

"And, mamma," continued Dell, "nobody but Mr. Stanley would give us such nice things, I know. What does the paper say, sister?"

Sadie picked up the wrapper of the watch and read with brimming eyes: "The good teacher values the flying minutes, and to her a convenient time-piece is a real necessity. Will my young friend accept this, 'doubting nothing?'"

"No one," the girl added, choking down a sob, "would do such things in so delicate a way but Mr. Stanley."

"Isn't it splendid?" said Norton. "Some men who could afford to give fine presents would have sent a long fancy thing of a chain, but he understands his business; didn't want Sadie swinging through Spring and Sullivan Streets every day with a great chain glistenin' and danglin' from her neck. But, mother, you haven't looked into your orange yet. Dell, what ails mother, she's so quiet?"

"I 'spect she's overcome; 'nough to make her, isn't it? Do, mamma, look into yours. There must be somethin' nice, too, for you." said Dell, leaning on the table by the widow.

"Well, my sweet," replied Mrs. Camp; "see what you can find." Dell divested the pulpy mass of its covering (some deft hand had skillfully prepared beneath the skin of each orange a little chamber in which was placed the gift) and held up a closely-folded paper.

"Looks like a letter, mamma." Mrs. Camp took it from the child, and as she held it between her thumb and forefinger hesitatingly, she felt a hard, rounded substance within. Slowly she detached the folded edge, for it was gummed fast. Once opened, several closely-written leaves met her eye, then a heavy, plain, gold ring. Something, a device, on the inner surface of that ring, transfixed her attention, and caused her to turn very pale, and almost gasp for breath. Rising with her hand pressed tightly upon her heart, she walked hastily to the inner room and shut herself therein.

The children being left thus abruptly by their mamma, looked at one another in bewilderment. Dell was inclined to cry, but Norton checked her by saying, "Hush, Dell. It can't be anything very bad. Whoever sent us these nice things wouldn't be so wicked as to hurt mother. Sadie, can't you guess?"

"I saw a ring in the letter, Nortie, and it was that, I'm sure, made mamma look so."

"Mamma will tell us 'bout it 'fore long. I wouldn't love Mr. Stanley any more if he hurt mamma, and I wouldn't wear this ring 'though it's so pretty," said Dell.

"Mr. Stanley'd never hurt anybody," replied Norton in a peremptory tone.

"Don't speak so loudly, Norton," entreated Sadie; "mother might be sick."

"That's so. Let's be still and wait until

mother calls or comes out." And the children, suiting the action to the word, sat quietly for full ten minutes, when their mother re-entered the room. Her features wore the marks of recent agitation, but she smiled upon the little group that gazed at her with so deep an expression of relief as she resumed her chair; and, holding up her left hand, on which gleamed a ring they had never seen there before, she remarked:

"See, my own darlings. It was once your dear papa's."

H. S. D.

*(To be continued.)*

## MARIANNE S. WETMORE.

THIS lady has a large head as compared with her size and weight, and it absorbs her vitality rapidly, and works it off by way of thought, feeling, and sympathy.

She has an element of toughness, but lacks vital power. She has a great deal of endurance without having a great amount of strength. If she were larger and more highly endowed with the vital temperament, she would have a broader, plumper face, and could sustain her brain in its arduous labors much better. She should associate with people who are strong, plump, healthy, vigorous—so as to borrow something of their surplus vitality and vigor. Her brain is large at the top and becomes narrower at the base, showing that the superior developments have the ascendency.

The upper part of the forehead is massive, indicating the tendency to think and reason, rather than to gather. She is affected more by causes, by the interior philosophy of subjects, than by external forms and facts; and she is influenced strongly by motives and emotions, by themes and theories.

She has good power of observation, and acquires knowledge by travel and by daily life and experience; and is, in fact, a practical woman; but the theoretical, the planning, the forelooking elements lead in her mental processes.

She has large Constructiveness, and is a wonderful hand to devise ways and means. She has pretty good Acquisitiveness, but it is not so much developed in the direction of saving as it is in planning how acquisitions can be made. Her thought would instantly go out to see how additional income could be created, rather than how a meager income could be made to eke out the absolute wants of a family.

She has strong moral development. The head rises high from the opening of the ear, and from the eye upward, and broadens as it rises. She has large Benevolence, which renders her kind-hearted, sympathetical, willing to sacrifice for others, and anxious to do them practical service; to help them to help themselves. It would be more like her to hunt up a place for a poor boy or girl to learn a trade and earn something while laying the foundation for future independence, than to make gifts to help them along for to-day. She has strong Faith, an unusual development of that sense of the spiritual, the immortal, and the invisible—which gives her a strong sense of ultimate results. She has faith to believe that she shall reap in due season if she faint not. She has faith to cast her bread upon the waters, feeling certain that she or somebody will find it after many days. To her the future and the possible are as real and certain as things seen and present. She has Veneration well developed, which gives a religious cast to her thought and feeling. She is not so much inclined to think that Providence will fill the empty dish if it be kept right side up, as she is to expect to fill it by means of some legitimate industry that shall earn success. She plans in hope, cultivates in patience and care, and expects the harvest according to the tillage.

She has strong Imagination, and is able to inspire others with her own spirit. She has Language enough to write or speak well, to clothe her thought in befitting expression; and she has enough of Ideality and Imagination to make her poetical and artistical.

She appreciates wit and humor; enjoys the mirthful side of things; has conscience enough to believe in truth and duty, and ambition to rank well, and the desire to be appreciated and approved. She loves justice for its own sake; is cautious, watchful, regarding her own safety and the safety and welfare of others with great care.

Her large and active brain—inspired by moral, spiritual, and sympathetic feeling—arouses her energy and effort so that she is constantly inclined to overdo, and will wear out her life in intense thought and effort without taking enough to nourish the system, to recuperate and rest. She is too much inclined to be always on the wing, and keeps her system taxed to its utmost with brain-labor. If she want to last as long as possible she should sleep more, and have occasions when she can unbend the bow and thoroughly rest and recuperate.

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MARIANNE S. WETMORE, of Charlestown, Mass., was born in Kingston, Mass., November 2, 1832. Her father's name is Alden Sampson, who has been for years in

the service of the United States in the Navy Yard at Charlestown, Mass. She is a direct descendant from John Alden, who was among those English Puritans who came over in the *Mayflower*.

In a letter written some time since to a friend, Mr. J. C. Taylor, she says: "Educated by a father and mother who were *always* doing for those more needy than themselves, and inheriting a desire or a nature which impelled me on in whatever work for the moment came before me, and the call for work coming constantly in the form of distressed humanity crying for help—what could I do but take hold of the work for which by nature I was organized?" In another place in the same letter, she says, "I think I was intended for a *helper*."

Not constitutionally strong, she has suffered more or less from ill-health since her eighteenth year, yet has always exhibited an uncomplaining spirit. Her earnest, self-sacrificing disposition has rendered her, as it were, inattentive or unobservant of her own bodily weaknesses and pains.

Some ten years ago she began the special work of caring for friendless prisoners, and from that time to the present she has been constantly engaged in it. Whenever she hears of a prisoner without friends, she opens a correspondence with him, and by cheering words and other marks of sympathy and friendship, endeavors to encourage him to look forward to a brighter, better future. She keeps up the correspondence throughout the term of his imprisonment, and at its close takes immediate steps toward co-operating with him in his attempt to retrieve his character and life.

She does the right thing at the right time. She clothes and feeds him and secures him honest employment. She has taken ragged and forlorn prisoners just discharged, into her own home and kept them for weeks together till employment and means of self-support could be found.

Has this labor and interest been compensated by good results? Yes. With but a few exceptions, her assistance has been appreciated and her advice followed to the great betterment of the moral and social condition of her beneficiaries.

References could be made to several who received her kind and affectionate help in the manner above described, and who are now, and have constantly been, following in the path of right and duty which she marked out for them. It would be a gratification to us to know how many she has thus assisted, but it is doubtful if she herself could tell.

## MY HOME KINDERGARTEN.

No. III.

A YOUNG person finds pleasure in learning that there are three primary colors—blue, yellow, and red—that all others are combinations of these; that some colors harmonize, some contrast, others produce discords. This bit of knowledge thoroughly understood would decorate our homes in agreeable colors, make carpets and curtains and paper-hangings harmonize or pleasingly contrast with each other and the furniture, and dress our daughters and daughters' daughters in good taste; they would not wear blue dresses with a green bonnet and red shawl, or two or three different shades of the same color together.

Several selections from different writers upon the subject of color in dress Dora read and studied until she knew them thoroughly. One from Mr. Alison's writings I will insert here, as it is so plain and excellent. He says: "No dress is beautiful in which there is not some leading or predominant color, and that color must have some pleasing or affecting expression. There are colors which have no character in themselves, and are chosen for common apparel because they are convenient for the peculiar occupation or amusements in which we are engaged. Such dress has no beauty. When we say it is a useful color, we give it all the approbation to which it is entitled.

There are, on the contrary, a variety of colors which are expressive from peculiar association; which are either gay or delicate, or rich, or grave, or melancholy. Such colors are chosen for what is properly called dress. When we speak of such dress, we generally describe its beauty by its character; as delicate, rich, gay, or magnificent. There would be an equal impropriety in choosing the color of ornamental dress for its convenience, as in choosing ordinary apparel because it was gay or splendid.

"No dress is beautiful in which the composition of the inferior colors is not adapted to the peculiar expression of the prevailing color. The accumulation of different colors without regard to the general tint of the dress is expressive of ignorance or vulgarity. On the other hand, to suit these colors to the prevailing color is considered as the great criterion of taste." Then, to illustrate the author's meaning, I took different colored bits of cloth or paper or threads of Berlin wools, and, placing some solid color as the foundation, with the wools I made plaids or stripes upon it, or cut out cloth-flowers of some other color, and thus taught my daughter how ugly fabrics or beautiful ones might be made by the improper or correct combination of shades.

Many people think beauty of color lower in its nature than beauty in form; but if they would study nature, and see how much the blue of the sky, the green of vegetation, the varied tints of the rainbow add to our pleasure in the contemplation of a landscape—if, in the words of Ruskin, "such disparagers of color would only take the pains to imagine what the world and their own existence would become if the blue were taken from the sky and the gold from the sunshine, the verdure from the leaves and the crimson from the blood which is the life of man, the flush from the cheek, the darkness from the eye, the radiance from the hair—if they could see but for one instant white human creatures living in a white world, they would soon see what they owe to color."

By mixing paints of the three primary colors, Dora learned that of the secondary colors orange was a combination of red and yellow; green, of blue and yellow purple, of red and blue; and that each of these secondary colors contrasted with the primary color which did not enter into its composition and harmonized with those which formed it. This rule is invariable, except with blues, which do not seem to harmonize perfectly with all greens; though a blue-green harmonizes probably with blue and a yellow-green with yellow.

The tertiary colors are formed from the secondaries, and are also three in number. Citron comes from orange and green, russet from orange and purple, and olive from green and purple. The tertiaries relate to the secondaries as the secondaries to the primaries. Thus, citron contrasts with purple and harmonizes with orange and green; russet contrasts with green and harmonizes with orange and purple; olive contrasts with orange and harmonizes with purple and green. Maroons, drabs, browns, etc., are combinations of the tertiaries.

As will be imagined, Dora did not master these subtleties of harmony and contrast for many years, but the leading colors and combinations any child of eight years will readily acquire; and persons who have not "much eye" for color, can, by study, learn sufficient of the theory of combinations to avoid the gross errors daily committed. The primary object of dress is to cover and protect the body; the secondary, to embellish and adorn it. "Becoming dress depends upon its fitness to the wearer, and the agreement of its predominant color with the wearer's complexion and with its own hues." No one style of dress becomes all; there is such diversity of form and complexion. The dress proper for a young person is not suitable for one advanced in life. The dress which adorns a tall, graceful figure, may look ugly upon a short, stout person; it does not suit two different forms. The same remark applies to the material of dress. A slight, graceful girl often looks perfectly beautiful in soft, flowing muslin; when if dressed in heavy, rustling silk, laden with ornaments, she would be a little fright.

Richness and harmony of dress almost take the place of beauty of face and per-

son. A plain woman dressed gracefully will be more admired than a pretty woman carelessly dressed. Cheap ornaments of every kind were forbidden to Dora. One handsome ring was chosen, rather than three fingers full of common ones. We disliked sham in everything — ornaments not excepted. The wearing of trashy finery debases fine taste and blunts the moral sense by substituting seeming for reality. Better the tiniest edge of linen lace, or a simple ruffle, than imitations of Honiton or Valenciennes.

Dora was dressed as children should ever be—simply. The tendency of the present day is to over-dress young girls. The money thus employed would be much better expended in good books and pictures for them. Our young people are learning to value elegance of dress unduly, and when grown, will find nothing new and fresh. Having always had laces, embroideries, and silks, only by paying enormous sums can they purchase "a new sensation."

While there are so many poor and suffering in the world, children should be trained to enjoy good and beautiful clothing without longing for the elegant and expensive. We fancy ourselves kind-hearted and sympathetic, when, sitting in our own pleasant homes beside a cheerful fire, we say: "I am sorry for any who are without food and warmth to-night;" but will we go to-morrow, seek out the destitute, and give up that beautiful pin or costly silk that we desire, but do not need, in order to help those who can not help themselves? "Alas! for the rarity of Christian charity under the sun." As a nation we give freely to charities upon a magnificent scale, but we need yet to cultivate that charity which gives the "cup of cold water" only that brings no praise.

Though I taught Dora much about tasteful dress, it must not be imagined it was made a special study, or that great stress was laid upon the matter. I taught this in those odd moments which are at the option of all to improve or waste, and many years passed before they were thoroughly mastered.

Dora early learned habits of accurately observing surrounding objects and persons. In her lessons upon color she noted the hues of the clouds, the sky, the sunset, vegetation, birds, and flowers. When learning to draw, her attention was directed to the shapes and sizes of objects, the branching of trees and shrubs, the oval of the leaves, the cup-shape of many flowers, and the varying animal forms. She learned to know the plants, flowers, and trees by name and sight at an early age.

A foot-rule marked with inches, a yard-measure, a small scale for weighing, and tin pint, quart, and peck measures were given her with her slate and pencil for arithmetical studies; and she counted, weighed, and measured day after day and week after week until she had acquired real, practical, live knowledge of "denominate numbers."

A great part of the drudgery of learning the botanical nomenclature was saved by daily observation and naming the peculiarities and parts of plants. The elements of geology were acquired in the same way. Handling over and learning the names of specimens and fossils fixed in the youthful mind the appearance and the name of the great rock families. This rudimentary knowledge, gained while the memory was plastic and retentive, saved at least one-third the labor of acquiring these sciences subsequently.

I taught Dora when but a child the quality and value of all articles of dress, household furniture, food, pictures, and books. Teaching her to distinguish cotton, linen, and silk goods; fine, medium, and coarse qualities in carpets, dress-materials, toweling, etc.; the different woods of which furniture is made, the quality of workmanship and finish, the strength or weakness, durability or fragility; the varieties of porcelain and glass; the difference between stale and fresh vegetables and fruits; the marks of excellence in paintings, engravings, and the binding, printing, and illustrations of books.

This knowledge saved her many mortifications that sensitive ignorance meets; and when making purchases, she could always use her means to the best advantage and was not liable to be defrauded. Many a

young woman is married and sets out to keep a house and make a home without having ever received an hour's instruction upon these points. Some few persons "pick up" such knowledge without any effort, but most young girls occupied with their books do not acquire it without much loss and annoyance after leaving the home of their gay, thoughtless youth.

AMELIA V. PETIT.

## "GIVE, AND IT SHALL BE GIVEN TO YOU."

Are we votaries of pleasure?
Do we kneel at Mammon's shrine,
Pouring forth the soul's rich treasure,
Precious gift of the Divine?

Do we aid the fallen creature
In her downward path of sin
To regain the priceless feature—
Heeding thus the voice within?

Breathe we comfort to the weary,
Oft, in anguish, sore opprest;
Lighting up their pathway, dreary,
To a home of blissful rest?

Fill the cup, aye, to o'erflowing;
Heap with joy, nor deem it vain:
As we measure in our sowing,
God will mete to us again.

GRACE GARLAND.

## "JACKKNIFE CORNER."

OF course the name is a fictitious one; but it is not a misnomer; for go there at any time you will, and you will see groups of men and boys whose only occupation seems to be whittling. Were the jackknives used to construct some useful article we would not complain, but instead they are used only to while away the time and make litter.

We have known young men and boys, endowed naturally with a fair amount of intellect, waste as much time in one year as would, if properly employed, familiarize them with almost any branch of common school study, and yet ask them some simple question in American history and they are unable to answer it. And to add to this, loss of time; while hands are busy wielding the jackknife, tongues are active in repeating coarse jokes and obscene stories. The air also is impregnated with smoke from a dozen filthy clay pipes, and the platform of the one store of which "Jackknife Corner" boasts, is scarcely discernible through its coating of tobacco juice.

Sometimes the crowd adjourns to the street in front of the blacksmith-shop, and amuse themselves by throwing horse-shoes from one stake to another, meantime interlarding their conversation with oaths and choice by-words. But such tame amusements do not long satisfy. They return to the store and spend the evening in drinking and gambling; for, though "Jackknife Corner" is in Maine, and consequently under prohibitory law, the merchant has so little of manhood in his nature that he smuggles rum from the adjacent Province of New Brunswick and sells it, in secret, to those who frequent his store. From drunkenness to licentiousness is but a step; and thus our friends of "Jackknife Corner" tread the downward way.

Reader, this is no fancy-sketch; the place and persons that we have attempted to describe have a real existence, and we fear that even in enlightened New England "Jackknife Corner" has its counterparts. That there is a cause for this degradation is apparent to all; and, though there are three churches and several schools in the town, we pronounce the cause to be ignorance.

Surely, were the young men of "Jackknife Corner" aware of the misery which they are bringing upon themselves they would not thus subvert the higher faculties of their minds—surely, if they knew that they can not be happy thus for a single day, they would abjure forever those indulgencies which ruin both body and soul.

But there is a remedy for, as well as a cause of, this evil, and that remedy is Education, and no part of education is more impor-

tant than a knowledge of ourselves. Thus we see the great changes for the better which Phrenology would make if applied to the condition of such persons as are described above. By giving them a knowledge of themselves, and of the laws which govern them, it would lead them to choose the better way. And we do not despair that Phrenology will yet be applied to the condition of such as these. We hope and believe that as the tide of progress rolls onward, the good effect which our science has upon the morals of mankind will be felt even at "Jackknife Corner." JAMES PERRIGO.


## PHYSICAL ELONGATION; OR, SCIENCE vs. SPIRITUALISM.

"THE signs of those that are inspired are multiform; for the inspiration is indicated by the motions of the whole body and of certain parts of it, by the perfect rest of the body, by harmonious orders and dances, and by elegant sounds or the contraries of these. *Either the body likewise is seen to be elongated, or increased in bulk*, or to be borne along sublimely in the air, or the contraries of these are seen to take place about it."—Iamblichus, *De Mysteriis*, Taylor's Translation, page 124.

Among the various manifestations of the supernatural, none seem more incredible than physical expansion and the lengthening and shortening of a human body. Standing face to face with the miracle of elongation, we find our credulity stretched to its utmost tension, faith in the genuineness of the phenomena gradually diminishes, and the mind wanders from phase to phase of this ever-recurring mystery, only to suffer a general collapse with the historic witches whose "bodies were now blown up like a barrel without bursting, then again were drawn in as if they were totally gone, and as suddenly again puffed up like a pair of bellows, and with the loudest noises, as if struck, moved up and down, sunk and swelled again," and we sink into a sense of our own littleness, or come at last to doubt the evidence of the senses, denying the validity of all human testimony, rejecting the facts which can not be explained, or indolently assigning them to the domain of the supernatural.

"I should have to see it done, madam, before I could believe," said a leading scientist to the writer. "Well, Professor T——, you may reject the historic witches and the Egyptian mediums, but you can not ignore the bewitching young ladies of modern society, with their electrified arms puffed to order like their party-dresses. Take this one fact, that, in New Haven to-day, a magnetic physician can temporarily increase the bulk of the human arm by simply passing through it an electric current. Then step from these artificial charms of modern drawing-rooms to the laboratory of the scientist, where the influence of electricity in expanding solid bodies was discovered by Dr. Priestly during his experiments on the effects of explosion through metallic substances, when he found that a chain was actually shortened after the charge of a battery was passed through it. A length of chain of exactly twenty-eight inches, after having transmitted a charge of sixty-four square feet of coated glass, was shortened one-fourth of an inch, or 1-112 part of its length. Mr. Brooks also succeeded in shortening a wire one inch and a half or one-eighth of its whole length."

"Madam, I can not accept any of these facts. I should wish to see Dr. Priestly perform those experiments."

"Oh, I am not pinning my faith upon any one experimenter. There is your personal friend, Prof. John Tyndall, speaking of the law of angular reflection, incidently refers to this subject, giving the weight of his illustrious name to the support of facts which some experimenters still seek to deny. In his recent lecture on 'Light,' he says: 'Thus, by attaching mirrors to his suspended magnets, the celebrated Gauss was able to detect the slightest thrill of variation on the part of the earth's magnetic force. The minute elongation of a bar of metal by the mere warmth of the hand may be so magnified by this method as to cause the index beam to move from the ceiling to the floor. The elongation of a bar of iron when it is magnetized may be thus demonstrated.' In another place he adds: 'A strip of glass six feet long, two inches wide, and a quarter of an inch thick is held at the center between my thumb and finger. I sweep over one of its halves a wet woolen rag; you hear an acute sound due to the vibration of the glass. What is the condition of the glass while the sound is heard? This: its two halves lengthen and shorten in quick succession.'"

Professor T——'s attitude toward this phenomenon is such a type of the present prejudice against every phase of the so-called supernatural that I have reported the conversation in detail. Large-wigged science sits staring at this sphynx of material fact; denies the authenticity of historic annals, rejects the validity of all human testimony, and now seeks to ignore the inductive theories and experimental proofs of animal magnetism. It seems to me we have only to carry Prof. Tyndall's elongated bar of magnetized iron into the parlor of Mrs. S. C. Hall to find a plausible explanation of this seeming miracle exhibited in the person of Mr. Home.

During a séance at Mrs. S. C. Hall's, after the usual phenomena of raps, etc., "Mr. Home then rose from his chair—impelled, he said, to do so—and walked to and fro. Then followed the extraordinary manifestation of the lengthening and shortening of the medium's body—a phenomenon not unknown to those who have followed this inquiry, but nevertheless very remarkable and equally unaccountable. Mr. Home said he felt as if his hair was being pulled, but without causing pain; on the contrary, he described the sensation as pleasant. At his request I placed my feet on his up to the instep, to be satisfied that he did not stand upon his toes, and at the same time placed my right hand on his body horizontally—partly on his waistcoat and partly on his trousers. The upper part of his body then rose to such an extent that my hand was in a few moments resting on his shirt, with, I should say, about an inch of space between it and the trousers below, and a similar space between it and the vest above. After remaining for a few moments at the stature of at least seven feet, Mr. Home sank quietly down to his normal size, and then appeared to be pressed down till less than five feet in height."

If we suppose the medium's person in the condition of the magnetized metal, the lengthening and shortening would naturally follow in obedience to the same principle. If the phenomena occur but seldom, on exceptional occasions, in the human body, the exception can be accounted for by the experiments of Mr. Joule, who proves that "at *a certain tension* there is no alteration in length."

We understand "Some important discoveries in magnetism have been made of late years, and some knowledge has been gained as to the molecular changes produced by the magnetic condition. Mr. Joule has shown that a bar of iron in being magnetized increased in length, while its breadth diminished. The greatest elongation observed by him amounted to the one hundred and eighty-thousandth of the length of the bar. He also states that the elongation is proportional to the square of the developed magnetic intensity. He also found that iron wires of a certain tension diminish in length instead of increasing, and that at a certain tension there is no alteration in length."—Knight's "Encyclopedia of Arts and Sciences; Art on Magnetism."

If our theory be true that the principles of animal magnetism explain the whole class of phenomena included in the term Spiritualism, we shall find no ramification of the subject too minute to be susceptible of experimental proof and inductive analysis; while a comparison of the analogous facts of mesmerism, spiritualism, and terrestrial magnetism will demonstrate a reality of vital truth in a seeming superstition and result in a future science of the supernatural. JULIA M. HOLMES.

## PHRENOLOGISTS COMPARED WITH OTHERS AS EDUCATORS.

THOSE who teach Phrenology—practical phrenologists in particular—ought to be encouraged in their efforts to enlighten the people on the subject of education, and the proper means for bringing educational influences to bear upon different classes of human developments. All can not be successfully educated by one fixed method, any more than all horses of every degree of strength and speed can be reduced to the same mode of working. Farmers and others who use horses, can generally understand at a glance by the build and constitution of a horse whether he can trot rapidly with a light load, or whether he will be able to move moderately with a heavy load; whether he is better fitted for the light carriage or for the plow; and some men are so used to this that it has ceased to be noticed as anything remarkable. But when a practical phrenologist proposes to describe a half-dozen boys, and tell which will succeed best in languages or history or mathematics or philosophy; which will be best in mechanism, which in trade, people seem astonished, and are inclined to call him a pretender or a fortune-teller.

Aside from that furnished by Phrenology there is no rule for teaching which seems to satisfy the public. Nearly every paper or book of any consequence has leading articles designed to help in developing and perfecting human character. Attempts are made to analyze it and point out the elements necessary to success in life. If this fact proves anything, it proves that there is a public demand for such instruction, and, of course, a need of it. But no two persons seem to be agreed as to how this shall be conducted. Almost every teacher, in seeking for a better way to improve his pupils, seems to be a law to himself. He has a way of working which is unlike that of other teachers, because any general method with which he is acquainted doesn't seem adapted to secure success, under his administration. He can urge, however, in support of his measures, only isolated facts. One writer gives us a story of a willful and stubborn boy, what he did, or refused to do, and how he was at last conquered, or how, being unclaimed and unsubdued, he came to grief; and that is given as a story for boys, ignoring the fact that some boys are mere weather-vanes, like clay or putty in the hands of their associates. Perhaps in the same book, or paper, a little further on, *energy* will be stated as the one thing needful to encourage young men to effort. A few names of men that have succeeded, and who attribute their success to energy, will be given as a proof that that is what *they* should have. Another says it is *self-reliance* that is wanting, and names are cited from Dr. Johnson to Benjamin Franklin, from Cromwell to Napoleon, from Chatham to Clay; the writer seeming to forget that perhaps half of the young men who may read it, will make fools of themselves by disdaining to aim at anything less than attainments which have distinguished genius. With others, again, it is *education* that is needed; and by education is meant the storing in the memory that which is taught in our school text-books, the speculators seeming not to know that a great many children go into the schools incapable of much scholarly attainment, and that others who are precocious and strongly inclined to mental activity, study till their heads consume their bodies. Other teachers, again, try to teach by *rule*. A recent Encyclopedia gives as many as sixteen rules

to be observed if one would succeed in life, thus laying down one rule or standard for the observance of all, which is like trying to get one size of shoes to suit all men.

Do not such ideas of teaching and culture show a lamentable want among people at large of a knowledge of human nature? And all these differences go far to prove what phrenologists have over and over said, that if Phrenology is not a correct system of mental philosophy, the world is without one. The error of teachers and of others who would control human nature, lies not in their rules or precepts or motives, but in trying to apply general rules to special cases, and in failing to take into account the nature of the pupil, which certainly is a very important factor in all culture.

The difference between phrenologists and others is this: Phrenologists say, "Know thyself, and make that knowledge the basis of your future conduct," and they offer a rule by which one can study others and know, before experience reveals the character, what may be expected from each one. The other method is to say that what others have done, you can do, provided you do as they did.

Dr. Adam Clarke slept four hours; therefore students are recommended in academies and colleges to imitate so eminent an example. One man in a million might get along on four hours of sleep; all the rest would do much better on eight. These people say man is what circumstances and education make him; phrenologists say man inherits certain tendencies which constitute his nature; circumstances and education only modify it. No man is so low, who is above idiocy, that he may not be improved; but the influences which are brought to bear upon him should be carefully adapted to his peculiar nature and disposition, if the best success in his culture is to be attained.

Ten thousand young men having all the opportunities for acquiring an education so far as time, money, and earnest effort are concerned, fail to take a good rank as scholars, because they are taught according to a rule that may answer for seven persons in ten; but the rules are not at all adapted to them, and, therefore, they waste their time, their strength, and their money in misdirected efforts to obtain education and distinction. And some we may say are trying to break their way through who never should have made the attempt, but who could have been successful as farmers or mechanics. Many parents are ambitious that their children should become professional men, and having made money enough to pay tuition bills, try to push them through college. The phrenologist would tell them the truth in the case, and perhaps be snubbed with the old remark, that "if the boy studies hard enough he can succeed."

JAMES MC CREA.

## GENIUS AND LABOR.

OH, the dire inconvenience of having to associate genius with manual labor!

Now, this morning, Sam was giving the third finishing coat to that poem he has been completing for eight days, and just as the intellectual steam was making off with Sam, whither none could tell, at a speed unrivaled by Franklin's bottled lightning, the old man called out in thunder tones: "Samuel! Sam-u-el! Sam! you villain! Come out of that, and water them calves! Don't you hear 'em a bawlin'?"

Down breaks! Shut off steam, and let Sam off; he has to water the calves!

Oh, great big world, that carries the weight of all our disagreeablenesses as you go a-whirling through space! how many Sams have you on board? A million answering groans from the struggling *I woulds* of earth, convince us there is something wrong with the machine that weaves the life-web.

Our tempers are all naturally sweet and good when we are in our element; conversely, a face all snarled up, and lips that mutter naughty things under the breath, are evidences that the proprietor is "out." Sam was "out" of his element!

He is not lazy, although the old man says he is. Sam thinks he is too, but he mistakes. In fact, he has been taught from infancy to believe that industry consists wholly in two-fisted digging into the soil for nuggets; and any one possessing the audacity to choose a less manual pursuit has always been slurred in his hearing as a shiftless idiot. Thus, Sam has reached his nineteenth year without becoming philosopher enough to find out that he is a fool for believing himself a fool. He has borne the weight of his degradation all these years, conscious of his inability to make labor a success; yet, somehow, supposing it to be his own fault, till his self-accusation has become a chronic disorder, and his countenance a perpetual snarl while at work; not merely because he *must* work, but because he can not bring himself to love labor, and thereby rid his badly-educated conscience of its intolerable burden.

But what is to be done? It is very necessary that the calves be watered, and that some one attend to this duty regularly; and it were a good thing for Sam to know how to take care of them, for the sake of common information. But it is undeniable, that had all the knowledge of all the cattle-dealers that ever made a highway melodious been drilled into Sam's cranium, he would never choose cattle for a profession, but would let the calves die of thirst, while he wrote for the newspaper. What use, then, for him to know anything on the subject more than to write an occasional fine article on "What I know about calves."

Yet here he is, like the million other geniuses on the rack, never knowing when he is going to be hurled from the very top of Olympus down into the lowest depths of the valley of commonplace reality. And then how hard to get back again and feel just as he felt before. Always some sparks would fly off and expire when the flaming dart was thus suddenly broken off, and they were forever lost to the literary world.

Yes, there's something wrong with the machine. No matter how long it has been going wrong, it demands all the more to be fixed right now. Who will get up an improvement in virtue of which circumstances shall be servant instead of master? Who will invent a patent self-revolving life recipe, and be paid for the same in showers of blessings, and a monument after you're dead?

MINNIE MYRTLE, JR.

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SELF-IMPROVEMENT.—A want of thoroughness in whatever is undertaken is, perhaps, one great cause of such failures. A practical writer on that topic gives the following good directions: "Never leave what you undertake to learn, until you can reach your arms around it, and clench your hands on the other side." It is not the amount of reading you run over that will ever make you learned; it is the amount you retain. Dr. Abernethy maintained that "there was a point of saturation in his mind" beyond which it was not capable of taking in more. Whatever was pressed upon it afterward crowded out something else.

Every young man should endeavor to perfect himself in the science of the business he has chosen. Without this, he must always content himself in the lower walks of his calling. The cost of a few cigars will buy all the books he requires, and his own diligence may be made to well supply the place of a tutor. Without such diligence, the best teacher in the world could not manufacture him into a scholar. If once going over a point will not master it, he must tackle it again. Better give a week's study to a page than conclude that you can not comprehend it.

But though it is wise to give your main strength to your own specialty, you should not confine yourself to such studies exclusively. The perfection of all your powers should be your aspiration. Those who can only think and talk on one subject may be efficient in their line; but they are not agreeable members of society in any of its departments. Neither have they made the most of themselves. They become one-sided and narrow in their views, and are reduced to a humiliating dependence on one branch of industry. It costs nothing to carry knowledge; and in times like these, to be able to put his hand to more than one branch of industry often serves a man a good turn.—*Scientific American.*


## MODERN DISEASES.

A WRITER in the Boston *Journal of Chemistry* not long since briefly reviewed the situation with reference to modern diseases and methods of treatment. His conclusions are worthy of another hearing, and we take the liberty to reproduce some of them, as follows:

"A large number of the bodily ailments which afflict the race come from hereditary transmission. The neglects, the excesses of the fathers, which have induced physical weaknesses and organic lesions in their own bodies, find fruitage in their children. Three-fifths of the physical miseries of the present race are hereditary, and as the generations march along in the great procession of life, their transmitted torments will increase in number and intensity unless sanitary rules are better known and observed. The race could unquestionably be physically improved in a large degree, in two or three centuries, if it were possible for all parents to live in strict accordance with hygienic laws. The hope of those laboring for a higher standard of public health lies in this direction. Transmitted poisons can be eliminated and weaknesses removed, and happy will be the race living upon our planet when legacies of pain and mental anguish are no longer left by parents to their children.

"Science has already obtained the mastery over many forms of what are known as zymotic diseases, or those which arise from germinal poisons existing in the atmosphere, in water, and in foods. This class is very numerous and very fatal in tendency. Small-pox, fevers, diphtheria, scarlatina, cholera, some forms of dysentery, are all believed to be zymotic in origin; they are instances of blood-poisoning, the poison coming from agencies external to the body.

"But fevers of all kinds are less prevalent than formerly, owing to a better knowledge of their nature and origin, and when instances occur, the treatment is such, or ought to be such, as to cut short their continuance and change a severe affliction into a comparatively mild one.

"Diphtheria is a new enemy, or rather it is an old enemy which for some reason gets a fiercer grip upon us than formerly. This may be owing to habits of life, or morbid conditions which give the poison a freer scope in the system. At the present moment the battle with this cruel ailment does not result satisfactorily. Still, science is making a clear gain in the contest, and it can not be many years before this disease will be looked upon with less dread than now.

"Scarlatina continues to be 'a monster of most hideous mien,' and inspires dread in every household. Idiosyncrasies of organization have much to do with the fatality of this poison. Elevate or improve the general standard of health, purify the fountain of life, which is the blood, and the fire of scarlatina will burn less fiercely in the children's veins. Although ordinary medical skill is often of no avail, still in a large

majority of cases, the terribleness of the poison is modified by intelligent treatment, and lives are saved. There is ground for hope that in the centuries to come scarlatina will be classed among the curable affections, if its occurrence be not entirely prevented.

"Cholera is no longer looked upon with special dread, as it is certain that its career can be arrested wherever sanitary and medical science holds sway. Personal cleanliness, temperance, proper food, adequate clothing, healthful employment—these are the grand agencies by which the blood is put in condition to resist the introduction of poisonous spores; and when they find ingress the fuel to feed the fires of fermentation is lacking, and but a feeble flame results. Parents must remember that the purity and regularity of their lives give to their children immunity from zymotic diseases; for as is their blood, so is that of their progeny.

"The 'cure' of disease (of the *diseased?*) is rendered possible by certain conditions which, alas, are too often wanting in both adults and children. Medicines, if intelligently employed, are of service to the physician in the care of the sick. The indiscriminate use of drugs will not, however, cure disease, but will, on the other hand, certainly aggravate and complicate every form of physical and mental derangement. The notion that there are simple or compound agents adapted to remove physical ailments under all circumstances is fallacious and absurd. Cures, so-called, do not often result from the use of remedies alone, but from nature's efforts, assisted by proper dietary and sanitary regulations. The tendency of nine-tenths of all diseases is toward recovery. It is astonishing how tenaciously life clings to the frail body, when it is racked with pain or consumed with fever. Body and spirit part only after a desperate conflict, in the usual forms of disease. (The conflict is between the chemical forces on the one hand, and the vital forces on the other, and the destructive chemical forces are most frequently beaten in the fight). It is through vital action that the spirit makes defense, and by it not only are all the strongholds of the body defended, but also the outposts, where the slightest danger is possible.

"The important lesson to learn is how to help Nature in her efforts to care for us. If the indestructible parts of us do not act harmoniously, we are soon forced to yield the body to decay; body and spirit part company. Sound health, which comes from an observance of Nature's laws, is the greatest earthly blessing. There is no occasion to talk of *cures* where there is no *disease;* and while it is impossible for us to live superior to accidents, it is possible to help Nature better than we do in her care of our bodies."

## THE USES OF SALT.—No. II.

**Unsalted Missionary—A Very Pretty Theory—Vital Action Superior to Chemical Action—Thrown Out—Chronic Disease—Persons who do not Use Salt—"All the Animals Eat It"—What it is Good For.**

WE have seen the fallacy of the plea that we must use more salt than we find naturally in our food, because we find a greater proportion of it in all the tissues of salt-eaters than we do in their unsalted food. The plea, then, that we must add salt enough to our food to furnish this observed quantity of salt in the system, is worth no more than the argument that we must use alcohol or tobacco enough to saturate our systems to the same extent as those of the tobacco-users and liquor-drinkers.

### UNSALTED MISSIONARY.

By the way, too, it seems that our cannibal friends recognize our saltness very much as they do our saturation with tobacco. It has long been a standing joke that cannibals would not eat the carcass of a tobacco-user. Sydney Smith humorously represents a native Polynesian chief as best able to show his hospitality when he had "cold missionary on his sideboard," but we are now informed that these fastidious epicureans

"greatly object to the distasteful and perhaps unwholesome saltness of their European visitors when cooked as food, in contrast with whom their own countrymen have quite a sweet and agreeable flavor." However consoling this might be to those who would perchance prefer cremation to the prospect of walking the earth a second time in the form of a New Zealand cannibal, we are not aware that the latter ever takes the pains to taste his prey *before* he kills it. We think it would hardly pay to salt one's self down alive to spite our possible captor after death, and disappoint his taste when it would be too late to save ourselves. If we did so, however, we think we should prefer to "cram for the occasion;" and for the rest, ask how it is that the Polynesians, without salt, enjoyed the vigor and vitality for which they were noticeable before the advent of Europeans. But the example of these and many other tribes and nations who never use salt, and of such individuals among ourselves, and the fact that the best scientists acknowledge that they do not know of what use salt is in the human system, do not prevent some ingenious people from projecting

A VERY PRETTY THEORY,

and talking about it as if it were all true. In the first place, they assert that a large quantity of salt is required to furnish the hydrochloric acid for gastric digestion, that there would not be anything like sufficient if we did not add salt to that naturally existing in the food. Youmans suggests the *possibility* which one of our latest cyclopedia writers (whom we happen to know is much more of a chemist than a physiologist), takes up and asserts as a fact, and this is the shape in which he presents it, with none of Youmans' "highly probable" about it: "In the ordinary process of digestion a given portion of salt is used over and over again in the animal system. The salt yielding up its chlorine, the latter combines with hydrogen and forms hydrochloric acid for the gastric juice. The sodium set free, combines with oxygen and forms soda, which passes to the bile and pancreatic juice. When the gastric juice and the bile, having served their respective functions, come together in the lower intestines, the hydrochloric acid and soda are mutually decomposed and reproduce the chloride of sodium or common salt. This is taken up by the absorbents and returned to the system to again undergo decomposition," and go through the same process as before. All this while the blood, the urine, the sweat, the tears, and other secretions are loaded down with salt which they have no use for and are constantly throwing it out. This may be all we could expect from a chemist, though a far greater chemist than he has said that such processes as the decomposition and recomposition of inorganic substances have no place in the living organism of animals, that this organism is controlled by vital and not by chemical laws.

VITAL ACTION SUPERIOR TO CHEMICAL ACTION.

When chemical action is strong enough to find a place in the living organism, it tends to destroy vitality, which is supposed to be the cause of the "action" of poisons in the living system. When the vitality has departed, then the system is given up to the laws of chemical action and reaction, which eventually restore it to its original elements as they existed before they were taken up by plant life.

Now the point for which we are contending is not that there is no salt in the normal human system, but that the full amount required may be, and according to the rules of vitality, should be, furnished in an organic form with the organized matters which we take for food. When we see how easily is furnished the phosphate of lime, of which the system uses so large a quantity, but which we are never required to take in the form of a salt, may we not well hesitate to insist that all the chloride of sodium we need can not be furnished in the same way? We should be led all the more to think it not impossible from the fact that so much salt is present in all the tissues for which we can assign no necessity and see no use, and from the fact also that large quantities are so freely and continually

THROWN OUT

by all the liquid secretions. We have seen that it loads down the urine, the sweat, and the tears, in what are supposed to be conditions of health. Is it possible that the system can perform all this work of carrying through the circulation so much extraneous matter (if it be extraneous) without injury? Examine carefully what Brinton says about it (Food and Digestion, Eng. ed., page 336): "Indeed the excess seems easily to pass out by all channels; not only, for instance, by the healthy excretions, but even by the effusions of disease, in which its proportion seems often increased. In this way the fluid of ascites [dropsy of the peritoneum] is often highly salted, or the sputum of pneumonia exhibits a quantity of this chloride, which goes far to explain its contemporaneous deficiency from what is ordinarily its chief channel of removal from the body, to wit, the urine. A proportion of such an habitual excess is, however, left in the body, most of the tissues of which probably become impregnated with a quantity of salt far larger than would suffice for the most vigorous health."

Is it not reasonable to suppose that these and other diseases may sometimes be caused by the efforts of the system to get rid of this foreign substance? It certainly looks like it. True, this is but a theory, yet as a theory it is far more probable than that it can be taken in and thrown out of the system as an excess or an unnecessary substance without injury. And if this be kept up year after year, we have a right to expect, according to the laws of our organization, that it should cause

CHRONIC DISEASE.

Exactly what forms of disease it does cause we are not prepared definitely to say, because investigation hitherto has not led in that direction. Men have almost always taken for granted that salt was necessary, a much larger amount than we get with our common food, following the reiterations of the early writers on the subject who settled their theories according to men's practices, and not according to their demonstrated needs. One thing we have already noticed, the running sores of the negroes, and they are not the only ones who have running sores that are supposed to be incurable. If these sufferers should put less salt, or rather no salt, into their food perhaps they, too, like the negroes, might get well. Dyspepsia is said to be cured by salt; perhaps in much the same way as we have known headaches to be cured by tea and many other diseases "by a hair of the dog that bit him." It is a fact at least worth noticing in this connection, that the French, who seldom have dyspepsia, are credited, according to authentic statistics, with using only from fifteen to nineteen pounds of salt each per annum; the British twenty-two; and the Americans, the most dyspeptic people in the world, with fifty pounds each per annum.

We noticed in the above quotation from Dr. Brinton that "the sputum of pneumonia exhibits a quantity of this chloride." Now we utterly decline to suggest that salt-eating always produces pneumonia, but we have known many cases where people who entirely gave up eating salt are also entirely cured of a tendency to "take cold," and the cases are so numerous that we think the coincidence can not be merely accidental. But we are also *decidedly* of the opinion that lung diseases of all sorts may arise from various causes, and that it is not at all necessary to suppose that the use of the mineral chloride of sodium is the only cause, in order to show the advisability of examining the subject to see whether or not it may have some influence. If it but creates a tendency in that direction it is well worth the while to know it in a climate where we are so greatly subject to this class of complaints. We have just referred to

PERSONS WHO DO NOT USE SALT,

and we mean just what we say. There are such people living in high health and in considerable numbers not only in Polynesia and in ancient (!) Dutch prisons, but in America, and so nearly within reach that we may observe them daily for months and for years. And when we say that they do not use salt, we do not mean simply that they do not add it to their already salted food at the table, but that the mineral chloride of sodium is *never* added to their food

before, during, or after cooking. According to the theories of the salt-eaters, such people should be dyspeptic, indeed quite unable to digest their food, they should take no pleasure in eating, they should die slow and lingering deaths, if indeed they are not devoured alive by worms engendered in their own stomachs.

But none of these things have happened! On the contrary, they have usually improved in health and digestion, and in the enjoyment of their food. They have learned the truly delicious natural flavors of things which they had never before been able to perceive. We must also truly add that this change has seldom been made by itself. It has been accompanied usually by more intelligent care in diet, dress, exercise, bathing, and general hygiene, so that it would be difficult to state what proportion of the improvement has been due to the relinquishment of salt.

Several things, indeed, have been discovered by the temporary slight addition of salt to their improved diet, and, to their surprise, one of the most constant first effects was a marked salinity of sputum, sweat, and tears. This shows, at least, that the system is not suffering for want of salt. Instead of the small quantity taken being retained and used, it is thrown out with a celerity suggestive of increased vigor of health and consequent promptness in the expulsion of intruders.

But have the scientists who so unanimously declare the necessity of a large amount of salt added to our daily food heard of these cases? Some of them have; and these, after all their declarations, graciously say that probably such people get all that is necessary for them from their food, in which it exists as an organic constituent!

Very good. That is all the negative ask. We never have seen any necessity for the experiments that elaborately extract all the natural salts from food, and then undertake to show from the lack of adaptation in these foods to the wants of the vital economy, that salts were necessary. What they are called upon to show is that there is any necessity for adding the mineral salt to any food whatever, excepting to make it conform to a *taste* that is accustomed to it. Of course we feel ourselves justified in taking the ground that man's taste is largely artificial, and that anything we are pleased to call instinct in this matter has no applicability to man in his present condition. But, says the objector,

"ALL THE ANIMALS EAT SALT."

How many? You can count them all on your fingers. We are aware that there is here quite an extensive and amusing field for observation and experiment, but we consider it quite irrelevant to the question of its use by man. We notice that most of the scientific writers urge that "all the animals" need it in order to perform gastric digestion, which indeed, in a vast number of cases, depend on the same conditions as in man. And yet, all the birds, all the quadrumana, most of the quadrupeds (excepting those which "divide the hoof and chew the cud,") and we believe all the still lower animals reject salt. To many of them it is rank poison, and causes speedy death. The ox, bison, antelope, and sheep, with others of that class, are not "all the animals," and it does not follow that because they eat salt man should. The analogy does not apply any more than it would in the case of grass. Another "argument," still more strange, we notice, not because it is an argument at all, but because it is a sophism. We are told that Nature in nearly all parts of the world has wonderfully provided us with salt, "and

WHAT IS IT GOOD FOR

if not to eat?" What a waste of good stuff, to be sure! But let us see what becomes of that which we do not eat.

First, it helps to make mountains. Second, it is a good fertilizer for asparagus and cabbage. Third, it kills vermin. It "is supposed" that it will kill even the potato bug! Fourth, it keeps the ocean sweet! And if this is not use enough for one chemical, must we needs be called upon to "eat it, because we do not know what else to do with it?"

Now if salt-eating has gained the argument, judge ye. We have honestly sought for the best arguments that we could find in its favor, and we find none that will bear examination. Instead, we find facts strongly suggestive of the propriety of investigating in order to find out *what harm* salt-eating does.

JULIA COLMAN.

## A TALE OF CONSUMPTION.

DR. DIO LEWIS, who has been living in California the past year, publishes a pleasant story with the above title, in the *Mining and Scientific Press*.

"Thirty years ago, and while I was practicing my profession in Buffalo, N. Y., Henry S—, a slight, pale, young man, presented himself one morning, and asked me to examine his lungs. The examination over, he scanned my face with eager solicitude, and in a trembling voice, said: 'Nothing there but a little bronchitis or something of that sort, is there?'

"I did not reply at once, and during the silence it was painful to watch his face. I asked:

"'Are your parents living?'

"'No, they are both dead. My mother died when I was six weeks old, and they say she died of exhaustion. My father died of bronchitis. The doctors pronounced it a complication of dyspepsia and bronchitis, but they all agreed there was no consumption about it. And I might as well tell you, that I had a sister, and she is dead. Her malady the physician called *marasmus*. So you see, there is no consumption in the blood. I don't know as there was any use in my troubling you with my little ailments. I should soon be all right again, of course, but I have a friend who is sort of fidgety about me, and I promised her that I would drop in sometime, when I happened to be passing your office.'

"Poor fellow! my heart ached for him. I suppose that during my 35 years of medical experience, I have met a thousand victims of consumption, who, like this young man, tried to shut their eyes so that they should not see. I resolved to be honest with him, and as tenderly as possible I said:

"'I am sorry you are trying to deceive yourself. You must learn the truth soon; why not see it now while there is time to do something? You are probably mistaken about the malady of your parents and sister, but nothing can be more certain than that *you* have genuine consumption. You seem to be a person of spirit and courage. If I am right it is, perhaps, not too late to turn aside the shaft. At any rate, the only chance of escape lies in clearly comprehending the danger, and with your eyes wide open, boldly meeting it.'

"I may here inform the reader that he gave me the name of the physician who had attended his parents, and I wrote for information. The family doctor assured me that both parents died of tubercular consumption, and the sister, he presumed, died of the same malady.

"I advised my patient to take a vacation, and come to see me daily. On the following morning he brought with him a pretty, modest girl, who told me, with many blushes, that she had a right to be interested in everything that concerned Harry. He had not told her my opinion of his case, but had brought her to hear from me the dreadful news. It has been very rare in my experience to witness anything so touching as her grief when I told her that her friend had the consumption."

"'Is there no hope?' she cried. When I said, 'There is still hope, if certain things can be done,' she replied, with startling energy: 'It can be done! It shall be done! No matter what it is! Nothing shall stand in the way!'

"It does not matter what our discussions were; it does not matter that many difficulties sprung up; it only remains to inform the reader that within a few days two saddle horses were purchased, the young woman's hair cut short, two suits of corduroys obtained, and what seemed two young men, with saddle-bags stuffed with good flannels, left Buffalo for Virginia and the South. I need not tell you how a pulse of 95 came down to 75 in 10 weeks, nor how while riding through Northern Georgia and Alabama these two travelers often made from 20 to 30 miles a day; nor how when they came up the Mississippi Valley the next spring, they were obliged to add two ponies to their riding stock, as their daily distances had become too great for their animals; nor how when they arrived in Buffalo, after an absence of 8 months and 21 days, having ridden on horseback about 4,300 miles, they were the brown-

est and roughest and toughest young chaps you ever saw; nor how one of the young men, with the assistance of old friends, was transformed into a bride with a stunning veil; nor how the two devoted travelers insisted upon sitting for the ceremony on the same horses that bore them away to health and happiness nine months before; nor how the horses were bedecked with flowers, and petted as if they were parties to the new relation.

"I could tell you about these things, and many more which would enhance the interest of the story, but this is not my purpose.

"What I will state is, that Henry S— and his faithful wife kept up, under my exhortations, a daily ride of 10 to 15 miles, and at length came to believe, as firmly as I did and as I do, that the case of consumption must be desperate that can resist a year of life in the saddle."

HOW TO COOK BEANS.—The value of beans as food is not sufficiently appreciated. They have even a remedial efficacy in some forms of disease, particularly those of a pyæmic character, like scrofula. They contain an oil which induces a mild activity of the alimentary canal, and thus help to dispose of the effete matter or poison in the blood. Most people think they know how to cook beans, but there is scarcely one in a hundred who can produce an excellent dish of them for the table; and as ordinarily brought on they are utterly unfit for the human stomach. Rarely cooked enough, saturated with salt, pork, and grease, they become an element hostile to normal gastric action, and where frequently eaten they will destroy the solvent power of even the strongest stomach. There is a close-grained tenacious hull upon both beans and pease. This hull is composed of cellulose or woody fiber, to dissolve which a long-continued and rather high temperature is necessary; and unless it be dissolved this shell can not be digested. The cooking process must dissolve it, else the mass must be strained or sifted so as to remove the skin. If beans are cooked in a double boiler—a boiler having a water-jacket—as they should be, they can be kept on the fire all day without burning. We do not approve of baking as a mode of cooking beans and pease, for the reason that it is not sufficiently thorough; they need water, and a good deal of it. A soup is the best form of bean food. It should be made quite thin and strained, and should form, when cold, a solid jelly. Such bean food eaten with a little cream and sweet bread is delicious. D.

## PAT'S CRITICISM.

THERE'S a story that's old,
But good if twice told,
Of a doctor of limited skill,
Who cured beast and man,
On "a new-fangled" plan,
With the help of a strangely-made pill.

On his portal of pine
Hung an elegant sign
Depicting a beautiful rill,
And a lake where a sprite,
With apparent delight,
Was sporting in sweet dishabille.

Pat McCarty one day,
As he sauntered that way,
Stood and gazed at that portal of pine,
When the doctor with pride
Stepped up to his side,
Saying, "Pat, how is that for a sign?"

"There's wan thing," says Pat,
"Ye've lift out o' that,
Which, be jabers, is quite a mistake:
It's trim and it's nate,
But to make it complate,
Ye shud have a foine burd on the lake."

"Ah! indeed! pray, then, tell,
To make it look well,
What bird do you think it may lack?"
Says Pat, "Of the same,
I've forgotten the name,
But the song that he sings is 'quack! quack!'"

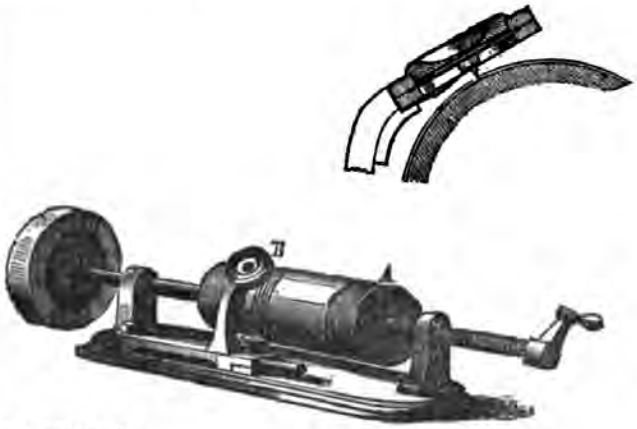
TREATING.—Well-bred Parisians never treat. In public resorts, cafes, buffets, etc., the French system of every man paying for his own drinks is strictly observed, save in the case of beggars, who are treated sometimes to a cup of coffee, but never to whisky. In England, men, even the commonest kind, do not treat each other in a public way. They drink together—excessively—but if one man offers to treat another, he will be promptly replied to: "I have money, sir!" Treating is poor business at best.

# NOTES ON SCIENCE AND AGRICULTURE.

**Grecian Archæology.**—We are informed that the excavations of Professor Curtius, the author of one of the very best histories of Greece, on the site of ancient Olympia, have been rewarded by the discovery of a great number of interesting works of art. Olympia, the theater of the famous Olympic games, had, since the time of Pausanias, who described the place in the second century after Christ, become buried under accumulations of mud brought down by the river Alpheus, until there were but few traces of the ancient town left to sight. Some partial excavations were made in 1830, but it was not till 1875 that any thorough work was undertaken—the German Government having appropriated the sum of $75,000. The chief work accomplished is the thorough exhumation of the temples of Jupiter and Hera. The town was once said to have three thousand statues. The total result of the two seasons' excavation amounts to nineteen marble statues belonging to the eastern pediment of the temple, and fourteen belonging to the western—the work of Paionios and Alkamenes, the eldest pupil of Phidias; the temple of Hera and one of the masterpieces of Praxitiles; four sculptured metopes from the great temple; fifteen colossal statues of the Roman period; one hundred inscriptions, a great many bronzes, and numberless architectural remains in marble and terra-cotta.

**Photographing with Lightning.**—Mr. A. J. Jarmin communicates to the *Photographic News* an account of experiments made to take negatives during a thunder-storm. He sensitized a plate in the usual way and placed it at the back of a negative. Four flashes of lightning were counted, and upon developing, the image came out as clear and quick as if taken by ordinary daylight. One flash with a weak negative gave a fair transparency. He next tried with the camera, after getting everything nicely in focus, through the studio window, which was done by the aid of lightning, he obtained a photograph with twenty flashes, the view being down a street. The experiment proves that the chemical process of lightning is equal to the electric light produced artificially and nearly equal to daylight. Photographs of the electric spark itself have been taken by aid of a Ruhmkorf coil.

**The Phonograph.** In the sketch which we gave a few months ago, of Mr. T. A. Edison, the electrician and inventor, we gave a brief description of the telephone, and intimated that Mr. Edison had nearly perfected an apparatus for the reproduction of human speech. Since that time the instrument has been brought before the public and its capabilities demonstrated to the astonishment of every one who has had an opportunity of observing its workings. In the telephone, electricity, or the galvanic battery, is necessary to its operation. In the speaking machine, or the "phonograph" as it has been designated, the battery is not essential, it being a simple mechanical affair, allied, however, to the telephone, because, like it, a metallic diaphragm, capable of receiving and transmitting sound-vibrations, is the important feature. The illustration conveys a good idea of the character of the apparatus, which consists of a brass cylinder several inches in length by three or four in diameter, mounted on a long horizontal shaft or axis, to one end of which a crank is attached. This shaft works in screw bearings, so that when the cylinder is revolved it receives a forward or backward movement; the threads of the screw are about



THE PHONOGRAPH.

one-tenth of an inch apart, giving a slow to-and-fro movement. The part marked B in the illustration is the diaphragm of which a side view is given in the separated figure This is composed of a very thin disk of steel stretched across the opening of two brass rings which are screwed together so as to hold it firmly in place. In the center of this metallic disk is a steel or diamond point; this point, of course, responds to the movements of the disk, and if there be a sheet of soft or plaster material arranged to receive the impact of the point, marks or punctures will result in correspondence with the vibration of the diaphragm. It is customary to use thin sheets of tin-foil for receiving the impressions of the diaphragm. These are smoothly wrapped around the cylinder, then the diaphragm is fastened in place by clamping, after the manner indicated in the illustration. There are grooves cut in the brass cylinder at intervals

corresponding with the screw cut in the shaft, and the point of the diaphragm is set so that it will press a little against the tin-foil over the cylinder-groove. By speaking into the mouth-piece or outer opening of the diaphragm, the diaphragm is made to vibrate; and if while one is thus speaking the crank is turned, the plastic foil becomes marked along the line of the groove, the impressions made by the steel point varying in depth in accordance with the strength, inflection, and modulation of the speaker's voice. Now, to reproduce the vibrations of the diaphragm, and at the same time the sounds or language which have made the marks upon the tin-foil, it is necessary only to rotate the cylinder in such a manner that the steel point shall traverse the marks which have been made in the foil. The more nearly responsive the diaphragm is to the impulses communicated to it by the voice, the closer will be the resemblance of the sounds produced by the phonograph to the quality and the tone of the human voice. If the machine in its present state be not perfect, it is, at any rate, a wonderful consummation.

**Weather Notes.**—According to the report of the chief signal officer, the weather for March last was distinguished for a high range of the thermometer, a predominance of cloudy, rainy weather, and the occurrence in some parts of the country of severe gales, particularly in Colorado, Nebraska, Kansas, and also for extended areas of low pressure. There were very severe snow storms in the north-west. The weather on the Atlantic coast was unusually mild and favorable for agricultural operations.

**The Size of the Globe.**—This has been determined to within a few miles, in what appears to us now a very simple manner. In the first place, every section of the earth is bounded approximately by a circle, and mathematicians divide all circles into 360 degrees. Hence if we can measure accurately the 1,360 part of this great circle, and if, when we have got that measure out into miles, we multiply it by 360, we get the circumference of the earth, that is to say, the whole distance around it. Then by dividing this result by something a little over 3 (3 1416, the ratio of the circumference of the circle to its diameter) we find out how far it is from one side of the earth to the other. This gives us the diameter of the earth. As a result of a long series of observations, it has been found that a degree measures as near as possible on the average 69½ miles. It can be stated in inches, but it is near enough for us to give as a first statement of result that it is about 69½ miles; and if you take the trouble to multiply 69½ miles, the average length of one degree, by 360 degrees, the number of degrees that there are round the earth, you will find that the circumference is something like 25,000 miles, and therefore that the diameter of the earth is something like 8,000 miles. Mark well the words, "on the average." In truth, the earth is flattened at the poles, so that the length of the degree varies from the pole to the equator; and hence the diameter in the equatorial plane is in excess of the diameter from pole to pole. These two diameters, expressed in feet, are as follows: Equatorial, 41,848,389; polar, 41,-708,710.

**A correspondent** of *The Druggists' Circular* furnishes a formula for a "Good Cheap Paste that will not ferment in warm weather, and which contains no poisonous substance."

| | |
|---|---|
| Dextrine, | 2 ounces. |
| Acetic acid, | 4 drachms. |
| Alcohol, | 4 drachms. |
| Water, | 2½ ounces. |

Mix the dextrine, acetic acid, and water, stirring until they are thoroughly mixed; then add the alcohol.

**Flower Barometers.**—For some time past artificial flowers, called barometers, have been exhibited in a number of our city shops. They are colored with a material composed of chloride of cobalt, which gives them their susceptibility to weather changes. When exposed to sun and dry air, the leaves become deep blue; when the air is saturated with moisture they become pinkish.

**The Robin's Food.**—In 1858 Professor Jenks devoted a season to determining the character of the robin. He found that in Massachusetts, in March, April, and May, its whole food was insectivorous; from the last of June till October its stomach contained both insects and berries, but after July its diet was mostly grasshoppers. Professor Treadwell, of Cambridge, has demonstrated that each young robin eats more than its own weight each day.

**A New Use of Sour Milk.**—A new industry has been started in Mansfield, Mass. It is no less than the manufacture of jewelry out of sour milk. This seems a strange anomaly, but it is a fact. The milk comes in the shape of curd from butter and cheese-making counties in New York, and looks, upon its arrival, a good deal like popped corn; but, before it leaves the shop, it undergoes a wonderful change and receives the name of African coral. The secret in making it up is carefully guarded, but it is certain that it is to be heated very hot, during which coloring matter is introduced, followed by a very heavy pressure. Some of it is colored black and called jet, while some appears as celluloid. It makes very handsome jewelry, and is made into all kinds and styles known in the trade.

**The Pomegranate South.**—"DEAR JOURNAL: I notice in the March number of your valuable magazine, an article on 'Citron Fruits,' in which the writer speaks of the pomegranate, thus: 'It is said to have been introduced into the Southern United States, though we are not informed exactly where.' Perhaps it will interest fruit raisers to know that the pomegranate grows luxuriantly in the latitude of Charleston, S. C., where I re-

member that in my early years the pomegranate was a common fruit in our gardens. The tree was valued both for its beauty and usefulness. It grew to the height and size of a medium-sized apple-tree, and was found in almost every garden. It is a delicious fruit, and as healthful as delicious. I presume it would grow and thrive anywhere below the 33d degree of North latitude. If this little item will interest your readers, it is at your service. Yours truly,

"MARY D. SHINDLER, Memphis, Tenn."

**Great Discoveries.** — Undoubtedly the most brilliant recent discovery is that of the liquefaction of hydrogen, nitrogen, and oxygen gas, by M. Cailettet, of Paris, and M. Pictet, of Geneva. Nitrogen becomes liquid under a pressure of 200 atmosphere, and hydrogen 280. The cold required for these experiments is estimated at 300° below 0° Centigrade, or more than 500° Fahrenheit.

**An interesting paper appeared** not long since in the English *Agricultural Gazette*, on the color of animals, and its relation to their health or hardiness. The nature of the food or surrounding earth appears to exert an influence on the color both of animals and plants. Alum directly influences the color of the flowers of the hydrangea, and hempseed causes bullfinches and certain other birds to grow black. The natives of the Amazonian region feed the common green parrot with the fat of large siluroid fishes, and the birds thus treated become beautifully variegated with red and yellow feathers. Young oyster shells taken from the shores of England and placed in the Mediterranean at once alter their manner of growth, and form prominent diverging rays like those on the shells of the Mediterranean oyster.

**Agriculture in Japan.**—Japan cultivates 9,000,000 acres, one-tenth of her entire area, though about one-fourth of her fertile area. She supports a population of three and a half persons to every cultivated acre. Most of her people live on fish and vegetables; her great lack is live stock. Milk is not used as an article of food, and what few cows there are, are employed for ploughing.—*Baltimore American.*

**Location of an Orchard.**—Plant on the highest land accessible, and otherwise suitable, because you will have less extremes of heat and cold; more perfect maturity of wood growth; exemption from unseasonable frosts, which injure fruit and foliage; and also exemption largely from the different forms of blight, which results from defective circulation in the tree. Plant on the summit or cool side of the hill, because there you have less changes of temperature in winter and spring, at which time wood growth is most susceptible of injury from the cold. A northerly aspect is preferable to any other; and wind-breaks, if any, should be on the southwest side of the orchard or trees.

J. C. PLUMB.

**Intermarriage of Relations.**—Mr. George Darwin, after searching investigation, concludes that "the widely different habits of life of men and women in civilized nations, especially among the upper classes, tend to counterbalance any evil from marriage between healthy closely-related persons." Mr. Darwin's views are in a measure sustained by Dr. Vorni's inquiry into the commune of Batz. Batz is a rocky, secluded, ocean-washed peninsula of the Loire Inferieure, France, containing over 3,000 people of simple habits, who don't drink, and commit no crime. For generations they have intermarried, but no cases have occurred of deaf-mutism, albinoism, blindness, or malformation, and the number of children born is above the average. Their simple habits are their salvation, friend Darwin.

**A Medical Truth.**—The President of a State Medical Society holding its annual session in Harrisburg, Pa., recently, said in the course of his address:

"Neither the self-styled regular school of medicine, with all its accumulated store of three thousand years of knowledge, experience, and experimentation, nor homeopathy, with about sixty-three years of medical reformation, have, as far as I know, as yet struck at the proper object or aim in saving, in the aggregate, human life. What disease has ever yet been blotted out of existence? What malady that existed three thousand years ago is there that is not now to be found prevailing as fatally as then? while the number has largely increased, and some of them have become infinitely more prevalent and fatal. These may be unprofessional ideas; but a man can afford to be heretical upon a subject in which so comparatively little real visible progress has been made. Physicians are battling disease with the small end of the club while they hold the large, unwieldy butt."—*Banner of Light.*

**The Paris Workman.**—Malet, in his report on the artisan classes in Paris, says: "It is stated that a Paris workman has no grandchildren." This saying he explains in part by the reflux of the working population to the provinces whence they came; but he adds: "There is, however, no doubt that the life led—hard work, dissipation, and drunkenness—goes a long way to account for the fact. Not only is the man destroyed, but his children are weakly and unable to battle with the stern necessities of life. They die out early for want of stamina, and leave in their turn offspring who never come to maturity."

**Damp Closets.**—In damp closets and cupboards generating mildew, a trayful of quicklime will be found to absorb the moisture and render the air pure; of course it is necessary to renew the lime from time to time, as it becomes fully slacked. This remedy will be found useful in safes and strong rooms, the damp air of which acts frequently most injuriously on the valuable deeds and documents which they contain.—*Maine Farmer.*


Mrs. C. Fowler Wells, *Proprietor.*
H. S. Drayton, A.M., *Editor.* N. Sizer, *Associate.*

NEW YORK,
JUNE, 1878.

## THE DECLINE OF COURTESY.

ARE we, as a people, decaying in politeness and good manners? What mean the indifference, off-handedness, and inconsideration which people generally, whether friends or strangers, exhibit toward each other? Do not politeness and courtesy "pay" now as they formerly did? Two men meet upon the street. By their dress and appearance they belong to the "upper" class. They may shake hands, but in that case they evince their cordiality by so much tightness of grip as to give a bystander the impression that they are testing each other's muscular capacity or manual endurance.

"How are you, old fellow?" roars one.

"Right side up; how are things with yourself?" responds the other.

Then they take up positions just where they met in the middle of the sidewalk, and may continue to parley about personal matters for a quarter of an hour, quite oblivious to the fact that they obstruct the thoroughfare, and are an element of annoyance to the streams of pedestrians moving up and down the street.

We enter an omnibus or car, and find well-dressed persons occupying more seat-room than is reasonable, while other persons equally well-dressed are hanging to the straps. We notice some among the sitters and standers in postures evidently annoying to their immediate neighbors, yet exhibiting a stolid unconsciousness of their bearish conduct.

We enter the general waiting-room of a ferry or railroad dépot and find "gentlemen" lounging about, puffing cigars or expectorating tobacco slime miscellaneously, notwithstanding the presence of ladies, and perhaps of other "gentlemen" to whom tobacco is disagreeable. We may find ladies there who gaze upon you as upon a newly-arrived curiosity from Borneo or China, apparently without the faintest idea that they are committing an act of impertinence.

In places of entertainment patronized by upper-tendom, one's ears will be dinned by the loud and frivolous chatter of his neighbors, so that his enjoyment of the performance is marred.

In the services of the church such levity and indifference are exhibited by people who claim to be religious, that a Mohammedan would be confirmed in his idea of the impiety of "Christian dogs." It may be that the agitation with regard to woman suffrage and independence has had much to do with the matter of our lapse from the old chivalric courtesy in our relations with woman. Nevertheless, every one who appreciates the æsthetic side of life must deplore it. An English essayist claims that the manners of women "are indisputably decaying;" that "they no longer silently exact that deference from men which is every woman's natural right, and which no sagacious woman ever forfeits." He goes on further to assert that women have even "corrupted men's manners, and then they complain of the corruption."

In America the spirit of equality diffused by our democratic institutions has much

to do with discouraging the practices of courtesy and sentiment, not because social equality is in its very nature suppressive of polite formalism, but because, as a people, we have not learned the true significance and bearing of social equality, and in the fear of subordinating ourselves to others, we assume manners which are unreasonable and coarse.

Yet we haven't altogether lost the taste for polite bearing, for when we meet a "gentleman of the old school," we inwardly experience a pleasure on beholding his easy, high-bred carriage and delicate consideration for the feelings and wishes of others, and we inwardly or outwardly express our belief that it would be well for us all did we copy his "style."

We are lacking in courtesy, in what is well termed "the poetry of conduct," because our natures are insufficiently developed and cultivated on their æsthetic and moral sides. We study the material, practical, useful, in what we do in a direct business fashion, but give little or no attention to the kind, gentle, graceful, dutiful, and beautiful in manner and language. In a word, we are too selfish. To be courteous and polite we must be generous, and live from day to day with the thought quickening our heart's impulses, "we are happiest when serving."

## WILLIAM M. TWEED.

"BOSS" TWEED is dead. The man who ruled the celebrated Tammany Ring of New York city for so many years, enriching himself and his political comrades at the expense of the tax-payers, and boldly conducting colossal schemes of fraud and peculation as if for him there were complete immunity from retributive consequences, died in prison, the miserable victim of disease and disappointment. The amazing proportions of his schemes of plunder made the name of this man notorious the world over but a few years ago when his crimes as a municipal officer was exposed, so that only a very brief survey of his career is needed in this place.

William Marcy Tweed was born early in the year 1823 in New York, the youngest of three children. His father was a chair-maker, and when old enough to help, he was set to work in the shop. It seems that as a boy he did not take kindly to the trade of chair-making, and was given a place in a hardware store. A little later he was sent to a school in New Jersey, where he remained one year, and on his return to New York, became a clerk in a tobacco store. Leaving this business at the end of two years, he joined his father, who had become associated in partnership with another man and was manufacturing brushes. By the time young Tweed had reached his twenty-eighth year, he had saved some money, and then went into partnership with his brother Richard as manufacturers of chairs.

William M. Tweed was desirous to be rich, and dissatisfied with the slow profits of industry, tried stock-speculation, with the result of bankruptcy and large indebtedness, involving his father and brother as well as himself. This failure appears to have decided the future current of his life. He had been something of a ward politician before, and had been somewhat popular with the firemen and "boys," who, twenty years ago, constituted the larger part of the political element in ward affairs, and he deemed his chances good to make politics a business. He was at home in the dram-shops and a profligate in other respects, and knew the mettle of the men whose votes are generally all one way. He worked successfully among his ward associates and was elected

to offices in the city government—even obtained a majority as candidate for Congress in 1852, but found himself out of his element in Washington, and returned to New York to take the place of a member of the Board of Supervisors in 1856, when the preliminary steps were taken for the formation of a system of plundering the city treasury or inventing methods of robbing tax-payers.

As years went on, Tweed gained in power; and when in 1869 the celebrated Tammany Ring was organized, he blossomed into the great manager of councils, courts, and Legislatures, and aimed with his many like-minded associates to accumulate wealth under the mantle of municipal or legal enactments. The audacity and recklessness of the Ring, however, aroused in a few years the slumbering indignation of the better class of citizens, and by a powerful effort, its toils were broken and its members summoned to account for their criminal acts. The celebrated Ring trials will ever remain a signal feature in the history of New York city.

Tweed was tried three times before being convicted, and then served out but one term in the penitentiary. On his release, however, he was arrested and confined in Ludlow Street jail, from which he escaped and found his way to Spain, where he was arrested after nearly a year of restless wandering and brought back to New York and replaced in the Ludlow Street prison. There he remained until his death. Strenuous efforts were made to procure his release, but were unavailing—the power of the "Boss" had departed. He probably deemed his authority and influence unlimited eight or nine years ago, and seems to have died without perceiving the enormity of his crimes, or appreciating the inevitable tendency of dishonesty to destroy the guilty. Just before he died he said, "I have had bad luck. I have tried to do some good"—language indicating either a deranged mind or an absence of moral discrimination. His public career indeed shows him to have been conspicuously lacking in the sense of moral accountability, and points warningly to the habits and associations of his youth as to influences which gave color and direction to his warped mental development.

## FROM HEAD TO FOOT.

DR. Delauney, whose observations on the relation of the size of heads to their intellectual ability have made him conspicuous among the savants of Paris, has been giving attention, lately, to the feet of man, considered in his racial and individual states. He concludes, that the part of the body upon which we stand has a good deal to do with that mental property which we are wont to term "understanding," and endeavors to indicate some of the marks by which one may be enabled to judge others. "In the same people," he says, "the foot is shorter and more arched among the high classes than among the low. . . . . It is smaller and more arched among city folk than among country folk. . . . . The old ruling classes which are in the way of degeneracy, show feet which lengthen and flatten at the same time that their volume of head diminishes; and 'cracked heads' (brains) have feet almost flat, and if their feet appear to be arched it is because they wear shoes with high heels which hide at once the flatness and length of their feet."

Here the doctor aims a hard blow at a fashion which has prevailed for some time, and found votaries, especially in the lower classes of society in Europe and America; the same people taking to the high heel who

were the first to adopt the abominable mode of wearing bonnet or hat low down over the forehead. It would be inferred, naturally, that "high-steppers" are not given to high heels, just as your "high-headed" people scorn to wear head-gear which flops down over their eyebrows. Certain it is that well-informed, judicious people are not inclined to deform and injure their feet and legs by wearing tight shoes with heels two inches high, or to hamper their view of the world around them by an overhanging hat-brim. On the whole, we think that the French observer has shown a good deal of reason in the manner of making human *extremes* meet.

# Our Mentorial Bureau.

"He that questioneth much shall learn much."—*Bacon.*

## 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.*

WE CANNOT 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—stamps being preferred. Anonymous letters will not be considered.*

EXPRESSION OF MOUTH.—M. E. L.—The shape of the mouth which you specify as belonging to Lord Derby is largely due to the effect of the engraving. The lower lip in the original card, from which the portrait was engraved, projects somewhat. This indicates that the owner possesses a good degree of self-reliance, colored with a measure of pretension, or the aristocratic sense. In Fig. 10 of the same article in which the portrait of Lord Derby appears, you will notice a similar extension of the lower lip. In the lady's case it is even more strongly manifest, but her self-reliance has a close relation to the sense of worth, independence, individuality, personal ability.

HEART, MIND, AFFECTION.—G. B.—*Question:* Has the heart anything to do with our thoughts or our affections? As we often hear of "broken hearts," "speaking from heart to heart," etc.

*Answer:* In ancient times, when the philosophy of the mind was not well understood, people were accustomed to think that in the organic centers of the body were to be found the sources of emotion. Hence, many of those quotations about the heart, bowels, and so on. Now it is understood that the brain is intimately related to the body to such an extent, that the excitement which may pervade it, impresses special actions upon the centers of physical vitality. When we are wrought up by any stress of feeling the heart beats tumultuously. In deep grief the stomach refuses to digest our food. It is the mind which produces such effects; and its instrument, the brain, being excited or inflamed, impresses a similar character or tone upon the circulation of the blood, and so affects the physical centers. Men become dyspeptic who get into the habit of eating at times when their minds are intensely occupied by business cares or other considerations, for the reason that there is not enough of blood circulating in the vicinage of the stomach to maintain its normal action, the brain monopolizing the current of life, on account of the predominant exercise of certain organs.

UNIVERSAL LOVE.—J. L.—Your Conjugality is probably weak in its influence, while Amativeness and Friendship are strong. Bring into exercise your intelligence and sense of duty, and so control the general tendency of your affections.

MOLE ON THE FACE.—C.—Have you shown the offending blemish to a good surgeon? It is possible that it may be of such a nature as to be removable without occasioning much inconvenience. Ordinary moles, however, are not removable when one has reached adult life. We think that parents are very remiss in regard to such matters. Many are afraid of occasioning

pain, and so they permit their children to carry into adult life what becomes for them a permanent occasion for mortification.

GENIUS.—W. M. F. C.—We have not met with any pamphlets discussing the negative side of the question you propose—"Is genius hereditary?" But we have heard it often said that the essence of genius is industry, the meaning of such a statement being that the best results to man as an individual and to society, are derived from earnest, plodding work. We believe that what is generally understood by *genius* is largely due to organization, and therefore *is* hereditary.

TRAVEL AND NERVOUSNESS.—S. J. H. —Out-of-door life intelligently conducted is one of the best methods for relieving nervous excitability. Travel is excellent for such a purpose, particularly travel in regions where the interest is abounding. One is thus drawn out of himself, and so forgets most of his weaknesses, and nature, unless overwrought, has an opportunity to rehabilitate herself.

IMPROVEMENT IN LANGUAGE.—If you will read the orations, speeches, etc., of prominent men, committing passages to memory, and reciting them with care, besides reading carefully the works of leading authors, particularly essays, you will in time greatly improve your faculty of Language. You should have opportunities for discussion and debate. Join some literary association and take an active part in its exercises. *Practice* is essential for facility of expression.

ARCTIC FOOD.—G. A.—It would be necessary for the inhabitants of the Arctic regions to eat such food as they could get. In Greenland, and farther north, the opportunities for obtaining a supply of vegetable diet are few, hence the people who make their home amid such scenes of sterility are compelled to subsist mainly upon flesh. Exposure to extremes of cold demand that the diet shall be largely constituted of the carbonaceous element, to supply needed warmth to the blood. Some kinds of vegetable food are rich in carbon, particularly those which contain a great deal of saccharine matter. Pease, beans, rice, corn, and potatoes are largely composed of carbon, and are very good food for people in winter. Many people make the mistake of adding oils, gravies, fat, to the dressing of pan-cakes in winter, besides sugar or syrup, which is quite a sufficient addition of carbon; consequently, we find that on the approach of warm weather there are many cases of catarrh, fever, or other sicknesses due to bilious derangement.

WEAK MEMORY.—Read only that which is good and profitable to the mind. Perhaps you have been disposed to peruse trashy story-papers and novels, and they have greatly weakened the intellectual constitution. When you read, devote yourself to the occupation for the time. A late number of the PHRENOLOGICAL JOURNAL contained some excellent suggestions for the improvement of the memory. You must have seen it.

BALDNESS.—N. C.—The tendency to baldness is constitutional, although that unpleasant cranial condition may be hastened by improper habits, such as wearing close-fitting hats, keeping late hours, carelessness in diet, drinking alcoholic liquors, strong tea and strong coffee, smoking, etc. We think that a good brush, not too soft, and clean tepid water, will strengthen the hair as much as any application.

WANTS TO INCREASE HIS SIZE.—LEX. —The matter of stature is of course constitutional in the main. If you are the offshoot of tall parents, you should be like them physically, unless there were some physiological difficulty which contributed an abnormal tendency to your growth. It is said by some physiologists that the use of tobacco will retard one's growth. A friend of ours who is of medium stature, while his brothers and sisters are all tall, insists that his shortness is the result of the early practice of smoking and chewing. Exercise a good deal out-of-doors; endeavor to stretch up, being careful, however, not to strain yourself.

ORGANS OF LANGUAGE.—J. L. S.—The researches which have been making for several years past in relation to the phenomena of aphasia, have resulted in the establishment of a center for Language in the left cerebral hemisphere, neighboring the part known as the Island of Reil. Now it is generally understood that the left hemisphere of the brain controls the action of the right side of the body, and as people are disposed to exercise the right side of the body more than the left, the natural outcome of such condition is that the left hemisphere of the brain should obtain predominance in the brain economy, and its centers be more assertatory of function. Some physiologists, however, acknowledge that it is not satisfactorily demonstrated that the center for language exists only in the left hemisphere; that there are cases in which sympathetic indications point to the part having a similar function of the right hemisphere. The eyes, one or both, are measurably affected in aphasia, and where both are affected it is reasonable to infer that the organic centers of both hemispheres are diseased or deranged.

A NAME FOR THE BABY.—A correspondent wishes to obtain a tasteful name for her girl-baby. She feels very properly dissatisfied

with the prevailing names borne by children, large and small, and asks for some suggestions from our lady readers. How would one of the following, which are rarely met with, answer? Alma, Elline, Beatrice, Hermine, Lucia, Edith, Rinna.

TENACITY OF LIFE.—W. H. L., M.D. —Tenacity of life, we think, is indicated by the depth of the middle lobes of the brain below the line of the base of the anterior and posterior lobes of the brain, while mere physical force or vigor is shown by the width of brain above the opening of the ears.

*Several* ANSWERS *must be deferred to the next number.*

## What They Say.

WHY ARE THESE THINGS SO?—I have never been a good student of Phrenology, in the fullest sense of the word, but have read the PHRENOLOGICAL JOURNAL for a number of years and know something of the principles upon which the science is based. Having been an invalid for a long time I was not out among the people, and did not know their views concerning Phrenology, but supposed they coincided with mine. The time came, however, when I could mingle with the world, and then came the surprise. Nearly every one seemed to think that Phrenology is "the theory that the mental faculties are shown by means of bumps or protuberances on the surface of the skull." Did I talk with a doctor, he would ridicule the science, and make statements that would indicate either his entire ignorance of the subject, or that he was willfully trying to misrepresent. Editors and preachers were the same, and would talk of the materialism and fatalism of Phrenology. Coming across any who claimed to believe in the science, it was found they believed only that part which relates to character-reading. When I went to school to prepare for teaching, the professors would talk of Phrenology and assert that "it is not so accurate as physiognomy;" but the principal of the school, who is also the professor of Mental Philosophy, would not believe it at all, although he admitted he generally formed an opinion of a man when he met him, *by the contour of his head.*

When I asserted that Phrenology included not only every method of reading character, whether we looked at the head, or to the face, form, temperament, and movements of the body, to find the signs of character; and also included mental and moral philosophy, and the manner of developing each particular faculty of the mind; they asserted I was trying to set up a system of Phrenology of my own, and told me so. Not wishing to have the students misjudge the science, the opponents were challenged to discuss the subject; and such an absurd discussion! I fought for the Phrenology of the PHRENOLOGICAL JOURNAL. They fought against the pseudo phrenologist who goes about the country "feeling bumps" for a quarter. In vain did I assert that "bumps" had neither part nor lot in Phrenology. They proved conclusively by Webster's Dictionary that I was mistaken. In vain did I appeal to Phrenologists to prove my point. They brought up Noah Porter and other equally learned men who assert that it does have something to do with "bumps," and wanted to know if I thought Phrenologists were superior to them in learning.

Two questions are ever in the writer's mind: 1st, Why are the people, especially the educated, so ignorant as to what Phrenology is? 2d, Why will men of Dr. Porter's standing assert that "Phrenologists have not proved that the bumps or protuberances of the cranium correspond to the physical traits which it is said they decidedly indicate." I think the educated classes are more ignorant as to what Phrenology is than are the great mass of people, and am pleased to find so specific a presentation of the true theory of brain development as that which appeared in the chapter of "Brain and Mind," in the April number. It will enlighten many. L. C. C.

OUR GIRLS.—How shall we educate them? What life-work shall be provided for them in case they are turned out in the world, as they may be, to battle for themselves? Riches are fleeting, and death often removes the natural protectors. Shall our girls then be utterly defenseless, or shall we provide them with the means by which to acquire independence? Emulation may hurt girls, but inactivity kills them. And we speak not of the physical alone. A father who provides not for the future occupation of his sons, whether in trade or profession, is severely censured when the youth, whose activity must take some direction, drifts into dissipation and wickedness. But the daughters? Have you ever thought that they also have ambitious minds, which, if they have not some object for which to labor, will turn and prey upon themselves? The boy is early taught that the time will come when he must be manly, self-reliant, and self-sustaining. All his education points to this time, and is a preparation. If he fail in one profession, many other avenues are open to him, and in some of these he must find, if not success, at least room for development and an object for which to strive. If he meet trouble he can plunge a little deeper into his work, and drown e'en cankering sorrow. If he

lose in one direction, the world lies before him, and he is free to turn his steps where'er he will. His sphere is not contracted or narrow, and he can choose whatever occupation will best accord with his temperament and talent, and prove most conducive to his happiness. And this is well; we would not have it otherwise.

Let us look now at the course pursued in the education of our girls. They are reared, for the most part, in the belief that woman's chief and final destiny is to *marry*. This is the only ambition cultivated. Parents, friends, and society at large all tend to inculcate the principle. So the education of our girls goes on; a little smattering of the languages; a little music; a great deal of fancy-works; but not enough of anything to enable them to say: "I hold within myself the power to gain an honorable livelihood by my own exertions." There is ever the miserable sense of dependence even for thought. To be sure, there are a few who have dared to step outside their allotted sphere, but these are the "strong-minded and unfeminine."

The superficial education finished, the daughter waits in the home circle for him who is to fulfill her destiny. Perhaps he never comes, or if so, only to deceive. What then? Ah, if the parents could but lift the veil and see! A miserable life spent in complainings and bitterness of soul. Sometimes indeed the mind and body both a wreck. And all for what? Because, this hope gone, their education did not supply that which would satisfy the cravings of the mind—an aim, a something tangible for which to work. Society is slowly working out the problem of the sexes, and ere long the cause which we espouse will need not our poor pencil. We have listened with pleased incredulity to the discussion of the question of woman's work and education, by the learned doctors of our colleges and universities. It is not they who can settle the question as to woman's mental capacity. We must answer it for ourselves.

Parents must weigh well the obligations resting upon them, and see that the intellectual wants of their daughters are satisfied with proper pabulum. Let them but supply for their daughters, as they do for their sons, work which will satisfy not only physical, but mental cravings. It is not good, wholesome, satisfying work that wastes energy and mental fiber, but rather the lack of it. A child fed on sweetmeats exclusively can not be strong, and it is useless to bring up the present weakness of woman's intellect as her normal condition, when her meutal diet has ever tended to this end.

Give the girls a chance, and they will develop strength and character. A thorough education, and special training with reference to self-support can not detract from womanly dignity. Give them opportunity, then, to work out for themselves a place and name. Then, if they be called to fill the divinely-appointed position of wife and mother, they will fill it nobly.

Strong, intelligent, and self-sustaining, they will transmit to posterity a worthy heritage. But if, on the other hand, such be not their lot, and they be called to walk through life alone, their lives may still be fruitful of good works and crowned with richest blessings. CHRIS.

CONSCIENTIOUS. — MR. S. H. O., of Glendale, N. Y., writes: "For about twenty years I was a subscriber to the PHRENOLOGICAL or *Water Cure Journals*, and part of the time both. I desire to say that I am strictly a temperance man, not having drank any alcoholic liquors since 1850; and I have a son, now twenty years old, who has never drank a drop; and I can give the above mentioned journals the unqualified credit of producing this good result."

## PERSONAL.

A LADY PRACTITIONER OF SURGERY IN DISGUISE.—A Dr. James Barry served as surgeon in the British Army for more than fifty years, during which time he held many important medical offices, and gained an enviable reputation as a cool and skillful operator. He was of a very irritable temper, and, while stationed at the Cape of Good Hope, fought a duel. Notwithstanding frequent breeches of discipline, he attained high rank in the army, served in many parts of the world, and in 1865 his name stood at the head of the list of inspectors-general of hospitals. In July, 1865, the eccentric surgeon died, and the next day it was officially reported that the doctor was a woman. No suspicion of the surgeon's sex seems ever to have been entertained, even by his most intimate associates. In addition to his other accomplishments, Dr. Barry was an inveterate smoker.

THE LATE DR. JAMES B. COLEMAN, of New Jersey, was the possessor of very unusual versatility. He was a practicing physician in Trenton for forty years; lectured at different times on natural philosophy, chemistry, vegetable physiology, and phrenology, and wrote a clever Hudibrastic pamphlet against the Thomsonians; and was specially skilled in surgery. He was also a capital draughtsman, and some of his cartoons were immensely popular. A series of his articles on natural and artificial mechanism were published by the *Scientific American*, and when physician of the State prison in 1841 he originated the plan of forced ventilation of public buildings by means of a blowing-fan. He is said to have conceived the idea of applying the process of electro-plating to forming raised cuts, to be used as wood-cuts in printing.

MR. WILLIAM ORTON, President of the Western Union Telegraph Company, died on the 22d of April. The immediate cause of his death was apoplexy. He was a very estimable man; had won his way to the responsible position he occupied at the time of his death by sheer industry and capability. A sketch and portrait of Mr. Orton were published in the June number of the PHRENOLOGICAL for 1872.

THE EARL OF ENNISKILLEN is stone blind, and the tallest man in the House of Lords, measuring six feet seven inches. He possesses one of the finest collections of coins in the United Kingdom, and in spite of his sad affliction, takes great interest in numismatics. His daughters are also exceedingly tall, being over six feet; yet very handsome, and fine horsewomen.

DR. HICKS, editor of *The Wayside*, was graduated from the Medical Department of the University of Pennsylvania, at the late commencement. He was also graduated from a New York Institute, more than ten years ago. He desires, it appears, to keep posted in the latest ideas and facts of medical science.

PROFESSOR CHARLES F. HARTT, of Cornell University, who went to Brazil to take charge of the geological survey of that country, died recently a victim of yellow fever. He was a native of St. John, N. B., and was one of Agassiz's favorite pupils. He was the author of a work on Brazilian geology.

MR. HAMLIN is the oldest Senator now serving; he is sixty-eight. Mr. Dorsey is the youngest; he entered the Senate when only thirty years old, and has served five years. Mr. Edmunds, who is forty-nine, is the Senator who looks oldest.

ONE JOHN CONNELLY, of Brooklyn, New York, playfully blew some tobacco smoke into the face of his infant son, fourteen months old, a few days ago. The child gasped for breath, fell back unconscious, and died.

JOHN FARWELL, of Houston, Texas, measures seven feet, six inches, in his bare feet. A wretched punster says: "He must be the identical 'Farwell, a long Farwell,' mentioned by our old friend Shake."

## WISDOM.

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

To deliberate on useful things is a prudent delay.

BE severe to yourself, and indulgent to others; you thus avoid all resentment.

THE worst tyrant in this world is a woman who is superior to her husband, and lets everybody know it.

MOST people will forgive a great man's faults far more readily than they will praise a small man's virtues.

SILENCE never shows itself to so great an advantage as when it is made the reply to calumny and defamation.

POLITENESS is not always the sign of wisdom, but the want of it always leaves room for the suspicion of folly.—LANDOR

WE must not judge a man by a word or a single action. Life is composed of so many inconsistencies, that he would often take the exception for the rule.

MAKE a firm-built fence of trust,
All around to-day;
Fill the space with loving work,
And within it stay.
Look not through the sheltering bars,
Anxious for the morrow;
God will help in all that comes,
Be it joy or sorrow.

CONSCIENCE is your magnetic needle. Reason is your chart. But I would rather have a crew willing to follow the indications of the needle, and giving themselves no great trouble as to the chart, than a crew that had ever so good a chart and no needle at all.—JOSEPH COOK.

## MIRTH.

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

A PERSON was boasting that he had sprung from a *high* family. "Yes," said a bystander. "I have seen some of the same family *so high that their feet could not touch the ground.*"

A YOUNG lady of Clinton, Ill., sent twenty-five cents and a postage stamp in reply to an advertisement of "How to make an impression," and received for an answer: "Sit down on a pan of dough."

JOHNNIE lost his knife. After searching in one pocket and another until he had been through all without success, he exclaimed: "Oh, dear! I wish I had another pocket, it might be in that!"

A VISITOR at an art gallery being asked whether he preferred pictures to statuary, said he preferred the latter, as "you kin go all round the statoos, but you can't see only one side of the pieters."

"HAVE you dined?" said a lounger to his friend. "I have, upon my honor," replied he. "Then," rejoined the first, "if you have dined upon your honor I fear you have made but a scanty meal."

An Aberdeen man was telling his symptoms—which appeared to himself of course dreadful—to a Scotch medical friend, who, at each new item of disorder, exclaimed, "Charming! Delightful! Pray go on!" And when he had finished the doctor said, with the utmost pleasure, "Do you know, my dear sir, you have got a complaint which has been for some time supposed to be extinct. I am so glad!"

Robinson went up to his room the other afternoon, and noticed that there was only one match remaining in the box. "Now, if that shouldn't burn to-night when I come in," soliloquized he, "what a fix I should be in." So he tried to see if it was a good one. It was.

A Kentucky man who went to the Black Hills wrote back to a local paper, saying: "Offer a premium at your coming fair for the biggest fool in the country, and I'll try to get there in time."

Our modern poets may well complain that all the similes have been used up before their time. "White as snow," "white as a lily," "white as ivory," are now general property; but the Welsh poet Davyth ap Gwilym has a completely new image—he calls the maiden of his love "white as lime."

## 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.*

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What Our Girls Ought to Know. By Mary J. Studley, M.D., Teacher of the Natural Sciences in the State Normal School, Framingham, Mass. 12mo, cloth, pp. 261. Price, $1 50. N. Y.: M. L. Holbrook & Co.

Many books have been published recently which have for their purpose the instruction of young people in physiology, and in that phase of morality which is intimately related to man's sexual life. Dr. Studley devotes her effort to our girls, and as she has had the experience both professionally and socially which every teacher who aims to instruct the young in matters of physiology and hygiene should have, and a rather pleasing manner in imparting her knowledge, she has turned out a really interesting volume. Her aim appears to be to cultivate a better physical type of womanhood in the realization of the fact that upon a solid basis of health can only be reared a noble structure of moral health. The thirteen chapters into which the volume is divided present a connected series of lessons upon personal hygiene, with frequent illustrations drawn from the lives and writings of prominent persons. She has no sympathy with the absurdities of fashion, and shows in language which is often forcible, because of indignant feeling doubtless, how utterly inconsistent with robust health is the adoption of the customs and mannerisms tolerated in good society. The book is moderate in tone, as the author takes no advanced views dietetic or otherwise, yet the information it furnishes renders it of high value to the mother who would direct the attention of her daughters to many personal matters with which they ought to be conversant.

The Mill and the Tavern.—By T. S. Arthur, author of "Ten Nights in a Bar-room;" "Three Years in a Man-Trap," etc. 16mo, cloth. Price, $1.25. New York: National Temperance Society and Publication House.

It has become a "second nature" for this veteran author to write temperance stories, and always good temperance stories. In this, his latest contribution to the cause of social purification, he contrasts the results of selfishness and generosity, of acquisitiveness and the sense of duty in the lives of two brothers, one of whom becomes the proprietor of a tavern, the other of a grist-mill. He of the tavern is deemed in the start a lucky man, assured of fortune, while he of the mill is thought to have a hard road before him in the attempt to win a livelihood, saying naught of a fortune. Years pass on, the tavern-keeper becomes demoralized by his business, and goes to his grave a miserable victim of self-indulgence. But the mill-owner grows rich and takes under his protection the destitute family of his self-ruined, self-murdered brother.

Several other stories of similar moral import make up a book as interesting and vivid as talent and experience in writing short sketches can well make them.

Advance Sheets of the new Bryant and Stratton Universal Book-keeping.

The editor or author of this new text-book in the science of accounts—we presume him to be Mr. Packard—has succeeded in imparting a real literary interest to what is generally considered a dry, staid subject; and we do not wonder when he says, that "the seventy pages of matter here submitted have cost the author more study, reflection, and down-right labor, than any five hundred pages of previous work."

Starting with a discussion of the principles governing trade and the accumulation of wealth, he carefully and sharply sets before the reader and student the results of the best thought in

Europe and America. The sources of acquiring wealth by labor, rent, exchange, gift, and circumstance, are analyzed with extraordinary clearness. In chapter four we are shown the necessity for a method of accounts or book-keeping, and what points are involved in a perfect system. Interspersed with the specimen entries for the day-book, journal, ledger, cash-book, etc., are explanations of the why and how of the transactions which the entries record, so that the student is led on, step by step, toward a complete mastery of the science. It has been a matter of complaint in commercial circles that school-taught book-keeping is usually found to be unsatisfactory in every-day business. We do not know how the case stands with the young men who receive Mr. Packard's instruction, but if this text-book be illustrative of his mode of teaching, we can not but think that the faithful student who is graduated by his college, must be well-informed in the principles and practice of true business recording.

## PUBLICATIONS RECEIVED.

ALIMENTATION IN SURGICAL ACCIDENTS AND DISEASES: And its general value as contrasted with the value of medicine, by Frank H. Hamilton, A.M., M.D., LL.D., Surgeon to Bellevue Hospital, etc. In this Dr. Hamilton occasionally deprecates the use of drugs in the treatment of the sick, being persuaded that the ministering of appropriate food will be attended by better effects. He says: "Medicines so called are in general far inferior to a warm and savory cup of food as peptic persuaders, and I have seen many patients suffering with nausea and loss of appetite, who have been speedily relieved by the mere omission of bitter and disgusting tonics which have been forced upon their reluctant stomachs."

MUSICAL.—The following recent publications have been received:

THE MUSICAL WORLD: Current monthly numbers. From S. Brainard's Sons, of Cleveland, Ohio. These contain a large amount of interesting musical literature, and a variety of new music, some of the compositions being choice bits of thought and taste.

LULLABY, as sung by Fritz. Composed and sung by J. K. Emmet; arranged by Charlie Baker. Publisher, F. W. Helmick, Cincinnati, Ohio.

NEW MUSIC. A Little Bow of Blue: song and chorus, words by E. Carswell; music by A. Lang. Dedicated to the reform clubs of America; price 35 cents. Published by the National Temperance Society of New York.

SONGS OF NORMANDY, potpourri, arranged for piano, by Charlie Baker; price, 50 cents. F. W. Helmick, Cincinnati, Ohio.

CHRISTIAN EXPEDIENCY; or, The Law of Liberty. By L. D. Bevan, LL.B. Published by the National Temperance Society and Publication House, New York. This is a discussion of the principles which enter into human action. It was prepared by Mr. Bevan by special invitation for a "Parlor Conference." Price, 15 cents.

THE COUNCIL FIRE: A Monthly Journal. Devoted to the history, character, social life, religious traditions, government, etc., of the American Indian, and discussing the relations of our Government and people to him; under the editorial management of A. B. Meacham, ex-Superintendent of Indian Affairs. The opening of this new publication promises well. It contains many interesting features.

BRIEF. A weekly Epitome of the Press, for the Home Circle, Travelers, and Residents abroad. This publication of thirty-two folio pages comes to us by the favor of a friend resident in England. It is an admirable epitome of the news of the day from all parts of the world, as well as a synopsis of the doings in scientific and literary quarters. Some of our enterprising publishers in this country would do well to examine *Brief*, as we have nothing like it in this country.

IS MODERN EDUCATION EXERTING AN EVIL INFLUENCE UPON THE EYES OF OUR CHILDREN? By A. W. Calhoun, M.D., Professor of Diseases of the Eye and Ear in the Atlanta Medical College. A short, but intelligent discussion of a very important subject. Our physicians and educators are waking up to the realization of the extent to which eye diseases exist among children; and we hope that such measures shall be put on foot, by authority, as shall result beneficially upon the eye-sight of the rising generation.

TWENTY-NINTH ANNUAL REPORT OF THE TRUSTEES OF THE ASTOR LIBRARY, for the year ending December 31, 1877, by which it appears that upward of 11,500 volumes were added to this most valuable collection of books during the time covered by the report.

THE WESTMINSTER PARK ASSOCIATION OF THE THOUSAND ISLANDS: Descriptive of the Scenery and Improvements in that picturesque region of the St. Lawrence.

DISEASES OF THE BRAIN AND NERVOUS SYSTEM. By J. Martin Kershaw, M.D., Professor of Diseases of the Brain and Nervous System in the Homeopathic Medical College of Missouri, etc. Part First: Facial Neuralgia and the Visceralgæ.

TOTAL ABSTINENCE FOR THE SAKE OF OURSELVES AND OTHERS. By Rev. Canon Farrar, D.D., F.R.S. As delivered in the Hall of Kings College, Cambridge.

THE SERPENT AND THE TIGER: Address at a great Temperance gathering at Aberdeen, Scotland, Feb. 13, 1878. By Rev. Canon Farrar, D.D., F.R.S.

CAUSE AND CURE OF HARD TIMES. A paper read before the Philadelphia Social Science Association, Jan. 17, 1878, by Mrs. R. J. Wright.

ABSTINENCE FROM EVIL: A Sermon delivered at Glasgow, Scotland, Feb. 18, 1878. By Rev. Canon Farrar, D.D., F.R.S. These three pamphlets are published by the National Temperance Society and Publication House of New York. Price, 15 cents each.

Canon Farrar has lately become among the most conspicuous of English clergymen, and his opinions in theology and morals are quoted everywhere. The strong position which he takes in these addresses is every way worthy of a man of high conscientious feeling and mental culture. He appreciates those duties which grow out of our relations to others, and which St. Paul so well expressed when he said: "If meat (food) cause my brother to offend, I shall eat no meat (flesh) while the world standeth."

A TREATISE ON IMMORTALITY FOUNDED ON BIBLE TRUTHS. By Joseph Wheeler, of Bath, N. Y. In this the author endeavors to show by numerous quotations that the Bible favors the idea of natural immortality.

INAUGURAL DISSERTATION. Zur erlangung der docturwurde bei hochloblicher philosophischer facultat, zu Marburg, eingereicht von Adolph Rambeau, aus Jessen.

THE SALT-EATING HABIT. Its effect on the animal organism in health and disease; a contribution to the study of the rational food of man, by Richard T. Colburn; published for the author by Austin, Jackson & Co., Dansville, N. Y. The bearing of the argument in this pamphlet is against the use of chloride of sodium as an element or accessory in food.

THE SHELTERING ARMS. A monthly publication in the interests of destitute and unfortunate women. A well-written and neatly printed affair, and worthy the consideration of the philanthropic. It represents chiefly the well-known association of ladies in this city called the "Sheltering Arms," of which Mrs. B. F. Corlies is treasurer.

THE WESTERN REVIEW OF SCIENCE AND INDUSTRY, current numbers. This magazine is gaining as an expression of scientific thought, and is certainly creditable to the New West. It is published at Kansas City, Missouri, and conducted by Mr. T. S. Case.

PANACEA FOR HEALING OF THE NATION: The centennial of the foundation of the Government of the United States of North America. Contains extracts from addresses by Washington, and other reminiscences of the early years of our Republic.

APPLETON'S RAILWAY AND STEAM-NAVIGATION GUIDE: Current numbers are on our table.

TENTH ANNUAL REPORT OF THE FREEDMEN'S AID SOCIETY, of the Methodist Episcopal Church, which certainly is an excellent showing of the work our Methodist friends are doing for the negro in the South. May their efforts be abundantly compensated by good practical results.

LIPPINCOTT'S MAGAZINE, current numbers. Published by J. B. Lippincott & Co., of Philadelphia, Pa. We notice a considerable improvement in the literary and illustrative features of this magazine. It is rapidly making its way toward the first place in the front rank of American periodical literature.

THE AMERICAN ANTIQUARIAN (Antiquary?) An illustrated quarterly journal, devoted to early American history, Archæology and Ethnology; edited by Rev. Stephen D. Peter, of Ashtabula, Ohio; subscription price, $2 a year.

THE MAGAZINE OF AMERICAN HISTORY: With Notes and Queries. Edited by John Austin Stevens. Published by A. S. Barnes & Co., N. Y. The number for April contains in its Historical Department a sketch of the Continental Congress before the Declaration of Independence. There is an excellent portrait, with a biographical review of Colonel Peter Force. There are also reprints of original documents of interest to the reader of history; and items and notes of value, because of their connection with the early life of our nation. Price, 50 cents.

GOOD TIMES, No 1, for December, 1878. A new candidate for a reading constituency. Largely in the interest of advertisers. Price 10 cents.

"FOUNTAIN OF SONG." A new collection of hymns and tunes for gospel temperance meetings, devotional meetings, and the home circle, by Rev. Robert Lowry and W. H. Doane. It contains one hundred and seventy-two pieces, comprising many of the popular religious songs, together with a variety of new pieces adapted to the times. "Rescue the Perishing," "Sweet By and By," "Dare to do Right," "Dash it Down," "Who is my Neighbor?" etc., etc., are among them. Price 30 cents; $25 per hundred. J. N. Stearns, New York.

THE

# PHRENOLOGICAL JOURNAL

AND

# LIFE ILLUSTRATED.

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VOL. LXVII. OLD SERIES.—VOL. XVIII. NEW SERIES.
JULY TO DECEMBER, 1878.

H. S. DRAYTON, A.M., AND N. SIZER, EDITORS.

NEW YORK:
S. R. WELLS & CO., PUBLISHERS, 737 BROADWAY.
1878.

"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 perfectionnera jamais la physiologie du cerveau."—GALL.

"I regard Phrenology as the only system of mental philosophy which can be said to indicate, with anything like clearness and precision, man's mixed moral and intellectual nature, and as the only guide short of revelation for educating him in harmony with his faculties, as a being of power; with his wants, as a creature of necessity; and with his duties, as an agent responsible to his Maker and amenable to the laws declared by the all-wise Providence."—

JOHN BELL, M.D.

"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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# ILLUSTRATIONS.

THE PHRENOLOGICAL JOURNAL AND LIFE ILLUSTRATED.

VOL. 67. 1878.

NUMBER 1.] *July, 1878.* [WHOLE No. 475.

## CARL SCHURZ,

SECRETARY OF THE INTERIOR FOR THE UNITED STATES.

WHEN Mr. Hayes, immediately after his assumption of the Presidential office, sent to the Senate his appointments of Cabinet Ministers, the name of Carl Schurz was among them as his selection for the important duties of the Department of the Interior, and the announcement of his name occasioned much warm discussion in political circles. It was an unexpected choice. Certain leading partisans of the Republican side deemed themselves aggrieved by the independence expressed on the part

of the President in making the appointment, and there were open declarations of hostility to it on this and on other accounts. However, as it turned out, Mr. Schurz was confirmed, and that with comparatively few dissenting voices, and the tenure of his place has been undisturbed.

The phrenological development, as shown in the accompanying portrait, has some marked peculiarities. We observe, in the first place, a very wiry temperamental organization. The gentleman is remarkable for the toughness of his constitution, and the tenacity of his purposes. These qualities are very apt to go together. The motive temperament is apt to characterize the mind with steadfastness and sometimes with an overbearing stiffness of will and purpose. It will be seen that the head is very full across the brow, indicating the capacity to gather knowledge rapidly, to make himself familiar with details and particulars. It will be seen, also, that the head is very wide from side to side, in the region of the temples, which shows that Mr. Schurz has mathematical, musical, and mechanical talent, and that he has also a large degree of Ideality or Sentiment. He is ingenious, fertile in resources, full of collateral facts and speculations.

He has historical faculties. The middle of the forehead is full, showing a good memory of facts, places, and dates. He reads character quite well, is strongly impressed, favorably or unfavorably, with those whom he meets. That elevation of the head on each side of the top where a vertical line drawn from the outer angle of the eye would come, if projected up through the hair, shows two organs well-developed—Imitation and Spirituality. The first gives power of adaptation, ability to copy and conform, and the other imparts a speculative, dreamy, intuitive, forelooking tendency. We infer from the expression that Firmness and Self-esteem are large, and that he is proud-spirited, imperious, unflinching in determination, headstrong, and inclined to dominate wherever he has control or influence.

His head is broad above the ears, indicating force and courage, with power to push his enterprises, and severity in driving home his thoughts and plans. As a soldier, he would show courage and executive force. He is cautious, but has courage enough to modify it.

He has, apparently, strong Acquisitiveness, and can understand financial matters, and take good care of his own affairs. He has literary capability. Language being large, qualifies him for acquiring a knowledge of languages and for using language with facility. His sympathy does not seem to be very strongly manifested; hence he would be more inclined to exercise influence without the modifications of sympathy or benevolence, and to govern by law rather than by love. We judge that he is capable of being very severe when he is exasperated, and of following his enemies to the wall. If he were the leader of a cavalry corps, we should expect his charges to be fierce, impetuous, and persistent.

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CARL SCHURZ was born at Liblar, near Cologne, on the Rhine, Prussia, March 2, 1829. He was sent to the High-School of Cologne, and subsequently to the University of Bonn, where he gave special attention to the studies of philology and history. He was at Bonn when the revolution of 1848 began, and at once took an active part in its promotion. He joined Gottfried Kinkel, Professor of Rhetoric in the University, who was an earnest advocate of liberal principles, in the publication of a newspaper; but after the unsuccessful storming of the Siezburg arsenal, fled with Kinkel to Baden, where he became an adjutant of Tiede-

mann, a leader in the insurrectionary movements. He took part in the defense of Rastadt, and was taken prisoner at its capitulation. He would have suffered death had he not succeeded in escaping from the casement of the fortress to Switzerland. Prof. Kinkel had been sentenced to the State's prison for twenty years, and was brought to Spaudan, where Schurz undertook his liberation, which seemed an almost fruitless task. Although an outlaw, he went to Berlin under the guise of a student of medicine, with a fictitious name, and in November, 1851, succeeded in effecting the escape of his teacher and friend. With Kinkel, he fled to England, where he made a living for a year or so as a music teacher. For a while he corresponded from Paris with German newspapers.

In 1852 he married the daughter of a rich merchant of Hamburgh, Miss Margaret Meyer, and in the fall of the same year left Europe and came to America, making Philadelphia his residence first, and subsequently removed to Wisconsin, where he had bought a farm. Having determined to make the United States his home, he diligently studied our language, laws, and history, and gave some attention to politics. He made his appearance as a public speaker in the Presidential campaign of 1856, taking the stump for John C. Fremont, one of the candidates. His achievement in liberating Kinkel rendered him popular with his countrymen in America, and many of these were won over to the side which he espoused. During the memorable contest between Stephen A. Douglass and Abraham Lincoln for the United States Senatorship in 1858, Mr. Schurz made his first English speech, which proved a success, and ere long he had won an eminent position as a political orator. In 1859 he was called to the New England States, where he was conspicuous for his opposition to the proposed constitutional amendment prohibiting foreigners from voting until two years after their naturalization. In the Republican National Convention, which was held at Chicago in May, 1860, Mr. Schurz performed a prominent part. He was chairman of the Wisconsin delegation, and through his efforts a paragraph was inserted in the platform condemning all endeavors to change the laws of naturalization.

He advocated the nomination of William H. Seward as candidate for the Presidency. Mr. Lincoln, however, obtained a majority, and Mr. Schurz was appointed a member of the committee to carry the tidings of the nomination to Mr. Lincoln. In the exciting campaign which followed, Mr. Schurz was one of the most prominent and active speakers, and soon after Mr. Lincoln had entered upon his office he appointed Mr. Schurz Minister to the Court of Spain. But the inclinations of the latter were much more toward service in the army than in the walks of diplomacy, so he remained a short time only in Madrid, for, resigning his commission in December, he returned to the United States and offered his services as a soldier. He entered the army as a Brigadier-General; distinguished himself in the second battle of Bull-Run, and fought bravely in the battle of Chancellorsville, where his division was routed by Jackson. At the battle of Gettysburg he commanded the Eleventh Corps, and participated in the battle of Chattanooga. He had already been promoted to the rank of Major-General, and after Chattanooga, commanded a division until the end of the war. After the close of the war he practiced law, and was employed in Washington as a newspaper correspondent in 1865 and '66. He worked earnestly for the re-election of Mr. Lincoln, who appears to have had great confidence in him. When by the death of Mr. Lincoln, Mr. Johnson became President, he was appointed special commissioner to report upon the condition of the Southern States. In furtherance of this duty he traveled through the South, and made a very elaborate and statesman-like document setting forth the true status of affairs, and communicating what, in his opinion, were the only available remedies. His report proved exceedingly distasteful to the President, who tried to suppress it, and dispatched General Grant to make another report.

In 1866 he removed to Detroit and started a newspaper there, the Detroit *Post*. In the spring of 1867 he withdrew from his con-

nection with that, and went to St. Louis, where he purchased an interest in the *Westliche Post*. In the publication of both papers he exhibited remarkable literary ability. At the Republican National Convention of 1868, which was held in Chicago, he was made temporary chairman, and labored in the canvass for General Grant.

In January, 1869, a United States Senator was to be elected by the Legislature of Missouri. Mr. Schurz was pressed forward as a candidate, and elected by a large majority. His career in the Senate was a brilliant one. Prior to his election he had a high reputation as an orator. Many, particularly of the opposing party in politics, deemed him nothing more than a talker. On the floor of the Senate, however, he showed higher qualities: patriotism, courage, and fidelity to conviction. His eloquence on some occasions was masterly, particularly that of his speech on the sale of arms to France. Charles Sumner and Roscoe Conkling, although strongly opposed to him in that controversy, pronounced Mr. Schurz's effort as one of the ablest speeches they had heard in the Senate.

His political career, as a whole, has been marked by independence of thought and action. This independence was especially evinced in the movement of 1870 for the disruption of the Republican party. Lacking sympathy for some of President Grant's administrative acts, he took a leading part in the organization of the so-called Liberal Republican party, and presided over the Convention at Cincinnati which nominated Mr. Greeley for the Presidency. In 1873 and 1875 he visited Europe, and was received with much favor in Germany. On his return from his second visit he took part in the canvass of Ohio for Governor Hayes in opposition to the inflation policy of Governor Allan; and during the whole Presidential campaign of 1876 he worked assiduously in behalf of the Republican cause, attracting immense audiences of Germans.

In appearance Mr. Schurz is tall, slightly built, with dark-brown hair and beard, now sprinkled with gray. In debate he is a rapid and fluent speaker, and shows himself a complete master of English. He is something of an author too, having published "The Irrepressible Conflict," "The Abolition of Slavery as a War Measure," and an Eulogy on Charles Sumner. He has administered the duties of his position in the Cabinet with his customary spirit of independence, and the opposition which has been shown to some of his measures have sprung, we take it, rather from that feature of his conduct than from anything reprehensible in them.

## RESPONSIBILITY AND PUNISHMENT.

THE doctrine of fatalism is obtaining unexpected support. Strangely enough, the most orthodox theology and the most orthodox science have reached, by widely different processes, the same demonstration. Reasoning from the necessary perfections of the Almighty, Calvinism finds all things "bound fast in fate," not excepting the human will. Professor Tyndall, the Calvin of science, observing the dependency of moral and mental actions upon causes which lie beyond human discretion, finds no more room for the freedom of the human will. Circumstances make the man, and man himself is a circumstance. Though he is wont to think that he may act for himself, herein he is deluded, for he is but the passive agent of higher powers that he knows not of.

Some impulse, no matter what its origin, prompts one to a certain action. No one would contend that he is accountable for the impulse, and here there can be no dispute; but what is next? The man begins to consider the impulse, and asks: "Will it give me pleasure or pain, advantage or disadvantage, to act upon it? And if it bring present gain or loss, what will be the remote effects?" These and other questions may be weighed in the balance preliminary to a choice. Again, the question may be asked, Is such an action right or wrong? and then, perhaps, there comes a conflic

between opposing principles. In the resulting choice, the unsophisticated mind is prone to believe that the man exercises a free will; but no, says the fatalist, man is not master of the impulse, nor of the considerations which have influenced him; both are the result of causes, which he neither makes nor controls; hence man, like all other things, is "bound fast in fate." Such is the teaching of modern fatalism.

Recognizing, as indeed we must, that no one is responsible for his existence here, nor for the organism which he inherits and which gives to him his temperament, his native desires, his capacities, and tendencies, and even his standards of normal action, all of which act upon him; and, of course, influence his conduct to a great extent—is there not room left for a free will and responsibility?

Man is not merely a circumstance, and a "creature of circumstance," but he is a *centerstance*—a *cause* as well as an effect. He is both active and passive, and if always subject to, and dependent upon, the forces of nature, he is not always the *unwil.ing* subject, for he determines for himself; and, as it were, unbinds and submits himself to the forces which shall influence and mould him for weal or woe. His orbit of existence may be predestined, and his actions in one sense be necessary, but he is, nevertheless, arbiter of his own destiny, within the limits which nature has prescribed; and, sooner or later, he will surmount and wield the adverse elements of condition and circumstance.

### RESPONSIBILITY.

No fatalistic reasoning can ever rid man of his *conscience* and the feeling of accountability thereto. If human action is necessary and foreordained, so is the remorse which inevitably follows, sooner or later, a broken moral law; and the sense, also, which recognizes the justice of punishment. Though pride or malice may for a time enable the criminal to hide his shame from the world, he feels it none the less. Soon, in the privacy of the dungeon cell, remorse overtakes him; and, could we read his thoughts, we should not often find him blaming a relentless fate, but only himself.

Of course there are exceptional cases of the loss of moral sense, just as of the loss of physical sense, but we should consider the average man. Human conduct is naturally attended by a moral sanction. These feelings which regard certain actions with approbation and others with disapprobation are indigenous to man, no less so because subject like all things to change and development. They are ever growing clearer, and in the same direction of a perfect law. Each is ultimately his own judge and his own lawmaker, and will, sooner or later, here or hereafter, atone to an awakened conscience for every offense, and he will pay the uttermost farthing.

We should state the measure of accountability to be the resultant of—1st, the enlightenment; 2d, the ability; 3d, the opportunity of the individual.

### TREATMENT OF CRIME.

When the body manifests disease, various remedies are indicated to restore it to health or normal activity; so when a moral infirmity leads the unfortunate sufferer to crime, moral remedies are demanded. But what shall be the remedy? Here is the great bone of contention. As there are different schools of medicine for the body, so there are different modes of treatment for moral disease or crime. There are the allopathic, the homeopathic, and the hydropathic methods.

But here, as elsewhere, there is danger of carrying the parallel too far. The all-important distinction to remember is, that whereas the bodily invalid is harmless to society in proportion to the degree of his illness, the moral invalid is *dangerous* to society in the same degree. In one case the malady afflicts only the subject of it; in the other, it threatens his fellows. The object of medicine is to put in action the self-healing powers of the body until the natural balance and harmony of the system are restored. Different cases call for different treatments. Likewise moral healing is to be effected by various appliances, wherewith to wake the latent moral forces to proper activity, and the cases and treatments are equally numerous and varied. The end justifies the means.

The object in view is the right action of the natural powers. Now in one case this can only be induced by fear of bodily torture. No shame nor moral sense have yet been born in him. The soil is not yet ready for the seeds of such virtues to germinate in his barren heart. It must first be plowed and harrowed by rougher implements than those of love.

We would not dispute that when the mind of the animal becomes enlightened upon the moral law, and his conscience once fully awakened, the self-imposed punishment for broken moral laws will be fully adequate to the offense, without any superadded punishment of human manufacture. But conscience, though present in all, often slumbers and manifests little sign of life, and other methods must be employed to influence the conduct of the subject under care. There are some minds which are susceptible to moral suasion and the "beauty of holiness;" but there are many, also, which are utterly barren to such influences and to whom such ministrations were "casting pearls before swine."

Physical laws carry their own penalties. The punishment for a broken law never varies. But the moral law, from the remoteness of the punishment which, in the natural course, follows violation of it, is far more uncertain and difficult to learn. Penal laws appeal, first, to the sentiment of *fear;* second, *shame;* third, *conscience.*

When the conscience of men shall become sufficiently sensitive to outweigh all other considerations, then it will be time to enact the gospel of love and incorporate it in our statute books. Seeds of virtue do not grow well among the thorns of evil, but there is a cultivation suitable to the most barren soils.

### THE TRUE REFORMER

is no revolutionist, but he is one who, seeing whither society is tending, would forward the slow natural growth by various fertilizing processes. We are still living in the Mosaic dispensation, and mankind generally are more amenable to the law of retribution —an eye for an eye, a tooth for a tooth— and feel a more wholesome restraint to wicked propensities under it, than under the Christian law of love.

A mistake of many would-be reformers is that they *assume* that human nature is something altogether different from what it really is; that it actually is what it ought to be, and reasoning from such premises, of course their doctrines of punishment, etc., are wholly inapplicable to the present state of things. When the millennium arrives, such doctrines will be in order, but to the average mind of the present time, they seem ludicrously incongruous—importations, as it were, from some Utopian country. Government and laws are necessarily harsh, so long as society is harsh. Violent disorders demand violent remedies. The uniform administration of human laws necessarily works injustice in individual instances, since individuals, fortunately, are not all constituted alike.

In order for the Government to be absolutely just, there would have to be a law for every case. But laws from the necessity of the case are a compromise. They are made for the average man of the time, and always mark the progress of civilization. It is better that the good and the innocent should occasionally suffer from bad laws, than that there should be no laws, or, what would come to the same, to substitute the Christian law of love, when practically society as yet recognizes no such law. C. S. W.

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THE ROAD TO SUCCESS.—No royal road is found, for that abounds with will-o'-the-wisps, whose deceiving lights lure into the mires and quicksands of life. The one true road, hard to find and difficult to travel, is marked by sign-posts along the route. First, Labor, rattling his tools, invites all to join in the busy hum. Then Punctuality opens her hand and beckons along the way. Perseverance displays her iron links and gives a smile of welcome. Honor meets the eye and points with a finger onward. And Honesty, spreading her large white hands over the whole, confers a blessing.

# THE AGARICS OR MUSHROOMS.

## SPECIES, GROWTH, CULTURE, USES.

THE caption of this article is a word which conveys to very few minds a distinct, well-defined idea. It is the name of a race which, though its families are distributed throughout the length and breadth of the earth, and are everywhere enormously prolific, has continued to live and multiply, while its nature, origin, and habits, are almost unknown to the generality of mankind. And this is true, notwithstanding the fact that its existence affects more nearly the health and well-being of men than that of almost any other vegetable production.

In a former article, the important relations of the minute fungi which can be studied only under a microscope to the history of the human race was cursorily noticed, and it might not be uninteresting to glance at the history of the higher developments of this strange race, which would seem to have come into the world under a strict incognita, and to have busied themselves with puzzling the heads of inquisitive naturalists, or startling the superstitious vulgar with the facility with which they appear like phantoms, and vanish as easily, leaving only the mysterious fairy ring as evidence of their existence. The science of Mycology is as yet in its infancy; but the possibilities which it is already beginning to unfold are most interesting. The close analogy between the lower and higher forms of life in the fungus are astonishing. "A Boletus," says Cooke, "is only an enormous aggregation of the vegetable tissues which constitute a Mucor, subject to the same influences, and propagated by means altogether analogous." When we consider that the Boletus is a mushroom of large size, and forming in some varieties a most valuable article of diet, and the Mucor, the cobweb-like mould, which gives up the secrets of its growth only to the microscope, the fact is certainly startling, and another illustration of the great truth which science is making every day more apparent, that the infinite variety of nature resolves itself back to a few original forms and combinations of apparently simple causes.

Fig. 1.—BOLETUS.

It is not surprising that fungus life should have so long remained, and that to a great extent it still remains, a mystery. There are many reasons for it, and not among the least is the fact that it is ephemeral to the last degree. The largest and most solid growths have but a brief existence, and even during that short space of being, undergo wonderful and important changes. Another cause is found in the extreme sensitiveness of these plants to outward influences of every description, variations of temperature of soil, and degrees of light,

have upon their delicate organization such transforming power that individuals of the same species, in widely differing habitat, can scarcely be recognized as belonging to the same family. Another fact which contributes to aid this "will o' the wisp" form of life to elude even the search of the keen-eyed naturalist, is, that spores of one kind falling upon different soils, produce in one place the parent form, and in another one entirely different. Thus the Ecidium loves, and is chiefly found upon the Barberry; and it has long been a faith among the vulgar, that the presence of the Barberry was injurious to grain. Science resolves the tradition into a fact, by showing us that the spores of the Ecidium which flourishes upon the Barberry, falling upon grain, produce Puccinia, a mould destructive to its

Fig. 2.—The Agaric. Typical Forms—Young and Mature.

health and growth. The immense number of forms also render the task of classification difficult, presenting no less than 598 genera and 4,000 species.

But among the abundantly interesting forms of fungi which offer themselves to our investigation, the limits of this paper forbid more than a brief glance at some of the leading features of a single genus—that of the Agarics, the noblest form of fungus, because of its more perfectly-developed organism and of its usefulness to man.

The claim to distinction is based almost entirely upon its value as a food, as its other uses are extremely few, one or two kinds being used as dyestuffs, and one anciently as a medicine.

There is also found in forests and upon the bark of trees, the best upon the larch, a kind which, being large and thrifty in growth, and having in its center, beneath a hard exterior, a soft substance of great tenuity resembling dressed deer-skin, was used as a styptic, though having no real value has fallen into disuse. This belongs to the Polypori, which with other varieties growing upon trees is often classed as an Agaric. When old, these polypori sometimes attain a diameter of two or three feet, and become quite hard and woody. If we add that a very similar though much finer growth generally found upon birch, and sometimes called the birch agaric, is used, when cut in strips, to sharpen very delicate instruments, we shall have exhausted pretty much all the righteous uses of fungi outside of its claims to be ranked among valuable articles of food. We have used the term "righteous use," because one or two kinds are used as intoxicants in some countries.

The Romans were well acquainted with the mushroom, and regarded it as a great delicacy, and in Rome still, and throughout the cities of Italy, it is so much esteemed that an Inspector is appointed to see that the markets are supplied with those of wholesome character. But notwithstanding the fact that several kinds have been under cultivation from ancient times, the prejudice against them in the minds of the ignorant has always been great, and like other prejudices difficult to eradicate. We call the feeling prejudice, because though there are many poisonous fungi which have been the cause of painful accidents, the marks distinguishing the evil from the good are in many cases so clearly defined, as to be as easily learned as those which distinguish many other harmful plants from their healthful congeners; while care in studying their appearance and habits will enable any intelligent person to avail themselves in many cases of a plentiful, inexpensive, and really delicious addition to their table. To the poor, the liberty of gathering freely of plentiful food which princes and kings have regarded as a luxury, would be no inconsiderable advantage; more especially, as it is found in all climates, and under great

variety of circumstances, while their successful cultivation is attended with little difficulty, and might be made, even upon a very small scale, a source of profit. Many will be astonished to learn that the common puff-ball which every child has delighted to break open and scatter its pure white meal, is one of the safest and best of the edible fungi.

Fig. 3.—Edible Mushrooms.

As a specimen of the kind of feeling with which the mushroom has been regarded by many, one writer calls them "a class of plants always to be suspected, for the most part poisonous," while another denominates the whole tribe, as a "family of malignants."

Fig. 4.—Poisonous Varieties.

In the United States, they have hitherto been used sparingly, and few kinds are known to be good for food except the common mushroom of the market (Agaricus campestris), which is more used than any other even in England, and upon the continent of Europe. It is one of those most easily distinguished. The cap, or pileus, is white and has something the texture of fine kid, slightly roughened in places, and often shaded with a rich brown; in the center the gills are, first pink, afterward a rosy chocolate color, turning brown and black with age. It has a very peculiar woody fragrance, which a person once familiar with can not mistake. The plant first appears as a small white ball, called a "button," which is wrapped in a veil or caul of pure white. As the stem pushes upward the cap enlarges and spreads out umbrella-like, and the veil is severed and falls about the stem, leaving a sort of collar of the torn edges. The spores, or seeds, are found upon the surface of the gills, and when the plant matures and re-

lapses again into decay, these spores falling to the earth germinate and reproduce new plants. A good idea of the number and size of these spores may be gained by laying the cap of a mature mushroom upon a piece of white paper; the almost impalpable

Fig. 5.—A. Hydrum.

dust which will be found in radiate lines upon its surface will be the spore-dust. This is also a good method of determining the color of the spores, often an important point in fixing the species. This mushroom is found upon open commons frequented by cattle, and in meadows used for pasture, but never in woods or swampy places, and will be gathered most freely in the latter end of September and the beginning of October, when the first frosts whiten the ground in the early morning. I have seen them growing in such great profusion in Northern Indiana, on the outskirts of a village where the grass was cropped close by cattle, as almost to whiten the ground. They were of the finest quality, and often from four to five inches in diameter.

The meadow mushroom *(Agaricus Arvensis)* is very much like the campestris and largely used in England, and greatly liked in France and Hungary. Withering mentions one weighing fifteen pounds. The common name for them in England is the "horse mushroom." It is hardly generally known that many kinds are excellent dried, and are used for enriching and flavoring various sauces. The *Agaricus Cyambosus*, an early spring plant, thus prepared brings from fifteen to twenty shillings a pound in the English market. Many of this tribe, popularly called "toadstools," and condemned unconditionally, are really edible, and it will be seen that all that is necessary to enjoy the delicate food which nature sets before us, is to learn how to distinguish and select it. Whatever may be said by the most timid, of the danger of gathering wild plants, all such fears vanish when the mushroom is cultivated, as it is, in enormous quantities in France and Italy.

Dr. Baham, in his work on esculent funguses, laments the ignorance of the people, who during a year of great suffering from scarcity, were blind to the wealth of food to be had for the gathering, and breaks out into the following appetizing description of his favorite fungi: "Pounds of extempore beefsteak growing on our oaks in shape of Fistulino hepatica; A. fusipes to pickle, Puff-balls like sweet-bread. Hydra, good as oysters; A. deliciosus; like the finest lamb kidneys; beautiful yellow chautarelle;

Fig. 6.—A. Deliciosus.

nutty-flavored Boletus edulis; A. heterophyllus like crawfish, when grilled. A. ruber and A. vireceus which may be cooked in any way and are good in all." He believes the mushroom in the majority of cases harmless, but this would seem to be rather too confident, as many even of the Agarics are violently poisonous. Some are narcotic, others stimulating; as the famous fungi of Northern Asia, amanita muscaria, which is used for purposes of intoxication. A variety growing in Kamschatka produces convulsions, and a powder made of its root, is used, probably upon homeopathic principles, as a remedy for epilepsy. Others have the drastic effect of gamboge, and one, A. Nicator, goes by the significant name of the "Slayer." In view of these facts, great caution, or rather accurate information, will be seen to be necessary in using kinds which are unfamiliar. The two groups given of edible and poisonous varieties will give an idea of the general appearance of both types; we furnish also portraits of one or two of the best esculent kinds, from which it will be seen that there is a family likeness with which one may easily become familiar. At a casual glance indeed, as in the case of most family likenesses a stranger might see no difference, but a more intimate acquaintance develops so many distinctive characteristics, that we wonder that we even have thought them alike. Perhaps nothing can give a better idea of the general differences of structure than a sectional view showing the varieties of gills.

The mushroom consists of four divisions, the cap (or pileus), the stem, the gills, and the root, which is more or less apparent and takes the place of the mycelium in the lower forms. The stem is sometimes solid and sometimes fibrous. The cap is generally in the Agarics of a close texture like kid, and the gills adhere not directly to it, but to the fleshy extension of the body of the stem which lies just beneath. The radius of gills is called the hymenium, because they are generally grouped in fours, and between these gills lie the spores. In the Boleti the Hymenium is composed of tubes instead of ventrical gills. The Agarics have no tubes. The plant is propagated equally well by spawn or by the spores (or seed), the spawn consisting of the stem, which, being divided and sown, is capable of reproduction.

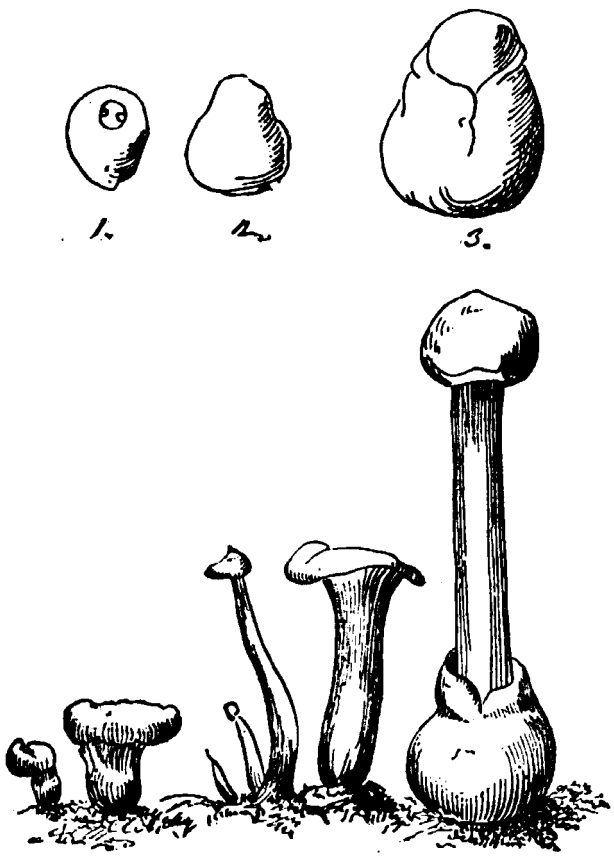



Fig. 7.—AMANITA (INTOXICATING), SHOWING PROGRESS OF GROWTH.

In color these singular vegetables vie with richest flowers. I have, myself, gathered, in the vicinity of Washington city, specimens of such variety as to present when arranged together the appearance of a rich bouquet; masses of bright scarlet, deep crimson, orange, pale yellow, brown, green, indigo blue, and pearl-white. It has been a common impression that any vividness of

color was an unfavorable indication; but so far is this from being true, that some of the finest edible species are brilliant in color. The figure which we give of the vase-like A. pileolaris is a bright fawn-color in cap and gills, and the stem light red, and the A. deliciosus is also gorgeous in color, the ground being flame color, and the lines upon it a deep orange and the stem also orange. The juice when first cut is deep yellow, but soon turns green on exposure to the air.

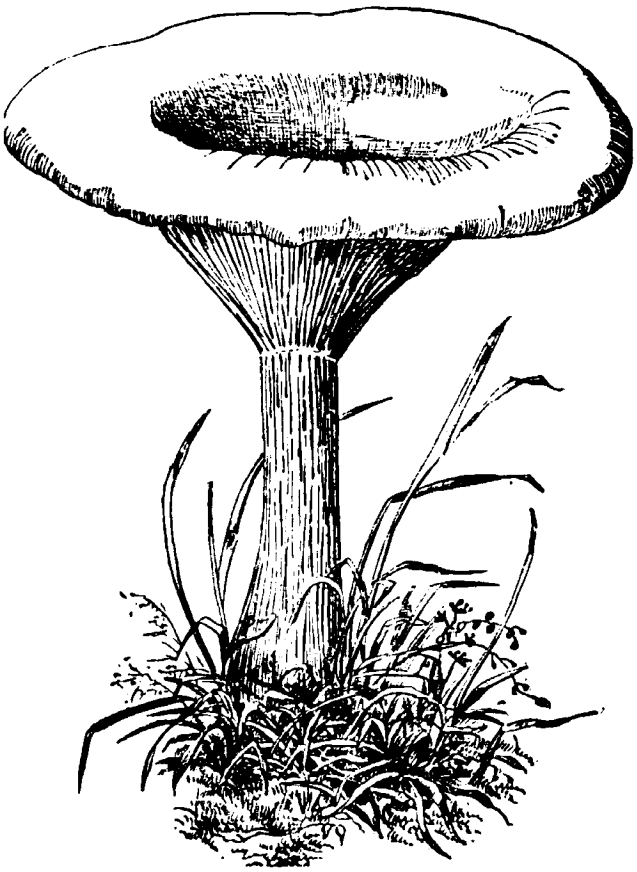
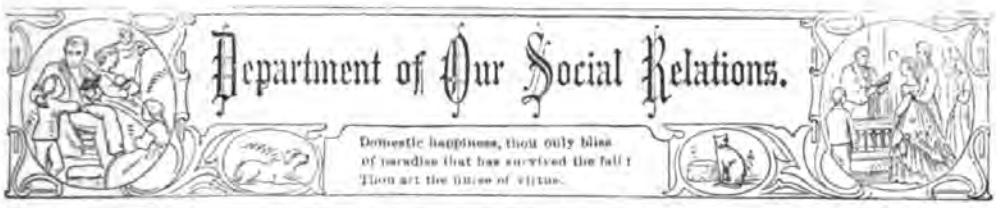


Fig. 8.—Agaric Pileolaris.

Some authors give color as the most reliable feature of distinction; but Dr. Baham tells a story of a naturalist who fell in with two soldiers who had gathered enough of the deadly Nicator to kill a regiment, having mistaken it for Hydrum Repandum, which it resembles in color and in nothing else.

The following marks are given by a reliable author as belonging to the Agarics of suspicious character: "Pileus (cap) thin in proportion to the depth of the gills, stalk growing from one side of cap, gills of equal length, every one having filamentous collar, that is, resembling a cobweb in texture." To these are added milky juice and rapid deliquescence. But Mrs. Hussy, in her splendid quarto volume on fungi, declares that milky juice is one of the greatest recommendations of A. deliciosus, in which statement we may put entire confidence, since she had cooked and eaten them herself, and every one who has made mushroom sauce knows that the common plant Agaric Campestris deliquesces with great rapidity. From my own observations, I should say that thinness of the cap and one-sided situation of stem are generally suspicious signs; but people should endeavor to make themselves acquainted with par-

ticular species, by consulting reliable sources of information; and so reliable is the knowledge once acquired, in qualifying to judge between trival claims, that there is no danger of mistake where ordinary care is given; but by the uninitiated great precaution should be observed. But what is said with regard to fungi might with equal force be urged with regard to other vegetables which are eaten with perfect confidence, though closely resembling those that are poisonous. We urge upon our reader attention to this subject the more, because high physiological authorities consider mushrooms particularly light and nourishing food for invalids and old persons; an opinion well supported by their chemic l analysis. MRS. C. S. NOURSE.




## 'TIS FOR THEE, SAD SOUL!

'Tis for thee, sad soul! 'tis for thee!
'Tis for thee, the measures move—
'Tis for thee, I sing of love;
'Tis for thee, 'tis for thee, wherever thou mayst be,
'Tis for thee, sad soul, 'tis for thee!

Every care and grief soon shall flee!
Ah, we little heed the night,
In the sweetly dawning light;
Light for me, and for thee wherever thou mayst be,
Ah, for thee, sad soul! ah, for thee!

Only free, sad soul, only free—
When we join that song above,
Which the mystic measures move,
Toned for me, and for thee, wherever thou mayst be,
Ah, for thee, sad soul! ah, for thee!

GRACE H. HORR.

## FELICIA GREATHEART,

### EXPONENT OF THE GOLDEN LAW.

I HAVE not traced her genealogy, but I have a fancy that she must be a descendant of that noble, chivalric, courteous Greatheart who conducted Christiana and Mercy from the Interpreter's House to the Celestial City, and valiantly slew the giants and braved the lions that threatened them with destruction as they press trembling through the perilous places in their rough and toilsome way. When you look into her clear, serene eyes—the crystal windows of her soul—you feel as you may sometimes when you gaze up into the infinite blue expanse above, as if an illimitable world of divine light and beauty were opening to your view, and that enigmatical saying of Emanuel Swedenborg, "An angel is a heaven in its least form;" comes to mind with new force and significance; for the blessed Felicia, with her angel wings yet folded in the flesh, seems a sweet suggestion of what the visionary old theologian and philosopher might have called heaven in "ultimates." She is purely and divinely good, but her goodness has not that oppressive and repellant quality so common to the many excellent people whom you know. She does not flaunt it ostentatiously in your face; she does not seem to suspect that she is better than her neighbors, and she does not set her opinions and her practices in opposition to yours with that insufferably self-righteous air which says, "Behold how good I am, and behold how vile you are." If you are vile,

she does not remind you of it, but she seeks tenderly after that which is best and purest in you, and generously hides her eyes from your evil.

You can't tell how it is, but there are persons enjoying the reputation of great piety and devotedness who stir up and call out all the wicked forces of your nature. To hear them oracularly laying down the law and pronouncing judgment on sinners is sufficient to excite you to the expression of the most heretical sentiments, and nothing delights you more than to see the whites of their eyes displayed in holy horror at your iniquity. They work such disorder to your mental machinery that it entirely slips your control and runs with perfect craziness, and you not only say, but you do things in their presence which, remembered afterward, fill you with astonishment and sorrow. Of course you are wrong; nevertheless, you hold a secret grudge toward these people who persist in looking at the worst side of you.

But Felicia Greatheart brings out your best possibilities. She approaches you as if you were in sympathy with all that is good and lovely, and for the moment, at least, it appears to yourself that it is so. All your evil qualities are quiescent, incapable of action through lack of recognition, and you feel as though they were not; you are free, you are strong, you are full of light; you glow, and radiate, and expand with pure and holy aspirations; you burn to speak grand words, to do great deeds, to bear up the weak, to help up the fallen, to comfort the sorrowing, to ease the oppressed. Life is a glorious, divine gift, and in the exultant joy of possession you run into solitude, fall on your knees, and in speechless ecstacy adore the Infinite Giver.

Mournful Straightlace, coming upon you in such mood, and seeing your glorified face, would think you had "got religion." No, you have not got religion, you have simply got a glimpse of it.

Alas! could Brother Straightlace analyze your emotions, he would tell you promptly you had not got even that. He would distrust the medium through which such light pours wonderfully in upon your soul. He would begin to question the certainty of your election and adoption, and become solicitous concerning your convictions on the subjects of justification, redemption, free-will, good works, predestination, and damnation. He would charge upon you with a full brigade of melancholy books in mourning uniform, illustrative and explanatory of the aforenamed doctrines, and he would bring up the rear with a detachment of heart-rending biographies, depicting the Christian's life in such sad colors that you would involuntarily shudder and turn away, not daring to face its pains, and sorrows, and persecutions, and fiery temptations, feeling God unkind to so afflict the children of His love.

But all these gloomy influences would work on you; you would grow moody, morose, dejected; lose your interest in the affairs of life; neglect your daily duties; forget the kindly offices of love and friendship; weep a great deal, brood and bewail morbidly over your sins; refuse innocent pleasures; long unutterably for some inexperienced and inexpressible good, you scarcely know what; give yourself over to wild paroxysms of entreaty and self-abhorrence; press a thorny pillow, and in half-sleeping, half-waking visions see yourself marched to judgment between two files of ghostly spectres. Election, adoption, justification, sanctification, free-will, vicarious atonement, and all that solemn company, each bearing in its hands one of the mournful black-bound volumes which afflict your mind as heavy, undigested food does the dyspeptic's stomach. You would go out sorrowfully into the beautiful world of singing birds, and laughing waters, and radiant sunshine, and incense-bearing flowers, but you would find there no help, for the God of all these seems other than the God of those melancholy tomes which aim to teach you His nature and interpret His meanings, and which picture Him as a stern, awful Being, whose wrath can be appeased only by living sacrifices, whose immutable laws are such that He can not, if he would, save His wayward children from destruction. Nature, kind mother, would teach you otherwise, but the tomes reject Nature and you dare not ac-

cept her patiently-urged truths; so she whispers and chants and thunders to you in vain.

Happy for you if, in this state of conflict, the serene Felicia, whose soul is anchored above the storms, shines in again upon you with her clear, steady light. She is one with the singing birds, the jubilant waters, the radiant skies, and the priestly flowers that stand in the Temples of God burning holy incense; but she is so intensely human that her sympathies reach down into all spheres of life, and take hold of the woe, and pain, and wretchedness there, and none are so poor, and vile, and miserable, that she does not claim them as her kin, and with tender hand feel out their hurts and apply the sovereign balm.

With quick intuition she would divine your trouble, and pressing close to you with face aglow and hand sympathetically outstretched, it would seem as if from her softly-parted lips a crowd of wise and loving words like a flock of white-winged birds were just about to flutter gently out; but she is shy about intermeddling with mental states, of obtruding advice in spiritual affairs, and of urging her own convictions upon others, and she would wait for you to speak, which, warned by her tender interest, you would not be slow to do, telling her freely all your tribulations, and longings, and anxieties. And out of her great sympathy and desire to help you she might say, as once I heard her, humbly as a little child, "Perhaps, if you are not already confused with many guides you would like to hear how I was directed to find the priceless pearl you are seeking;" nothing could please you better.

Well, she would say, with her earnest eyes looking clearly into yours, weeping and wailing over my offenses did not make them lighter; wild, importunate entreaty without effort did not make me stronger to resist evil; poring over creeds and doctrines did not help me to a better life nor a clearer understanding of the truth; but when I put away these and began earnestly to strive toward the fulfillment of the Divine law, "Do unto others as you would have others do unto you," then straightway my burdens grew light as air, the discords of my life smoothed and rounded themselves into harmonies, the way grew plain and open to my feet, peace descended like a benediction on my soul; and, dear friend, I found the "pearl."

Would it not seem as if you were waking suddenly out of a terrible nightmare to the clear, smiling light of day? as if you were passing from a dark labyrinth, in whose tortuous mazes you have been long entangled, to a marked and easy road cutting plain and direct to the end you are seeking?

Do unto others as ye would that others should do unto you, for this, says the Christ, is the Law and the Prophets.

O, Mournful Straightlace, gather in your spectral guides—your doctrines of election, atonement, justification, baptism, damnation, and the rest—their mission is confusion, their end disunion. They present the melancholy spectacle of the blind leading the blind, and we anticipate the sad catastrophe that must ensue.

But here open and direct is the law of Christian life, the law of Christian brotherhood; the sum of all philosophies that aim to make men better; the lesson of Nature; the attraction that draws all members of the human family together and holds them in unity and harmony; the incarnation of charity and tolerance; the power that breaks down the partitions between earth and heaven, makes angels and men one kindred, and turns the world over to face the golden dawn of that glorious day of promise when "there shall be one fold and one shepherd."

You see, at least so far as you can see, that the blessed Felicia, living in obedience to this divine law, breathes the air of heaven, and is girt about by a sphere of purity and light into which nothing evil durst venture, and you remember the promise to the innocent, and think you see it fulfilled: "He shall give His angels charge over thee to keep thee in all thy ways."

When the heavenly law does not govern, you know how roughly and crazily the machinery of life runs; how it rasps, and groans, and shrieks, and tears, making horrible discord; but in the circle of which Felicia Greatheart is the center it moves orderly and without friction; no rust, no rat-

tling bolts, no clashing wheels, or, if these are there as elsewhere, the lubricating oil of love makes all glide smoothly.

Where there are wrongs she quietly strives to right them; unintentional mistakes she magnanimously covers; rudeness and impatience she meets with gentleness and unruffled serenity; injuries and neglects she sweetly forgives and puts out of mind; and those glaring faults of temper, unpleasant peculiarities of character, and gross derelictions of duty that others take note of, and repeat, and repeat, and harp upon, and denounce until one wearies of, and hates the whole human family, she sees as though she saw them not, flinging the mantle of charity tenderly over them all, her large, noble, generous nature delighting not in imperfections, but hungering for, and seeking after, those lovely graces which may always be found linked with deformity as sunshine with shadow. In one respect it may be said there is a similitude between her and Mistress Pickflaw. Both are fond of setting their fellow-creatures in the light, and bringing out the remarkable features of their characters; but there is this difference: Mrs. P.'s light is like that which issues from a pit, wild, lurid, infernal, giving to the objects on which it glares a hideous, distorted appearance, startling to the beholder. Felicia Greatheart shines calmly down from above, and her mild, steady light illumines and glorifies every hidden virtue, every kindly action, every good intent, lingering lovingly on each as the sun lingers on the mountain-top, leaving the great mass of evil brooding like a black shadow below. Whoso loves darkness may descend into this shadow and trace out its horrible shapes; but Felicia loves the sun.

She is no belligerent; she carries no weapons of warfare, makes no attacks, utters no warnings, uses no threats, but the devils are afraid of her, for she sows the wheat so thick they find no place for tares. She is the tender nurse of good, and overcomes evil by neglect of it. She can not destroy vice and its consequent misery, but she checks its growth by persistent and loving encouragement of virtue.

A. L. MUZZEY.

## ALMIRA LINCOLN PHELPS,

### THE TEACHER AND AUTHOR.

ONE of our household names is that which forms the caption of this sketch. When the writer was a boy at school, "Lincoln's Botany" was the text-book commended to his study of the vegetable world; and what school in which botany is made one of the departments in its curriculum, is there that is not acquainted with this excellent text-book? At this time we bring to the notice of the reader the venerable lady who so many years ago had won reputation as an educator, and as an author of treatises on natural science.

Mrs. Lincoln Phelps is about eighty-five years of age, having been born in 1793, yet so well-preserved is her mental and physical health, that she is as active and efficient in most respects as women usually are at sixty. A splendid organization is hers, reminding one, by its remarkable balance of temperament and high native quality, of Mrs. Hemans. Her entire expression, coupled with the well-marked perceptive organs, is indicative of mental activity and physical vivacity. The brain has been amply supplemented by the body. Those eyes evince no lassitude of function in any degree, but a thoroughly nourished nervous system. The plumpness of the cheek and chin speak of the vital riches of her organization, and also of the careful regard their owner has had to her habits of alimentation and exercise. She has evidently lived temperately, systematically, and intelligently in the observance of physiological laws, and thus been enabled to exercise her mental faculties with har-

mony and to achieve great and lasting results. The portrait was taken from a fine steel plate, made by Mr. Sartain a few years ago, and is said to be an excellent likeness of the lady as she now appears.

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ALMIRA LINCOLN PHELPS was born in Connecticut. She is the daughter of Samuel Hart, a man of pioneer mind and body, descended from the first minister of Hartford. For some years she was the pupil, classmate, and assistant of her sister, Emma Hart Willard, whose career as a teacher and institutrice is well-known in this country and England, until she married Simeon Lincoln, editor of the Connecticut *Mirror*. At the age of thirty she was left a widow with two children, but found time to perfect herself in Latin and Greek, and in the natural sciences, and devoted considerable attention to drawing and painting—passing some years in alternate study and teaching.

Her second husband was John Phelps, a lawyer of Vermont. In 1839 she became principal of a seminary at West Chester, Pa., but subsequently removed to Maryland, and established the Patapsco Institute for Young Ladies, at Ellicott's Mills, which for twenty years was one of the most flourishing and best conducted institutions of the kind in this country.

Mrs. Phelps' first publication was the work on botany, known to the schools as Lincoln's Botany. No work on this subject, within our knowledge, has had anything like a similar success, it having been, and still being, a leading class-book. Her next

work was a Dictionary of Chemistry, which was followed by "Botany and Chemistry for Beginners," and in turn succeeded by her lectures on Education. These were followed by "Natural Philosophy for Schools," "Geology for Beginners," with a translation of Madame Necker de Sassure's "Progressive Education," and several other works, including "Ida Norman," a novel written for the benefit of her pupils. As an indication of the popularity of the works written by Mrs. Phelps, it may be stated that more than a million copies of some have been sold. Mrs. Hale says, in reference to them: "It was for her pupils that her scientific works were prepared. No woman in America, nor any in Europe, excepting Mrs. Marcet and Mrs. Somerville, has made such useful and numerous contributions to the stock of available scientific knowledge as Mrs. Phelps. Yet had she not been a teacher and found the need of such works, it is very doubtful if she would have prepared them." Among her later books should be included "Christian Households," and "Reviews and Essays on Art, Literature, and Science," the latter being published in 1873.

Although prominent among American women by reason of her talents and authorship, she has no sympathy for the efforts so strongly put forth by well-known and estimable ladies in behalf of woman suffrage. On the contrary, she has taken ground against such a measure. In a recent "Address to the Women of America," Mrs. Phelps thus expresses herself: "May there be no divided councils in the human family; the one sex arrayed against the other. On mothers greatly depend the characters of the future men; at the home fireside may they learn to respect woman, and imbibe such sentiments as will cause them, when they become law-makers, to protect her rights, so far as may be consistent with the proper organization of society.

"Let women in practical life reflect that though their names may not appear on the pages of history, they are yet acting an important part in life's drama. How many good women, heroines it may be, who have never been named in public prints, except at their marriage and death, have, in the sight of God, been greater than those who have governed kingdoms; for them is the 'crown of glory that fadeth not away.' Memory brings to the writer, among the crowds of departed friends, martyrs who went from trials and sorrows to inherit the 'unsearchable riches' of Christ's kingdom. One noble Christian woman, by her wise administration of affairs, shielded her husband from the disgrace which a mean and parsimonious spirit would have brought upon him, and thus enabled him to hold a respectable, even an honorable position. When she was removed from her life of mortification and anxiety, the man appeared in his true character, and died despised as a *miser*. We dare not enter into particulars, but it is the testimony of experience that there have been, and are, heroines in private life, perhaps surpassing in excellence the most renowned among the good and great women of history."

Mrs. Phelps resides in Baltimore, where she is highly esteemed, not only for what she has accomplished, but for what she is now doing. She is president and a liberal contributor to the Woman's Aid Society of St. Bartholomew's Church, and is still quite active in all good works. Though at such an advanced age, she yet transacts, from day to day, much more business, financial and social, than most women whose years number but half her own.

## BRIDGES.

**Oh! brave, strong hands that build and build,**
**With stone and iron, and wooden beams,**
**Conquering swiftest seas and streams,**
**Linking each land to other land—**
**No runner tarries to demand**
**The secret of your road; what filled**
**Foundations on which you might build!**

**Oh! brave, strong souls that build and build,**
**And day by day cross stormy seas,**
**With smiling eyes and steady knees—**
**No mortal dreams what cost of tears**
**Was spent to sink the hidden piers,**
**Before their bitter strength had filled**
**Foundations on which you could build!**

## LIGHT IN DARK PLANS.

"This mournful truth is everywhere confessed,
Slow rises worth by poverty depressed."—SAMUEL JOHNSON.

### CHAPTER XXIX.

#### THE LEGEND OF THE RING.

MRS. CAMP had few secrets which she kept from her children. She believed that they had rights as parts of the household—and in the changes of sunshine and cloud experienced by her, all three children were usually permitted to enter fully into her plans, and to suggest, as each might, measures for their general benefit. Thus a spirit of co-operation was nourished among them of which even Dell partook, and with its growth the sympathy and affection between mother and children were strengthened. One of their neighbors, whose home was much disturbed by quarrels on the part of his grown-up boys, asked Norton how his mother managed to get along so well when she could get no work, and provisions and everything were so high. The boy replied, "Oh, we all work together, and make our money go as far as we can. Mother knows how to do it, I can tell you."

"I wish I could say the same thing of my family," rejoined the neighbor. "They don't work together—and the boys spend their money in the theater and beer-saloons, and quarrel with me 'cause they don't get what they want to eat at home, and it's as much as I can do to give them what I do. If they'd only help, we'd have fine times, I can tell you."

"I guess that's what's the matter with most of the families around here," commented the boy; "they don't work together, and they don't take care of what they earn."

"Ye're right, sonny, and I'm thinkin' that yer mother's put the kind of ideas in yer curly head that'll make a great man of ye if ye foller 'em."

Sadie, Norton, and Dell ran to the widow joyously when she had shown the ring, and they cried in concert, "Do let me see it, mamma!"

"What do these words on the inside mean?" asked Norton, as he was examining it in turn. "They are *Habe Spes Deo*, my dear boy, meaning, 'Have hope or trust in God.' It was by them that I recognized the ring as your papa's. He wore it a good many years before he died, and he used to say that the ring served him as a kind of talisman or preserving influence, because whenever he looked at the ring he thought of the words within it, and they braced him up and made him feel strong when care or disappointment caused him unusual anxiety."

"You must be very glad to get it, mother," said Norton, "and isn't it strange that it should come now, and in this way. Didn't the paper tell who sent it?"

"Yes, my boy. It is Mr. Stanley who has shown us all so much kindness."

"He knew our dear papa, you said, mamma, while they were soldiers; and papa gave him the ring," said Dell. "Now I know it's the same one he used to wear on his little finger; and just the very last time he was here I had hold of his hand and was twisting the ring 'round while he was talking, and he said softly, 'It's very dear to me, Dell, and I'll tell you some day why.' It must've 'minded him of God, mamma, and made him feel happy as it did papa."

"Yes, my own darling, that is one reason for his prizing it, and another is because it was given to him by your papa just before he died," replied the widow, her eyes filled with tears.

"Don't feel so sad, dearest mother," entreated Sadie; "I'm almost sorry that Mr. Stanley sent us these beautiful presents, because they make you weep."

"This ring, my Sadie, brings so many scenes from my early married life freshly to mind that I can scarcely repress the feeling of sadness; at the same time there is a deep gratification in my heart for the enjoyment which has been yours to-day, and for the truly sincere interest which our friend

shows in our welfare. Come, now, let us clear the table and put things in order, and then we can have a game of 'corn and beans' together."

"Oh, yes! that will be fun," cried Norton, and they all set briskly to work and were well toward the end of their task, when a knock was heard at the door. On opening it, a man in livery presented himself.

"Please, ma'am," said he to Mrs. Camp, "the missis sent me down with the carriage to ask if ye'd care to have a little ride the day, ye and the childer."

"Your mistress is very kind, and I thank you also. What do you say, my dears?"

"Oh, yes, let's go, mamma," cried Dell and Norton, joyfully. To ride in a handsome carriage being to them so unusual an experience as to be invested in their minds with a sort of ideal happiness.

"Well, get ready."

"We shall detain you but a few minutes," said the lady to the coachman, who then went down to his horses.

"I suppose that we can go where we like, mother?" said Norton.

"I presume so."

"Then wouldn't you like to be driven up through Fifth Avenue, mother?" asked Sadie. "I should like it, as I haven't been up in that beautiful street for a year."

"Yes, dear, and perhaps we can have a little glimpse of Central Park, and return by way of Broadway."

"Oh, won't that be nice!" cried Dell, clapping her hands.

"Mother, I'll go down and speak to the coachman about the way we'll go," said Norton, who then put on his overcoat and cap, and went out. In a few minutes he returned, but wore so thoughtful an expression that Sadie asked:

"What's the matter, Nortie? Can't we go to the Park?"

"Yes. The coachman says you can go where you please. But there's little Mickey down on the stoop looking so kind o' anxious at the carriage that really, mother, I'd just as lief have him go in my place if you won't object. Poor little fellow, 'twould do him good."

"My dear, generous boy. You may do as you like."

"Then I'll run down and send him up to his mother to be dressed."

A few minutes later the Camps and Mickey were on the sidewalk by the carriage. Norton assisted his mother and sisters and the little boy to be snugly ensconced in the comfortable vehicle, and closing the door, told the driver "All ready."

"An' why don't ye git in yerself?" responded Mr. Whip.

"The little fellow goes in my place."

"Botheration, and can't ye go just as well too? Jump up 'longside er me and we'll have a little bit of a talk, if ye don't mind."

"Oh, thank you, that's what I would like dearly," and Norton sprang to the broad driver's seat. The thick fur robe was drawn closely about him by the good-natured coachman, and as they drove off he glanced up at the fourth floor of their tenement and saw Mrs. Moriarty and her "man" looking down with such a comical expression of pride, that he couldn't help laughing aloud as he waved them good-bye.

## CHAPTER XXX.

### THE PROPOSAL.

THE hour was unusually late that New Year's night when the lamp was extinguished in the apartment of Mrs. Camp, and that lady had placed her head upon the pillow. Much later still was it when "tired nature's sweet restorer" settled down upon her eyelids, for her brain throbbed from the intensity of the emotions which had been aroused by the events of the day. But the excitement which precluded sleep and filled her mind with anxious thought had its origin in the contents of that letter which accompanied the precious ring. In confidence the reader is made acquainted with the terms of the missive. It ran thus:

"DEAR MRS. CAMP:—I trust that you will not regard me as presuming or obtrusive in addressing you thus; but the feeling I entertain for you and your dear children is so earnest and sincere, that I can not refrain from some direct expression of its import.

From the first of my acquaintance with you I have carried in my heart the impression that you were closely related to my happiness, and that impression has grown stronger and stronger until it has assumed a positive embodiment in my mental life. Our relation, I know, has been that of friends, and I am grateful indeed for your frank cordiality, but not satisfied, and now I come to ask a closer relation, even that which the law sanctions, and religion blesses when the union is a true one. I would have you become my wife, and I would be your husband. I need such companionship, sympathy, love, as your warm and tried heart can render. I dare not plead ability so much as entire willingness to help you in carrying into effect your aims or purposes with respect to the precious young souls that are so large a part of yourself. But the great world outside of ourselves has work which craves your attention and mine, and I know that side by side, and heart to heart, we might do much, even more than we could separately. We are acquainted with each other's views of life. We have been frank in their exchange, and our differences of opinion have been trifling. We have drawn our principles of moral truth and of physical conduct from similar sources; and, dear friend, is it rash for me to think that we have drawn nearer and nearer, each to the other, as our acquaintance has continued? You will at once recognize the original ownership of the ring inclosed. It was but a few moments before his eyes closed to awaken no more in this life that he gave it to me. 'Brighton,' he said, 'you have been a kind friend, a faithful soldier—comrade, take this ring. It may prove to you as it has to me, a precious counselor when doubts or weakness oppressed the spirit.' It seems to me that with the ring he must have given a part of his great inner self, for it has exercised a blessed influence upon my whole life since that sad yet inexpressively sweet hour. I had thought to tender the ring to you when first we met, as to one by pre-eminent right entitled to its possession; but it had become so dear to me that I could not suddenly part with it. Have I done wrong in withholding it? But now I offer the treasured circlet, and with it the hand that has worn it so many years. Is there room still in thy faithful heart for an honest and true affection? Do you not need a husband's tender sympathy and co-operation? And do not your sweet children desire the love and guidance of one who would strive to be to them as a father?

"Let me, dear friend, have the answer of your own heart and of theirs. I ask no more.

"Unchangeably yours,

"BRIGHTON STANLEY."

Before leaving her room the next morning Mrs. Camp slowly read again this letter. She had indeed "slept on it," and had awakened with certain well-defined impressions of what should be her action concerning it. Dell awoke, and lying in her crib peered at her mother with curious eyes, as she stood wrapt in thought, the letter pressed against her forehead. At length she caught a glimpse of the child's questioning expression and asked:

"What is in my darling's busy head?"

"I don't know, mamma, as there is anythin' in my head, but 'pears to me mamma must have somethin' in hers, and she's got it from that letter. Won't my mamma tell her Dell 'bout it?"

"How would my darling like to have another papa?"

"Oh, ever so much, ever so much!" cried the little girl, jumping up and running to the window. "Other little girls have their papas and oughtn't Dell to have one too?"

The excited voice of the child aroused Sadie, who shared her mother's bed, and Dell, perceiving that she had awakened, crept into the bed with her sister, a proceeding by no means uncommon.

"I hear Norton at work about the stove, children, and must see to the breakfast things," said Mrs. Camp, who then went into the adjoining room. Sadie sprang out and commenced dressing, while Dell nestled into the warm place vacated by her sister. Her mother's question had stirred up a train of wishes and longings in the little mind, which soon found voice.

"Sister Say, do you know what's in the letter mother was a-readin' just now?"

"What letter, Dell?"

"Looked like the one the ring come in."

"Why, that was from Mr. Stanley. Mother hasn't told us yet what it contains."

Dell was silent for a minute or two, and then ventured:

"Wouldn't you like to have a papa, a real, live, good papa, Say?"

"Our own papa is in heaven, Dell."

"Yes, but he isn't here where we can see him and talk to him, and have him all to ourselves, like other children who have real, live papas. Oh!" sighed the child. "How I wish I had a nice dear papa to talk with and go to when I wanted him."

"I wish, my darling, we had. It's very hard to be fatherless." A tear glistened in Sadie's eyes as she spoke.

"Well, sister Say, I think mamma's going to get a papa for us."

"What! What in the world put that into your little pate?"

"Why, mamma was reading the letter this mornin' when I woke up, and she asked me if I wouldn't like to have another papa; and oh, wouldn't it be nice, if we only could have one just like Mr. Stanley?"

The coyness of the maiden hesitated before the frank artlessness of the child; besides, it was natural enough for Sadie to experience a feeling akin to jealousy when the thought was presented thus suddenly of permitting a man to possess so considerable a part of her mother's affection, as in her pure ideal of the marital relation a husband should rightfully claim. As the eldest of the children, and on the border of womanhood, she deemed herself the companion as well as daughter, and since it had been the custom of Mrs. Camp to discuss the affairs of the family with her children, and to listen gravely to their opinions, Sadie felt that she should be consulted, if so momentous an affair as that mooted by Dell were really entertained by her mother. If that letter contained a proposal of marriage, and the proposer were Mr. Stanley, she would scarcely know what to say about it. She liked the gentleman very much. His kindness had given him a claim to her gratitude; but she acknowledged to herself that aside from his kindness there were qualities in him which had won her esteem. He had become to her as an uncle or great elder brother, to whose worldly intelligence and moral strength she could appeal at necessity. Her mother was wise; in her view no mother could have more of perfectness, but there were occasions which required more than the woman nature, which demanded the robust energy of the man nature, and she had observed many such occasions during the few years of her work-girl career. Perhaps it would be well for them all did her mother marry again. She would then herself have an assured home, and might be enabled to carry into effect plans of benevolence which she had more than once sketched when in conversation with her mother; plans which her position in the Mission School would greatly help to mature and point the way of their application. Besides, it wasn't right to indulge feelings of selfishness, and debar her dear mother from having a season of rest after so many years of labor and sacrifice in her behalf. At any rate, if the candidate were indeed Mr. Stanley, she would think more kindly of the proposal than if it came from any other man.

This was the tenor of the reflections which thronged into the mind of Sadie, and so much absorbed her attention that she scarcely heard Dell, who prattled on about what she would do with a papa when she had one. Finally observing that her sister was more intent upon her thoughts and her toilette than interested in talking, the little girl cried out:

"Sister Say, are you deaf?"

"Oh, Dell, did you speak to me?"

"Yes, I've been talking to you ever so long. I want to know if you wouldn't like another papa; and if mamma wouldn't let Mr. Stanley be our papa?"

"Yes, my sweet little pet, I would like to have another nice papa, if only to please my Dell. As for your other question, it would be mamma who should have to answer it. Jump up, now, and dress. I must go and attend to my morning duties."

## CHAPTER XXXI.

### THE ACCEPTANCE—CONCLUSION.

"I AM sure, mother dear, you will be happy with Mr. Stanley, and Nortie and Dell already love him so much that he will seem almost a father indeed to them."

"And should I return him an affirmative answer, my Sadie is equally sure that there will be no abatement in her love for mother in our new relations?"

"My darling mother, can I love you less when I see you once more in comfort and happier?" The young girl threw her arms around the widow's neck and kissed her with impetuous warmth.

"Mother will need her Sadie then as now," said Mrs. Camp, returning the embrace and caresses. Such was the close of a long and earnest conference between mother and daughter on the subject of Mr. Stanley's letter, and a week later that gentleman, after waiting in a mood of deep anxiety for the result of his proposal, held in a hand which trembled with joyful excitement the following answer:

"DEAR MR. STANLEY:—Your generous and most considerate letter has been the burden of earnest reflection from the moment of its perusal. I need not mention here the different matters which entered into that reflection. Your own experience and the friendship which has subsisted between us, will suggest to your mind the interest so important to the woman, the wife, the mother who seeks to perform her full measure of duty. The intimations of your kind letter indeed show to me that you appreciate my position and understand my motives with reference to the many around us who need instruction and guidance in the things essential to common comfort and happiness. I have been frank toward you from the first of our acquaintance, because of the peculiar, yes, to me, holy nature of the relations which conduced to its formation, and you have evinced a like frankness, and certainly a most noble sympathy. Under all the circumstances of our acquaintance it was but reasonable that my esteem for you should grow, and that my children should exhibit a warm regard for you. How strong the feeling entertained by my own heart had

THE WEDDING PARTY AT MRS. LAWTON'S.

become, would not have been known, perhaps, to me, had I not been called by the terms of your letter to examine my inner self, and to prove my spirit ere I attempted to frame a reply to so important a proposal. I believe that your affection for me and mine is deep and enduring. I know that my regard for you is earnest and trustful. If this sufficeth thee, dear friend, my answer is yes. ALMA N. CAMP."

. . . . . .

One fair spring morning, about four months after the date of this letter, which this missive bore, a considerable number of persons were assembled in the cheerful parlors of Mr. Stanley's sister. A stranger looking in upon the assembly would have had his curiosity awakened by the mixture of classes and intelligences which the company presented. There were Mr. Edward Hammond, Secretary of the —— Mission, and Miss Delmont, a teacher in the same excellent institution; Betty Sniven; Mr. Taylor, Stanley's partner, and Mrs. Taylor; our old friend Larry, alias "Bumpy;" Mrs. Moriarty and her son Mickey; Mr. Carringford, Norton's kind employer, and Mrs. Carringford; Rinna, the young sister of the sick and dying girl to whom the ministrations of Mrs. Camp were so acceptable; Mr. and Mrs. Price, with their two eldest children, almost young ladies; Stanley's sister and brother-in-law, Mr. Lawton; several of Mr. Stanley's more intimate friends, and an old farmer-uncle of Mrs. Camp's who had come down from Maine by express invitation; Mrs. Camp, Sadie, Norton, and Dell; and last, but not least, the Reverend Dr. Phillips, whose air seemed to convey to one the impression that something of importance was about to occur in which he would perform a not insignificant part.

The occasion which brought these together, our reader has doubtless surmised already. It was the marriage of Mrs. Camp to Brighton Stanley. And need we say that it passed off pleasantly?

"Indade, indade, ma'am," said the true-hearted Bridget Moriarty when her turn came to congratulate the wedded, "ye desarve to be happy as the angels, shure. As long as grass grows and water runs, may ye live, both uv yees, an' niver have to taste uv sorrer or misfortin. Musha now, Misther Stanley, ye'll be afther lettin' us have a sight of the swate lady now an' thin, for indade it's a great loss to us, it is, havin' her no more in the owld house down there beyant."

"Never fear," returned the happy bridegroom, "you people of Prince Street have a mortgage upon this dear wife of mine, so she thinks, and you will see her occasionally."

Every one praised the biscuits and cakes, which together with orange-ice, Charlotte Russe, lemonade, chocolate, and a variety of fruits, constituted the refreshments. Sadie had made the biscuits and aromatic cakes in the pure, healthy way long ago learned from her mother. Larry and the children generally, were delighted with this feast of good things.

"Tell you what, Nortie," said the former as he smacked his lips over the dainties, 't reminds me of the time I took somethin' for you to eat down to the perlice station. You r'member. My eyes, wasn't that roll good your mother give me! Mom makes 'em pretty good now, but law, I jest never eat such good ones as I got at your house."

The evening which followed the bridal found the newly-wedded in their own pleasant home; for Mr. Stanley had taken a modest dwelling in the vicinity of Grammercy Park, and furnished it in anticipation of the event which would rescue him at last from bachelorhood.

The ample sitting-room, with its neat and comfortable furniture, appeared like a new world to Norton and Dell, while Sadie reflected in her smile a sense of new-found happiness as she gazed upon her cosy surroundings.

That evening Uncle Rob spoke of the many years which had elapsed since he had seen last the face of his niece, and of the pleasure this meeting gave him.

"Why, Almy," said he, "how was it you didn't let your old uncle know of your existence? I found that you'd disappeared from Boston, and nobody could give one a sign of your whereabouts."

"Alma owes us some account of her life, Uncle; and indeed, my love," said Stanley to his wife, "you promised to tell me, after we

were married, how it was that you came to live in such obscure relations. Perhaps now is an appropriate time, as Uncle appears to demand satisfaction."

"It is not a very long story, dear Brighton," returned the lady, "and, probably, an overweening sense of self-reliance or self-importance, as some people called it, lay at the bottom of my conduct."

"I remember you as a little girl, Almy, always wanting to do things for yourself and hating to make trouble for people," remarked the Maine farmer, "and I s'pose the disposition didn't wear off as you grew up. Well, let's know about your life among the lowly."

"After Lawrence died, I returned with the children to Boston, and lived for a time, as you know, Uncle Rob, with Lawrence's father. He had become much reduced in circumstances, the war having quite broken up his business, and he had a large family to maintain. The girls, Lawrence's sisters, had formerly expressed much affection for me, but when I came with my children, apparently compelled to seek shelter under their father's roof, they treated me coldly, and intimated by look and asides that their father had as much as he could do to support them, and that I had no right to expect him to provide for me. Such conduct was intolerable, as I had only asked a temporary asylum with them, so that I could mature some plan for my support."

"Why didn't ye come to me?" exclaimed Uncle Rob in much excitement.

"I wrote to you, Uncle, but received no reply until several months afterward, when I had come to this city, and had already entered upon an engagement which provided me and the children with the necessaries of life. Your letter had evidently been tampered with, for a long time elapsed between its date and the day when it was placed in my hand. I wrote to you immediately."

"Yes, and I saw sperrit and pluck in every line of it, and felt proud of you, and thought to myself—Almy's going to show folks that if she be a widow with three little children, and nothing besides her head and hands, she isn't helpless, and she'll get along."

"Thank you, Uncle, for the good opinion. At first I occupied rooms in the neighborhood of Cooper Union, but finding them too expensive, and having to go every day to a shop below Canal Street, I found rooms in a building farther down, where we remained two years; then work began to slacken, and it became necessary for me to remove to cheaper quarters, and they were discovered on Prince Street. One day while looking in that neighborhood for a tenement a little less uninviting than most of them, I asked an honest-faced Irish woman if she knew of any cheap apartments in a tidy house. It was Mrs. Moriarty, and I went home with her, and hired those two rooms in the rear of the third story, which have been our home so long; a home in which we have enjoyed many, many days of true happiness notwithstanding its rude and untoward surroundings."

"Yes, my dear Alma," said the proud husband, "that pure happiness which comes to the charitable, earnest heart when dispensing its wealth of patience and good-will among the needy."

"Almy was always one of the steady, contented kind when a little gal," said Uncle Rob, "while others were a complainin' because things didn't suit 'em, she'd be good-natured and pleasant, taking matters in a practical sort of way. Her mother was a good deal like her. Well, I'm glad you remembered me, Almy, this time, and I think you've got a right good man in Mr. Stanley. He's one of our sort, kind of old-fashioned, you know, and it seems to me, too, he'll appreciate you."

Stanley smiled at the frank humor of the old farmer, and said:

"I shall endeavor to appreciate her, and I want you, Uncle Rob, to watch me, to see that I make a good husband. Men of my years are usually set in habits which do not comport well with new relations, especially the domestic, and they find it very difficult to accommodate themselves to new duties and responsibilities."

"If ye have the mind," said the old man solemnly, "ye can meet your duties rightly. I'd trust you, my boy, knowing you to have the spirit to do the right."

Dell had enthroned herself upon Stanley's knee that evening, and when Uncle Rob had concluded his admonition, she looked half reproachfully at him, and throwing her little arms around Stanley's neck, exclaimed:

"I dess my own dear new papa will do just right, I *know* he will."

H. S. DRAYTON.

THE END.

## THE REASON WHY.

MOST people are cross, and most people are unusually hungry on Sunday. No one can tell why it is, but if we observe our acquaintances, we shall find it to be true.—*Golden Rule.*

NOW it seems to me the easiest thing possible to know the reason of this Sunday crossness and hunger. Almost everybody sleeps later on that morning—most persons from two to three hours. A great many parents are driven up at last by noisy, hungry children clamoring for breakfast. They rise hurriedly, themselves faint from a longer fast than usual. The breakfast, where servants are employed, has been kept waiting so long as to be nearly unfit to eat, and often the poor servant is blamed for it, and the "crossness" of the mistress rouses crossness in her. All having had their usual habits broken in upon, are affected more or less by it, principally the children. When servants are wanting, and the late risers have to prepare breakfast, what a hurrying and "scurrying" takes place. Then there is the fire that won't burn, the muddy coffee, the underdone biscuit, the crying, quarreling children (little animals as they are, like any other animal deprived too long of food) ready to snap at anything, while father wonders that they are so cross. Many a child has had a Sunday whipping when the real fault lay with those who compelled it to wait too long for its accustomed bath and food. Just here I bethink me of a child who used often to be chastised on Sabbath morning, not exactly for crossness, but for skipping out of bed, waking up two sisters and a baby brother, and getting them all uproarious with laughter at her antics. Ah, me! how that child subsided as mother, driven from her bed by the noise, appeared at the door. I took the whipping, but to this day am in doubt whether I deserved it or not. *I* wasn't tired with work; I rose at my usual hour; and if only the rest of the family had, what unpleasant memories I should have been spared.

"No one can tell why people eat more on Sunday!" Because they've fasted longer. And then overloading their stomachs and having no usual labors to engage in to work it off, but idling about, stretching themselves to rest again, or dozing over a book or paper, who wonders they are cross? Some of these late risers—more's the pity—are church-goers; and then there are the hasty or neglected baths, the clothes that won't be found, the missing buttons, etc.—when found, mother is called all ways at once, and at last has her brood dressed only as the bell strikes for church. Throwing on her own clothes, snatching parasol and fan, and marshalling her troops, she hurries forth, and, panting and heated, enters the house that "holiness becomes forever" quite unfit for worship.

And just here I must say it seems to me that Protestant churches might, with great profit, adopt one custom of Roman Catholic ones, by appointing an early morning service—at least in summer. As it is, the hottest hours of the day, half-past ten in the morning and at three in the afternoon, the bell summons out the faithful to drag, through the heat, bodies which, however willing the spirits they may carry, do often succumb to it. I have positively envied the Irish girls as I saw them walking cool to church in the fresh morning hours, while I, miserable woman, myself up at the same hour as on week days, was waiting breakfast for sleepers.

But I hear some workingman or woman, some overtasked father or mother, ask, "Is not Sunday a day of rest? Do you grudge us *one* morning to sleep?" Yes, dear friends, I do grudge you the morning hours, because I know it hurts you more than it helps or rests. A celebrated physician tells his consumptive patients even, "Never go to sleep after you wake in the morning. Every nap you take drains your life." Judging from my own feelings when forcing myself into taking a second nap that I might not disturb those who wished to sleep, I believe this to be true. Try rising at your usual hour through the week, take breakfast at the usual hour, bathe and attend church in the morning—let us hope the hour for service will soon be appointed earlier ere the sun is hot—then in the afternoon, O workers, stretch the tired limbs on the lounge, on the cool grass under the lilac bushes or the great, glorious elms, and rest body and mind until evening. A short service of prayer and praise you will surely wish to join in ere sleeping, and will come home refreshed, and, as Fanny Fern says, with "something wherewith to fight the devil with through the week."

COUSIN CONSTANCE.

Literature, Mental Science, and Education.

True philosophy is a revelation of the Divine will manifested in creation; it harmonizes with all truth, and can not with impunity be neglected.

## BRAIN AND MIND.

### CHAPTER VI.—*Continued.*

#### ORDER.

THIS organ is situated in the middle frontal convolution, at the outer angle of the superciliary ridge (See Fig. 17–O). It was discovered by Spurzheim. In Dr. Gall the element of Order was extremely small. Dr. Fossati says on this point: "If it be true, as we believe it is, that there is an organ of Order, Gall was absolutely destitute of it." A comparison of his cast or portrait, with that of Wellington, Dr. Johnson, or of John Neal, the American author, will show a striking difference in the development of that organ.

When large, the lower part of the forehead appears square, and relatively broad.

It is the function of Order to give a love of method and system in the arrangement of individual objects. Persons who have this organ well developed are disposed to be orderly in their business affairs. They aim to have a time and a place for everything; are punctual in keeping appointments, neat and cleanly in person, and systematic in all things. Much, however, depends upon habit and association in giving direction to this faculty. A person may be systematic in some things to which his attention is specially called, while in regard to other matters in which he takes little interest, he may be considered quite disorderly.

In the head of Curran, this organ appears to be quite deficient; and he was noted for his careless, slovenly habits; while in the mask of the celebrated William Pitt, it is very largely indicated. As an orator, Pitt was remarkable for the orderly arrangement and coherence of his words and sentences. In persons noteworthy for administrative ability the organ is found large. Dr. Gall speaks of an idiot in Paris who could not bear to see a chair

Fig. 35.—ORDER LARGE.

or other object out of place; but would immediately replace it, without an intimation, as soon as it was disarranged. Thus the instructive action of the faculty was illustrated. In Fig. 24 it is evidently small.

#### CALCULATION OR NUMBER.

The organ of this faculty is located in the frontal convolutions, at the external angle of the superciliary ridge. (See Fig. 17–C). When large, it gives fullness and extension to this portion

of the brow. This organ gives facility in the use of figures for computation. It is limited, however, in itself, to mere calculation; other faculties are essential to success in the higher processes of mathematics. George Bidder and Zerah Colburn astonished the world by their calculating talent, when mere boys. Mr. Combe predicted of the former, however, that he would never excel as an engineer; and in confirmation of this prediction, his teacher said of him, after having given him instructions for two years, that he did not show as much capability in the higher branches as many others of the class.

Fig. 36.—Calculation Large.

In Mr. Combe the organ was small, and he said of himself: "Arithmetic has always been a profound mystery to me, and to master the multiplication table, an insurmountable task. I could not now tell you how many eight times nine are without going to work circuitously, and reckoning by means of the tens. Yet, for seven years I studied arithmetic. This deficiency has been the occasion of much trouble to me. I could understand everything relating to accounts, but had always to employ clerks to perform calculations. This faculty in me is, in fact, idiotic, and the organ is very small. Were my other powers in like condition, I should be totally unfit for the ordinary business of life."

Arctic travelers speak of the deficiency of the Eskimo in respect to numerical calculation; they generally resolve every number above ten into one comprehensive word, and in corroboration of the weakness of this organ in the Eskimo brain, it is said that the external angle of the eye instead of being horizontal with the internal, as with us, is sensibly raised up toward the temples.

A patient in the Lunatic Asylum of Newcastle, England, employed himself continually in covering paper with arithmetical calculations. His paper being taken away, he used a slate; this was removed, and he then scratched the figures on the wall with his nails; his hands were then tied behind his back, and he employed his tongue to make figures on the wall with saliva. This conduct indicated disease or excitement in the brain-matter composing the organ of Calculation. In Napoleon the organ was large, as is seen in the cast by Antommarchi. In Dr. Gall it was small, and he affirmed that every kind of numerical computation fatigued him, while "he knew nothing of geometry, nor the problems of mathematics."

### LOCALITY.

The organ of this faculty is situated in a division of the First Frontal convolution, over Weight, and upward and outward from Individuality. (See Fig. 17–1.)

Everything which exists upon the earth must occupy a place somewhere on its surface, and it is the function of this organ to set us in harmony with this order of nature, by enabling us to form conceptions of, and to remember Locality. Those who have this organ well developed possess an instinctive sense

of the relations of place and direction They are enabled to make their way readily to any desired point, and easily remember the scenery and topographical features of places which they have visited. When very large, it gives a passion for traveling and seeing new countries. In M. Meyer, author of "Dia-na-Sore," it was greatly developed, and he found no pleasure except in a wandering life. His memory of the places which he had seen was astonishing.

In the busts and portraits of all eminent navigators and travelers, as well as in great astronomers and geographers, there is invariably a prominence at the seat of this organ. Witness the portraits of Captains Parry, Ross, Dr. Kane, Sir John Franklin, Galileo, Laplace, Herschell, Dr. Livingstone, the explorer of Central Africa, etc. It is by the aid of this faculty, in co-operation with other perceptive powers, that the Indian is enabled to traverse the trackless forest, and make his way with great ease from place to place.

Many of the lower animals, particularly horses and dogs, possess this organ in a remarkable degree. It is related that one of a litter of pigs recently born was taken from its mother, placed in a barrel, from which it could see nothing but the sky, and carried on a wagon some distance by a circuitous route and across a stream. A few days after, the little pig made its escape from the pen in which it had been inclosed, and was found to have taken a direct line toward its home and mother. It swam the stream in its course, and, being carried down a little by the current while crossing, the animal rectified the deflection by striking out at a new angle for its destination, when it had reached the other side.

Birds, especially the predatory class, have the instinct of Locality in a marked degree. Pigeons are remarkable for their local memory, and some varieties are highly esteemed for their swiftness and fidelity as messengers.

At one time Dr. John Hunter was afflicted with a disease which disturbed the function of this organ, and Sir Everard Howe says of him: "He had no conception of any place existing beyond the room he was in, yet was perfectly conscious of the loss of memory."

***The Adaptation of Nature.***—In the enumeration of the physico-perceptive facultics which we have just completed, we observe an order and completeness, with respect to their location and function, which are characteristic of the works of the Creator in every department of nature. These faculties are all arranged about the eyes, the chief instruments through which impressions of the external world are conveyed to the mind, and each has to do with a quality or relation of external things which is entirely distinct in essence from every other relation, but necessary to a complete conception of any material object. If we take a common object, a tree, for instance, and exercise each one of our observing faculties upon it successively, we may then gain an idea of the complete impression which they give.

Fig. 37.—Locality Large.

In the beginning we must perceive

an object as an existence before we can note its qualities, and here the organ of Individuality is exercised, and enables us to separate the tree from all other objects which exist, and to consider it in particularity. But trees differ very much in their forms. The pine, the elm, and the willow have each a peculiar shape, and the organ of Form enables us to apprehend this property. Again, trees are of all sizes, from the seedling of an inch high to the giant of the forest, full grown, towering up a hundred feet or more; and we are enabled to take cognizance of this point of difference by the organ of Size. The weight or density of the wood which composes a tree is a quality which it is often useful to note, and through the organ of Weight we are enabled to perceive the differences which exist in this respect between various kinds of woods. Color, also, is a quality which belongs to a tree; its wood may be light or dark, and its leaves show different shades of green or brown, according to the season, and here the organ of Color comes in as a convenient and agreeable intellectual accessory. Again, nature observes a method in the disposition of the limbs and leaves, and every leaf shows a perfectly systematic arrangement. To give us a proper idea of this relation among the parts of the tree, we are endowed with an organ of Order. Moreover, it is useful for man to know the number of its parts to be able to compute its dimensions, the years of its growth, etc.; and here the organ of Number comes to help toward obtaining such knowledge. Finally, the tree can not exist without occupying a piece of ground, and having a special situation, for the consideration of which the intellect is provided with the organ of Locality.

Some men possess these faculties in a large measure, and therefore keen powers of observation, which enable them to give accurate descriptions of objects which come in their way. Others are feebly developed in them, and are superficial in their observations, and vague and indefinite in their descriptions of physical objects.

## THE SEMI-PERCEPTIVE OR LITERARY ORGANS.

### EVENTUALITY.

The organ of this faculty lies in the middle of the forehead directly above Individuality. (Fig 17–E.) The natural subdivisions of the First Frontal convolution in this region of the brain appear to afford a special seat or center for it. It is the function of Eventuality to take cognizance of action and change, and thus supplies memory of events, circumstances, whatever has passed through our own experience or that of others. Dr. Gall was of the opinion that the parts embracing this organ, and what we now call Individuality, were the seat of one organ only, and he named that "Educability," because he found that persons having this part of the brain large were distinguished for prompt conceptions, facility of apprehension, retentiveness of memory, and a strong desire for knowledge and instruction. Dr. Spurzheim subsequently made the analyses which determined the separate function of Eventuality with enough of clearness to warrant its being set apart as a special organ.

In illustration of the distinctive functions of the two organs of Individuality and Eventuality, Mr. Combe relates the following anecdote. There had been a great review, and he dined with a number of gentlemen who had attended. He asked one of them what regiments were on the field. He re-

plied, that he did not know. He asked him then if he remembered the numbers on their knapsacks. No; he did not notice them. He then inquired if he had observed the facings of the regimentals. No; he did not recollect seeing them. He asked him then what he did see. "Why," he replied, I saw the review." "And what do you call the review?" asked Mr. Combe. "Why," said he, "I do not call the numbers the review, nor the facings the review, but the evolutions." He then described the various movements, the marching and the countermarching of the soldiers, with great precision. Another gentleman sitting by said: "I know that the soldiers marched about and formed squares, yet I certainly could not have described the various successive movements as that gentleman has, but I remember what regiments were on the field, their numbers and facings." Mr. Combe was struck with the difference between these two gentlemen, and remarked, that in the first, Eventuality was much the more prominent organ, and in the second, Individuality greatly predominated.

Some writers consider Eventuality not only a central depository of knowledge or material for the use of the intellectual faculties, but also receptive of the results of the operation of the sentiments and emotions. Love of knowledge is certainly its innate characteristic, and those who have it large are given to inquiry and investigation. That disposition which is commonly known as curiosity is referable to it rather than to Individuality. Dr. J. T. Browne says: "Seeing, then, that this organ of Eventuality is the only one that can become sensible of the existence and of the special functions of all the other organs, whether they relate to external things or to inward thoughts and feelings, it follows, in the course of reason, that it must embrace within its sphere of action the notion of the entity, Self. And for the same reason it seems right to assume that it is also the true seat of Consciousness, that mysterious abode so long sought for in vain by the most able students of metaphysical science."

Authors who excel in descriptions of things owe this quality of their composition to a good endowment of Individuality; while those who excel in the description of action, possess Eventuality in a large degree. Both of these organs are essential to vividness of narration, when both objects and actions enter into the description. These

Fig. 38.—Eventuality Large.

organs were large in De Foe, Goldsmith, and Swift, and are prominent in Victor Hugo and Wilkie Collins, and the qualities which this organ gives to composition appear strikingly in their productions. In the portraits of the naturalists Cuvier, Buffon, Lyell, and Buckland this organ is prominent. Eminent jurists and statesmen, like Webster, Calhoun, Choate, and Evarts, have it large. (See Fig. 38).

### TIME.

The location of the organ of this faculty is in the middle frontal convolution, about midway between the *vertical frontal fissure*, as marked by Ecker,

and the anterior margin of the brain. Its place, as indicated on the cranium, is in the center of the lateral region of the frontal bone, immediately over the orbit. In the living subject it is above the middle of the eyebrow, and outward from Locality. (See Fig. 17–33).

This organ furnishes the power of measuring time. It is a matter of common observation that there is a great difference among men in regard to memory of the time when events have occurred, as well as in regard to their ability to measure intervals in music, and to keep step when marching or dancing. Some persons may possess this faculty in a remarkable degree, and be idiotic or feeble in all other respects. A case is related of the son of a farmer who hardly knew enough to take the cows to pasture, yet was able to tell the hour of the day with great precision, even immediately after being awakened from sound sleep. The deaf and dumb usually show a strong appreciation of rhythmic movements by keeping the step in dancing. "The sense of touch," says Dr. Simpson, "may be the channel through which the organ of Time is excited, as well as the sense of hearing and sight. No one will dispute that a soldier could perform the manual exercise to a succession of taps on the shoulder; and to time in the same way given might a person dance." The deaf and dumb dance by taking the time from the movements of the musician's hand, or instantaneously from their companion dancers, and apparently derive great pleasure from the exercise.

The metaphysicians were greatly puzzled to account for the power which is possessed by man and some of the lower animals for appreciating intervals of time, until it was shown that this power is an original mental faculty, having a certain part of the brain as its functional center.

A case of disease in this organ, accompanied with special derangement of the power to consider the duration of time, is recorded by Dr. Hoppe, of Copenhagen. A lady of much intelligence, who required his medical advice, stated, that though perfectly conscious of everything around her, she possessed no conception of time. Sometimes a very long period and at other times a very short period seemed to her to have elapsed since she had fallen into her present condition. Without being questioned, she complained of pain, and a strong sense of burning in a line across the forehead. And when requested to point out the seat of the pain, laid her finger exactly on one organ of Time, and then drew it across to the other organ. She stated that she felt pain in no other place but in this line.

Fig. 39.—Time Large.

Many remarkable instances are related of the manifestation of this faculty

by some of the lower animals; but, as the reader has doubtless met with frequent illustrations in his perusal of current literature, we deem it unnecessary to occupy space with any particular relation.

The development of Time in young children is subsequent to that of Eventuality, which is apparent from the fact that one two years old will exhibit strong curiosity and a good memory of things, but have scarcely any notion of time in its extent or application. What has passed is referred to "yesterday," and "to-morrow" expresses for them the future generally. As the child grows older he is found setting closer and closer bounds to intervals, and approaching to exactitude in periodic designation.

The organ of Time plays a very important part in our mental life, and Dr. Browne fitly says: "A keen, habitual sense of the value of time is naturally a very influential, nay, indispensable ingredient in the composition of an industrious character;" and he argues, that "if the harmonious intervals of musical sounds are dependent on a correct perception of time, it is not irrational to suppose that sustained harmony in the arrangement of our thoughts and words will be proportioned to the relative size of the organ of Time, especially when it is acting in unison with the sense of Order." In Dr. Gall, Samuel Johnson, Daniel O'Connell, Benjamin Franklin, Henry Clay, and other men distinguished for indefatigable, intellectual activity and practical efficiency, this organ was a salient feature.

### TUNE.

The organ of Tune is situated in the lower lateral or angular part of the forehead, adjoining Time, and immediately above Order. (Fig. 17–34). When large, it gives a rounded fullness or projection to that part of the temporal region, although its conspicuity may be much reduced by association with a large organ of Order, and the relative disposition of the frontal convolutions. According to Dr. Spurzheim, this organ in Glück had a pyramidal contour; in Mozart, Viotti, Dussels, and others, the external and lateral parts of the head were enlarged and rounded.

This is the musical faculty. It gives love and appreciation of melody, and is essential to skill as a musical performer. Time is, however, a most important ingredient in a genius for music, contributing to the sense of harmony by affording a just perception of intervals.

Dr. Gall observes that a large endowment of this organ should not be expected in every ordinary performer. By persistent training a person with a moderate development of the organ may acquire considerable skill with musical instruments. But when the soul feels the inspiration of harmonious sounds, and the countenance expresses the rapture which thrills through the frame of the real musician, a large organ will never be wanting.

As an instance of remarkable deficiency in the organ and faculty, the case of Ann Ormorod is given. She was admitted at twelve years of age to the Blind Asylum of Liverpool, and during two years unsparing efforts were made to develop any musical talent which she might possess, but without effect, as she experienced no greater pleasure from the finest music than from the rudest noise. A comparison of the mask which was taken of her head with that of Madame Malibran, shows a remarkable difference in development at the region of Tune; the one being flat and sunken, the other full and protuberant.

Dr. Andrew Combe gives an interesting case of disease of this organ from his own practice. The patient complained of acute pain at the exact situation of the organs of Tune, which were largely developed. She dreamed a great deal of hearing the finest music, and her dreams were so vivid that she said she believed she would be able to

Fig. 40.—TUNE LARGE.

reproduce a piece which had particularly pleased her. The pain and excitement in the organ of Tune continued for several days, with growing intensity, accompanied by an irresistible craving for music, which she was powerless to repress. Being refused permission to get up and play and sing, as she strongly desired to do, she requested that a friend might be sent for to play and sing for her. In the meantime the craving became so intolerable, that she seized a guitar, and lying upon the sofa, gave way to the torrent of her feeling with a clearness and strength of voice and a facility of execution which were extraordinary. Dr. Combe, perceiving the physical cause of these phenomena, made use of remedies to allay the inflammation and excitement of the cerebral organ, and with happy results.

Napoleon I., as stated by Bourrienne, had very little capacity for appreciating music, and his mask confirms the statement. Sir Walter Scott was weak in this faculty also, while Moore possessed a strong development. The difference among the poets in lyrical qualities may be referred to their differences in the organ of Tune.

In Weber, Handel, Beethoven, Rossini, Jenny Lind, and other great musicians, the organ is strikingly shown. In the ordinary practice, however, of Phrenology, it is not an easy matter for the examiner to determine the size and strength of Tune, until he has had a large amount of experience. The student should carefully note the differences of conformation in the region of the organ, as shown on the heads of eminent musicians, when contrasted with those who are lacking in the musical faculty.

Singing birds are examples of the existence of this faculty in the lower animals, and in the male singing bird a greater fullness of the skull over the eye orbit exists than is observable in the head of the non-singing female.

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HOW HE OUTDID THEM.—A lad in Boston, rather small for his years, worked in an office as errand boy for four gentlemen who do business there. One day the gentlemen were chaffing him a little about being so small, and said to him:

"You never will amount to much—you never can do much business; you are too small."

The little fellow looked at them.

"Well," said he, "as small as I am, I can do something which none of you four men can do."

"Ah, what is that?" said they.

"I don't know as I ought to tell you," he replied. But they were anxious to know, and urged him to tell what he could do that none of them were able to do.

"I can keep from swearing!" said the little fellow.

There were some blushes on four manly faces, and there seemed to be very little anxiety for further information on the point

## HOW TO PREPARE FOR FOREIGN TRAVEL.

THE purpose of this brief paper is to give advice concerning the mental preparation necessary to obtain the greatest pleasure and profit from a visit to foreign lands.

As the climates of Europe vary from warm to cold, clothing will be required for both extremes, as at home. Simplicity and durability are the two great requisites for the traveler's dress. The less baggage, the less trouble and expense. Employ your time rather upon mental than physical furnishing, if you wish to make your trip profitable to you throughout time. If your chief desire is to live in handsome hotels and observe the dress and manners of men and women, you can enjoy nearly as much of that in the United States as in Europe, without the dangers of ocean travel.

Now, what are the best things to be seen in foreign lands that we can not see at home? There are paintings, statuary, fine buildings, forests, prairies, rivers, cataracts, mountains in our own land; have we seen these? Have we found ourselves able to appreciate them, grown up mentally to the height of American scenery, of American science and art? If so, then we may, with propriety, think of going abroad for wider culture, deeper knowledge. The sight of the eye is more than the hearing of the ear; an hour's description would not give us the knowledge of mountain grandeur or cathedral grandeur that one broad, sweeping gaze would afford. And in those lands beyond the blue Atlantic are gathered the treasures of art, the collections of science, the products of skill which the ages have amassed and willed to the present. Priceless paintings which would never come to us, the works of Angelo, Murillo, Correggio, Canova, can only be seen by making a pilgrimage to them. I say pilgrimage because unless we take with us the devotion and soul of pilgrims, we might as well absent us entirely from the shrines of genius. Such cathedrals as are scattered throughout Europe w l never grow upon American soil; they are the product of a past, mighty in a way, different from the might that builds us swinging iron bridges and steamships of iron planks. Crumbling abbeys and castles will never dot our American landscape. And that atmosphere filled with legend, romance, myth, can only be breathed in lands saturated with the tears, the blood, of long lines of maidens and warriors whose beauty and high-born grace smiles to-day in the grass and flowers that nod above their ashes.

One of the first requisites for a traveler is knowledge of some international language, if we may so express our meaning. French and English are now more widely spoken than any other tongues, hence the mastery of these will give the key to all modern knowledge. Madame de Peyrac's "Comment on Parle à Paris," or Williams' "Getting to Paris," should be purchased and carefully studied, followed by Marcel's "Rational Method of Learning to Read, Speak, and Write French," which may be followed by reading Ladreyt's "French Conversational Reader," Picciola, Graziella, and other easy prose books. Next, calculating in foreign coins and currency will be a necessary step in preparation, for ready counting and valuation is essential to economy in expenditure; and it takes considerable practice to enable one to think in pounds, guineas, francs, louis, piasters, etc.

Now one should take an inventory of his mental furnishing to find what he has or lacks to form a good foundation for future acquisitions. What knowledge have I of European history, of European literature, of the principles of art and architecture? is a pertinent query. One might nearly as well stay at home as to start away ignorant of these four important subjects. You say, "Why, we could not master these in months and months, and we are to start in the autumn." Certainly you can not master these branches in years, but you may make a beginning; you may start with the first principles, and knowing what you lack, may constantly make additions to your store in a systematic method. Take first an universal history—Willard's "Universal History in Perspective" is a good one; from this work

fix in your memory the great epochs of European history, and read special histories to fix prominent persons and events in memory; read also biographies of prominent leaders, as Hannibal, Cæsar, Charlemagne, Napoleon I., Josephine, Mary Stuart, Prince Charlie, Elizabeth, Marie Antoinette, Henry VIII. and his Queens; these may be found condensed with many others in Godwin's "Cyclopedia of Biography," or in Chambers's or the New American Encyclopedia. Next read a history of France, of Switzerland, of Spain, Italy, and Germany, if you purpose visiting all these lands. If your time is quite limited, confine yourself to the universal history, and stamp the outlines of historical knowledge upon your mind; what you acquire abroad will then fit in its proper connection. Broad, clear, comprehensive outlines of knowledge are vastly better than a jumble of disconnected facts.

Jarves' "Art Hints" will furnish you with important knowledge concerning the true spirit of art and its sure foundations. Any or all Ruskin's art books are valuable, inculcating sound principles while leading the art-worshiper to the true source of all art, nature and nature's God. Now read carefully D'Anvers' "Elementary History of Art," or Clement's "Hand-book of Painters, Sculptors, Architects, Engravers, and their Works;" and study any books of engravings, any paintings, statuary, or fine buildings that may come in your way here at home. Note all their peculiarities and good points; learn why some are thought good, bad, or indifferent; observe the spirit of such works, whether they are made for show, for use, or for expressing a love and taste for the beautiful. If possible, study some of the books of engravings of Raphael's, Angelo's, Titian's, Turner's, or Rembrandt's works of foreign cathedrals and castles. Samson's "Elements of Art Criticism" should also be carefully studied. One will thus acquire a faint idea of the vast riches of European galleries of art and of those works which are judged by competent critics best and most worthy to employ the time upon. We can see enough mediocre and fair work in painting, architecture, and statuary, without leaving the United States, and it is desirable to know exactly what is highest and noblest in conception and execution and confine the attention almost wholly to those works.

Finally, we must not forget making some acquaintance with the authors and their writings. One must know of the great writers of each land, by reading something of their works and their biographies, and in order to have this knowledge systematic, read Mrs. Botta's "Hand-book of Universal Literature," or Schlegel's "History of Literature;" these, with Gilman's "First Steps in English Literature," and Sismondi's "Literature of the South of Europe," will give a careful student a fair acquaintance with the history of literature. This is a brief outline of the course of study preparatory to really enjoying and profiting by foreign travel; if to this we add a knowledge of drawing and the rudiments, at least, of painting and music, our travelers will find themselves very fairly equipped for pleasant journeying. That much pleasure may be taken and much good gained without this preparation is undeniable, but if we seek the most, we must give time and thought to making our minds and souls receptive by harrowing up the soil beforehand, that the seed may fall upon good ground, "yielding some forty, some sixty, some an hundred fold." Knowledge is like money out at interest, it increases by its own aggregation, its own use, and if there be no principal, how can there be interest?

Such books of travels and guide-books as come in the way easily, it will be well to read. Every scrap of information will come of use. Finally, begin at once to cultivate your powers of observation; learn to look at everything carefully, thoroughly, understandingly, for by that means comes great profit.

AMELIA V. PETIT.

## WAITING.

When rose-leaves in long grasses fall
To hide their shattered head,
All tenderly the grasses tall
Bow down to veil the dead.

And there are hearts content to wait,
Still as the grasses lie,
Till those they love, however late,
Turn there at last to die.

F. W. B.


## FOOD AND HEALTH—SOME EXPERIMENTS.

SOME one gives an account in the New York *Ledger* of the method he pursued to relieve himself of that arch-enemy of physical comfort, dyspepsia. The hygienic points in the account may be new to the *Ledger* readers; to the old readers of the PHRENOLOGICAL, they are only confirmations of certain well-established principles governing nutrition and the assimilative functions. Here they are:

"I was turned off by the doctors as incurable, but one was kind enough to give me some good advice, and it, together with my own judgment, made me a well man. That was fifteen years ago, and I am well yet. The rule I followed was to avoid entirely pork and lard, and anything cooked or fried with it; also, hard-boiled eggs, doughnuts, mince pies, or any kind of pie, tarts, or pastry; also white-wheat flour, no matter how cooked; tobacco, liquor, molasses of all kinds, corn-bread, pickles, and all kinds of nuts. I lived on the following: Sound, unbolted wheat flour, stirred into boiling milk, and thickened to suit the taste, and eaten with fresh butter and white sugar; or the same flour made into light bread, and eaten twelve hours old at least; cracked wheat; boiled or roasted potatoes, warm, never c ld; fruit of all kinds, raw or cooked; soft-boiled eggs, broiled and boiled beef and mutton, rice, rye, hominy, with moderate use of vegetables; beets and cabbage very moderate. Eat no cucumbers, and if you need acid, use lemon juice, or unsweetened lemonade. Have your meals regularly, and eat nothing between meals. Stick to this twelve or eighteen months, and you will be a well man."

It is not out of place in this connection to note the fact that a statement originally published in the *Tribune* has been going the round of the American press to the effect, that a physician of Sandy Hill, N. Y., spent with a friend a part of last winter in New York attending lectures at one of our medical schools, and being of similar tastes, they chose to board themselves. Their food consisted mainly of milk, oatmeal, granulated wheat, Graham bread—and although they studied closely all the time, they never felt better in their lives than at the close of the lecture term. Their board for January averaged twenty-five cents a day apiece, and for February, twenty-three cents a day. They had meat and oysters occasionally, but only as a kind of luxury.

A more carefully-noted experience is that recorded in *Nature*, of Dr. T. L. Nichols, an American physician resident in England, who related particulars of a "dietetic experiment" upon himself which he made with a view to solving a difficulty as to the quantity of food per diem which would best sustain health. He began on November 5th, his food being chiefly bread, fruit, milk, and vegetables. During the experiment he had taken no flesh meat, wine, beer, spirits, tea, coffee, or tobacco. With regard to smoking, if it were the

good thing people said it was, why not, he asks, encourage their wives and daughters to smoke? Medical authorities differed as to the quantity of food that should be eaten, and it was a common belief that the more food we ate, the greater would be our strength.

"The first week he lived on bread, milk, fruit, and vegetables, the total weight being 3 lbs. 9½ oz., costing 3s. 1d. (about 75 cts.), *i.e.*, a daily average of 8 3-14 oz., costing 5 2-7d.; this was slightly below his standard of 6d. a day. He felt better and clearer and brighter than usual. The second week he studied quality rather than cheapness, his food being "Food of Health," milk and fruit. Total weight, 4 lbs. 4½ oz.; cost, 3s. 8d. (85 cts.); average per diem, 9 5-7 oz., costing 6 2-7d., and nothing could have been better, physiologically, than the effect of that food upon him. His digestion was simply perfect, and the action of the whole system as good as it could be. He then discontinued milk as unnecessary. For the third week the total amounted to 3 lbs. 2 oz., equal to 1s. 9d. (43 cts.), giving an average of 7 1-7 oz. of food, costing only 3d. per day. Milk was not so cheap for food as Gloster, Dutch, and American cheese, because they had to pay for the water it contained. Doctors recommended 2 or 3 lbs. of food daily to repair the waste of the system; but he asserted that the weight of brain atoms and nerve force could not be measured. The food eaten had to be disposed of at great cost of life and strength, and he believed the wisest plan was to eat the smallest quantity that would properly support the body. The fourth week, his food being similar, weighed 3 lbs. 6 oz., costing 1s. 2½d. (30 cts.), giving an average of 8 oz., equal to 2d. per day. He considered 8 oz. the minimum and 12 oz. the maximum quantity of food that should be taken per day. The total weight of his food during the four weeks was 14 lbs. 6 oz., costing 9s. 3½d. (about $2.30); average per week, 3 lbs. 9½ oz.; per day, 8 oz., costing per week, 2s. 5d., and per day 4 1-7d. He then added soups, puddings, eggs, etc., and the fifth week his food weighed 3 lbs. 12½ oz., costing 3s. 4d., being at the rate of 8 4-7 oz., at 5 5-7d. (or 12 cts.) per day. For the sixth week the figures were 63 oz., at 2s. 1d., or 9 oz. at 3 4-7d. per day. He had taken the diet without stimulants, and had experienced a constant increase of health and strength and power to work, and his weight had remained at about 12 st. 2 lbs. (170), except that at the end of the fourth week there had been a slight decrease, which had since been recovered. The experiment had been fairly made upon an average subject and the results were satisfactory. He was convinced that they ought to give rest to the stomach, and that this would cure all cases of dyspepsia. The diet question was at the root of all diseases. Pure blood could only be made from pure food."

## DISCOMFORTS OF THE SICK.

THOSE only who have passed weary days and wakeful nights in weakness and pain on a bed of sickness, with powers of endurance weakened, and every form of mental and physical sensibility acutely active, can comprehend the multitude and misery of the discomforts which beset the sick. Noise in its hideously infinite variety; creaking boards, which no deftly-made screw has been devised to secure; rattling china and ware, not yet replaced by ingeniously-devised substitutes—perhaps the old wooden bowl and platter on dumb-waiter for food, and articles partially protected with rubber for general use; falling coals and cinders, surely preventable by the employment of wooden tongs and silent ash-pans; harsh door-fastenings, possibly avoidable by special apparatus constructed for use with locks temporarily fastened back; glaring lights, that irritate the wakeful, and make the dozing dream and start; puzzling shadows or lugubrious darkness, evils instantly remediable if only it were possible to secure a soft and shaded light. These are a few of the surface grievances of the

first stage of illness, when the head aches, the faculties of hearing and sight are preternaturally intensified, and a morbid fancy extracts suffering and bewilderment from every disturbing circumstance, however small.

Then comes the stage of helplessness, when the sick person lies in the paralyzing grip of his malady, perhaps unconscious or delirious, and those about want all the aids which skill and thought can bring to their assistance to minister to his wants safely, promptly, and with the least distress or disturbance to the patient and his surroundings. It is seldom possible to say precisely how little or how much the surroundings of a seemingly unconscious person affect him. In this period of an illness, apparatus, contrivances and arrangements of every class for the ministration of comfort to the sick, play a not unimportant part in the treatment, and should be so regarded. It is discouraging to observe the meager results of the enterprise bestowed by designers and producers of appliances useful in this phase of sickness. For example, a thoroughly efficient feeder suitable for use in the case of an adult does not exist, and expert nurses revive the old-fashioned butter-boat. A shaded hand-lamp, of no greater weight than may be borne on a finger, and so contrived that the light will fall at the point required, without assailing the eyes of the patient, is not yet devised. Complicated and costly beds, quite out of the reach of any middle-class family, and therefore available only for the wealthy, or the unfortunate inmates of hospitals, alone meet the requirement of cleanliness without discomfort. The like is true of nearly all the apparatus for the relief of pain by change of posture, and of securing immunity from pressure, or steadiness in a particular position. The rich and the poorest are provided, but not the multitude in narrow circumstances with small and inelastic financial resources.

The stage of convalescence is in many respects the most trying of all. It is then that petty annoyances, such as arise from noises, draughts, smoke, foul vapors, bad or ill-managed light, improperly cooked food, nauseous remedies administered in uncleanly cups or glasses, knives, forks, and spoons that turn over with a clatter, things that fall or are readily knocked down, irritating wall-papers, hard, lumpy or too soft beds, burdensome or cold bed-clothes, beds that can be put in order only with labor and confusion. There is scarcely an article or piece of apparatus for the sick-chamber which is not obviously susceptible of improvement, and would not repay the thought expended upon it, if placed within reach of families with small incomes, who feel the cost of comfort in sickness. None of these matters are beneath the consideration of the medical practitioner. In no small proportion of cases they are relatively of high moment. It is neither wise nor safe to leave the care of such details to nurses, whether trained or domestic. The physician should be able to direct those in charge of the sick what to provide, where to obtain all necessary appliances, and how to use them when at hand. This is a matter of more than common importance, and it is with the view of reminding the profession and the producers of special apparatus—efficient and inexpensive—of the conspicuous part their enterprise should play in minimizing the discomforts of the sick, we bring the subject under notice.—*Lancet.*

## OUR SCAVENGER-TEACHERS.

**Rats and Mice—Cats—Dogs—Smaller Vermin—Flies—Mosquitoes—Tropical annoyances.**

IT is no uncommon thing to hear people exclaim, "I do wonder what mosquitoes were made for!" Or the subject of remark may be flies, or fleas, or any one of the forty or more things which we commonly regard as nuisances. Perhaps we sometimes allow ourselves to arraign Providence in this way during momentary irritation without really giving ourselves the trouble to look into the philosophy of the matter. We think, and sometimes even intimate, that if we had had the arranging of affairs we would have been *wise* enough to leave out certain classes of annoyances. Such thoughts, perchance,

may appear to higher intelligences somewhat as children's fancies appear to us in whose ideal worlds all penalties and correctives are left out, if not the schools and the teachers also. Indeed, in the schools themselves of this day the rod is omitted, other stimulants and correctives of a less brutal nature being found to take its place. At the same time we may safely acknowledge that in a coarser age nothing less severe than a cat-o'-nine-tails would suffice to scourge the barbarism out of some natures, and it did good service too. Is it not worth the while to inquire if those things which we look upon as our greatest annoyances do not serve excellent purposes in our coarse ways of living, which will be entirely done away with as we grow more refined, and the annoyances themselves cease, to an extent which we now but slightly foresee? Among the first to whose usefulness we invite attention we will name

### RATS AND MICE.

That these so-called pests are properly scavengers, no one who has lived in the great cities and seen their haunts will deny. Firstly and mostly among garbage everywhere, picking up in out-of-the-way places and crannies the crumbs and débris which our careless habits would leave there to decay and breed disease and death, the rat plies his vocation most diligently. There is little doubt that ships and warehouses, sinks and sewers, would become far more than they are now the sources of pestiferous disease but for the labors of these scavengers, which grow to a size proportionate to the amount of work to be performed. It is by no means pretended that they do this work with any friendly feeling toward men. Having their own way in their dark and underground passages, and in the warehouses, where they are left undisturbed for so large a part of the twenty-four hours, they resent the intrusion of man very fiercely, and even attack individuals sometimes and put them in peril of their lives. It is usually this large species which attacks and even kills little children sometimes. It is also well known, that the rat by no means confines himself to garbage. It is freely acknowledged that he wastes and devours the choicest stores wherever he can reach them. If he were merely a scavenger we might look upon him with a deal of complacency and be encouraged in our wasteful, careless, and lazy habits, flattering ourselves that the rats would clean up after us. But he does the scavenging first, finding his way even to the upper floors of houses where garbage is allowed to stand and sinks are left impure. This is now becoming so largely realized that careful cleanliness is enforced in many families as the best means of avoiding the inroads of these nuisances. When we have learned hygiene well enough to be scrupulously clean, we shall doubtless also be intelligent enough to build houses rat-proof; the wonder being that we have not done so already. It is said that the irruption of the rat into Europe was followed by the decadence of the plague.

Similar remarks could be made about mice. They teach us lessons of cleanliness, though on a smaller scale and in a slightly different way. I think it would be amusing if we could know how often among indifferent housekeepers this or that room, or closet, or shelf, is overhauled and cleaned up, because "the mice have got in." The Jews were commanded to break down a shelf over which the mice had run, and doubtless we should be far cleaner if that were our rule of action. Houses can be built mice-proof as well as rat-proof. With a little trouble even wooden houses could be so built—perhaps that is one of the things that will be done when women build houses or plan the building. Men seldom think of such trifles. But in the barbarism of the past, and in the crude way common to barbarous minds, we sought to free ourselves from both these pestiferous scavengers, by using other and larger scavengers to prey upon them, namely,

### CATS.

In one sense they are cleaner animals, but left to their own way among careless people, their cleanliness is questionable. Let any one go into a low tenement-house inhabited by careless people, infested by rats and mice, and scavengered by cats, and

the cat makes the first and the worst impression. If it be asked why such people keep cats, we reply, that with them *cleanliness* is not the question. The scavenger system in such a house stands about this way: the rats or mice clear away the garbage and particles of food that otherwise would decay in nooks and crannies, and create miasmatic fevers, and the cats control the demonstrations of these smaller animals in the more open parts of the house, and protect to some extent the eatables of the inmates, and prevent their being quite overrun and kept awake at night. One would think that such a state of things, together with the outrageous din set up by the cats themselves, at certain seasons of the year, would be enough to scourge people into cleanliness, and doubtless in the long run it helps to do so. But what a barbarous state of things it is!

Very likely now you are thinking of some charmingly neat house which keeps a cat, the pattern of neatness and propriety, and seems to find it necessary to do so; and you consider that either a refutation or an exception to any theory. Not at all. If such a house kept clean needs a cat, it must be badly built. But even here a cat is a nuisance, a remnant of barbarism, an untamable savage itself. The canary, the parrot, and sometimes the plants must be carefully guarded against it. And worse still for the birds in the garden and shrubbery, which can not be guarded against it, especially singing birds, whose warblings are often their own death knells. In such cases, the cats usually kill far more birds than mice, and we are still so barbarous that we do not recognize the fact. I am convinced that in many suburban and rural places, we should make a permanent gain of one hundred song birds for every cat less on the register. But leaving these, we pass on to

DOGS,

which to a large extent, in some places, are recognized as scavengers and concomitants of barbarism. In the warm cities of the East they swarm in the streets, especially at night, and devour much of the débris of food thrown out by the careless and half-civilized inhabitants. In our own "merrie England," in the palmy days of Queen Bess, when the guests at table threw the rejected portions back of them, these were picked up by the dogs. Otherwise the straw litter common to the floors of those days would have been a greater source of malaria and discomfort than it was. All this has ceased with cleaner rooms, and it is now no longer necessary to keep dogs in our dining-rooms to play scavenger for us.

It is curious to note how nearly the number of dogs, especially in rural sections, indicates the degree of civilization in each family and neighborhood. Nothing is more common than for poor families in the country to have one or two mangy curs, even though they have not food or clothing enough for their children. Among the Indians this custom is very noticeable. It is true that dogs are very helpful in the wild new life of the frontier, as well as in hunting, but the elements that require his services are the elements of barbarism, not of civilization, and the results of his presence are often barbarous enough. I well remember how my flower-beds used to be spoiled by nightly tramping of troops of dogs when it fell to our lot to live among the Indians. We suffered also in so many ways from the predaceous habits of dogs, that in very self-defense we were obliged to entertain a dog of our own, but the habit ceased when we left the Indians.

I think the feeling that dogs belong to the barbarous period of human development, when men wore the skins of animals more than their wool, is prevalent among our wool-raisers, and is gaining ground among all classes of people, helped on perhaps by the late developments of hydrophobia. The "upper classes," who with a touch of barbaric splendor keep their thousand-dollar pets, can find no security against the sudden madness of those whom they caress the most. Wealth and beauty will, doubtless, yet become sufficiently chastened and truly refined to shun such encounters with a savage element, which is no longer necessary to the appointments of our cultured civilization.

SMALLER VERMIN.

The dogs themselves bring us a parasite, which is a warning against too close companionship, and civilized man finds similar warning against nearly or quite all intimate association with animals. The dog must not be too intimate with the children, nor his kennel too near the house if the little ones are to be protected from the murderous flea.

But aside from such animals and their parasites, it is really curious to glance around on other predaceous insects, and see how greatly they conduce indirectly to cleanliness and health. One kind imparts zest to the reasons why our bedrooms get so thorough a cleaning in the spring-time, and very frequently thereafter. Many of our kitchens are cleaned much more carefully than they would otherwise be but for the Croton bug and cockroach. And those of us who live in cities can hardly fail to get suggestive hints from enforced cleanliness when a waif is brought into a respectable family; how carefully his person and every particle of his clothing are cleansed—the very best hygienic measure that could be adopted, though usually it is a visible and felt presence they strive to avoid, rather than an occult and more insidious and fatal infection. That

FLIES

have a mission has been duly demonstrated. They scavenger the air as well as the débris of our stables and kitchens, and dining-rooms, (save the mark!) They sweep to and fro, gathering up the myriads of animalculæ too small for the human eye to see, but not too small to affect the human lungs. In the winter, when the air is pure, they do not intrude their services. It is really wonderful how discriminating they are, sometimes hardly more than respectfully looking into the kitchens and dining-rooms where only hygienic food is to be found, while they pester beyond measure the precincts where flesh is kept or cooked. Is it not possible that the "plague of flies" may yet be reduced almost to a nullity, when we become clean enough to avoid the conditions which breed, and entice, and feed the flies? We think so. A friend at our elbow, doubts whether the same can be done with

MOSQUITOES.

That is his hobby. He thinks the mosquito an excrescence on the fair face of nature. But I doubt if he has ever had much experience with the insect in its native habitat. He is in a perfect terror if he hears *one* singing at night. I wonder what he would do if he traveled through such a "Fly" as was near my grandfather's house, when the country was new. A stranger passing through there one day met another, and inquired what sort of a country it might be, saying that the very coat on his back had turned *gray* since he left home in the morning! It was literally covered with mosquitoes.

If their presence renders the country uninhabitable, all the better. Such a country is full of miasm and should not be inhabited long, unless the swamps can be drained and their miasm dissipated.

Mosquitoes have been very largely instrumental in dissuading from the settlement of many localities which otherwise would be settled by careless or ignorant people, who would speedily die there. A few mosquitoes are very useful, in keeping lazy people on the move, who otherwise might even lie down in the woods and go to sleep, or be out late at night, or some other such indiscretion. The mosquitoes of these great cities ought to stir up their inhabitants to drain the unhealthy swamps of the neighboring shores, and probably will do so—when we are sufficiently civilized. Much in the same vein might be said of many of the

TROPICAL ANNOYANCES

which prevent people from going to sleep in the unhealthy swampy forests. On still a larger scale we can easily see that the presence of these pestiferous animals prevents, to a certain extent, the general influx of population upon their fertile soils, where we should all in time grow worthless and lazy like the present inhabitants of the tropics. The colder climate of our northern zones spurs us up to exertions not needed in the tropics, where the greatest

efforts of man seem to be largely put forth in self-defense against the abounding animal life that surrounds and encroaches upon them.

For our own part, we are inclined to think that those who accept the conditions by which they are surrounded, and learn the best possible lessons from them, will find these conditions wonderfully adapted to our real needs. But our needs change with our increasing civilization, and we find that by the exercise of our judgment, intelligence, and industry, we have before us the prospect of being able yet to subdue even what we call nuisances to a large extent, and to bring into subjection to our wants, or dismiss at our pleasure, many things that are now sources of annoyance. These are the lessons which we ought to learn from our scavenger-teachers.

JULIA COLMAN.

# NOTES IN SCIENCE AND AGRICULTURE.

**Death of Prof. Henry.**—We regret to have to announce the death of Prof. Joseph Henry, the long-time Secretary of the Smithsonian Institution He succumbed to an attack of Bright's disease of the kidneys, induced, it is thought, by a cold contracted during his trip to the North last fall in connection with the fog signal service. He was born in Albany, N. Y., December 17, 1797, and was therefore in his eighty-first year. In 1846, upon the organization of the Smithsonian Institution, he was appointed its Secretary, which position he held until his death. He may, in fact, be said to have made the Institution what it is, as he has been its manager from the first; and besides, his services in behalf of science in general have been of great value. In the PHRENOLOGICAL for July, 1875, an account of his career, with a portrait, was published

**The Candle Tree.**—In *Hooker's Journal of Botany* we find an account of the "Candle Tree," which is worth reading. This remarkable tree grows only in the valley of Chagres, where it forms entire forests. In entering them, a person might almost fancy himself transported into a chandler's shop. From all the stems and lower branches hang long cylindrical fruits, of a yellow wax color, so much resembling a candle as to have given rise to the popular appellation. The fruit is generally from two to three, but not unfrequently four feet long, and an inch in diameter. The tree itself is about twenty-four feet high, with opposite trifoliated leaves and large white blossoms, which appear throughout the year, but are in great abundance during the rainy season. The *Palo de Velas* belongs to the natural order *Crescentraceæ*, and is a *Parmentiera*, of which genus, hitherto, only one species, the *P. edulis*, De Cand., was known to exist. The fruit of the latter, called *Quanhscilote*, is eaten by the Mexicans; while that of the former serves for food to numerous herds of cattle. Bullocks, especially, if fed with the fruit of this tree, guinea-grass, and *Batatilla* (*Ipomæa brachypoda*, Benth.), soon get fat It is generally admitted, however, that the meat partakes in some degree of the peculiar, apple-like smell of the fruit: but this is by no means disagreeable, and easily prevented, if, for a few days previous to the killing of the animal, the food is changed. The tree produces its principal harvest during the dry season, when all the herbaceous vegetation is burned up; and on that account its cultivation in tropical countries is especially to be recommended; a few acres of it would effectually prevent that want of fodder which is always most severely felt after the periodical rains have ceased.

**Eclipse of the Sun.**—The total eclipse of the sun, which occurs this month, will take place on the 29th. According to *The United States Nautical Almanac* the line of totality extends over the western end of Montana, across the Yellowstone National Park, through Wyoming Territory, over Denver, Col., down through Northern and Eastern Texas, entering the Gulf of Mexico between New Orleans and Galveston. It will then pass over most of Cuba and the southern portion of Santo Domingo, vanishing from earth shortly afterwards. The breadth of the totality shadow in this country will be about one hundred and sixteen miles. The partial eclipse will extend all over the United States, Mexico, and British America. Instructions are given in the *Almanac* by which unskilled observers, possessed of a spy-glass and a watch, may make observations on this eclipse along the line of totality, that are likely to be of use if sent to Washington.

**Trees as Absorbents of Sewage.**—A correspondent of the *American Architect* calls attention to a phenomenon which he has observed in the outflow of waste from his own house. He has a close-built brick cesspool eight feet in diameter and eight feet deep, with an overflow thence for liquids into a percolating stone cesspool 10 x 10 feet; both are domed over at the top, closed each with a flat stone, and covered with soil. Unlike his neighbors, whose cesspools are constructed in the same manner and in the same kind of soil, but who are subjected to the necessity of cleaning out both cesspools at frequent

intervals, his own have been in use for four years without being opened, and have given him no inconvenience. A few months ago a deep excavation in the street near his percolating or overflow cesspool revealed the fact that the moisture from it was all absorbed by the roots of three large and very flourishing trees, a tulip and two maples, in its immediate neighborhood. "There could be no accumulation of water," he says, "where there were such channels to draw it up." This certainly is an important point to be considered in locating the area of absorption for household waste. We do not remember to have seen elsewhere noticed this very probable sanitary function of trees; but if the theory is correct, it goes far to solve the most serious difficulty in the problem of drainage without common sewers.

**Properties of Woods.**—The following items concerning the commercial value and properties of the better known woods, as laid down by the *American Builder*, are interesting to the farmer as well as to the builder:

Elasticity.—Ash, hickory, hazel, lancewood, chestnut (small), yew, snakewood.

Elasticity and Toughness.—Oak, beech, elm, lignum-vitæ, hornbeam.

Even grain (for Carving or Engraving).—Pear, pine, box, lime tree.

Durability (in Dry Works).—Cedar, oak, yellow pine, chestnut.

Building (Ship-Building).—Cedar, pine (deal), fir, larch, elm, oak, locust, teak. Wet construction (as piles, foundations, flumes, etc.)—Elm, alder, beech, oak, whitewood, chestnut, ash, spruce, sycamore.

Machinery and Millwork (Frames).—Ash, beech, birch, pine, elm, oak. Rollers, etc.—Box, lignum-vitæ, mahogany. Teeth of wheels.—Crab tree, hornbeam, locust. Foundry patterns.—Alder, pine, mahogany.

Furniture (Common).—Beech, birch, cedar, cherry, pine, whitewood. Best furniture.—Amboyna, black ebony, mahogany, cherry, maple, walnut, oak, rosewood, satinwood, sandalwood, chestnut, cedar, tulip wood, zebra wood, ebony.

Of these varieties, those that chiefly enter into commerce in this country are oak, hickory, ash, elm, cedar, black walnut, maple, cherry, butternut, etc.

**Weather Predictions for 1878.**—Mr. C. C. Blake, of Illinois, offers the following table of "probabilities" for 1878. He had tried his hand at 1877 with a good degree of success, and is encouraged to a further attempt at weather wisdom. Thus far in the year the predictions have proved tolerably accurate. The reader is at liberty to try their strength for the remainder of the months.

January.—First part moderately cool; balance of month mild, with excess of rain and some snow.

February.—Mild and pleasant, but excess of rain or snow part of month; somewhat colder last half of month.

March.—Will "come in like a sheep, and go out like a lamb." The first of March will be moderate, and gradually grow warmer till the end of the month; though there will doubtless be two or three moderately cool spells during the month, but none that might be deemed cold. The equinoctial storm will be a rather warm one. The precipitation for the month will be a full average, and in the form of rain except in high latitudes.

April.—Rather dry and warm; though in places a full average of local storms.

May.—Warm; heavy showers in places; on the general average not a wet month.

June.—Hot and dry, except as relieved by a moderate number of local storms; cooler about the 10th.

July.—Hot and dry; local storms will give relief only in places.

August.—Hot and dry; but some severe local storms.

September.—Hot and dry part of month; severe local storms and variable weather in places; rain-fall for the month rather less than the average, except in Southern States; some danger of cyclones in the Southern States, also in Indian Ocean.

October.—Cool; rain-fall less than average; a heavy frost the last of September or first of October.

November.—Quite cold and dry; probably more snow than rain.

December.—Cold and dry; moderate amount of snow; little, if any, rain north of Galesburg, Ill.

Mr. Blake says these "calculations" are made 41° north latitude, longitude 90° west of Greenwich; which is at a point about twenty miles E. N. E. of Galesburg, Ill., as I conceive that point to be a fair average for that tract of country designated by the Signal Service as the "Lower and Upper Lake Regions," the "Ohio Valley and Tennessee," the "Upper Mississippi and Lower Missouri Valleys," and "Minnesota." They apply, however, to a considerable extent, to other parts of the country.

I conclude the year 1878 will be a very auspicious one, so far as weather is concerned. The season generally will be rather dry and warm. There will be few heavy storms and tornadoes, and very few general storms that will extend over any considerable portion of the United States. There will be a reasonable number of heavy showers, but they will be local, and, in places, accompanied by heavy thunder and lightning; though on the general average thunder and lightning will be scarce. The general amount of rain-fall for the year (from April 1, 1878, to April 1, 1879,) will be about thirty per cent. below the average for the whole United States; while for a considerable part of the year it will be 50 per cent. below the average, and in places as high as 70 per cent. below the average. The fall months will be quite cool; though there will be no serious frost till about October 1, 1878, at which time there will probably be heavy frost in most of the higher lati-

tudes. From that time on it will be cool to cold; winter will start in quite early, and continue as a long, steady, cold, but not excessively cold, winter. There will be several thaws or partial thaws during the winter; the most notable one will be in the first part of January, 1879. After this thaw a cold spell will again set in; but it will not be as cold as before the thaw. The butt-end of winter will come first; though the latter part of winter will not be mild, as is frequently the case when the first part is cold. The precipitation during winter will be small, and mostly in the shape of snow. At Galesburg, Ill., I conclude that at no time during the winter of 1878–9 will the temperature fall more than 20° (Fahrenheit) below zero.

**A Home-Made Fertilizer.**—First, gather any quantity of swamp muck into a pile to dry. Measure off six barrels of this, or any other rich, black earth, into another pile, and add the following salts, previously dissolved in a barrel or more of water, viz.: Forty pounds of nitrate of soda, sixty pounds of sulphate of ammonia, and half a bushel of common salt. Then add a barrel of ground bones. Mix all well together, and use in the same manner as Peruvian guano.—*Cottage Hearth.*

**The Bible Revision.**—This is about the latest we have heard on this international undertaking: The English Committee on the New Testament are now revising that portion of the Scriptures for the second time. Their special work is to consider the suggestions of the American Committee's first revision. The order is as follows: The English Committee complete the New Testament, and send their work across the Atlantic. The American Committee go over the work, considering the English corrections, and making such others as they approve. The work then reverts to England, and afterward again to America. If the two committees fail to agree on any point, the American departures will be noted in an appendix. The work on the Old Testament is not so far along. The English Committee has gone two-thirds through the Hebrew Bible, and the American Committee about one-third. The American is always working on the text as revised by the English
r. Schaff thinks the work will be completed in three or four years more. Intimations are, that the committees on both sides of the sea are quite conservative in the matter of departures from the version of King James.

**Straightening Up Trees.**—Often in a fine orchard we find one or more trees leaning over so far as to destroy the beauty of the whole orchard. It is also much more difficult to cultivate around a leaning tree. This trouble may easily be remedied while the trees are young by partly digging up and replanting them. The roots will be found smallest on the side from which the tree leans; therefore these roots should be loosened from the earth, and the tree set in a perpendicular position and carefully fastened by stakes and guys and the earth replaced around the roots. It would be well to add some rich compost to promote their growth. If, as is very probable, the top of the tree has become one-sided, it should be pruned so as to restore the balance. In this way we have "righted up" pear trees six inches through the stem; but the best way is to look after the young trees and not permit them to depart from the way of uprightness.—*Ohio Farmer.*

**Electric Lamps.**—A department of the Paris International Exhibition is devoted to electricity, so that all the systems of electric lighting may be tested comparatively. The electric light continues to create the greatest interest in Paris. Experiments have been conducted during forty consecutive days at the Lyons railway station. A force of about forty horse power is sufficient to maintain twenty-eight electric lamps, each of which gives a light equal to eighty gas lamps, and works with regularity for ten and a half hours. The effect is splendid, the whole of the station, except the waiting-room, being lighted *a giorno*. The question of economy, however, is not yet settled. It is not known whether the company will agree to pay a somewhat higher price in order to multiply the power of its illumination. These experiments have been tried on Lontain's system, a modification of Wilde's and Siemen's principle. M. Lontain has contrived to send the current generated by an ordinary Wilde machine into an electro-magnetic engine called a distributor. The central part being strongly magnetized by the current from a Wilde machine, a number of electro-magnets are influenced by its rapid rotation, and in each of these an induction current is generated. These induction currents are powerful enough to feed three electric lamps, and as there are two series of twelve magnets, a single machine could, theoretically, feed seventy-two lamps Actually, however, it feeds only twenty-eight. Lontain uses a new regulator, which works very well by the dilatation of a small silver wire. By its dilatation this part of the apparatus works a lever system, and brings the carbon electrodes into contact. The French Northern railway has purchased a number of Gramme magneto-electric machines.

**Deaf-Mutism.**—According to Mr. A. G. Bell, of telephone reputation, dumbness is nearly always the consequence of deafness, the organs of speech being perfect while the mechanism of hearing is radically defective. Persons born deaf may be taught to speak by proper instruction. Professor Bell supports the opinion that language of some sort is essential to reason. The reasoning of deaf-mutes is of an extremely concrete nature, and he never found a deaf-mute who had formed a conception of the Deity. Deaf-mute children, when they think at all, do so by means of pictures, and from this picture-speech a conventional language of limited range is in time developed.


MRS. C. FOWLER WELLS, *Proprietor.*
H. S. DRAYTON, A.M., *Editor.* N. SIZER, *Associate.*

NEW YORK,
JULY, 1878.

## PULPIT TALK ON THE GREAT SUBJECT.

IN the flood of discussion concerning Future Punishment which has been sweeping through religious literature during the past five or six months, less attention has been given to rigid doctrine than would naturally be expected by the intelligent reader. The polemics generally have appealed directly to the language of the Bible for support, and made the opinions of critics and commentators subsidiary. This phase of the controversy commends itself as both rational and logical. All Christian societies or churches have derived their tenets with reference to the nature and duration of Future Punishment from statements made by Old and New Testament writers, and it would be an impugnment of the culture and progress of the day in philological and historical research, to say that our scholars are not as capable of interpreting the Hebrew and Greek of those statements as were the scholars of early and mediæval times.

But besides the direct appeals to Bible language, and the careful scholarship displayed in the discussion, we have observed a tendency on the part of men prominent in their particular church relations to follow the bent of organization in the matter of personal opinion. We have seen an eminent Canon of the Church of England giving expression to views quite inconsistent with the asserted doctrine of that Church on the important subject. He can not bring himself to accept an eternal state of punishment for the wicked; his very large Benevolence suggests the possibility of a limit to Divine retribution, and a final restoration. A leading American orator, presumably on the orthodox side in the discussion, brings his great intellect to bear in treating the subject, and compels Science to yield her stores of fact which relate to man as a physical and moral being. He aims to show how physical ills result from the transgression of laws governing human conduct in matters alimentary and sensuous, and how analogously the persistent violation of moral law is followed by moral degeneration, and vice becomes a natural product.

Another public teacher, viewing the matter chiefly through the medium of a large endowment of Destructiveness and Conscientiousness, asserts the necessity of punishment in the future life, and its thorough infliction as a testimony to the terrible majesty and justice of the Creator. Another divine, of the liberal school, exhorts his hearers and readers to make good use of the present life, exercising the virtues of a human spirit, and to let the world beyond take care of itself. His meager Spirituality and Hope clouding his vision, he can not see another and a better country, and as for *future punishment*, that is but the figment of a morbid fear. And so they go on, these teachers of religion, in most instances appearing to forget or disregard the canonical or conventional precepts of their respective churches, by the utterance of what seems reasonable or suitable to their individual

mental endowment and culture. Their congregations ask for light, and they seek, doubtless, to furnish it in a definite and rational manner; but only they who treat the matter scientifically, that is, bring to the interpretation of the Word all the resources of their intellect, and calmly, dispassionately, without sentiment—for sentiment usually biases the judgment—expose the simple meaning of terms, and their natural application, are the true teachers.

## THE WORK OF TOBACCO.

TOBACCO is universally known to be a rank poison, and its effect on persons who are not accustomed to its use proves its poisonous tendency. If a single cigar could be taken into the system of a person in good health and of fair constitutional power, who was not accustomed to the use of tobacco, and his system were not relieved of the noxious drug, it would paralyze the action of his heart and he would die in six hours. Untrained human nature, indeed, so abhors the weed that it manages in one way or another to get rid of it, while a poison like arsenic may be taken and it will quietly eat its way into the tissues, not necessarily producing a tendency to its rejection in any way. In the United States the use of tobacco has become twenty times greater than it was fifty years ago in proportion to the number of inhabitants, and we believe that death from "apoplexy," as it is sometimes called, or an "affection of the heart," as it is more generally denominated, has increased in equal ratio.

One of the effects of tobacco is to paralyze the nerves which operate the heart, and produce sudden death in consequence. The reader who looks back over the past fifteen years, may recall the sudden death of many distinguished individuals, and also that heart disease, or an affection of the heart, or apoplexy, was the alleged cause. If one would inquire into the history of those persons he would find that they generally were great smokers.

We met a young man of twenty-three a short time since, who was telling how many cigars he smoked in a day, and what the annual expense amounted to—it was about $700. He smoked from ten to twenty cigars daily. We met a while ago a nervous, sensitive, excitable business man, a deacon in one of the prominent churches of Brooklyn, who said that he lighted one cigar by the stump of another from breakfast till supper-time, eating no lunch at midday. We persuaded him to give up the practice, and he gained eight pounds in a fortnight, and probably saved himself from an early grave.

Charles Dickens entertained friends at dinner and was stricken at the table, and never spoke again. Henry J. Raymond, editor of the New York *Times*, as robust and executive a man as the city has seen, did a hard day's work, visited the club in the evening, and fell dead in his own hallway with disease of the heart. He was a great smoker. Men with such a constitution as his should not die at forty-eight or fifty.

As far as the sensitive nerves of the telegraph reach, especially in America, the recent sudden death of Mr. Orton, President of the Western Union Telegraph Co., brought a thrill of astonishment and regret. A man of excellent constitution, of marvelous vigor and endurance, whose recreation was hard work and whose power of mind and body enabled him to organize and govern affairs and become master among competitors, should not suddenly break down at fifty-two years of age and in the plentitude of his powers. Paralysis

or rheumatism of the heart, and instant death therefrom, speak to us and should speak to all, the dread results of the habitual use of tobacco. Mr. Orton was a smoker. He has paid the penalty and the world suffers the loss.

We could recall dozens of men who were great smokers, and who died from a sudden stoppage of the heart, and in our mind there is no doubt that tobacco was the prime cause of it, aggravated, perhaps, by the use of coffee, which tends toward a similar effect. Now we have to record the death of Major-General Thomas S. Dakin, of Brooklyn, who died on the 13th of May last. We find in a morning paper this:

"His friends could scarcely believe the announcement, as it was generally known by them that he attended Plymouth Church the evening previous, to hear Mr. Beecher's first sermon to the Thirteenth Regiment. He walked home with a few military associates. While conversing on the event of the night, Captain Jewett remarked to General Dakin, 'I never saw you looking better.' 'I never felt better in my life,' was the response. After reaching home the General sat with friends *enjoying cigars* until eleven o'clock, when his visitors bade him good-night. Fifteen minutes later the General complained of a pain in his throat, when his family becoming alarmed, a messenger was dispatched for Dr. Swalm, who quickly responded. At first the physician did not deem his symptoms of a serious nature, though he carefully watched his patient. Later in the night, the doctor pronounced the General to be suffering from neuralgia of the muscles of the throat, and the disorder extending to the heart, it resulted in death at a quarter to six A.M. It is said that paralysis set in before the General became unconscious."

The General was a robust, vigorous-looking man, and being born in August, 1831, was less than forty-seven years old. That he had naturally a good nervous and muscular system may be inferred from the fact that he was the Captain of the American Rifle Team, the champion shooters of the world, and General Dakin's marvelous record in that respect shows that he had a good constitution, a strong and steady nervous system. Such men ought not to die from spasmodic action of the heart, or from paralysis of the nervous system.

The case as we view it was this: The General had an easy, leisurely Sunday; had probably eaten heartily, as most people do in like circumstances, and had smoked a good deal during the day. In the evening he went to listen to a sermon from a noted preacher on a novel occasion, whereby his brain became warmed up and his blood excited. Then he goes home and smokes an hour and a half with his friends. Within fifteen minutes afterward he feels neuralgia in the throat, which extended to his heart and produced death. To us this seems a clear case of death from the use of tobacco, perhaps aggravated by the use of coffee and by the circumstances of the day and evening. This man ought to have lived twenty-five years longer; and free from the habit of using tobacco, his prospect was excellent for longevity. We have a high esteem for the deceased gentleman, but we would have every man who has read of his death, and who is following a similar course with respect to the use of tobacco, to understand distinctly that such a death, though in the estimation of the public quite respectable, might have been avoided by avoiding the causes which produce such unfortunate results. Tobacco is killing some of the best men of our nation.

It may be said that some eminent women die of apoplexy and of heart disease. True, and most of these women live improperly; drink strong tea and coffee, and season their food with spices which disturb the action of the heart. Such have told us when we

advised them to avoid coffee, "Oh, I live on coffee! I could not possibly do without it! I must have a cup the first thing in the morning. I could not eat a mouthful till I had some coffee, and I take it very strong, and use it three times a day!" We believe that nine out of ten of the men of eminence and strength who die at forty or fifty years of age from heart disease and apoplexy, might live twenty years longer but for the use of tobacco.

## BIOLOGY IN THE UNIVERSITY.

IRENÆUS writes, in a late number of the New York *Observer*, concerning the existence once in the Old University of Pisa, of a professorship of astrology, and comments passingly that we may yet "have Chairs of Biology and Spiritualism in our own Universities." It is altogether probable, friend Irenæus, especially with respect to Biology, for that is a subject now profoundly interesting to many of the most eminent scientists of our day. Well had it been for civilization had our learned men given attention to the science of human being ages ago. Well had it been for the moral and physical health of society had they investigated the nature of the influences affecting the development of the human organization, and defined the laws which must be obeyed if harmony of physical and moral growth would be attained.

Let us by all means have a chair of Biology in our Universities; let the principles so earnestly advocated by Maudsley, Farr, Allen, Galton, and Cook, be applied in the instruction given to young men and young women; let the truths of psychology which these and other investigators have demonstrated as vitally related to everything valuable in the human economy be recognized in the public and private institutions of society, in our business walks, and in our domestic retirement. Every one who wishes good to mankind, and who is intelligent on the subject of what is essential to the procurement of that good, would have Biology taught everywhere among the people.

AN ITEM FROM ABROAD.—There is a society in Paris which is entitled "The Society of Mutual Autopsy," and which, according to the language of the reporter, "is founded for the purpose of furnishing to the investigations of medicists brains superior to those of the common people." This is not an empty statement, because several of the more eminent French savants are enrolled among its members. Dr. Paul Broca, the celebrated physiologist, is one. Recently one of the number, Dr. Louis Asseline, died, and in accordance with the rules of the society, his body was carefully examined; when it was discovered that death had resulted from the rupture of the left auricle of the heart, the rupture being the outcome of fatty degeneration. The muscular fibers of the heart had almost disappeared, so that it was a matter of wonder to the anatomists that life and apparent health could have been prolonged with such a condition of the central organ.

The skull and brain of Asseline were also examined, and it was noticed that the frontal-parietal sutures were not ossified—a matter for special comment, because the age of the deceased exceeded forty-nine years. "This ossification of the anterior sutures of the cranium," says the reporter, "occurs earlier in the lower races than in the white, and if the fact observed in the case of Asseline may be verified in other persons exercising an intellectual profession, one would conclude with certainty that it is cerebral activity which causes the delay in such ossification."

# Our Mentorial Bureau.

"He that questioneth much shall learn much"—*Bacon.*

## 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.*

WE CANNOT 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.*

GROWTH OF ORGANS.—F. J. K.—It would be impossible for us to state the time requisite to increase an organ from the degree of five to five and a half or six. The full and continuous exercise of a faculty will necessarily strengthen and increase its organ; but as to the external manifestation of the increased size, there are so many things to be taken into consideration that it could not positively be said that it would increase so as to be readily apparent, because the brain-substance forming the organ may be altered in density or extend laterally into the space left by the shrinkage of adjacent unused organs. Disuse tends, of course, to atrophy. If a whole group of organs be exercised and the body be well sustained by proper habits of life, the region occupied by the group will grow. In this way increase of size is mainly indicated. We have known persons with rather strong perceptive faculties, who exercised a vocation which brought them into play, to show growth in the lower part of the forehead in the course of a few years. We have known persons given to mechanical pursuits to grow in Constructiveness, the widening of the head being recognizable. The temperament of the organization can be improved. One whose habits are of a refining nature, who aims to keep his associations pure, makes his business highly intellectual, will be likely to grow in physical and mental tone; in other words, elevate the average of his organization.

PURE WATER.—C. H. T.—A well should be at least sixty feet from any line of drainage or vault or sink-hole. In some kinds of soil pollution will find its way even farther than sixty feet. The aim should be to locate the well which is to supply water for family use above the line of drainage. Many people suffer from drinking impure water after they have been to very considerable expense in preparing the well, thinking that by sinking the hole and stoning it up carefully, they do about all that is necessary to obtain a proper supply. The nature of the ground, the natural direction of the water-courses, the neighborhood of ditches, slop ways, soil pipes, etc., should be carefully surveyed beforehand.

LEMON JUICE.—C. A. D.—Lemon juice is valuable as an antiseptic, as a stimulant to digestion, as an aid to hepatic function. We think that if people who in the spring time suffer from languor and depression, and the other disagreeable sensations resulting from general systemic congestion, were to use a little every morning, they would find it beneficial. People who are fond of lemonade make a mistake of putting too much sugar with it. After all, lemon juice is but a substitute for the fruit which people should use as a part of their food. We have seen a paragraph going the rounds of the press which extols the lemon as a specific for consumption. Now, as many cases of biliary derangement and of disturbance of the heart and lungs associated with that trouble when it has become chronic, receive the name of consumption, the lemon juice, if used in connection with other means of a hygienic sort, will be likely to produce a favorable reaction in the system. We are inclined to think that most cases of "consumption" are one phase or another of chronic dyspepsia, and if the subjects be not too far gone, by putting themselves in right relations to hygienic laws they can be greatly benefited, if not cured.

SOFTENING OF THE BRAIN.—C. L. O.—Most of the cases of the so-called softening of the brain arise from improper habits, chiefly those which relate to the use of alcoholic liquors and other stimulants. A very active mental life tends to exhaust the nervous forces, especially if the person be not careful to supply them with abundant nutrition. Most people of sedentary habits who perform much head-work, are not sufficiently thoughtful about the needs of the body, and in the course of years become so reduced in strength as to lose nervous power; and when their weakness is exhibited in incoherency of expression or irregular conduct, are said to be

troubled with softening of the brain. The ablest men in Governmental affairs now living are well advanced in life. Witness Gortchakoff, Disraeli, Gladstone, Bismarck, Secretary Thompson. These are still vigorous, and during their whole lives they have been much more active than the average of men. Their present vigor is doubtless due to special care of their bodily condition.

SWEDENBORG.—J. W. N.—This eminent man was very highly endowed in the moral regions of the brain. Hence his writings are thoroughly pervaded with the spiritual cast of thought. His imaginative sense was also strong, and associated with his religious faculties in the production of those splendid descriptions of the celestial life which illuminate his volumes. He was also highly endowed intellectually; but his religious nature dominated, and therefore impressed his reasoning with it devotional inspiration.

FARMER.—S. J. H.—In your physical condition it would be better for you to remain on the farm. In no other line of pursuit can you find so many favorable opportunities for improving your health. If you like teaching, indulge the disposition moderately. You can teach a few months in each year. This would afford you a very desirable variation from your farm work and tend to the improvement of your mind. Avoid all exciting associations. Your ill health probably has much to do with your excitability. Invigorate that, and your nervous system will become stronger.

GOOD SPEAKER.—J. L. H.—One who expects to become a good speaker should possess a good intellectual development, particularly in Language, Time, Order, Comparison, Mirthfulness, and Causality. He should also possess a good degree of Ideality, Constructiveness, Human Nature, Imitation, Agreeableness; he should also possess excellent health, a strong sense of personal dignity. A full back-head would give him push, positiveness, physical energy. He ought to read the lives of eminent statesmen and orators; make himself generally informed in literature and history.

YAWNING AND SNEEZING.—D. R. H.—One who is weary is naturally disposed to yawn. When the system is thoroughly percolated with bilious or effete matter, it makes one languid, dull, sleepy. The same systemic condition, on account of the torpidity of the excretory organs, may produce tendency to sneezing. If the sneezing be a sort of habit on the part of the person, it is probably due to catarrhal disorder.

THE WORK OF RUM.—Dr. Story's recent publication, entitled "Alcohol: its Nature and Effects," contains some statistics which are quite startling. He finds an aggregate of 335,000 persons engaged in the manufacture and sale of liquors; 110,000 saloons and restaurants, a number which is rather understated, we think; as in some single cities there are upward of 5,000—in New York 8,000. These 110,000 drinking-places are patronized by 4,200,000 people, or ten per cent. of our entire population. Of this number, 2,000,000 are the occasional drinkers; 1,500,000 moderate drinkers; 315,000 hard drinkers; 300,000 drunken sots. The tables of mortality show that annually upward of 75,000 deaths result directly from liquor-drinking. Of this seventy-five thousand, four thousand are females. Dr. Story figures up the cost of the liquor trade, in its injurious effects upon the people, in the following way: Loss of time and industry, valued at $900,000,000; cost of insanity to the public at large, $36,000,000; idiocy, $42,000,000; crime, $36,000,000; sickness and hospitals, $10,000,000; pauperism, $50,000,000; loss or accident, $50,000,000. Total, $1,124,000,000. A direct drain upon the resources of the country, to say nothing of the moral effects.

*Several* ANSWERS *must be deferred to the next number.*

## What They Say.

*Communications are invited on any topic of interest; the writer's personal views being preferred.*

NARROW MINDS.—There are minds so narrow and cramped that it would seem that some outside influence had pressed upon and distorted them in the same manner that the pressure of a vise destroys the symmetry of a soft substance. And those narrow-minded persons are the first to reject any project which has for its object the expanding of their own and others' minds, thinking that ideas which were not advanced by their grandfather or great-grandfather are useless. We once knew a man who, in speaking of fir trees, persisted in pronouncing the word fir the same as though it were spelled f-a-r, and no method of reasoning could convince him that he was wrong; "for," said he, "that's the way father pronounced it, and, of course, it must be right." Now, a mind that clings to old ideas and customs in that wise, even when they are shown to be false, is what we denominate a narrow mind. And how many of such narrow-minded persons there are! or, in other words, how many persons there are who do not think! How many there are who reject anything grand and noble because *their* minds are not broad enough to comprehend it.

There are those who dare not investigate the

laws of nature, because they have been taught that to do so is forbidden by the Bible. And those very persons weep and mourn over the sins of their children, meantime debilitating their bodies and inflaming their animal passions with unwholesome food and drink; and yet hint that science can not be advantageously employed in the work of reform, and you are put down as an infidel; their minds are too narrow to grasp the idea, and they really seem to think that wrong-doing brings more happiness in this life than right-doing.

Then again there are those who seem to have drawn two parallel lines, by which they gauge their actions, thinking apparently that if they keep between them they will be saved, and yet they would not willingly do anything more than is absolutely necessary to save them from eternal condemnation. They seem entirely shut out from the grand idea that the Infinite mind has so moulded our minds that we are happier both in time and eternity for living surrounded by an atmosphere of knowledge, purity, and right.

And there is yet another class, whose minds are narrowed down to the smallest compass. We mean those who through generation after generation have neglected the cultivation of the intellect, until it is impossible for their minds to compass the simplest laws of nature. One illustration is sufficient. When trying to convince a young man that the earth is nearly round and revolves around the sun, he replied, scornfully, "You can't make me believe any such nonsense as that. Why, I've been in and out of our house at all times, both day and night, and the back door was always in its proper place!" Can we reasonably expect such an one to be other than immoral? Is it any wonder that they have no desire to rise above animal enjoyments? Can we expect them to appreciate the truths of our noble science, Phrenology?

We confess that we are in a maze of doubt and perplexity. If the above questions are answered in the negative, by what means can we cultivate the thinking power of this narrow-minded class? But, as a constant dripping of water will wear away the hardest stone, so a steady onslaught on the walls of ignorance will cause them to totter and fall; and by expanding our own minds we can draw other and lesser minds into the circle of our influence, as the earth attracts smaller bodies to itself, and makes them a part of its mighty whole. JAMES PERRIGO.

HOW I DREAM.—EDITOR PHRENOLOGICAL JOURNAL: In the April number I find a piece entitled "Memory and Dreaming," by S., which I can not fully endorse. I think that physical and mental conditions have the most to do with our dreams, and that if we were in a perfect normal condition we would not dream at all.

I use no alcoholic drink or tobacco, but take fair care of my general health, and seldom dream.

Four years ago, I was in the habit of getting up early, and working very hard (on a farm), and almost as sure as I overslept in the morning, I dreamed of trouble in some way. about the cows getting into mischief, or of having all the chores to do late at night. If I rose at the usual hour I had no trouble with dreams. If I overslept, there was action of the mind, in such a way as to produce the unpleasant dreams. It seems to me clear enough that this was caused by my every-day care; for afterward, when I did not have so much care, during my conscious hours, all such trouble ceased.

S. says: "One curious phase of dreaming is, that it rarely brings back and repeats the pleasant facts of life, but almost always those which were troublesome or undesirable."

If I can judge correctly from his writing, his memory is quite apt to serve him the same trick; but my dream experience now is almost the opposite. I am more apt to realize my social enjoyments in dreams, than any other one branch of thought. When I go in company I aim to leave behind all trouble about business, and if the weather is stormy or roads are bad, do not fret about it; and I do not remember of ever dreaming about such troubles. The habit of dreaming of being in company seems to increase, and twice within six months I have dreamed of what I was hoping would come to pass. In these dreams I see everything in a normal condition, *i. e.*, rooms are all clearly seen, and the persons present are always natural, and there are no strangers among them.

If others have any dream experiences like mine, or otherwise, I would like to read them.

V.

## PERSONAL.

PRINCE GORTCHAKOFF, the Russian Premier, has just entered upon his eighty-third year.

M. BELGRAND, a distinguished French engineer, died on the 8th of April, in the sixty-eighth year of his age. To him is due the remarkable system of sewerage established in Paris.

MISS FRANCES E. WILLARD, well-known as a temperance lecturer, and Mrs. Mary B. Willard, her sister-in-law, widow of the late Oliver A. Willard, editor of the Chicago *Post*, have assumed control of that paper as editor and publisher respectively.

THE Rev. Samuel M. Isaacs, the most prominent representative of orthodox Judaism in this country, and pastor of the Forty-fourth Street Synagogue, died on Sunday, May 19th, aged seventy-four years.

THOMAS HUGHES, Q.C., the author of "Tom Brown's School Days," is often to be found in his shirt-sleeves; it is with difficulty he can be induced to keep his coat on in the House of Commons. He has an open countenance, bespeaking honesty, and writes a bold, clear hand.

ALFRED TENNYSON, the poet laureate of England, has never been known to crown his head with a stove-pipe hat. His Inverness cape, after twenty years' wear, has assumed its original color; his hair is in a matted condition, and his hands are not always clean; yet his poems are.

MISS CATHERINE E. BEECHER, eldest daughter of the late Dr. Lyman Beecher, and sister of Rev. Henry Ward Beecher, died of apoplexy, suddenly, at Elmira, N. Y., on Sabbath, May 12th. She was born September 6th, 1800, and has devoted her life largely to teaching, writing, and other active public work.

THE EMPEROR WILLIAM of Prussia has again narrowly escaped death by the hand of the assassin. There appears to be a conspiracy against the life of the Emperor, and the Berlin authorities are earnestly endeavoring to discover the members of it. This time the weapon was a double-barreled gun, loaded with buckshot, and the Emperor was severely wounded. His assailant subsequently shot himself.

SIR MOSES MONTEFIORE, the great benefactor and helper of his kinsmen, the Jews, sent, some time since, a letter to Jerusalem containing one hundred guineas, with instructions that it should be expended in having Jewish children taught Arabic, and that, if this was not allowed, it should be returned to him. Only one of the Polish rabbinical authorities, and that very reluctantly, would consent to have any thus taught, and almost immediately the Jewish community assembled, and proclaimed excommunication against any parent that would dare to have his child taught Arabic. The proposal being refused, the money was returned to the noble donor.

THE MARQUIS OF LORNE is said to be losing all his good looks; he weighs about 200 pounds. He seems to spend his existence at auctioneers' sales, and on one occasion was seen to be turning over baby linen, but for what reason, to this day can not be explained. The Princess Louise is a universal favorite, and, unlike her husband, wears well. Is it thus with all attachés of royalty?

## WISDOM.

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

LET another's shipwreck be your sea-mark.

No man has a right to do as he pleases, except when he pleases to do right.

IDLENESS is hard work to those who are not used to it, and dull work for those who are.

WHATEVER be your outward lot in life, your condition is truly pitiable if you are guilty of neglecting moments.

HE who can at all times sacrifice pleasure to duty, possesses, in a large measure, divine elements in his character, and must grow spiritually.

HE who reels and staggers most in the journey of life, takest the straightest cut to the devil.

WHAT a fine-looking thing is war! Yet, dress it as we may, dress and feather it, daub it with gold, huzza after it and sing swaggering songs about it—what is it but murder in uniform? Cain taking the sergeant's shilling?—DOUGLAS JERROLD.

COMFORT, as the world generally applies it, or would apply it in every-day life, when strictly analyzed, signifies a great consideration for self, and a perfect indifference about others.

## MIRTH.

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

"WHY, doctor," said a sick lady, "you give me the same medicine you are giving my husband! How's that?" "All right," replied the doctor; "what's sauce for the goose is sauce for the gander!"

"DOES your sister Annie ever say anything about me, sissy?" asked an anxious lover of a little girl. "Yes," was the reply; "she said if you had rockers on your shoes they'd make a nice cradle for my doll."

"Now, Willie, do have a little courage. When I have a powder to take I don't like it any more than you do, but I make up my mind that I will take it, and I do." "And when I have a powder to take," replied Willie, "I make up my mind that I won't take it, and I don't."

HOTEL guest, on retiring—"I want to get up at eight o'clock."

Facetious night clerk—"Haven't got one, sir."

Guest—"Not got what?"

Clerk—"A potato clock."

A STURDY vagabond, with full black beard of unusual length, was recently brought before a London magistrate, who questioned him about his past life. "If one can believe all that is laid to your charge," said the judge, solemnly, "your conscience must be as black as your beard." "Ah," replied the wily rogue, "if a man's conscience is to be measured by his beard, then your lordship has no conscience at all!"

## 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 these noticed.*

THE TEMPERANCE LESSON BOOK. A Series of Short Lessons on Alcohol and its Action on the Body. By Benjamin W. Richardson, M.A., M.D., F.R.S., Fellow of the Royal College of Physicians, London, etc. 16mo, 220 pages. Price, in cloth, 75 cts. New York: National Temperance Society and Publication House.

The late publications of the enterprising advocates of truth and humanity who rendezvous in Reade Street, have been characterized by their logical form and scientific reasoning. Medical experience, physiological authority, chemical analysis, have contributed their valuable aids to strengthen the attack upon the host of alcohol. We are gratified exceedingly by this turn in the good work; for the doctors have been too long a serious obstacle in its progress; and now that some of the most eminent in Europe and America have nobly given their assistance, we shall expect better results from reformatory effort. Dr. Richardson has shown great zeal in this matter. Volume and pamphlet, with his name on the title-page, have followed each other in rapid succession; and now that the young, as well as the old, should be well-grounded in the physiological aspects of the liquor-drinking question, he issues "The Temperance Lesson Book." Briefly describing the volume, we would say that there are fifty-two lessons, each followed by a series of questions for examination and review. They are free from labored and wearisome details, cover a wide range of physiological and hygienic information, and in style are simple and attractive, admirably adapted to win and retain to the end the interest of students.

The work should have the notice of Boards of Education, School Committees, Trustees and Teachers, and be introduced into schools generally.

THE SILVER CHALICE, and other Poems. By Emma May Buckingham, author of "A Self-made Woman," "Pearl," etc. 12mo, cloth. Price, $1.00. S. R. Wells & Co., 737 Broadway, New York.

Another volume by that intense, assiduous little woman who gave us "Pearl" last year. Verse is the proper form of the heart's language, and Miss Buckingham puts so much of heart into her work that poetry appears to be a more fitting product of her pen than prose. We notice an improvement in this new volume. Why should one continue to write, if there be no growth? It is, to be sure, mainly a refinement of metrical form and expression, but nevertheless salient, and deserving of special commendation. There are eighteen poems in the volume, of which "Silver Chalice," "Everlasting," "Nemanie," "Under the Snow," "Nellie's Prayer for Rain," contain sweet and natural pictures of life. "Cynicism" is an excellent reading of a somber side of human nature, quite too common, and contains in its half humorous, half serious tone much admonition for those inclined to be censorious and pessimistic. A religious fervor glows in all Miss Buckingham writes, and natures devoutly given will find sympathetic food in her new volume.

OLD HOMES MADE NEW: being a Collection of Plans, Exterior and Interior Views, illustrating the Alteration and Remodeling of several Suburban Residences, with Explanatory Text. By William M. Woollett, Fellow of the American Institute of Architects, author of "Villas and Cottages." Long quarto. Cloth. Price, $1.50. New York: A. J. Bicknell & Co.

The experience of most men, who have taken old houses and converted them into residences approximating the modern idea of convenience, architecture, etc., is not favorable to such undertakings, on account of the great expense which has generally attended them, and the dissatisfaction with what result has been ultimately obtained. Better far, say they, to tear down and remove the old hulk entirely than to attempt to potter with it. There is no end to the expense. You wish to remodel a gable, for instance, and think that it is only necessary to take off a few boards there, and a timber or so here, but when the boards are off, you discover decay and weakness in the framing, and a general lack of adaptation to your design, and what was at first deemed but a small job for carpenter and roofer, expands into a big one. Personally, we know something about this subject, and are in favor of a new erection rather than the extensive modification of an old building, unless, to be sure, the matter of expense is secondary. Mr. Woollett's neat book is a success in one respect: it shows how a few tasteful changes or additions, which affect but slightly the general form, will impart an entirely different appearance to a building; how a bay-window, the extension of a cornice, a trifling elevation of the roof, a tower, will render what was severely plain an object on which the eye can rest with gratification. Views 2, 5, 10, and 14 are very striking in this respect. View 10 shows what can be done in the way of imparting to a staid, methodistical

house the picturesque beauty of an English cottage. View 21 shows how the style and finish of a modern villa can be imparted to an old-fashioned, hip-roofed mansion.

Mr. Woollett gives us also several designs of interior alteration, with, however, the economical idea constantly in mind, to change as little as possible the old divisions of the internal area. Such a book is much needed; we only regret that it was not published long ago.

LOTOS-FLOWERS — Gathered in Sun and Shadow. By Mrs. Chambers-Ketchum. 12mo, cloth, tinted paper, pp. 205. New York: D. Appleton and Company.

A simple title this, breathing the aroma of the sunny Southland, the home of the gifted author. Without formal Preface or Introduction, this volume opens with a poem entitled "L'Envoi," to which, perhaps, we may attribute the character of a dedication, and from certain lines of which we may infer that the author gives us, in the pages which follow, the best of her thoughts crystallized in verse.

Mrs. Chambers-Ketchum can not be called a new candidate for honors poetic. Years ago some pieces of hers, like "Dolores," "Semper Fidelis," "Shady Side," "Hines" and "Benny," given to the world through the magazine press, won attention for their smooth diction, pathos, and charming naturalness; and doubtless there are many friends of the poet or of her poetry who would gladly avail themselves of the opportunity now afforded to obtain a collection of her verse. We have been treated to a surfeit of recent publications, yclept "poetical," from writers whose names were but first announced to the world of literature upon their title-pages, and critics have sought in vain through the crude metres and awkward phrases for their "reason for being;" but when a known writer presents us a dainty volume, containing a careful selection from the tolerably long list of subjects which her cultured pen has touched upon during twenty or more years, we open it with confidence. Mrs. Ketchum writes for the heart; her sentiment is pathetic, yearning, devotional, and there are occasional strains of vivid description whose intensity indicates deep knowledge of the dramatic phases of life. This, for instance, meets the eye in "La Belle Justine":

"But there is blight
More fearful than the fever of the South;
A wilder sorrow than the helpless cries
Of motherless children sobbing in the night;
A look more terrible than the spirit's gaze
Striving to pierce the death film:
The gray mould
That settles on the wrung heart's tattered robes;
The moan of faith slow perishing amidst
The trampled flowers of promise; and the look,
Stony and cold, which, like a jagged flint,
Is struck into the soul from eyes that once
Sent forth the silver shafts of love alone;
From these she flies with trembling, pallid lips,
Stammering a prayer for peace."

"Agathos," written "in holy memory of John Kemble," breathes in lyric measure a reverent sweetness. When dealing with religious themes, Mrs. Ketchum's pen appears to give clearer expression to herself and the poet sweeps her harp with a stronger hand; and to the thoughtful on grave subjects, she brings a truthfulness in the Christian scheme which must prove encouraging.

STUDIES IN LUKE. The Gospel according to St. Luke; containing the Original Greek Text, with an interlined word-for-word English Translation; and a New Version. Also an Alphabetical Appendix of Names, Weights, Coins, Words and Phrases used in the New Testament. By Benjamin Wilson. 12mo, cloth. Price, 60 cts. S. R. Wells & Co., 737 Broadway.

A marked increase of interest has been observable among the people during the past two years in the study of the Bible. This interest has been very actively promoted by eminent scholars and clergymen in the publication for popular use of expositions or commentaries on different portions of the Old and New Testaments. A systematic tone has been imparted to the study of Scripture by what are called the "International Sunday-school Lessons," whose aim is to generalize the study of particular chapters and writers. This plan has been adopted by all the prominent Protestant Churches, as one will find by reference to the religious organs of large circulation among Baptists, Methodists, Presbyterians, Congregationalists, Episcopalians, etc., respectively; each week a certain chapter or part of a chapter being prescribed for study in the Sunday-school and at home. All this means the enlightenment of the people in matters of religious belief and practice. It also shows a growing disposition on the part of the laity or unprofessional class to learn directly from the written Word what they should believe and what they should practice as true followers of Christ.

The motive of the publication of the volume above entitled is to make available to the people at large the very language in which the New Testament was written, and thus to meet the desire of every Christian to examine for himself what was taught by Christ and His apostles. The arrangement supplies a literal translation of the Greek, such translation being interlined so that it follows the Greek *verbatim:* while a version or current translation, based upon the literal rendering, is placed in the margin. Valuable notes bearing on the original text and the translation are given with much fullness, but more with the view to render the work philologically accurate than to offer a mere commentary on the meanings and applications of terms and phrases.

A lesson on the letters and pronunciation of the Greek alphabet is given for the instruction of those unacquainted with the language, so that one who familiarizes himself with its forms and carefully proceeds in comparing the original with the translation, will soon make himself quite fluent as a reader. With a grammar at hand, the student can pursue his readings critically as far as he pleases.

A great amount of historical, geographical, and statistical information is contained in the Appendix, and this will be found a very essential feature in the critical study of the text. A word should be said with reference to the singular freedom from partiality and bias which the author has shown in the preparation of the work, and which in itself has elicited the warm approval of learned clergymen, into whose hands the "Emphatic Diaglott" (from which these "Studies" have been taken) has found its way.

Neatly printed and well bound, this volume commends itself as a model of appropriateness for the purpose of its publication, while the very low price at which it is offered brings it within the procurement of every one.

A NEW ROCKY MOUNTAIN TOURIST. Arkansas Valley and San Juan Guide. The Tour through the Grain Districts of the Arkansas Valley, and Sheep and Cattle Ranges and Hunting Grounds of South-western Kansas, and the Pleasure Resorts of the Rocky Mountains, the Sanitariums, Springs, and San Juan Mines, to the Hunting and Fishing Grounds of Colorado. By J. G. Pangborn. Third edition, folio.

A very attractive description this of some of the most remarkable scenery in North America. Aside from its value as a guide to the traveler in the Rocky Mountains, it affords exceedingly interesting reading to stay-at-homes. We never tire of glancing through accounts of those wonderful regions bordering on White River, the Divide, Pike's Peak, White Sulphur Springs, Manitou, and Colorado Springs. Every visitor to those sublime regions, if he can write with a facile pen, seems inspired to tell us something new about them. In this publication Mr. Pangborn gives to the public a good deal of practical information with regard to the agricultural wealth of the land beyond the Mississippi, and is occasionally specific in advising how settlers may take advantage of the rich alluvial soil spread out in vast tracts along the great railways. It is a very attractive picture that he offers to our contemplation in the text of the work, while the numerous illustrations, many of them executed in the highest style of the engraver's art, not only adorn the text, but also render the publication of no mean value in the opinion of one who appreciates the artistic. The General Passenger and Ticket Agent of the Atchison, Topeka & Santa Fé Railroad has kindly remembered us in sending to our office the above publication.

## PUBLICATIONS RECEIVED.

GOLDEN SHORE, for the Sunday-school. By J. F. Kinsey. Price 30 cents. Cincinnati: F. W. Helmick. Contains 165 pages of hymns and songs, with music adapted to the Sunday-school and home circle.

WEATHER REVIEW. The Chief Signal Officer's Report for April indicates an unusual development of vegetation throughout the country. Particular notes are given under the head of "Miscellaneous Phenomena" concerning the growth of plant and vine, fruit and grain, at different points. We miss the customary Synopsis, an important aid to the editor in presenting the results of our extensive signal service.

CARBONIC OXIDE: Is it a Harmless Anæsthetic or a Virulent Poison? By Prof. Henry Morton, Ph.D., President of the Stevens Institute of Technology, Hoboken, N. J. This carefully-prepared essay is replete with notes from eminent authority bearing upon the topic, with a general leaning toward an affirmative answer of the second member of the question.

THE GIN-SHOP, as Illustrated by George Cruikshank. A pictorial blast against the alcoholic demon. Published by the National Temperance Society, New York.

THE DISCIPLES OF CHRIST. A Brief History of their Rise and Progress, wherein is shown the difference between the reformation of sects and the complete restoration of Apostolic Christianity, and also a connected view of the various Reformations of the last three hundred years. By John F. Rowe.

GODEY'S LADY'S BOOK has again appeared among our exchanges, and we are glad to note that in its stories there is an entire absence of any mention of smoking, chewing, or drinking among the heroes of its stories, and it has kept up with its former style in appearance. The price is $3 a year. Godey's Lady's Book Publishing Company, Philadelphia.

THE MAGAZINE OF ART. Illustrated. Published by Messrs. Cassell, Petter & Galpin: London, Paris, and New York. Part I. Price 25 cents. This new candidate for public favor opens well. The illustrations are numerous, varied in subject, and in the best style of the wood engraver; while the reading matter is of a quality at once high and adapted to interest all classes. A good periodical of this sort, offered at a low price, has long been needed, and we doubt not that this will receive a liberal support.

THE PHRENOLOGICAL JOURNAL AND LIFE ILLUSTRATED.

VOL. 67. 1878.

NUMBER 2.] *August, 1878.* [WHOLE No. 476.

## AMOS BRONSON ALCOTT.

THE portrait of Mr. Alcott shows a strong and well-defined face. The features, though large, are delicate, and every part of the face has its special expression. Such a face indicates the mental and motive temperaments. The first temperamental condition indicating mental clearness and activity; the second, strength of character and constitution.

The head from the opening of the ear forward seems to be long, indicating intellectual development; and from the eye and

ear upward there is unusual height, evincing a spirit of integrity, persistency, philanthropy, and a sense of the interior in the realm of the higher life. The great fullness above and near the eyes, and especially up from the root of the nose through the center of the forehead, shows uncommon power of observation, ability to gather knowledge and retain it, the power to remember in detail and to recall knowledge once acquired. That is pre-eminently a scholarly head, including hunger for knowledge, the power to gather it, the ability to hold it, combine it, and use it. He has a strong sense of the character and spirit of other people. This gives talent for reading the mental life of others, comprehending its spirit, and working it out in biography. He could be able as a historian, a biographer, and a reviewer.

He has warm sympathy — uncommonly strong Benevolence, which gives a gentleness and tenderness to his whole life. He is cautious, inclined to maintain safe relations to life, although he is also very frank and open and free in expression, on account of his moderate Secretiveness.

His back-head seems to be comparatively light, and the side-head narrow at the base, showing a lack of force of character, and of that kind of push and executive energy which enables one to be prominent, impressive, and controlling among men in general. A head that is broader in the region of the ears is more reticent, more financially wise, more courageous and energetic, with more power to push toward success and to overcome obstacles. The contrast between Mr. Alcott's head in these respects—that is, in weight of brain around the ears and in the posterior region—and the heads of such men as Commodore Garrison, Vanderbilt, James Fisk, and many others who have wielded power in the field of physical achievement, is so marked as to attract the attention of every student of human nature. If he could have had a broad base of brain, he would have made his mark in the Senate or elsewhere in the domain of mental force, or in the realm of physical enterprise. As it is, intellectual acumen, sympathy, moral feeling, taste and refinement, which arise from the anterior and superior portions of the head, are pre-eminent.

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AMOS BRONSON ALCOTT, the venerable philosopher, was born in Wolcott, Conn., November 29, 1798. In his early life he did not have the educational advantages that almost every boy has at the present time, but picked up a little learning between-times at the country school, the sessions of which were short and infrequent. Like many young men of his time, who found it necessary to make their way independently in life, he took up the peddler's pack and traveled in the South, going from house to house in Virginia. While pursuing this vocation, he read much, utilizing his leisure for the improvement of his mind. Returning to Connecticut, he taught school for a while. In 1828 he went to Boston and opened a school for young children in the old Masonic Temple. In matters of social opinion he proved to be in advance of public sentiment in Boston, and he was much abused and denounced by the newspapers on account of their enunciation, and compelled to close his school. But after an interval of four years it was again opened. Concerning the method of moral and intellectual training introduced into this school, an account is given in the "Record of Mr. Alcott's School," by Miss E. P. Peabody, a third edition of which was published in Boston a few years since. We will say generally that the great idea of the school was the cultivation of the moral nature, while the intellectual was not neglected. The room in which the school was conducted was a large one, well ornamented, not by the upholsterer or joiner, however. There were busts of Socrates, Shakespeare, Milton, Scott, and Plato, with a fine representation

of Christ in basso-relievo fixed into a book-case. The desks were not arranged after the "German method," so called, of having light strike the desk over the left shoulder of the pupil, but were placed against the wall. From the first the discipline was firm, yet mild. He insisted upon attention, and with but little opposition it was given him. In speaking of teaching spiritual truth, he says, "We have made it prosaic, literal, and worldly by neglecting the teaching of it by parables." "It was in pursuance of these ideas that Mr. Alcott took so much pains at first to bring out clearly in the children's consciousness a conception of the spiritual world, as alone having permanence and reality, notwithstanding its invisibleness." In his teaching he read much from the Bible, "Pilgrim's Progress," "The Fairy Queen," "Krummacher's Parables," "The Story without an End," and Miss Edgeworth's tales, dwelling upon them and thus exciting a continued interest in the subject.

Another prominent feature of the school was the mode of punishment; in brief, the culprit was the wielder of the birch, and not the one upon whom punishment was inflicted. It produced a "more complete silence, attention, and obedience than there had ever been." To putting this system into practice the scholars objected; they did not want to punish Mr. Alcott, and it actually brought tears to the eyes of some upon whom the duty devolved of inflicting blows upon Mr. Alcott. In thus escaping the momentary pain of the body they experience the much deeper pain of the mind in witnessing another suffer for their own violations of law.

The fatherly element thus brought into this school must have been of great advantage to the pupils, according to all that is said of its effect. Mr. Alcott continually, by conversations and readings, especially from the Bible, showed that his sole desire was not the mere intellectual gain of the individual, but that higher gain of the spirit, the benefits of which endure forever.

Later we find him in Concord, studying various questions of reform in education, diet, civil and social institutions, and living the life of a peripatetic philosopher, conversing on a wide range of subjects wherever invited.

Between 1839 and 1842 *The Dial*, that famous transcendental sheet, was published, and to this Mr. Alcott contributed several papers called "Orphic Sayings." In 1841 he visited England, and on his return, in 1842, in conjunction with Messrs. Charles Lane and H. G. Wright, founded the community of "Fruitland," in Harvard, Mass. These gentlemen, however, became dissatisfied and returned home to England, and the scheme was given up. Mr. Alcott then removed back to Boston and devoted himself to lecturing.

His books are not many in number, but rich in their freight; the list comprising "Tablets," "Concord Days," "Conversations with Children on the Gospels," and a later book entitled "Table Talk." In all we find charmingly-written papers on many subjects, and all laden with the wisdom of experience and deep thought.

Mr. Alcott, though nearly eighty years of age, is a tall, well-proportioned, sunny-featured old man, loved and esteemed by a very extensive circle. He held a monthly "conversation" or "symposium" at the parlors of the Rev. Joseph Cook, in Boston, during the past winter. At one of these meetings Mr. Alcott talked most of the time for the three hours it lasted, the subject being "The Concord Transcendentalists," telling, as he only can, much to interest the highly intellectual company present of that Society, which comprised Emerson, Hawthorne, Margaret Fuller, Thoreau, and himself. Of himself he then said, that he was educated on the "Pilgrim's Progress." He borrowed the book of a neighbor, and after keeping it six months, returned it and then borrowed it again. This he did every six months, until the book was given him. He had from the time he was ten or twelve always kept a note-book and had put everything into it—interviews with men, visits to friends, extracts, his own thoughts, whatever came to him. He had seventy volumes of these diaries, some of them being very voluminous.

Mr. Alcott is the father of Louisa May

Alcott, known to a very wide circle of readers by her "Hospital Sketches," "Little Women," "Old-Fashioned Girl," etc. It is her literary success that has placed him in comfort, as Mr. Alcott was never anxious to make money, but sought rather to introduce what he deemed better methods of living than are commonly followed by society. They are indeed better methods, but not sufficiently imbued with selfish sentiment to find a large following in this generation. He spends most of his time, according to the New York *Tribune*, "as a New-England Socrates, in asking and answering questions which are put to him in public and private circles. He is a wise man and has much dry wit for the seasoning of his speech. As many strange things are said of him as of Emerson or Thoreau, but with all his vagaries or transcendental theories, he has always combined such an amount of good sense and such a genial spirit that friends spring up in his path wherever he goes."

## NOTHING TO DO!

Upon these acres, broad and wide,
Where God has set His husbandmen,
Whore good and evil, side by side,
Spring up and bloom and seed again,

Do those exist who can not see
The labor fields outspread for them?
Who fold their hands contentedly,
Nor good approve, nor ill condemn?

I blush, indeed, that we should live,
We mortals, neither deaf nor blind,
Who fail, through indolence, to give
Some little lift to help mankind.

Nothing to do! The fields are white;
The harvest comes; the Reaper 's here.
The undergrowth, inducing blight,
We might have plucked in passing near.

Growth of our growth—imperfect all—
Deep-rooted; generations past
Let the dire seed of habit fall,
And it sprang up whorever cast.

Impervious to frost, the seed,
Impregnable to drouth as well,
It grows, outreaching with all speed
Its everlasting buds to swell.

Nothing to do! Alas! alas!
The work is great beyond our days;
Yet if we clutch the weeds we pass
We may a few uproot and raise.

Close, close at home the labor lies.
To imperfections men are born;
And wise is he who, patient, tries
To pluck first from himself the thorn.

Nothing to do! Press on! press on.
Do first what closest is to thee.
Let thy clean hands be ne'er withdrawn
From labor till God sets thee free.

S. L. OBERHOLTZER.

## THE NEW THEORY OF IMMORTALITY.

### A COMPARISON WITH PLATO'S VIEWS.

A VERY animated discussion has been in progress among English writers, principally contributors to the *Nineteenth Century*, concerning the new theory of immortality advanced as a possibility by Comte, and as a probability by Mr. Frederick Harrison. It seems to be Mr. Harrison's belief that our future life will be without consciousness, and will consist of the personal influences of our lives, works, or thoughts. Instead of conscious beings, we are to be working influences for the good of humanity. Mr. Harrison advances some strong arguments in favor of his theory. He notices the impossibility of demonstrating the conclusion that our consciousness as we know it can continue without a physical basis. It is an ingenious line of reasoning, but in estimating the future life as a mere working influence, we find a narrow and unsatisfactory conception of the soul's future condition. A certain valuable positive element is absent from all influence without personal presence. Take a controlling and active man away from his business, or a general like Napoleon from his army, and

you will find, generally, that the business will decay, or the army will suffer defeat. We therefore see that in every-day affairs personal presence greatly strengthens influence. It is true that the world is governed directly or indirectly by the thoughts of men now dead, but the present motion of events and the present power rests with the living. The mighty and quietly-working under-current of influence from those that are gone partakes not so much of personal power as of a Universal Power working with events. The genius should have great praise for seeing the right path and disclosing the real drift of the mighty current, but he would be too wise to assume that he was the current. It has been said that had Shakespeare known the tremendous results which were to follow his work he would have been unnerved by the awful responsibility and weight of every line. None of the great men could foresee the far-reaching effects of their work. It is greater than they are, because it is related to a great design of which they are only a part.

The real influence which each man can claim as his own is that which arises from his personal presence whether in action or not. Silence sometimes exerts more positive influence than speech. The direct effect of the written words of Plato, Shakespeare, Aristotle, and Goethe may be classified as equivalent to personal presence. But when we include the action of others as resulting from Plato's influence, a new factor has appeared in the problem, and a new influence for which this great writer and teacher is not directly responsible. This obliquely-working power is, after all, less than a living soul, and the almost universal dissatisfaction felt in regard to a future without consciousness is an expression of this intuitively recognized fact. We shall see further on, that an existence without consciousness is at variance with the irresistible reasoning of Aristotle. The want of harmony in the new theory becomes evident when we compare its dim outline of a future with the magnificent conceptions of harmony and unity by Plato.

One of the opposing arguments which Plato encountered is to-day represented in the views of Mr. George Henry Lewes—that all this inquiry in regard to the unknown is in a large degree a waste of talent and genius. Plato thus replied to a similar conclusion: "But that we shall be better and braver and less helpless if we think that we ought to inquire than we should have been if we indulged the idle fancy that there was no knowing and no use in searching after what we do not know." Mr. Lewes believes that philosophy has worked its mission by disclosing the limitation of thought. Plato evidently thinks that we should prefer action to inaction, but he by no means assumes that we can know everything. He repeatedly refers to two worlds—the visible and the invisible—and this is of necessity an admission of his ignorance of the invisible. His inferences are like rays of light projected into space; each one in exceeding the last is a demonstration of the possibilities of the one to follow. Notice his reasoning in regard to the greatness of the invisible. He treats of thought or reflection as invisible, to distinguish it from the mere perception of outward objects as animals perceive them. He places hate and fear and malice among the lower levels of the soul—almost with the visible or sense-perceptions. It is worth while to notice in passing that these severe or low qualities are more readily disclosed to the eyes of others than the qualities of mental symmetry or harmony which may result in no further distinguishing mark than an expression of cheerfulness. In the darkness of the invisible we are to look for soul-qualities, and not in the superficial combinations of the objective world. Plato thus indirectly points out the value of the intellectual principle:

"The soul, I mean, accustomed to hate and fear, and avoid the intellectual principle, which to the bodily eye is dark and invisible, and can be attained only by philosophy; do you suppose that such a soul as this will depart pure and unalloyed?"

The question of its condition at departure will depend on the value of its influence, according to the new theory, and not on the intrinsic value or intellectual harmony of its powers or qualities. But, as we have seen,

Plato terms harmony and equability the higher conditions of the soul. These high qualities are not necessarily sources of influence. They may exist in a person on a desert island or in conditions which effectually prevent all possible influence upon others. Plato maintains that harmony is the proper condition by thus pointing out the disturbed mental state resulting from joy or pain:

"Excessive pains and pleasures are justly to be regarded as the greatest diseases of the soul, for a man who is in great joy or in great pain, in his irrational eagerness to attain the one and avoid the other, is not truly able to see or to hear anything; but he is mad and is at the same time quite incapable of any participation in reason."

It might be added that the vast repose of nature is a symbol of the harmony of the invisible. Voltaire, with his keen logical conclusions from the surfaces of things, ignores the enormous possibilities of that which to him seemed mere blankness. When we think of the millions of incidents which are taking place at any one moment, and when we reflect that each star represents a possible solar system and other forms of being—when we think of all this as a vast sweep of events, existences, and worlds to us unseen, and all whirling on and on during certain quiet moments of our lives, we are then better prepared to realize the force of Plato's reasoning concerning the harmony and greatness of the invisible. In the following extract Emerson reproves our curiosity concerning this mystery: "An answer in words is delusive; it is really no answer to the questions you ask. Do not require a description of the countries toward which you sail. The description does not describe them to you, and to-morrow you arrive there and know them by inhabiting them."

The real object of discussions of this unfathomable subject is not to satisfy what Emerson calls low curiosity, but to make us realize by reasonings from the known to the unknown that a great future is not only a possibility, but a probability.

The principal defect in the new theory of the immortality of mere influence is that the elimination of consciousness would seem to result in a partial or mutilated condition of being. A mental existence without consciousness, or with only the power of working upon affairs through others, would involve a break in continuity, as estimated from our present restricted point of view. The demonstrated facts of science seem to indicate that in the material universe, as far as known, this law of continuity is never broken. We are justified in looking upon this endless stability as applicable to the subjective universe of mind. Our existence, as Aristotle has explained, is a motion—the very act of changing or the constant condition of *becoming*. We are results of the balanced forces of the life and death of particles. The motion of the material universe is not for its own object; it is fulfilling the object of an unseen thinker, or it is working out a result which is to us unknown. But the mind is the highest form of force, because it exists for itself. Emerson says: "My life is for itself and not for a spectacle." In addition to this independent quality it manifests positive power by faintly imitating the original creative action, as seen in poetry or descriptive literature, or in the imitation of nature in painting and sculpture.

The self-consciousness which Mr. Frederick Harrison has pronounced to be not essential to a future state is the element that completes the circle. The mind even looks upon itself as an invisible object to distinguish it from the visible objects of the outer world. It is, in a mechanical sense, an independent power. In mechanics a certain measurable amount of force is transferred from the object acting to the object acted upon. But the action of the mind may take place without producing the slightest direct effect upon another mind, and of course without effect upon any material object. It does not, like heat, become a mode of motion, nor completely lose its identity owing to chemical change, but as long as we are conscious of its action here, we find its identity maintained during a constant change of particles. Why should its identity disappear at death or become distorted by a sudden cessation of this power of looking upon itself as an object? As animals are apparently not self-conscious, this would seem to be a fall in the scale of being.

WILLIAM A. EDDY.

# BRAIN AND MIND.

## CHAPTER VI.—*Continued.*

### LANGUAGE.

THE organ of this faculty is situated in the lower surface of the anterior lobe at the posterior part of the superorbitar plate.

"Let a line be imagined to extend for about an inch and a half from the root of the nose backward toward the center of the brain, and it will be found to reach a projection of bone rising from the base of the skull, called 'sella turcica,' from its likeness to a Turkish saddle. On each side of this body, and just where the optic nerves are about to enter the long orbit of the eye, there lies a convolution of the brain in man only (also in the higher apes slightly indicated), which runs from that point transversely in front of the middle lobe, till it reaches the convolutions which constitute the organs of Order and Number, and in its way it blends itself with the posterior portion of the convolutions of which the organs of the other perceptive faculties are composed."—BROWNE.

The phenomena of aphasia, an affection which deranges the faculty of speech, and investigations into the condition of the brain after the decease of the aphasic person, have convinced later anatomists of the existence of an organ in the brain which presides over speech. Dr. Austin Flint says: "It seems certain that in the great majority of persons the organ, or part presiding over the faculty of articulate language, is situated at or near the third frontal convolution, and the Island of Reil in the left anterior lobe of the cerebrum, and mainly in the parts nourished by the middle cerebral artery. In some few instances, the organ seems to be located in the corresponding part on the right side."

Its size is measured by the varying prominence or fullness of the eye, which results from the effect produced by the convolution which constitutes this organ upon the growth and form of the thin orbitar plate beneath it. This faculty takes cognizance of the artificial signs by which we represent ideas. Ideas are formed by the other faculties, and words are the signs by which they are represented. The word ox stands for a single object, and wherever the English language is spoken,

Fig. 46.—LANGUAGE LARGE.

conveys the same idea to the mind. In the phrase "red ox," two words or signs are used to convey two distinct ideas, and two mental faculties—Color and Individuality are employed to give us these ideas. In the sentence, "The big, heavy, red ox runs," five words are employed, five ideas are conveyed to the mind, and five mental faculties are concerned in comprehending these ideas. Language is the faculty which has to do with the manifest expression of these words or signs. It gives memory of words and facility in the

use of terms and phrases, and is thus the source of fluency of speech, and the ability to commit readily to memory. Where this organ is deficient the person finds great difficulty in giving expression to his thoughts. He may have ideas in abundance, but from want of the faculty which enables him to recall the words or signs by which these ideas may be represented, he will fail in the power of giving his thoughts expression.

Instances of disease of this organ in which the power of using words has been partially or wholly suspended (aphasia), are frequent in the records of pathology. We will instance but one or two:

The wife of a Presbyterian minister was seized with apoplexy, and upon recovery, it was found that her power of using words was impaired, while her other faculties remained entire. She frequently made very amusing blunders in her use of words. A clergyman came to the table one day in somewhat slovenly attire, and intending to ask him if he would have some soup, she inquired if he did not want "some clean linen."

Mr. Hood, of Kilmarnock, reports the interesting case of a man sixty-five years of age, possessing the ordinary knowledge of written and spoken language, who suddenly began to speak incoherently, and became quite unintelligible. "It was discovered that he had forgotten the name of every object in nature. His recollection of things seemed to be unimpaired, but the names by which men and things are known were entirely obliterated from his mind, or rather he had lost the faculty by which they are called up at the control of the will." He was quite well in every respect, with the exception of a slight uneasiness in the region of the eyes and eyebrows. If a familiar name were mentioned to him, he was able to repeat it once or twice distinctly, but generally before he could do so a third time, it was gone from him completely. He could understand passages which were read to him, but could not read himself. Between two and three years afterward he died of apoplexy. A *post-mortem* examination was made, and it was found that there was extensive disease in the left hemisphere of the brain over the orbitar plate.

The history of this organ is the most interesting of the faculties, as with its discovery by Dr. Gall began the series of investigations which resulted in the formulation of the Phrenological system. In the sketch of Dr. Gall's life, which is to be found in another part of this volume, allusion is made to the incident which drew his attention to the subject that has rendered him eminent among the world's benefactors.

Dr. Gall admits two organs or two divisions of the organ of Language, one termed the sense or memory of words, the other the talent for philology. Dr. Spurzheim admits but one organ embracing both modes of action. Mr. Combe and the later phrenologists have generally accepted Spurzheim's view.

## THE REFLECTIVE OR REASONING FACULTIES.

### COMPARISON.

The organ of Comparison is situated in the frontal convolution, at the inner margin of the hemispheres, on the middle line of the forehead, and directly above Eventuality. (See Fig. 17–37). It has for its function the perception of resemblances and differences. The other faculties compare objects of the same class as the ideas which they peculiarly and independently form; thus the organ of Color takes cognizance of the difference and resemblance of hues; Tune of

musical sounds; and Form of shapes. But this organ considers things which in their individual attributes are entirely unlike: as a light in a dark night, to a good deed in a wicked world. It frequently discovers unexpected resemblances among things, and is the source of the ability which some writers and speakers possess of illustrating their subjects by novel similes, metaphors, and analogies. "Its central position between the organ of the most benign of the moral and religious sentiments, and the most important of the perceptive organs is well adapted to the discharge of the functions it has to perform, since these appertain to each and

Fig. 47.—Comparison Large.

all of the faculties. For it recognizes resemblances not only in the attributes of incongruous physical objects, but also between things physical and things imbued with the characteristics of spirituality."

By the power which it gives of discovering differences and resemblances, it is a very important element in the critical and analytical mind. Chemistry, Botany, and all the sciences where nice distinctions and discriminations are necessary, are a natural field for its exercise. It gives to business men quick, practical judgment, by enabling them to compare any subject which comes up for their consideration with previous experiences. When this organ is small the judgment is slow; the person failing to comprehend readily the analogous conditions, is unfit for a place where prompt decision is required.

This organ was very large in the poet Moore, and his writings abound in comparisons. In his Life of Sheridan there are two thousand five hundred similes, besides metaphors and allegorical expressions.

Comparison is of great importance in a talent for public speaking. Many speakers, after a plain and simple statement of a given case has been made, find it difficult to dwell longer on the subject, even though Language may be

Fig. 48.—Comparison Small.

well developed, from want of interesting matter relating to it. Others again are able to enlarge upon the subject of which they are treating by the introduction of many topics which bear upon it, and so to present it in a clear and forcible light. Orators like Mr. Beecher, and reasoners like the late President Lincoln, have large Comparison, which contributes their readiness at illustrating their argument with anecdote and hypothesis drawn from every-day life.

Dr. Gall rightly observes that close reasoning and rigid induction are always disagreeable to a popular audience, because their faculties are not sufficiently cultivated or exercised to follow

abstract conceptions. The great charm of popular speakers, therefore, consists in perspicuity of statement and copiousness of illustration. So the most popular books of the day are those which abound with common incidents, analogies, and comparisons.

CAUSALITY.

All who have observed the contour of the forehead of men distinguished for profound reflection and theoretical reasoning talent, know that it is largely developed in the upper part. The

Fig. 49.—JOHN GARRETT.

portraits representing Socrates, Cicero, Bacon, Melancthon, and Kant, are thus marked, and Dr. Gall was led by his study of such characters to the determination of the organ which he ascribed to "metaphysical depth of thought;" "aptitude for drawing conclusions," and which Dr. Spurzheim named Causality.

The organ is situated on each side of Comparison, and above Locality. When large, it gives prominence to the upper portion of the forehead, the region of the *frontal eminences* of the cranium, and if the Perceptives are small, that part has an overhanging appearance. If, however, the Perceptives are developed in proportion to the Reflective faculties, the forehead recedes a little from the perpendicular. It is the office of this faculty to take cognizance of the relations among phenomena which constitute cause and effect. The Perceptive faculties recognize the existence and qualities of objects. Eventuality notes the changes which they present, and Causality seeks to trace these phenomena back to their origin or to the causes which produced them. Thus the Perceptives take cognizance of the existence of day and night, and the various phenomena presented by the changing seasons. Causality goes back of the phenomena, and inquires into their source. The moon is observed to increase in size from night to night, then to wane, disappear for a season, and again appear to pass through the same phases. Causality stimulates inquiry into the nature and law of these changes, and so contributes to the profoundest human wisdom. Sir Isaac Newton was helped toward the discovery of the law of gravitation by the fall of an apple. Millions before Newton had seen apples fall without giving the phenomenon even a passing thought. But Newton's large Causality led him to inquire why apples when released from the stem fall in a direct line to the ground instead of flying upward or in any other direction, and the result of his reflection on this simple every-day incident was the discovery of the law by which day and night, spring, summer, autumn, and winter follow one another in unalterable succession, and the countless worlds in the starry heavens revolve in harmony.

Dr. Spurzheim observes that "the

faculty of Individuality makes us acquainted with objects; that of Eventuality with events; Comparison points out their identity, analogy, or difference, and finds out their harmony; finally, Causality desires to know the causes of all occurrences. Consequently, these faculties together, pointing out general principles and laws, and drawing conclusions, inductions, or corollaries, constitute the truly philosophic understanding." In another place he says: "It is remarkable that the ancient artists should always have given to their busts of philosophers a large forehead, and represented Jupiter Capitolinus with a forehead in the middle part more prominent than is ever seen in nature (except in very rare instances). They seem to have observed that development of the forehead has a relation to great understanding."

If this faculty be very deficient the intellect will be superficial, and incapable of forming a comprehensive judgment or of taking wide-reaching views. It may be capable of dealing successfully with the common affairs of life, performing work laid out, or devised by deeper intellects, but if intrusted with duties involving a clear perception of causation and result, it will fail.

In man alone this faculty is capable of universal application, and its possession gives him an immense superiority over the brutes. Causality prompts man to ask the question Why? and its office of tracing effects to causes appears to include a measure of prevision, or of foreseeing effects which certain actions are destined to produce. Many persons largely endowed with the reasoning faculties, and hence capable of looking deeply beneath the surface of things and deducing remote causes and assigning what appear to most people novel relations to events, obtain the reputation of being "original," whereas true originality belongs to the function of another organ, and can not strictly be imputed to reasoning merely. Fancy and invention may contribute toward new methods of reasoning, but true originality proceeds from a sentiment, Spirituality.

## CHAPTER VII.

### THE SEMI-INTELLECTUAL FACULTIES.

#### CONSTRUCTIVENESS.

THE place of this organ is in front of Acquisitiveness and contiguous to that part of the frontal bone which is immediately above the spheno-temporal suture. (See Fig. 17-20.) When large, it gives breadth to the head above the zygomatic arch. "If the base of the brain is narrow," says Mr. Combe, "this organ holds a situation a little higher than usual, and there will then frequently be found a slight depression at the external angle of the eye between the zygomatic process and the organ in question, especially when the muscles are thin. In such cases it has sometimes appeared as high up as Time generally occurs. This slight variation from uniformity of situation, occurs in the distribution of all parts of the body; but the anatomist is not on this account embarrassed in his operations; for the aberration never exceeds certain limits, and he acquires by experience the tact of recognizing the part by its general appearance." It may be added here that the growth of organs in their groupings is toward those which exercise a dominating influence, so that when Constructiveness, for instance, appears high up in the brain and forward, it is more closely associated with the reasoning intellect than with the perceptive.

It is the function of this organ to manifest a disposition to fashion, to configurate, and to put together materials in forms of utility or beauty. It gives manual dexterity in the use of tools, and is essential to all arts which involve mechanical construction and configuration. It enables man to build houses for his shelter; to fabricate clothing for his protection and comfort; to construct ships, machinery, and the implements essential to his advancement as a rational and progressive being.

Some have supposed that the disposition to construct is dependent upon the general intellect, or habit, or a matter of acquisition, but this opinion is obviously not correct, since many persons eminent for intelligence have never shown any capability in mechanics, while others have manifested constructive ability in a remarkable degree, who were lacking greatly in intellect. This faculty also is frequently manifested by children at a very early age, while as yet the general intellect is undeveloped. Moreover, we find it exhibited in the lower animals in a way that evidently bears no relation to the degree of their intelligence. The elephant, the horse, and the dog rarely make the slightest attempt at construction, while the bird, the bee, and the beaver are remarkable for their manifestation of mechanical skill.

Fig. 50.—Large Constructiveness.

In illustration of the activity of this faculty at an age which precludes the idea of its being dependent upon the general intellect, Dr. Gall relates that Vulcanson, when a mere child, from simply seeing a clock through a window, constructed one like it with no other implement than a common knife. A gentleman with whom Dr. Gall was intimately acquainted, made, at a very early age, a machine for making pot-barley, and actually set it in operation by a small jet from the main stream of the water of Leith. Le Brun drew designs with chalk at three years of age, and at twelve he made a portrait of his grandfather. Canova, in chilhood, was led to model figures without knowing the methods or materials which are used in such sculpture. Sir Christopher Wren, at thirteen, constructed an ingenious machine for representing the course of the planets. Michael Angelo, at sixteen, executed works which obtained high consideration.

Mr. Combe speaks of an eminent Scotch barrister, in whom Constructiveness was largely developed, who, in the very act of composing a written pleading on the most abstruse question of law, would have vivid conceptions of particular pieces of mechanism, or of new applications of some mechanical principle, dart into his mind, and wholly interrupt the current of his thoughts, till he was obliged to embody them in a diagram or description, that he might "lay the Devil," as he termed it, and proceed with the subject in hand. Louis XVI. of France had a

private workshop in which he employed much of the time which should have been given to affairs of State in devising locks and setting type.

Dr. Gall mentions that two of his friends, the one an excellent teacher, and the other a "grand minister," were passionately fond of gardening, but he never could teach them to ingraft a tree. And Montaigne says of himself, "I can not handsomely fold up a letter, nor could ever make a pen, nor carve at table worth a pin, nor saddle a horse." We know persons of eminence in the law and some departments of science who have no taste or knack for using tools.

Dr. Rush says that there is no insane hospital in which examples may not be found of individuals who never showed the least trace of mechanical talent previously to their loss of understanding; but who have subsequently constructed the most curious machines. These unwonted manifestations of ingenuity are due to the excitement produced in the organ of Constructiveness by mental derangement.

A large endowment of this faculty is essential to the engineer and surgeon, to the dress-maker and milliner; and all women who take pleasure in cutting and fitting their own dresses, and devising changes in the arrangement of house or garden, have the lower and forward part of the side-head well filled out.


## THE FELLAHEEN OF THE NILE.

THE term *fellah* has come to signify all the poorer class of Arabs, whether in city or country, but the real meaning of the word is "tiller of the ground;" and while it is given to those poorer people living in towns who understand nothing of farming, it is also bestowed on all interested in agriculture, whether he be owner or laborer.

Fellaheen is the plural for fellah, and fellaha the feminine. There is but little difference between the rich and poor. The rich fellah may have a larger house than his poorer neighbor; still it is made of mud, and is no cleaner or better. The wealthy fellah buys gold ornaments for his wife, while the poorer fellaha adorns herself in brass or silver. The abode of the rich may have an additional apartment, and the lady of the house sometimes deck herself gorgeously in an embroidered vest at the great festivals, but their wretched abode is dirty and disorderly, swarming with vermin, suffocating in the hot season, and piled with dust and rubbish continually. There is, generally, only one room in the hut of the poorer fellah; the door is so small and low that the owner of the mansion must needs bow his head to enter; and there are no windows, so that it is not at all surprising that the inmates prefer the outside to the miserable interior, often sleeping without and sitting all day in the sunshine.

Why they should persist in building these huts on such a diminutive plan is beyond comprehension, for there seems to be plenty of room and no apparent reason for such close quarters; and still another wonder is, their utter disregard of all rules of cleanliness. The climate is such that greater care and labor are required to promote neatness

and remove dust than in northern countries. Fancy, then, what state a small, windowless room can reach where the whole family is crowded within the crumbling walls built of sun-dried mud, and no attempt is made to remove fleas, dust, and rubbish of every description.

It is amazing how the little fellah baby grows out of all the filth and reaches a strong, vigorous manhood. Probably those infants only live who possess naturally a strong constitution, able to fight its way through its wretched surroundings into light and air, for many children die under two years of age, owing to their miserable condition and the ignorance and neglect of their childish mothers. Those in the towns are in just as bad a condition, if not worse, occupying mud houses, two or more families congregating together in one small house having but one door, or in some ruined building nearly fallen to pieces, yet interesting to the traveler because of its remnants of exquisite carving and elaborate lattice-work, made in some long-since departed day of Egyptian glory; while under the dust and dirt that lies piled around, may be seen fragments of a mosaic floor, or gleaming of broken marble. An Arab never repairs anything which fate has stamped with decay; for example, visit the beautiful old Moorish mosque in Cairo, where the birds are building their nests in the quaint archways, and fluttering undisturbed amid the delicate, but broken, carvings of a vanished age.

What do these women, these fellaheen, find to occupy their time—how do they pass the long, sunny hours on the banks of the Nile? They are generally awake early in the morning, and astir as soon as daylight begins to appear, notwithstanding their natural laziness. As the fellaha wears the same clothing in the daytime which she does at night, it takes a very brief period for her to arrange her toilette. Sometimes she makes a ridiculous attempt at sweeping; takes a bunch of twigs, and squatting amid the dirt, feebly essays a clearance. After awhile the family assemble to partake of breakfast, sitting on the floor around the dish which contains boiled beans and oil, or a kind of stew. After this is over, the fellah goes to his work in the fields, and his wife not having any household duties to perform, such as washing dishes, making beds, etc., visits her neighbors, and a great amount of gossip and chatter ensue. If there is such an unlucky individual as a baby in this promising family, it is often rolled in a bundle of rags and laid down to sleep on a pile of mud, and there left to its slumbers, and the flies which swarm around it in delighted numbers.

The only time when the fellaha is really busy, occurs on the days of bread-making. Then all is bustle and confusion, picking and cleaning the corn, going to the mill, sifting the flour, mixing and kneading the dough, and baking the small flat loaves in the mud oven. Another duty is going to the river for water. Clad in a dark blue mantle, the national garb for centuries, they lift their jars to their heads and go down to the river's brink to fill them. From every village on the Nile, there is a path leading directly to the water's edge, and this is traversed morning and evening, but more especially in the evening, by long files of women. The *ballas* jar, as it is called, is washed in the stream and then filled; a hollow pad is worn upon the head on which the jar rests, and so having helped each other to lift the heavy weight to its place, they wend their way homeward, gracefully walking up the steep incline without even touching the jar with their hands, chatting and laughing meanwhile with their companions, and apparently never giving a thought to their burdens. The evening comes and the family is united at the principal meal of the day. A large amount of bread is broken into a huge bowl, boiling water is poured on this, and a handful of lentils scattered in, and the whole is then stirred with a wooden spoon. They all sit in a circle, each holding an onion or bunch of lettuce in the left hand, while with the right they dip their fingers in the bowl, alternately taking a mouthful of porridge and a bite of the onion or lettuce. This is believed to be the same kind of food as that for which Esau sold his birthright, centuries ago; the same as that which fed

the pyramid builders described by Herodotus, and is the invariable meal of the fellaheen, varied only with beans and lupins.

They are kind-hearted and generous with their food, and if any person pass by, they always call him to join in the repast. Even the smallest children possess this unselfish trait, and always share any object of food given them with their companions. No Arab ever dies of starvation in Egypt; food is shared with those who have none, and if a "brother" have need, they aid him in every way that is in their power. There is no occasion for orphan asylums among them, for if a child's parents die, somebody — generally a childless woman — always comes forward and takes the child to herself, treating it in every way as if it were her own.

The fellah performs his devotions before eating, but the women never pray; they think it would be useless, and so, night after night they creep into their huts like the snail into its shell, and, wrapped in some thin mattress, they fall asleep, ignorant of life's duties, and totally forgetful of the Divine power.

In the darkness of the Egyptian night we glide away from the Nile shores and leave them in their comfortless mud huts, while the palms wave far overhead and the river plashes its waves against the clover-scented banks, while the pigeons coo and fly over the brown mud villages, and hang in vast numbers on the awkward towers built for them, and far and near the sakias sigh to each other along the shore.

SARA KEABLES HUNT.

## SLIPSHOD WAYS.

MARK and Jane were to be married in a week. Dropping into the Taylor sitting-room one evening, Mark found Aunt Mary assisting Jane about some of her elaborate and mysterious bridal preparations. Aunt Mary was always considerate and sympathetic in her words and ways, and Mark liked her. He sat down by her now in unwonted silence, and with a clouded brow.

Jane looked at him furtively from behind the clouds of white lace and muslin in her lap, as he mechanically poked over the multitudinous trifles in her dainty work-basket, making as vague and unsatisfactory answers to her numerous questions as if he were guessing conundrums. After ten minutes had been spent in this rather stupid way, Aunt Mary asked, suddenly:

"Well, Mark, what is it?"

The young man started and looked up at her with a smile, as bright as if a heavy fog had been lifted off his mental horizon, as he said:

"I declare, Aunt Mary, I didn't mean to speak of it, but I am as nervous as a girl over—over—next Thursday; not the ceremony itself, mind you; I shall really enjoy the display in the church—but I refer to all the life that is to follow."

"Marriage is indeed the most important event of a life-time, and the outlook to every reflective mind must be a serious one," said the sweet-faced old lady; "but may I ask what has brought up the subject so impressively before you to-night?"

"The fact is, Aunt Mary," replied Mark, hesitatingly, "I have just come from Cousin Henry's. As I was passing the gate on my way here I heard the woodshed door open, and Susan's voice call out: 'Supper's ready.' The pleasing vision of a neat dining-room, a cosy tea-table, and two happy, contented young souls enjoying the nicely-cooked, tastefully-served evening meal rose up before me, and I could not resist the impulse to turn back and take a look at them. I ran in unceremoniously, as is my wont, announcing myself, as I opened the sitting-room door, by a hearty 'Good-evening.' There was no fire in the room, but plenty of dust and disorder.

"'Come right in here,' shouted out Henry, and I followed his voice through the dining-room, unwarmed except by the far-away warmth of the kitchen fire. A large basket of rough, unfolded, and unironed clothes was turned bottom upwards on the extension-table, an immense clothes-horse filled

half the room, and every chair was loaded with coats, hats, cloaks, and shawls.

"'We just use the dining-room as a sort of "gangway" in the winter,' said Henry, 'and den up here, except when we have company. If anybody runs in upon us they must take us as they find us.' This was not an over-cordial welcome, but I went along into the kitchen where Henry was seating himself at the tea-table, which, if you will believe me, Aunt Mary, was their little hanging cooking-table covered over with a strip of oilcloth. A few odd pieces of crockery were scattered upon it without regard to order.

"The little bit of a kitchen was untidy, the stove dirty and rusty. There were memories of Saturday's baking in the shape and appearance of flour, dough, and grease on the floor, table, and door-latches, and a salt codfish, with a cotton string tied around its tail, was hanging to the knob of the closet door. Susan's hair was rough and frowsy, and her gown was torn and soiled. Dear me, who could have imagined that such a state of things was so soon to follow their great and expensive wedding! What a picture of loveliness the bride was! They might as well hire two or three rooms in a flat to 'den up' in as to own that large, elegantly-furnished house and not use it, or to so misuse it.

"This scene rather discouraged me. Were Jane and I to deteriorate in that way I think I would rather have everything stop just where it is. I believe it would save us a world of trouble, and we would go on looking at married life, as we would have made it, through rose-colored glasses;" and Mark moved uneasily, got up nervously, and going around the table, seated himself by Jane's side and tenderly kissed the pretty, reproachful face she raised toward him, while Aunt Mary was considerately looking another way.

"Perhaps Henry is not altogether blameless in the premises," said Aunt Mary, coming back to the table with a red face after an energetic hunt for the shears; "did he fix himself up for tea?"

"Oh, dear, no," replied Mark, "he sat down and ate his bread and milk in his shirt-sleeves, collarless and cravatless, and with unbrushed hair and whiskers. He would not have shown himself to Susan in such a plight before his marriage, I assure you."

Aunt Mary looked at the pretty Susie's clock on the mantel, took out her gold pencil, wrote a little note, and then said to the young man: "I wish, Mark, dear, you would carry this *billet* over to my nephew, Horace Alden's, for me. They live in the east tenement in the Rutherford Block, you know, and on the strength of your cousinship that is to be, I want you to run in without ceremony."

Mark came back in an hour with a radiant face. Removing his hat, he made Aunt Mary a low bow, saying: "I am very much obliged to you; I wouldn't surrender the opportunity that may be graciously given me of helping make a *home* with Jane here for any earthly consideration."

"Indeed," cried Aunt Mary in seeming surprise, "perhaps you will be good enough to tell us what has changed your mind so suddenly."

"Well, you see," said Mark, "I ran up the stairs and opened the door at the top, as you told me, and such a charming picture that I saw. A living-room, neither parlor, dining-room, nor kitchen, but a happy combination of the three, made attractive and homelike by perfect neatness, order, and good taste. Such a cordial welcome that I had, to be sure. I was heartily ashamed when it came over me how well I used to know both Horace and his charming wife, and that I had not called on them before.

"I gave Julia your note, and she read it with a little laugh, and insisted that I should take off my overcoat and take tea with them. The cosy round-table, with its snow-white cloth and pretty tea-service, looked so inviting I could not resist the temptation. 'Horace does not get out of the store till seven; he sees to the closing up, so we have our tea at half-past seven.' Mrs. Alden said. Julia's dress was plain, but tasty and neat, set off by a dainty white apron, and her simple toilet was completed by a geranium leaf and a verbena blossom in her

shining hair. Horace, in a handsome dressing-gown and embroidered slippers, looked every inch a gentleman, as he is.

"The situation made us confidential, and I asked Mrs. Alden how she had managed to settle down into being such a wonderful little housekeeper, and she said: 'I used to be somewhat inclined to be careless in my habits, and I suppose my friends had some misgivings as to my ability to keep house. Among my wedding presents was one from a great aunt of mine who was wonderfully skillful with her needle. It was this tea-pot mat,' and she held it up for my inspection. It was a scalloped circle of scarlet broadcloth, with a slipper run down at the heel embroidered in it in black worsted, with the words, '*Never get slipshod.*'

"'This has been a constant reminder to me,' Julia went on. 'Were I tempted to neglect any trifling duty for the first time, my eye would fall upon or recall the words of Aunt Mittie's motto, and I would not only do what I had thought of neglecting, but would do it a little better, if possible. Horace, too, has kept me from falling into slipshod ways by his own habits of neatness. He always touches up his toilet for my sake before every meal, as punctiliously as if we had company.

"'Of course, when he is so thoughtful of me I can not be less regardful of him. All these little things take a few of the precious moments of our fleeting lives, but we consider their observance our bounden and interchangeable duty. Since housekeeping is the principal business I have in hand, I want to do my best in that vocation; to be as conscientious and painstaking in that as I would in teaching music or any other accomplishment. I enjoy my work; it comes easy to me. I take both pleasure and pride in it, and I think the secret of my success in this humble sphere of mine has been my keeping everything up from the very first, and never allowing myself in the smallest particular to fall into slipshod ways.'"

Mark and Jane, now settled in their beautiful, well-ordered, Christian home on the banks of the Connecticut, only the other evening spoke of the two lessons that December evening brought them, and the lasting impressions they wrought.

MRS. ANNIE A. PRESTON.

## SUNDAY AFTERNOON.

This soft sun glory filtering thro' heaven's blue—
Like love-light thro' th' azure of your eyes—
Melts and subdues my heart to tender sighs
For that sweet season, fresh with morning dew—
Life's flowery, fragrant June,
Breaking to bloom on Sunday Afternoon.

Let me remind you—with this lover's kiss—
Coming from church on such a golden day,
Love's radiant rainbow arching the charmed way,
Our hearts a-tremble with unspoken bliss—
Ah, all too soon—too soon
Fled that bewildering Sunday Afternoon!

Do you remember, sweetheart—that blush tells—
Coming from church upon a day more fair,
With orange blossoms nestling in your hair,
And all the air athrill with marriage bells?—
A blessed, blessed boon
Was life to us that Sunday Afternoon!

And blessed hath it been thro' all the years
That we have walked together, heart to heart,
Bearing of every burden, each our part,
Sharing our pleasures, mingling our tears,
And finding our way strewn
With heart's-ease, always, Sunday Afternoon.

For this oasis in the desert sands,
This peaceful stop between the week's stern wars,
This tender strain 'mid life's discordant jars
Strengthens our hearts, and nerves our failing hands.
Our souls are set atune
To heavenly music Sunday Afternoon.

Here present, past, and future strangely blend,
And life illumined by th' Eternal light
Unfolds its mysteries to our groping sight—
More clear appears our being's aim and end
When, rising soft, the moon
Closes with prayer our Sunday Afternoon.

ANNIE L. MUZZEY.

## THE DUTY OF LIFE.

THE publication of the sketch of Mrs. M. S. Wetmore in the June number of the PHRENOLOGICAL, led that lady to write the following letter to the editor. It will be seen by the reader how much it exemplifies the main features of the estimate of her character which was briefly predicated of the portrait supplied us by a friend. After a few preliminary remarks, Mrs. Wetmore says:

"If I possess traits which cause me at all times, and in all places, to see and feel the great need of a development of the finest and best nature of man, and to realize keenly, as I do, that man's thought, or want of thought, and action tend to develop only the grosser elements thereof, I can only work in season and out of season, even while I know that this grand old world would move on all the same, if I did not feel impelled to do the work that so few consider a needed one. I realize keenly that if I would do all I desire, I must economize my strength, and rest more than I do; but sometimes, aye oftentimes, when my soul is fired with a strong sense of the fearful condition of humanity, thought *will not* cease, and rest will come only in action. Oh, there is such need for greater *thought* in the community; such need of a grander Christianity, in the form of *love for humanity*, that I often feel if my poor life, given as a sacrifice, could effect even a slight change, gladly would I give it. But, life must be given in a grander and nobler manner than by simply ceasing to live in the form. It is the duty of every individual to strive to understand how his or her life may be of greatest service, not to self simply, but to the greatest number. At present we are, as a people, a result of ignorance, and until such ignorance becomes intelligence, we must suffer as we do. It is my greatest desire to be able to teach my brothers and sisters all around me, how they may become what it is said they were created, viz., beings a little lower than the angels. Inharmony reigns everywhere, but as the skillful teacher tunes the instrument that sends forth such discordant sounds, so shall the determined, unselfish souls who seek a grander life for earth's children, attune to harmony the living instruments in which are wonderful and numberless notes, that under skillful treatment will give forth music grander and sweeter than ever yet has charmed mortal ears. We want new evangels—and they must be such as labor from purest love—to go forth in the name of humanity, to teach mothers and fathers what they surely do not know, or they would commence in earnest the work of elevation for themselves and their children. What are the fathers and mothers of to-day? And what are the children to become? We may not decide what they *will become*, but it is patent that they will *not* be what we ought to look for at this day and in this generation. Surely they who clearly see the cause of all the difficulties, who realize that an inborn selfishness is eating the very life out of humanity in a thousand varied ways, ought to go forth with two-edged swords and with healing power in their hands and rest not until they have unsealed the eyes of the weak, the blind, and the thoughtless. That a better state of affairs will some day exist, I do not doubt, but I can not sit with folded hands and rest in such belief. The good gardener places his choice bulbs and seeds in suitable conditions for their development into all that it is possible for them to become. If the same kind care and attention could be exercised over the grander bulbs in human life, what glorious results might be achieved! Beautiful seeds, or seeds that would develop and yield lovely flowers under better conditions, are sown among thick and rank weeds, and the beautiful love-light of their blossoms choked out, and their otherwise sweet odor rendered a stench in the nostrils of humanity.

"Day by day the same process goes on, and day by day the record reads, murder, theft, arson, rape, and all the many remaining forms of crime contained in the catalogue. Prayers are offered up daily, but are unavailing, because the kind of prayer needed to-day is such as must be sent forth in earnest work, and in truthful words, so plain, a child may understand, and yet they must be sharp and incisive, cutting their

way to the very soul of things, and blasting by their *truthfulness* the errors and superstitions of the day. Let every person commence the work of *thinking*, and soon a new state of affairs would be inaugurated. Let us think, afterward let us pray; then, let us *do*.

"I have never realized that any work of mine was anything beyond what every one ought to perform, consequently it has not seemed much to me, even though I allow it to be *the* work of life, and so I have kept no reckoning in regard to it, hardly giving it thought only as it might serve upon occasions to rouse some listless beings into quicker life, by showing them what *they* could do, and how they could put their own sorrows out of sight by helping others to bear their burdens, and at the same time lightening the burdens of both the helper and the helped. I think that if I have talents I ought to be ashamed if I make no use of them; and grateful that I can be of service to my kind. I ask nothing but strength equal to the needs of the day; with that, I am sure I shall do something, that I need not feel I am no better for having lived, or the world made just a little better for my stay in it. We want *men* and *women*, true as steel to the best and highest intuitions and aspirations of their souls. We want only this, then everything good, noble, and magnificent can be outwrought. God speed the day when woman shall awaken to the knowledge of her power! Then, man will unfold his grandest proportions, and the twain, as one, become a power for good in the land, showing by the peaceful quiet of their lives and by the fruits thereof that only in true oneness can completeness be expected. Then will divorces cease. Then Free Love will be understood as that which unites two as one for time and eternity.

"Yours sincerely,

"M. S. WETMORE."

## WILLIAM CULLEN BRYANT.

ONE of the most impressive occurrences of the year is the recent death of Mr. Bryant. Although an old man, his presence among us had the nature of a revered public institution, a social and literary necessity. We had grown to look to him for counsel and suggestion when events of uncommon interest aroused general attention, and his long career as an author and journalist had given him an indisputable warrant to our confidence and esteem. Aside from the consideration always accorded him by his fellow-citizens of New York, he had won the respect of the civilized world through his poems and scholarship. Wherever the English language is understood, the author of Thanatopsis is known. Literature was his natural sphere, and when a youth he

gravitated toward it by the spontaneous impulse of his special mental endowments.

His death occurred on the 12th of June last, and it seems to us that his life should have been prolonged several years, for until a few days previously he had exhibited the indications of vigorous health both in body and mind, and we can not help thinking that it was an indiscreet undertaking on the part of so old a man to make a special oratorical effort in the open air as he did at the unveiling of the Mazzini bust in Central Park, on May 29th. There he stood in the presence of a large assembly, his uncovered head exposed to the glare and heat of the sun. His subsequent fall upon the stone steps at the entrance of General Wilson's house completed the injury done to his sensitive brain, and sent him to the couch from which he never rose again. It was a noble service which Mr. Bryant performed in celebrating the memory of the great Italian patriot, but it was performed at too great a risk, and New York is now deploring the consequences.

The poet was born November 3, 1794, in Cummington, Mass. He was carefully trained by his father, a physician of some eminence, and finished his education at Williams College. His poetic talent showed itself at a very early age, as before he was fifteen he had written several remarkable pieces of verse. He had adopted the law as his calling, but after ten years' practice he took up the pen of the journalist, becoming in 1827 the editor of the New York *Evening Post*, with which his name and personal interest have ever since been identified. His health and vigor were marked throughout his life, and were due not so much to an original endowment of physical toughness and endurance as to his simplicity and regularity in every-day habit. His temperaments were nearly balanced, the mental predominating. His head was full in the intellectual region, but somewhat narrow in the lower lateral portion bordering the ears, while in the upper and forward parts of the side-head it was strongly developed. His Ideality was large, but dependent upon his intellectual perception, as is seen in his poetry, which rests in the objects of nature, deriving its similes from tree, flower, bird, insect, etc., and ever picturing some phase of truth and utility. The upper part of Mr. Bryant's forehead, as shown in the cast taken from his head when he was about forty, is relatively narrow, particularly in the region of Mirthfulness, and in confirmation of the mental quality indicated by this phrenological characteristic it is said that he had no appreciation of the humorous; could not see why people admired or enjoyed Dickens. Yet he was a fine critic, sharp and incisive in defending his opinions or in refuting the sophistry of an opponent. The center of his forehead was conspicuously prominent; he had a fine memory, and prided himself on correct scholarship.

During the past ten years Mr. Bryant gave most of his time to leisurely studious pursuits, bringing out in the course of time his admirable translation of Homer, and responding to numerous invitations to speak on occasions of literary, educational, and political importance.

His diet consisted largely of fruit, baked apples in particular, and the different farinacea. For some years past the staples of his breakfast were oatmeal, milk, and fruit. He loved to retire early, and was a very early riser. It is said that for many years he had the habit of walking down to his office, winter and summer, by or before seven o'clock, and there reading the morning journals while munching a piece of dry bread, with a glass of water as his beverage. He was an extremely active man, fond of gymnastic exercises, and a great walker. After he was past forty he walked in one day, for his pleasure, from Haverstraw to New York, along the left bank of the Hudson, a distance of over forty miles. When he was sixty-five a ten-mile walk was a pleasure to him, and even in the last year of his life he walked down to the *Evening Post* building, and then, if the elevator were not waiting, would often ascend to the editorial rooms in the ninth story by the long flights of stairs.

The following letter, written by Mr. Bryant some years ago, describes with much fullness the routine of his life from day to day, and is very interesting in a hygienic sense:

NEW YORK, *March* 30, 1871.

TO JOSEPH H. RICHARDS, ESQ.:

MY DEAR SIR:—I promised some time since to give you some account of my habits of life, so far at least as regards diet, exercise, and occupations. I am not sure that it will be of any use to you, although the system which I have for many years observed seems to answer my purpose very well. I have reached a pretty advanced period of life without the usual infirmities of old age, and with my strength, activity, and bodily faculties generally in pretty good preservation. How far this may be the effect of my way of life adopted long ago and steadily adhered to, is perhaps uncertain.

I rise early, at this time of the year about half-past five; in summer, half an hour or even an hour earlier. Immediately, with very little incumbrance of clothing, I begin a series of exercises, for the most part designed to expand the chest, and at the same time call into action all the muscles and articulations of the body. These are performed with dumb-bells, the very lightest, covered with flannel, with a pole, a horizontal bar, and a light chair swung around my head. After a full hour, and sometimes more, passed in this manner, I bathe from head to foot. When at my place in the country I sometimes shorten my exercises in the chamber, and, going out, occupy myself for half an hour or more in some work which requires brisk exercise. After my bath, if breakfast be not ready, I sit down to my studies till I am called.

My breakfast is a simple one—hominy and milk, or in place of hominy, brown bread or oatmeal or wheaten grits, and, in the season, baked sweet apples. Buckwheat cakes I do not decline, nor any other article of vegetable food, but animal food I never take at breakfast. Tea and coffee I never touch at any time. Sometimes I take a cup of chocolate, which has no narcotic effect and agrees with me very well. At breakfast I often take fruit, either in its natural state or freshly stewed.

After breakfast I occupy myself for a while with my studies, and then, when in town, I walk down to the office of the *Evening Post*, nearly three miles distant, and, after about three hours, return, always walking, whatever be the weather or the state of the streets. In the country, I am engaged in my literary tasks till a feeling of weariness drives me out into the open air, and I go upon my farm or into the garden and prune the fruit trees or perform some other work about them which they need, and then go back to my books. I do not often drive out, preferring to walk.

In the country I dine early, and it is only at that meal that I take either meat or fish, and of these but a moderate quantity, making my dinner mostly of vegetables. At the meal which is called tea I take only a little bread and butter, with fruit if it be on the table. In town, where I dine later, I make but two meals a day. Fruit makes a considerable part of my diet, and I eat it at almost any hour of the day without inconvenience. My drink is water, yet I sometimes, though rarely, take a glass of wine. I am a natural temperance man, finding myself rather confused than exhilarated by wine. I never meddle with tobacco except to quarrel with its use.

That I may rise early, I, of course, go to bed early; in town, as early as ten; in the country, somewhat earlier.

For many years I have avoided in the evening every kind of literary occupation which tasks the faculties, such as composition—even to the writing of letters, for the reason that it excites the nervous system and prevents sound sleep. My brother told me not long since that he had seen in a Chicago newspaper and several other Western journals a paragraph in which it was said that I am in the habit of taking quinine as a stimulant, that I have depended upon the excitement it produces in writing my verses, and that in consequence of using it in that way I had become as deaf as a post. As to my deafness you know that to be false, and the rest of the story is equally so. I abominate all drugs and narcotics, and have always carefully avoided everything which spurs nature to exertions which it would not otherwise make. Even with my food I do not take the usual condiments, such as pepper and the like. I am, sir, truly yours, W. C. BRYANT.

He was to the time of his accident a fresh, active, spirited man, an example of what habits of purity, regularity, and hygienic intelligence will do for a man, and for upward of fifty years he had exercised an influence in the world of letters, politics, and society, at once refining and ameliorative.

To the reader a brief extract at least from his Mazzini address will be acceptable, as that was Mr. Bryant's last public effort, and so intimately related to his decease. In it one remarks a vigor and freshness rare, indeed, in one past eighty:

"The idea of Italian unity and liberty was the passion of Mazzini's life; it took possession of him in youth, it grew stronger as the years went on, and lost none of its power over him in his age. Nor is it at all surprising that it should have taken a strong

hold on his youthful imagination. I recollect very well that, when forty-four years ago, I first entered Italy, then held down under the weight of a score of despotisms, the same idea forcibly suggested itself to my mind as I looked southward from the slopes of the mountain country. There lay a great sisterhood of provinces requiring only a confederate republican government to raise them to the rank of a great power presenting to the world a single majestic front, and parceling out the powers of local legislation and government among the different neighborhoods in such a manner as to educate the whole population in a knowledge of the duties and rights of freemen. There were the industrious Piedmontese, the enterprising Genoese, among whom Mazzini was born — a countryman of Columbus — there were the amphibious Venetians and the Lombards rejoicing in their fertile plains, and there, as the imagination followed the ridge of the Apennines toward the Strait of Messina, were the Tuscans, famed in letters; the Umbrians, wearing in their aspect the tokens of Latin descent; the Romans in their center of art; the gay Neapolitans, and further south the versatile Sicilians, over whose valleys rolls the smoke of the most famous volcano in the world. As we traverse these regions in thought we recognize them all as parts of one Italy, yet each inhabited by Italians of a different character from the rest, all speaking Italian, but with a difference in each province; each region cherishing its peculiar traditions, which reach back to the beginning of civilization, and its peculiar usages observed for ages."

## QUIET PEOPLE.

THE misgovernment of the world is carried on with such an amount of talk that one has seldom time to think how little would suffice. Half a dozen well-chosen words would generally be better than whole conferences and debates. But, since people must speak first and choose their words afterward, everybody's time is taken up in saying that something was said, in saying that something quite different was meant, and in saying something fresh, which has to be explained in its turn. It naturally results that both wise and foolish people have broken much silence in praising it; and that, like abstract virtue, it is admired, but seldom practiced. It is in vain to point out that the silent fool often passes for a man of wit, because the fool who has wit enough to know this and act accordingly is not properly a fool. Were he a fool he would not keep silence. The negroes attribute this wisdom to the chimpanzee, who, they say, is a man, but will not speak lest he should be made to work. Silent people get through the world as well as their talkative neighbors; every one talks for them; their nod is interpreted where another man would have to make a speech; and every one is willing to excuse them, as the sailor excused his parrot, for, if they do not speak, they think the more. Foote, the actor, boasted of his horse that it could stand still faster than some horses could trot; and the silent man is often enabled, by the value attached to his rare utterances, to say more by his silence than a voluble talker by a string of phrases. No doubt there is a kind of silence which is the reverse of talk, and is in itself eloquent. A prisoner who reserves his defense, a witness who refuses to answer a question, a man who holds his tongue when his character is assailed—in short, all the cases in which "silence gives consent," are rather silence as the negation of speech than as a positive quantity.

It is quite easy to imagine loquacity in a deaf-mute. He may not have power to utter a sound, yet, in the strict sense, he is not perhaps a silent person. And silence kept on purpose to express, by its very existence, an emotion of the mind, is only a substitution of signs for speech. Such is the reticence displayed by the well-known epitaph on a tombstone in Fulham churchyard, where, after the name, age, and date of death of the lady buried below, three words only are added by way of epitaph—"Silence is best." The estimation of the deceased by her surviving relations could not be more fully expressed had the whole stone been covered. When a character is to be given to a drunken or dishonest servant, the omission of the words honest and sober is sufficient. But this is not the silence of quiet people. Too often they resemble rather the chimpanzee than the par-

rot, and are not talkative because talk may involve them in further exertion. But it is not easy to pry into their motives of action, or rather of inaction. The Ulster folk have a proverb, "Nobody can tell what is in the pot when the lid is on." It is not the most unselfish people who talk least about themselves. To some the facts which relate to their personal history are too serious for words.

Unspeakable are the emotions of silent people; a sense of personal dignity or shame keeps them quiet; but to most of them is vouchsafed a single confidential friend, into whose ear all the pent-up feelings are poured from time to time.

This is especially the case with quiet girls. What they say in their moments of confidence we can not pretend to know. Whether they are really quiet or only shy is equally beyond the superficial observer. That they are not found to impede the pleasant flow of soul in ordinary society is often because they are eminently good listeners, and do not yawn at the utmost commonplaces. That another should commit himself to speech, with or without anything to say, is enough to interest them. They are thought sympathetic, and often draw forth the tale of woe long hidden. Men begin by telling them of other loves, and often end by loving them for themselves. In this they have a great advantage over the more gushing sister. They take no notice of a foolish speech, and a man imagines he is safe in their hands. He can say things to them which, said to any one else, might have serious consequences. A quiet cousin is thus often a great blessing to a man. He can talk a matter out as if with himself, and imagine afterward that he has had counsel upon it. The quiet girl hears him with outward sympathy, agrees with all his views, and, when asked to help him to a decision, gives her casting vote in favor of the course he already prefers. He finds after a time that her quiet receptiveness is grateful to him; and, when she has seen him safe through an engagement or two, and half a dozen flirtations more or less serious, he suddenly finds out, or at least tells her, that he has really been in love with her only all the time.

Quietness is sometimes a sign of bodily health. The nervous man who is always stirring is seldom strong. But when a man is thoroughly wrapped up in himself and his own importance, perfectly satisfied with his position and prospects, the cut of his clothes, the length of his whiskers, the attenuation of his umbrella, and the lustre of his hat, the chances are that he is very quiet. Such men are habitually well-dressed; but as they get on in life they cling to old fashions. They are not considerate for others, yet they give very little trouble. They exact the utmost service, but make no fuss about it. They are painfully regular and punctual, but never seem put out by other people's want of order. They are bores at a dinner party, wet blankets at a picnic, mere sticks at a ball; but excellent as officers, admirable parsons, and much sought after by match-making mothers. It is they who carry off the heiresses; who always save money; who are never in debt or difficulty, as other men are; who are regular in their devotions, and invaluable on committees, where they always get their own way without trouble or fuss. They habitually wait till every one else has spoken, and then make the single remark which concludes the matter, and which seems as if it had risen to the surface, like cream, of itself.—*Saturday Review.*

THE TRUE FEAST.—When the barbarous practice of stuffing one's guests shall have been abolished, a social gathering will not necessarily imply hard labor and dyspepsia. Perhaps, when that time arrives, we shall be sufficiently civilized to demand pleasures of a higher sort. True, the entertainments will then, in one sense, be more costly, as culture costs more than cake.

MRS. A. M. DIAZ.

THE best part of one's life is the performance of his daily duties. All higher motives, ideals, and conceptions are of no account if they do not lift a man up and strengthen him for the better discharge of his duties in the ordinary affairs of life.

## THE IDLER.

INDUSTRY is a great teacher, but many there are who persistently refuse to put themselves under its tuition. They prefer the negative pleasures of inaction. Go where you will, you will find society with its burdens to carry in the form of men and women who are hunting the shortest and easiest road to pleasures that are separate and apart from all responsibility, pleasures that delight the taste, and are desired for their emptiness.

Society marshals a large army of good-looking ciphers. They flash in the sunlight of flattery and applause, and they are so scrupulously guarded by counterfeited elegancies that one might suppose a heart of great upheavals existed under that preponderance of gorgeous apparel. But they are like the empty bubbles; they will not bear tapping.

Some persons love idleness for its own dear sake; but a great portion of society is too much taken up with conventional nothings to permit the influx of healthful influences. They are hemmed in and their individuality is enfeebled by influences from without.

Energy and a fixed purpose are the strong meats upon which the inner forces of character subsist. Inaction will weaken these forces until they will have no weight in the intellectual balance.

Viewing the subject in a worldly sense, the man of means can better afford to be idle than the man without means; but we are slow to believe that God in His economy ever set apart a place in His vineyard for the idler. A man either pays his way in this world, or he filches from God's storehouse.

It is a sad misfortune to be drawn into the vortex of luxurious idleness. It lulls to inaction the higher attributes which, if properly cultivated, uplift the soul and bring it nearer the model of perfect manhood. A man's influence is only commensurate with the force of his inner life. A stream can rise no higher than its fountain-head; and we can not be too careful with regard to the outcroppings of our lives and the influences that mould the general features of society.

Idleness is not necessarily absolute inaction. Nicholas Gimcrack industriously pursued the butterfly, but neglected his family.

If the good time coming is a literal truth, as some persons suppose, when "Holiness unto the Lord" shall be written on the bells of horses, the passions of man confined within the limits of usefulness, and the warning elements of society wrought into happy consistency, then may we hope for a triumphant wave of public sentiment that shall sweep down every barrier to human advancement and break at the door of every palace of leisure, and call forth its dreamy occupants into an atmosphere pregnant with higher aims and nobler achievements.

W. R. GREGORY.

## BIRD LORE.

DISCOURAGED once I walked away
Within the wood to be alone,
Just as the sober edge of day
Its stillness on the leaves had thrown.

Upon the moss, with lips compressed,
I sat in silence; yet, within,
A cheerless voice to me addressed,
In weary words, a dismal din.

It said, "Toil on o'er stubble field,
Its garnered stores can you command?
Or when did fruitage ever yield
A harvest open to your hand?

"And yet, if labor brought success,
When you were struggling for the prize,
A transient joy proved none the less
A lasting sorrow in disguise."

It said that death might bring relief,
But life had not one ray of hope:
Made up of care or cankering grief
Was my relentless horoscope.

Just then, there fluttered at my side
A little bird with loaded beak,
And filled four mouths that opened wide,
Then sang of things it could not speak.

And clearly trilled the warbler's note,
In it, it seemed, a lesson lurked,
For tired I thought this yellow-throat,
And I, too, was but overworked.

The conflicts, which my brain had burned,
Were stilled—the song had brought me rest;
Home to my tasks I soon returned,
The bird went back into its nest.

MARIE S. LADD.

# Literature, Mental Science, and Education.

True philosophy is a revelation of the Divine will manifested in creation; it harmonizes with all truth, and can not with impunity be neglected.

## INJURY TO BRAIN AND INSANITY FOR SIXTEEN YEARS.*

THE following facts were given by Proctor Thayer, Professor of Surgery in Cleveland Medical College:

"Some years since, a lady called at his office and requested him to oblige her by visiting her husband then in jail at Cleveland. She gave the following pitiable and interesting history of the case:

"Sixteen years previously, they were residing in the State of Indiana, engaged in farming. While plowing, his team became unmanageable, because of a colt getting entangled in the harness, and ran away. In his effort to stop them he was dragged some distance, and was seen to be thrown violently against a fence, his head striking one of the rails. He was taken up insensible and after recovery from the concussion, was found to be suffering from mania. The mental disease assumed the acute form and was continuous; at first variable in intensity, but at times characterized by exhibitions of the most dreadful violence. He had at various times been placed in insane asylums and dismissed as incurable.

"After a varied experience of confinement in the asylum and the jail owing to these attacks, he at last was placed in the asylum at Newburg, near Cleveland. When apparently every other means had been resorted to without avail, his wife desired that his head might be trephined, at the spot as nearly as it could be determined where he had received the injury. This she had often requested of others, and now insisted on with much earnestness, whatever the consequences might be.

"Thoroughly incredulous, the doctor visited the patient, and found him a raving maniac, whose violence had made him a terror. It had been found necessary to construct an iron cell, the upper part of which consisted of gratings. No one ventured into his apartments save under the greatest urgency and with extreme care. He would not permit a single thing to remain in his room, breaking furniture into splinters, and tearing bedding and clothing into threads. He raved continually in his desire to destroy imaginary enemies, save when he snatched brief intervals of sleep on the naked floor. Wild, haggard, and filthy, he glared through the grating at the doctor, who did not venture nearer even to make his examinations.

"His head being entirely bald, it was easy to observe that no depression existed as a guide for the proposed operation.

"His keeper joined in the request made by the wife, on the ground that in no way could he be made worse, and should he die in the effort to benefit him, even that would be a blessing. So without the shadow of a hope, but to gratify the wishes of the wife, it was decided to operate on the following morning.

"At the appointed time the Sheriff opened the door, and seizing the maniac, threw him on the floor, when by the assistance of the surgeon he was tied, and chloroform administered. Not the least guidance to the operation could be obtained from the contour of the skull, but the trephine was applied at the prominence of the frontal bone, that being the point to which he occasionally put his hand, as if he suffered pain there; this point also coincided with the seat of injury as described by the wife. The skull was found to be hypertrophied and more dense than normal, but nothing else was discoverable. The operation being completed, he was untied.

"As the effect of the anesthetic passed

* From the *Toledo Medical and Surgical Journal* for Sept., 1877.

off, he lay quietly, and as he opened his eyes they were observed to have lost their former wild expression. Directions being given to apply cold water to his head, and place a cot in the cell with attendants to control him if necessary, he remarked calmly, 'I sha'n't harm them.' The instructions were observed, and on the following morning, all were surprised to learn that the patient had been continually rational, and had asked for his wife and *baby*.

"When the doctor entered his cell, he inquired where he was, and why he was there? When the matter was explained, he expressed the greatest astonishment; and to the inquiry as to what he knew about it, replied that it seemed to him that he had just awoke, and that yesterday he was plowing; that his mare and colt got to cutting up, ran away, and that was all he knew in regard to it.

"The doctor asked if he would like to see the wife and child he had inquired after, to which he quickly replied, 'Oh, she can't come, she has just had a baby.' The wife and baby, the latter now a girl of sixteen years, had been waiting in an adjacent room and were now introduced to him. He did not know either of them. The wife had changed in appearance and the baby become a woman. In utter amazement he inquired, 'My God, what can this mean; it seems to me that I have only been asleep and that I was plowing yesterday.' The scene that followed can only be imagined. His recovery was complete, the whole sixteen years remaining a blank to him, and all knowledge of his injury a mystery.

"His mental derangement never returned, and having hired his father-in-law's farm in Cuyahoga County, Ohio, he pursued the occupation of a farmer for seven years, when he died of pneumonia. A post-mortem revealed no perceptible trace of brain disease."

[The blow which produced the injury, doubtless fractured the skull, causing a pressure upon the brain. The fracture was not such as to be indicated on the surface; still the blow producing such mental aberration should have led the surgeon to employ the process of trephining at, or soon after, the time of the injury, and thus have saved all those terrible years of insanity. We commend the faithful wife for her wise persistency in the right direction. This case shows that a pressure upon the brain may suspend normal consciousness for sixteen years, and that a man may thus be made a raving maniac without serious damage to the bodily health or lesion of the brain. The mental machinery was disturbed, but not ruined.—ED. PHRENO. JOURNAL].

## GENERAL SCHOUVALOFF.

FOR months after the occupation of Constantinople by the Russians there were apprehensions that a fresh conflict would grow out of the agitations incident to the settlement of affairs between Russia and Turkey. The terms proposed by the Czar to the Sultan were not satisfactory to England and Austria, and both these nations threatened resistance *vi et armis* to an adjustment in which their "rights" territorial were not considered. In the early part of May the aspect was very forbidding for the peace of Europe. England was alive with martial preparations. Austria was organizing her army for speedy and effective action, while Russia was exerting her colossal energies to strengthen herself by land and sea against the onset of her probable foes. Meanwhile negotiations were going forward between ministers and special emissaries; and all the art and sagacity of veteran diplomatists were brought into requisition. Evidently the masses of the people in Russia, England, and Austria, and on the continent, did not want war, and the kings and courts were not united in sentiment on the question. So that the spirit of liberality displayed by the Czar, aided by the skillful management of his ministers, and by the quiet yet impressive attitude of Germany,

was successful in bringing about a temporary adjustment, at least of the international controversies.

Most prominent among these ministers is the Count Peter Schouvaloff, whose repeated visits to the court of Victoria resulted in the consent of England to the International Congress, which was held in Berlin in June. He was born of noble family, and received a liberal education. In 1845 he entered the service of his country, and distinguished himself as a soldier, winning rapid promotion. In 1857 he was made a Major-General of Artillery. In 1864 he became General Aide-de-Camp of the Emperor Alexander, superintendent of the Gendarmerie of the Empire, and head Privy-Chancellor of the Third Section of the Empire, a department which he entirely remodeled. In 1872 he was made General of Cavalry.

He had exhibited so much ability in the administration of the civil and political affairs which came within the scope of his official authority that the Government found it expedient to clothe him with important legislative or judicial functions at that time, and in 1876 he was sent to England as Russian ambassador to that nation. In the recent war with Turkey he performed important services, and added greatly to his reputation. When Prince Gortchakoff was ill, a few months ago, and it was thought that his withdrawal from public service was near at hand, Count Schouvaloff was deemed by many in authority to be the man best qualified to succeed the aged diplomatist.

His head and face, although imperfectly rendered in the portrait, show the man of energy, force, and influence. He is a natural critic of human character, and a natural leader among men, the elements of intuition, aspiration, and dominance being conspicuously limned. In many respects he reminds one of the German Chancellor, and if report be true that Bismarck and Schouvaloff are warm friends, their similarity in physiognomy but confirms the old proverb concerning "birds of like feather."

## A VISIT TO HOWE'S CAVE.

THIS cave is situated in Schoharie Co., N. Y., a few rods from the depot of the Delaware & Hudson and the Albany & Susquehanna Railroads. It is thirty-nine miles from Albany, and about two hours ride from Saratoga on the direct route to Philadelphia. There is a good hotel at the entrance, which renders all needful accommodations of apparel, guide, etc., for exploring the cave. As the dwellers in Olympian fields are fabled to wear robes adapted to their abode, so the underground visitors must assume the habiliments and learn the speech appropriate to their temporary sojourn. All apparel which restricts perfect freedom of motion must be laid aside. Above ground this is quite embarrassing, and the ladies shrink in by-ways and behind doors on the approach of strangers; but once within, all is forgotten. Our party numbered four. Each carried a light; and, for the first time, graced a torch-light procession.

Passing down a wooden stairway we were met by a current of cold air that threatened chills, but the guide assured us that we should soon be sufficiently warm. At the entrance the sides of the cave are decorated with flesh meats, watermelons, etc., for it is the best of cellars, and the hotel supplies can be kept here for an indefinite period.

The first expansion in the course is called "The Lecture-Room." This is about one hundred feet long, six to forty in height, and six to ten in breadth. Next is Washington Hall, graced by two beautiful stalactites two or three feet long, which have received the names of "Washington's Epaulettes" and "Lady Washington's Hood." Washington has, however, by no means been honored by christening the most beautiful part of the cave. This room is quite remarkable as showing distinct traces of having once been the channel of a subterranean torrent. From Washington Hall our weird procession ascended by two flights of stairs to the "Bridal Chamber," so called from having been the scene of the marriage of two daughters of the discoverer and original proprietor. In this is a table or counter of stone of considerable length and perfect as if for sale in the market. The "Giants' Chapel" is of immense height. Vainly we lifted our torches and tried to penetrate the black vault overhead. From its "Rostrum" a voice seemed to say, "Wonderful! wonderful! full of wisdom are my works."

This cave is claimed to be the only one in the world lighted with gas; and, passing into the long and nearly straight "Harlem Tunnel," the effect produced on the vaulted darkness by the jets is very beautiful. First the light gleams like a point, then we can trace its rays till they nearly fade in darkness. As these are lost, the faint beams of another jet appear, and these gradually gather in a shining spot; then, like their predecessors, scatter and die. These lights in which we glory, scarcely serve to break God's darkness.

Ascending a rocky table at the right, we stand in the "Ghost Chamber." Here is an excellent study for a resonant instrument. The guide thrust his head into a conical orifice about two feet in diameter, and his low muttering was magnified to an inhuman roar. Members of our party attempted to do likewise, but in vain. Only a certain pitch of voice can produce this singular resonance. In the "Music Hall" the fall of a plank gave a thunderous sound which reverberated back and forth on the rock-walls with deafening violence. Again and again the experiment was repeated, and each time the volume of sound increased as if the inorganic elements delighted to display their power to the audacious mortals who had presumed to invade their domain. We longed to test these echoes with varieties of sounds and musical notes, but time forbade. Like gentle Mercy following the dooming trump of Justice, the gentle ripple of water invaded the stillness. Pardon the vagaries of imagination! Her wings acquire a superhuman swiftness in these weird scenes, among the ever-opening vistas whose alternate light and shadow the eye vainly seeks to pierce. A stream is purling by our side over its pebbles. The water is so strongly impregnated with lime as to be unpleasant

for bathing, but it is cool and delicious to the taste. A fringe of stalactites shows that our brook has expanded into the lake, and a quarter of a mile to rest in the boat is very agreeable. Yet the exhilaration of the air here gives strength and elasticity alike to youth and age, and even the most delicate rarely complain of weariness. Physical difficulties vanish; climbing and scrambling become a joy. A pillar of rock three feet in diameter projects from the roof to the bottom of the "Lake" which is sometimes ten feet deep. "Table Rock" is a great, solid, detached mass, frightfully overhanging a beautiful line of stalactites just over the path.

After disembarking, the wildest and most interesting portion of the cave is reached. Sometimes the guide shouts, "Look out for your heads!" and down we go, forming a comical torch-light procession of right-angled figures. Then we straighten ourselves and climb the "Rocky Mountains," rightly named; afterward, down again in jumps of two or three feet, bumping our lanterns against the rocks and extinguishing them, or slipping and losing our overshoes in the soft, adhesive clay. All are shouting with the sport except the guide, who preserves his equanimity in spite of the liveliest sallies aimed directly at him. Yet he is so faithful and careful, so exact in his recollection of names, so truthful when questioned concerning the inroads art has made even underground, that we must be lenient if nature has not bestowed on him the faculty of perceiving a joke, especially when, to us, the best joke of all is his own solemn face.

The "Valley of Jehoshaphat" opens aloft into darkness which no light can penetrate. The roof is said to be one hundred feet high. This part of the cave is about one-quarter of a mile long. All the way the gently rippling brook loiters by our side, and we frequently pause to examine the pebbles in its bottom, or to bathe our stained hands. A bat, the solitary sign of life in this subterranean region, flies past, and occasionally a great drop of cool water from the overhanging stalactites splashes in our faces. It is very interesting to note the long seams in the flat rock that forms our roof. Through these the water is constantly oozing, and as if to beautify nature in its own way when untrammeled by art, it forms on every narrow opening a wavy line of tiny stalactites which will, in time, if vandal hands can be restrained, make a most beautiful translucent drapery.

Three passages open from the terminus of this "Valley of Jehoshaphat," but only one is accessible to visitors. This is the most beautiful and wonderful part of the cave. It is appropriately named "The Winding Way," for so tortuous and narrow is its labyrinth that often the whole party are out of sight of each other, though only two or three feet in a straight line intervene between them. The perfect correspondence between the sides of this rift show them to have been sundered by some mighty convulsion of nature. Over every prominence the soft white lime has formed an incrustation that smooths the rough angles into lines of grace. In one place a pillar two or three feet in diameter has cracked off from one side and lies diagonally across "The Winding Way," having entrapped a boulder between itself and the opposite wall.

Having threaded our labyrinthine course through "The Winding Way," we entered "The Silent Chamber." Here the guide retreated with all the lights, that we might realize total darkness. But he did not remain long enough for us to appreciate it, and silence was impossible to our exhilarated party. Our conductor, in a melancholy tone of despair at our zeal and energy, asks if we will go farther. "Yes! as far as possible," is our reply, and we proceed to the hardest scrambling of all, down "Fat Man's Misery." Though our party contained no fat man, we were forbidden to struggle through the opening two feet square, leading to the rotunda, as in summer it contains too much water to be safe for visitors.

So we retrace our steps through the beautiful "Winding Way," up the steeps of the "Rocky Mountains," pausing ever and anon to hold our torches behind some great pendant veil of stalactite, and wonder to see it all aglow. Once the passage seems entirely blocked up as if, during our wanderings the giants and ghosts of these won-

drous vaulted chambers had been aroused and had imprisoned in this dark domain those who so ruthlessly awakened their echoes. But our guide shows a way through the apparently solid wall, and we soon re-cross the "Lake" and approach the entrance. We have walked six miles and have been three hours underground, and the coming out into the heated summer air after the cool, highly oxygenated atmosphere of the cave, is stifling. It is like inhaling the breath of a hugh smelting furnace. The skin, for several hours after, is flushed, and feels as if blistered. As we emerged we met a party entering. While curiously investigating each other's appearance, a lady in a man's hat mournfully asked, "Will it pay?" "Try," was our response, knowing that the temperament and intellect of the visitor would settle the question.

In the vicinity of Howe's Cave are considerable limestone and cement works. The entire region is rich in minerals, fossils, barytes, etc. Geologists as well as other scientists are busy here seeking cabinet specimens. The finest points in the cave have been stereoscoped by means of a calcium light and sometimes an exposure of two days was required to obtain a correct picture.

Howe's Cave was discovered by the cattle of one Lester Howe. On every hot day they were observed to collect in a certain spot less shaded than other parts of the field. This led to conjectures that a cave might produce the cool current they so much enjoyed. A hunted fox is said to have finally led his pursuers to the entrance.

Large amounts have been expended in making this interesting spot accessible and agreeable to visitors. As the temperature is about 60° throughout the year, and the cave is driest in winter, that is the most pleasant time for its exploration. Every day brings many visitors, and nearly all who go, desire to repeat the excursion. M. L. C.

## THE LOON.

"AS crazy as a loon" is an expression which the reader has heard now and then. We do not say that we are ready to explain the origin of this expression, although it probably arose in Scotland, and bears some relation to the restless conduct of the bird, especially when in confinement, it then showing perpetual excitement. Its habit of bobbing the head up and down in the water may be another reason for the simile. The Loon belongs to the family of swimming birds known as Colymbidæ. Willoughby comprises this family under one general name, to wit, douckers or loons. He describes them in general thus:

Douckers have narrow, straight, sharp-pointed bills, small heads, and also small wings; their legs are situated backward near the tail for quick swimming and easier diving. They have broad, thick legs, by which they are distinguished from all other kinds of birds, and broad claws like human nails. Of these douckers, there are two kinds—those which are cloven-footed, but thin-toed, having lateral membranes along the sides of their toes, and no tail; and those that are whole-footed, and caudate, nearly approaching the tribactylæ, which are deficient in the back toe. "These are not without good reason called good douckers, for though they dive much, and continue long under water, as soon as they are up, dropping down again." To the second class the loon which is illustrated in our engraving properly belongs. Perhaps it is better described by some authors, like Montague and Richardson, as the C. Glacialis, or Great Northern Diver, of which a somewhat particular portrait would be this: head, neck, and upper tail-feathers glossed with deep purplish green, on a black ground, with a short transverse bar on the throat, collar on the middle of the neck, interrupted above and below, and the shoulders white, broadly striped on the shafts with black; the whole upper plumage, wings, sides of the breast, flanks and under-tail coverts black, all except the quills of the tail marked with a pair of white spots, near the tip of each feather. The spots form rows, are large

and quadrangular on the scapulas and interscapulas, round and smaller elsewhere, but smallest on the rump. The under plumage and inner wing coverts are white, the axillary stripe down their middles is black; bills compressed, strong and tapering, slightly arched above, and the lower mandible channeled beneath, appearing deeper in the middle; margins of both mandibles are, particularly the lower one, inflected; inner wing coverts particularly large; tail of tinted feathers much rounded; total length thirty-six inches, extent of wing forty-eight inches. Specimens in mature plumage may vary considerably in total length, or upward of an inch in the length of the wing, and more than half an inch in the length of the tarsus.

The young differ considerably from the

A LOON.

old birds. When less than a year old, the head and the whole posterior part of the neck are of an ashy brown. On the cheeks are small, ashy, and white points; throat, front of the neck, and other lower parts pure white; feathers of the back of the wings, and of the rumps and flanks, of a very deep brown in the middle, bordered and terminated by bluish ash; upper mandible ashy gray, lower mandible whitish; feet externally deep brown, internally as well as membranes whitish. At the age of a year both sexes show a transverse blackish-brown band toward the middle of the neck, about an inch in length, forming a kind of collar. The feathers of the back become of a blackish tint, and the small white blotches begin to appear; at the age of two years the collar is more defined. The upper part of the head and neck is varied with brown and greenish-black feathers; the numerous blotches on the back and wings become more prevalent, and there are other markings of white. At the age of three years the plumage may be deemed established.

Fish is the principal food of the loon, the herring being particularly relished. It nestles in small islands, and on the banks of fresh waters. Its habitat is the colder regions of the globe, as the name glacialis implies. But some species of the loon have been found even in the south of England, according to Richardson. It is particularly abundant in the Hebrides, Norway, Sweden, Russia; and is found, but not numerously, in North America. Loon Lake, in the State of New York, was so called because of the many loons which made it their home. It is rarely seen on land, its limbs ill-adapting it for walking, but can swim with great swiftness to a very considerable distance under water. When it comes to the surface it seldom exposes more than the neck; takes wing with difficulty, and flies heavily, though swiftly, and frequently in a circle around those who intrude upon its haunts. It has a loud and very melancholy cry, something like the howling of a wolf, or the distant scream of a man in distress. Its cry is said to portend rain. Many years ago, according to one writer, during an intense frost, two loons were taken alive, in the Thames below Woolwich, in England, and kept in confinement for some months. On the approach of spring, they began to show great uneasiness, and at length escaped from confinement.

## ASHES OF ROSES.

A ROSE once bloomed within a young girl's heart—
A dainty flower, with dewy petals fair,
That shed a fragrance o'er her life, and crowned
Her days with joy, and seemed to breathe a sweet
And lasting perfume o'er all things. To her
All laws suspended seemed to be; no growth
Were possible, for perfect seemed all things;
No death, nor slow nor swift decay could come
To aught; a bright and glorious light baptized
The earth, and life was all a joy. But now a change
Is wrought; the love of her young life—the life
Of her sweet rose of love has slowly died,
And naught is left to beautify her days
So desolate. No fragrance now, nor light
Of glory crowns her life; decay has touched
All things, and weary care has carved the lines
Of age where bloom should be, and in her heart,
Where bloomed that fair rose, a small, cold heap
Of scentless ashes lie. MAY MC COLLUM.

## THE UNITED STATES AT THE PARIS EXPOSITION.

ON the first of May the International Exposition, undertaken by the Republic of France, was successfully opened. As little attention has been given to this affair in the PHRENOLOGICAL heretofore, it may be well for us to consider briefly the general arrangements. The Exposition buildings consist principally of two vast structures, one erected on the heights of Trocadéro, the other in the Champs de Mars, the former having been built as a permanent addition to the grand structures so numerous in Paris. In the center of the Trocadéro is a pavilion or grand dome with a tower on each side, rising to the height of about two hundred and fifty feet. Flanking the pavilion are galleries extending in the shape of a horse-shoe toward the river Seine. The total length of the building is sixteen hundred feet. The pavilion in itself is an immense affair, and contains the largest concert hall in the world, with a capacity of seating eight thousand persons. The towers of this building are the highest points in Paris, and are furnished with elevators capable of carrying a hundred or more visitors at once. The view from the summit of these towers is very extensive, taking in the Valley of the Seine for miles on each side.

The Champs de Mars building is more than two thousand feet long, by one thousand in width, the principal front being parallel with the Seine, and located seven hundred feet from the quay. The general plan of this structure is rectangular, embracing three pavilions, which are divided by galleries running the whole length. At the corners rise higher pavilions surrounded by domes which are one hundred and thirty-two feet in height. The style of architecture is semi-Oriental, whose sweeping curves are agreeable to the view. Between these two great buildings the Seine flows, the whole intervening space being used exclusively for the purposes of the Exhibition. Here is the Pont de Jena, which has been widened and inclosed for a crossing place, so that the river offers no obstruction to travel, and contributes an element of picturesque variety to the affair.

Foreign nations have shown considerable interest in the Exposition, many having erected graceful or curious buildings, model cottages, etc. It was feared in the outset of this enterprise that the United States would not make a suitable exhibition of its resources—industrial and natural. The appropriation by Congress was small, and that hampered those Americans who were desirous of sending their wares to Paris. However, the quality of the exhibits in the American section is reported as creditable, and in some particulars without a rival. The assortment of labor machinery sent by our manufacturers is varied and rich, although generally of a light class, and by no means comparing with the vast area in our own unexampled Centennial.

Among our manufacturers who have sent goods, we might instance the Brown & Sharp Manufacturing Company, of Providence, R. I.; the Blake Crusher Company, of New Haven, Conn.; Messrs. Henry Disston & Sons, of Philadelphia, the celebrated saw-makers; M. B. Edson, of New York; J. A. Fay & Co., of Cincinnati, Ohio; Gardner & Co., of New York, whose perforated chair seats have become universally known; Lovegrove & Co., of Philadelphia, prominent manufacturers of steam engines; the Morse Twist, Drill, and Machine Company, of New Bedford, Mass.; Snyder Bros., of New York, another firm prominent in steam enginery; the Western Dynamo-Electric Machine Company, of Newark, N. J. In agricultural apparatus the superiority of American inventions is strikingly shown. The reapers and mowers, harvesters, and binders, present a fine array. The gold and silver work sent by some of our manufacturers compares favorably with the best English and French. One table service exhibited by Messrs. Tiffany & Company is notable. It is the property of a successful mining operator, and was made for him at the cost of $200,000.

Among American artists who are repre-

sented in the display of fine arts, are Bierstadt, Rolman, E. Johnson, Bridgman, Miss Gurdon, J. G. Brown, Quartley, Gifford, and others whose names are well-known at home for masterly execution with the pencil. American contributions are arranged in eight groups, viz.: Works of Art, Educational Apparatus, Furniture and Accessories, Textile Fabrics, Mining Industries and Products, Mechanical Industries and Apparatus, Food Products and Agricultural Implements. The space allotted to the United States is small as compared with that occupied by the larger European nations, and some time before the Exposition was opened it were said that the applications for space was sufficient to fill an area of double the allotment, so that it was necessary to make provision elsewhere to accommodate the shipments.

Canada is well represented in a beautiful structure specially fitted up under the northwest dome of the main exhibition building. It embraces a transept over eight hundred feet square, with towers at each end covered by domes—one hundred and eleven feet square. In the exhibits of the country, its rich forests and mining products, etc., are arranged with admirable taste and skill.


## VITALITY IN FOOD.

**Organic Condition—Constituents—Phosphorus for the Brain—Vital Force—The Best Condition of Food—Decay in Bread—The Poison of Decay—Freshness—The Vitality of Fruits without Cooking.**

WE have frequently had our attention called to the fact that the food of man must consist of organized matter. The entire process is constantly before our eyes. We see plants of various kinds taking up the earthy and inorganic matters and shaping them into the various kinds of food with which animals are nourished. No one supposes that either ourselves or the animals that we may feed upon can take the inorganic matter that goes to make up plant life and make even one satisfactory meal of it. If we eat sand or iron, will it not remain sand or iron? Silica and iron are found to be constituent parts of some of the plants which we eat, and it is from these that the system gets what is needed.

What, then, becomes of all the theories of supplying the system with preparations of iron, which are not organic matter, in cases in which the blood is deficient in iron? Can it be put into the blood in that shape, or into any of the tissues as a part of their organic structure? We know that mercury, for example, can be put in so that it will remain sometimes for years, but it does not prove itself a desirable inmate. It is not assimilated like bread or other organic matter, and the sooner we are rid of it the better. We see, then, that the idea of taking iron or salt or phosphorus or phosphate of lime in their inorganic forms, expecting them or any portion of them to enter into our structure to nourish us, or to remain there

for any good purpose, is in direct opposition to a great law of nature.

### CONSTITUENTS.

Perhaps we have been confused by the theories which have been very freely put forward within a few years analyzing the constituents of our food, and undertaking to decide just how much we must eat of this or that in order to meet the wants of our system and keep ourselves well built up.

### PHOSPHORUS FOR THE BRAIN.

We have been told that phosphorus was a very important ingredient of the brain, and if we wished to have our brains active, we must eat largely of food which contained phosphorus — fish, for example. Consequently, we have had in all parts of the country a great variety of numskulls, besides some people who ought to know better, calling for fish; and if the delusion had gone on in a direct line, doubtless we should have had the ancient garum revived (for decayed fish develops phosphorus), and these fishy philosophers would have carried around their little bottle of condensed "brain food," with which they would have sauced every dish they ate, unless, indeed, they might have preferred to take it in private doses.

We have some reason to believe that the animal system, when in good condition, may transmute organic substances to some extent, and manufacture out of any of our common food all the elements needed for health and effectiveness. The comparatively good health of many races who live upon a limited variety of vegetable food favors the idea that this can be done.

It may be desirable to know these facts about the constituents of food, for the purpose of providing dietaries for large bodies of people who live a confined life, like soldiers and seamen and inmates of charitable or penal institutions. Indeed, they have been very useful in calling attention to cases in which we were notably destroying the wise provisions of nature by our boltings and concentrations, which *deprived* the body of its proper materials for nourishment. We, doubtless, may injure our system in that way, especially if it be not very vigorous; but the converse does not follow, viz., that by a special supply of nutriment to any one organ, we can develop that into any marvelous proportions or efficiency. Hence we find this fishy theory sinking into forgetfulness almost as rapidly as it rose into notice.

If we take wholesome food, every part of the system is nourished by it, and we do not need to take one kind of food specially for the nerves, another for the blood or the muscles, and so on. If we keep the vital force strong, that will distribute to each organ as it needs out of the general supply This

### VITAL FORCE

is something we do not fully understand, partly because it can not be analyzed. The dissecter who cuts up an organism to find it, is very like the boy who pulls up his planted seeds to see how fast they are growing. It is generally allowed to be the power within which coördinates all the movements of the organism, especially those not immediately within the domain of the will. It does not appear that we can by any means directly nourish it or give it any sudden or extraordinary activity. In our present artificial condition our main business is *not* to injure it, and hence the rather negative aspect of the usual dietetic directions. We do so many bad things that it is almost necessary to continue reiterating, "Don't do this!" and "Don't do that." But there is one very important affirmative direction which we have hitherto ignored too much, viz., that we take organic matter while it is in its best condition.

### THE BEST CONDITION OF FOOD.

It is not sufficient that it has been at some previous period collected by plant-life into organic form. Coal was once organic matter, but we can not digest it now. When the vitality of the plant which collected the particles leaves them, they tend to separate, and then commences an early retrograde action toward the inorganic. We call this action decay, and we are not always acute to discern when it commences, nor the penalties we pay for neglecting it. The first penalty is a great loss of nutrition.

### DECAY IN BREAD.

Try it with bread. Compare fermented Graham bread with unfermented, weight for weight, and though it may be evident enough that the latter has more water in it, you will soon find out that it has far more nutrition. Let any one who has been accustomed to eat the unfermented, substitute for it the common baker's fermented bread, and after he has eaten so many slices of the puffy, spongy stuff that he is ashamed of his apparent greediness, he will very likely find himself growing hungry before dinner-time. If you wish further comparison, make the two kinds of bread into toast, or thicken pease, asparagus, or tomatoes with them, and the softness of the fermented becomes flabbiness itself. Perhaps you may *like* it better as a condiment, but that is not the question. In the course of the fermenting process, which is the first stage of decay, it has lost from five to fifteen per cent. of its nutritive power. Some maintain that this is its greatest fault, which is serious enough when we consider the aggregate of such loss throughout the country. Besides this, however, it has commenced a seriously degenerative process, which has not been entirely stopped by the heat. It is generally conceded not to be fit to eat until it has been twenty-four hours out of the oven. It has by that time passed through evident structural changes, which some people are wise enough to call "ripening." What do they mean by the "ripening" of a dead body which has already been within an hour of disgusting decay, arrested only by a long baking? What kind of a ripening is that which ends in decay or mould, unless it dries up, which it readily does if exposed freely to the air? If this be the "staff of life," it is indeed a broken staff, piercing many a hand which bears upon it.

### THE POISON OF DECAY.

A further idea we get from the acknowledged fact that this panary fermentation produces alcohol, a poison which has done more mischief to the people of this country than all other poisons combined. If any one waits to be convinced of the noxious character of decaying matter, let him investigate the production of alcohol and he will find that it is all and always produced by the decay of vegetable substances. Prussic acid will kill in very small doses, and it requires not more than double the dose of pure alcohol to prove as fatal and kill as quickly as the prussic acid. The great reason why we do not recognize it as a violent and fatal poison is, that in all the drinks in which it is used it is very largely diluted. Still it kills its thousands and tens of thousands yearly. As Dr. Jewett says, it is the product of degenerative decay and death, and it produces degeneration, decay, and death always and everywhere in all the organized beings who partake of it.

This is far more than a mere fancy. Alcohol is not the only violent poison that is manufactured in whole or in part by a fermentative process. Tobacco obtains a large proportion of its deadly power by fermentation in the "curing" of the leaf. Tea leaves also are fermented, at least those which are prepared for our market. Much more frequently than we suspect, do we allow our food to approach the boundary line of poisonous decay. Cases can be quoted to show that mouldy bread and mouldy cheese are poisonous. The warmed-over beans and potatoes are not so good as the fresh, because they have lost some of the qualities that recommend them for food. Warm them the second time and they are worse yet. In fact,

### FRESHNESS

is a much more important quality in our food than we have been in the habit of supposing. We allow that decayed fruits and wilted vegetables are not wholesome food, but we are slow in learning where to draw the line. We understand in the case of animals that vitality preserves from decay, and we note when an animal is alive and when it is dead, and we should do the same with vegetables, though for a different purpose. The vitality of vegetables is something which can enter into harmony with ours, can feed and nourish it. We do not always need to kill it; we might perhaps with propriety say that we transmit it into our own vitality.

THE VITALITY OF FRUITS

is easily ascertained, for when they die they begin to decay. Sometimes a local injury causes a local decay, but the latter soon infects the whole structure, and this is one reason why a partially decayed fruit is wholly unfit for food. Many fruits retain their vitality for a long time after they are removed from the stem on which they grew. There are many varieties of apples, pears, and other fruits which do not even mature until some months after their proper period for harvesting, but the vitality is definite enough. Kill that by heat or frost, and there soon follow changes of structure, indicating plainly enough the loss of vitality. Not only is their appearance more attractive when alive, and their taste more delicious, but their refreshing and satisfying effects are much more evident. They bring a feeling which is better than stimulation or exhilaration, and which, for want of any better term, might be called

SUPREME SATISFACTION.

It is not every one who realizes this benefit from eating live fruits; his digestive apparatus may not be in a condition to appreciate them, or it may be loaded down with grosser food, but many do recognize this satisfied and invigorated feeling after fresh fruits which they do not after cooked fruits.

Seeds and grains, which are the special depositories of vitality for future growth, have a large amount of this invigoration, which remains in them a much longer time than in fruits and can always be tested by "sprouting." I suppose it is very seldom that these, at least in their whole state, are used long after their vitality has departed. There is so great vitality in wheat, that it has been known to grow when thousands of years old. Maize is not so vigorous, and something of the same difference is observable in their ground products.

We encounter here a question of some difficulty. How much of this vitality remains after grinding? Millers say that very close grinding destroys "the life" of flour, and many people know that meal is not so good for it. Of course, meal can not *grow*, but may not some of the abounding vitality of the grain remain for a while to preserve the vital character of the food? It may be that the gradual departure of this makes the marked difference between fresh and stale meal and flour.

As for the satisfied feeling, we find just this after eating uncooked oatmeal, wet with water and seasoned with dried currants. It makes an admirable ration during continuous mental labor, and a refreshing drink, when sufficiently diluted. Experiments with other uncooked meals or grains are not very extensively recorded. Green corn has received some commendation in this line, and there may be many other things which can to advantage be eaten.

WITHOUT COOKING.

I do not wish to be understood as advocating the theory advanced by some that we can take all kinds of food better uncooked. Certainly there are a great many articles which we now prize highly which we could scarcely eat or digest at all without cooking, such as pease, beans, lentils, and many of the vegetables. Nor would I be understood as saying that fresh cooked fruits and grains are innutritious. But I would have those interested in such matters carefully keep the life in seeds and fruits and vegetables as nearly as possible up to the time when they are to be eaten as well as note the higher vitality and greater pleasure derived from eating living vegetable food. Careful, intelligent experiments will bring out truth. They may help also to clear up some such problems as the imputed "medicinal" value of grapes and celery.

More careful observation in the culinary preparation of food might also greatly improve our knowledge of the changes to which they are subject as well as our care in their preservation. We should be more likely to understand the true nature of the "ripening" process in cheese, and even of the value of milk after it has stood a few hours; of the lack of vitality and value in fats; the character of old eggs, by whatever process preserved; of the dietetic value of sugar and many other things which affect our food questions. Cases and illustrations multiply in our mind, but we must close in spite of the interest of our theme. We hope you will not dismiss it from your minds so promptly.

JULIA COLMAN.

## PLANTS FROM ANCIENT SEED.

GARDENERS advise the planting of fresh seed from year to year, and seedsmen do not guarantee to their customers the production of plants from seed more than two or three years old. This is particularly the case in reference to the succulent vegetables raised in our gardens. Wheat, corn, and oats may be kept for several years, and not lose their germinal power, but if we planted a field of grain and used seed ten years old, as seed is now grown, we would not expect a very large crop, for probably more than one-half of the seed would fail to sprout. The ancients, particularly those of

PEA PLANT FROM SEED FOUND ON A MUMMY.

Egypt, raised grain of peculiarly fine quality. This has been shown by the production of plants from seeds discovered in the wrappings of mummies. Wheat so found has been experimented with in this way. Our engraving represents a plant produced from a pea found on a mummy. General Anderson, of England, discovered in an Egyptian sarcophagus a few dry pease. These he preserved carefully, and, on his return home, planted them in the rich soil of the island of Guernsey. Some of the seeds germinated, and the plants from them on maturity yielded sufficient pease to plant a considerable tract of ground. The result with regard to both plant and fruit was somewhat peculiar. The development of stalk was considerable, some of the plants attaining a height of more than six feet, while the blossoms were numerous, of exquisite odor, and of a delicate rose-pink hue. The most striking feature, however, was the stem, which instead of trailing, as do the pea plants with which we are familiar, was small near the root, but became considerably thickened as it ascended, requiring a support to sustain it in the upright position, and the pods, instead of being distributed around the stem, as in the ordinary plant, were grouped about its upper extremity.

The plant evidently belongs to the ordinary variety, as the general character of the fruit indicates its alliance, although the flavor of the mummy pea has been pronounced to be superior in delicacy to that of the modern.

## THE ROMAN SOLDIER AND HIS FOOD.

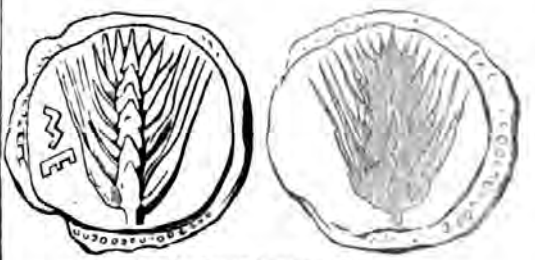
### A COMPARISON WITH MODERN DIETETICS.

THE Roman soldier, in the time of Julius Cæsar especially, was the best type of vigorous, physical manhood, probably, that the world ever saw. For fortitude and endurance in warfare, labor and suffering in campaigns, and perseverance under hardships, his reputation has not upon the whole been surpassed. In his day there were no railroads for transport, nor many bridges for passing rivers; no Goodyear to supply india-rubber for protection of feet, head, or body against storm and damp. He had no pontoons, or telegraph, or balloons. No powder, gun, rifle, or cannon aided him in destroying his enemies. His was a hand-to-hand conflict, with javelins, swords, and battering-rams, in which his opponents almost invariably succumbed.

How did the Roman soldier come to possess such a wonderful strength of physical and mental organization that he could accomplish the feats of prowess which fill so large a space in history? We know how he lived out-of-doors, inhaling plenty of pure oxygen. If he had lived in one of our modern, stove-heated houses, with its lack of ventilation, and breathed an atmosphere tainted with carbonic oxide and carbonic acid, besides the animal exhalations, with window-blinds and sashes closed, and curtains drawn, we think that his animal (*anima* means breath) powers would not have been equal to the achievements he has put on record. But the Roman soldier, besides breathing, had to eat. No matter how much fresh air and exercise he had, his physique would have failed with imperfect food. He could not have developed muscle enough to climb mountains, swim rivers, fight hand-to-hand, and endure privations, unless his digestive organs had been fed with aliment which fully counterbalanced the waste of tissue consequent upon his exertion. In speaking of muscular actions, we are apt to regard the muscles themselves as the sources of power. But if we should remove the nerves which connect the given muscle or set of muscles with the spinal or cranial system of nerve centers, it would be found that it would become as powerless as the engine from which the steam has been cut off. It is therefore more in accordance with the facts to speak of nerve force as the primal source of all the muscular forces of the body. In this light we can not conceive of the Roman soldier as other than a person of immense nerve power. It might not have been an intellectual nerve power, but it must

have been a neurotic power sufficient to sustain and control in a wonderful manner the still more wonderful combination of mechanical forces found in the muscular system. It is very generally acknowledged by physiologists that there is more or less waste of nerve and muscular tissues during the exercise of the varied functions of the human body. No light is seen, no sound is heard, no touch is felt, no smell is perceived, no process of respiration, digestion, secretion, excretion, cerebration, etc., is kept up without a waste of the tissues which are the agents of the functions named. Now the Roman soldier must have had just this tissue destruction, and he must have supplied it in his food, or else he would have broken down under such severe tests. History shows that he did not break down, and what he mainly subsisted upon is a very interesting matter.

In looking over the list of the commissary supplies of the Roman army, we do not find the modern diet table. *Frumentum*, grain or wheat, was the main article of diet. A bag of wheat was a regular part of the outfit. It was whole wheat, not flour. When the soldier was hungry, all he had to do was to eat it by chewing it whole on the march, or at a halt or in camp, after soaking it in water, rubbing up with a stone, and either uncooked or boiled. Any of the animals he might chance to find were caught and appropriated as additional food, and were so much clear gain. There might be at stationary camps other articles of diet, but in the long run unbolted wheat was his principal food. It is not here asserted that no other combination of fresh air and food does not furnish the same food material; but it is desired to emphasize that wheat has the undisputed character of a perfect food. Dr. Nichols says he entertains the profoundest respect for a grain of wheat: "It is a most marvelous combination of substances, admirably adapted for building up and sustenance of the tissues of the human body." It is emphatically the food of mankind. Its history can be traced back to the earliest ages. It has been found buried with the mummies of Egypt, and among the Lydians it was stamped upon their money as a symbol. (See illustration). Our modern civilization has adopted it, or rather preparations from it. The raising of wheat and carrying it to the market occupy the attention of large portions of the human race. Last year it took three hundred full-sized ships to carry the surplus crop of California wheat to the markets of the world. The manipulations and consumption of flour from wheat furnish employment for a much larger number of people than the aggregate of producers and freighters; and if we include those who eat the food prepared from wheat and wheat flour, there is hardly an individual in any civilized community throughout the world who does not come into the most intimate relations with bread, pies, cake, puddings, gruels, crackers, muffins, dumplings, etc., all owing their substance to the wheat grain.



AN ANCIENT LYDIAN COIN.

The consumption of wheat flour as food being so universal and large, may we not be allowed to infer that the characteristics of the tissues of the bodies of our race must be determined in some measure by this flour?

The old Roman soldier was a perfect animal in organization; and may we not deem it reasonable to conclude that his diet may have made him physically, or that he could not have attained his condition without his wheat or some other analogous grain? What diseases were prevalent among his comrades we know not, as no hospital records have been handed down to us. In the face of what we know and have already stated, may it not be admitted that generally he enjoyed good health?—for no sick or diseased soldiers could have done the work that was accomplished by the Romans.

From the tables published in Johnson's

"How Crops Grow," we ascertain the following:

Composition in one thousand parts of substance of—

| | *Water.* | *Ash.* | *Potash.* | *Soda.* | *Magnesia.* | *Lime.* |
|---|---|---|---|---|---|---|
| Wheat grain | 143. | 17.7 | 5.5 | 0.6 | 2.2. | 0 6. |
| Wheat flour (fine) | 136. | 4.1 | 1.5 | 0.1. | 0.3. | 0.1. |

| | *Phosphoric Acid.* | *Sulphur. Acid.* | *Silica.* | *Sulphur.* |
|---|---|---|---|---|
| Wheat grain | 8.2 | 0.4. | 0.3 | 1.5 |
| Wheat flour (fine) | 2.1. | 0.0. | 0.0. | 0.0. |

| | | |
|---|---|---|
| Amount of starch in wheat | 59.5 | per cent. |
| " " flour | 68.7 | " |
| Albuminoids in wheat | 13. | " |
| " flour | 11.8 | " |

It will be seen that there is a considerable withdrawal of mineral elements by the conversion into flour. The withdrawal of potash is equal to about four-fifths of the amount contained in the grain; of soda, five-sixths; of magnesia, $\frac{1}{2}\frac{7}{2}$; of lime, five-sixths, the same as of soda; of phosphoric acid, nearly seven-eighths.

Note that phosphorus or phosphoric acid is found largely in the albumen of the nervous tissues. It is also found in the bony tissues.

Chemical constitution of nerve (Vangeala):

| | |
|---|---|
| Albumen | 7.00. |
| Fat | 5.23. |
| Phosphorus | 1.50. |
| Osmazone | 1.12. |
| Acids, salts, sulphur | 5.15. |
| Water | 80.00 |
| | 100.00 |

Albumen is found solid in nerves. Its composition, according to Scherer, is as follows:

| | |
|---|---|
| Carbon | 54.9 |
| Hydrogen | 7.0 |
| Nitrogen | 15.0 |
| Oxygen, Sulphur, Phosphoric acid | 22.4. |

Here, then, is a withdrawal in flour of nearly seven-eighths of the proper nerve food found in the wheat, the main ration of the old Roman soldier. It is probably the soluble and assimilable form of phosphates, one that the digestive system can absorb and the nutritive system appropriate to its sustenance. Thus modern or civilized mankind are generally living upon a food which is deprived of seven-eighths of its nerve-sustaining element, *phosphoric acid.*

We raise the question seriously, Does the use of fine flour promote (that is, assist, predispose to) affections of the nervous system? Mark, we do not ask whether if mankind now received in its bread eight-eighths of phosphoric acid, instead of one-eighth, there would not probably be less disease of the nervous system?

Suppose the Roman soldier had had only fine-flour bread, and got one-eighth, would he not have sensibly suffered? Could he have carried his sixty pounds of baggage? Indeed, we find that the absence of what Cæsar calls *frumenta*, corn or grain (not our maize or Indian corn, which was then undiscovered) or wheat from their rations, was the cause of tumults, disturbances, and sometimes war. Suppose Cæsar had started a first-class flour-mill, and abstracting almost seven-eighths of the nerve food from the wheat, had fed his soldiers with the unnatural manufacture, may we not be allowed to think there would have been equal trouble? For one can not imagine such a large diminution without a corresponding lack of tonicity in those tissues needing and accustomed to a full supply. To put it differently, suppose Cæsar had removed 87½ per cent. of his soldiers' proper nerve food from their wheat, would he not have had a right to expect only 12½ per cent. of energy, tone, or vital force in those soldiers' nerves? And yet this is just the state of things our boasted modern civilization has put us into.

It can not be denied that neurotic complaints are very common and chronic. Never were there so many insane people; never was a physician called upon oftener to treat

nervous diseases than at present. How often people drop dead from heart disease, found upon examination to be solely from the want of proper innervation. How marked is the prevalency of paralysis. How the nerves of special sense suffer. We have trouble with the eyes very commonly. Our children, if we have any, grow up thin, ethereal, *nervous*, anæmic. They die of consumption, and break down readily under the discipline of schools. Then see what a vast amount of nervous diseases in women in every condition and class of society. Go into any public assembly in New England, see the cry of distress and care impressed upon the countenances—a cry of something they lack. It is a beseeching look. Some say it is from hard work! Well, it is hard work to fight the battles of life with but 12½ per cent. nerve food!

May it not be that the diet of most of our farmers—*white bread, pies, cakes, doughnuts, crackers*, deficient as they are in the full amount of nerve food—is partly the cause of their own, and particularly their wives', decay and distressed looks and decayed teeth and weak nerves, that tremble and shake and ache when engaged in services which should be pleasurable, not painful? Consider also the amount of nerve force it takes to digest the starch, which is the main constituent of flour, compared with the amount required to digest animal food containing the same amount of nerve food.

Sometimes cases of dyspepsia (difficult digestion) seem to depend upon the fact that the nerve power (so scantily fed upon flour) is all used up in labor and work and in carrying on the other functions of the body, so that there is none left to digest the food. In other words, the system is too tired to eat. What follows? As a matter of course, the whole system is unnourished, the other functions fail in their full performances; and if this is carried too far, the nervous system rebels, and we have neuralgia, headaches, and distress in various parts of the body; and if these things be continued, disease results, sometimes followed by death.

The fact is, that we are surrounded constantly by the causes of disease. Vegetation is subject to the same law. The moment animal and vegetable systems are reduced in their vitality, then step in parasites, animal and vegetable, which are called disease. In potatoes, for instance, that rot, it has been found that there is a withdrawal of lime to nearly seventy-five per cent. of the normal quantity. The aphides and fungi and microscopic algæ prey upon the tubers, and by some are thought to be the cause of the potato rot; but as they are found wherever there is decay, animal or vegetable, it is more probable that the loss of the mineral constituents so weakened the vitality of the potatoes that they fell an easy prey to the insects and spores which are everywhere present, ready to act if they get a chance.

Our present system of agriculture allows the ground no time to rest; and when the soluble salts of mineral plant food are exhausted from the soil, plants grown in that soil can not get their proper mineral food. The old Mosaic law of letting the ground enjoy the rest of a Sabbatic year (one in seven) allowed the undissolved lime, soda, potash, magnesia, salts, etc., to become soluble under the atmospheric influences, so that when the land came to be planted the next year, it possessed the materials in a soluble form for making growths with their full amount of mineral constituents. Thus built up, the plants resist the aphides and the fungi, and, as people say, they do not rot.

If mineral salts are so necessary to healthy vegetation, is it unfair to reason that animal life needs them just as much? And as nerve force is so indispensable a part of animal life, do we reason incorrectly when we assert that in our opinion nervous diseases would not be so prevalent if the human system were fed with all the 100 per cent. of phosphoric acid that God intended it should have? Ours is such a bustling, active, nervous age, that we need more nerve food than ever before in the history of the world. How many of us wear out, how many of us suffer, how many of us fail, how many contract improper, exciting, debilitating habits and mannerisms from just the want of proper nerve food, none can tell.

One thing is certain, the old Roman soldier did not give out until the introduction of wealth brought on an age of the most extravagant living the world ever saw. If the diet and habits had been kept down to the wheat standard in the palmy days of the empire, Rome, too, might have withstood decay (other things being equal) a much longer time. And what perpetuity can we expect for our own country, if we rear a weak race with feeble nervous systems on food which has lost nearly 87½ per cent. of its phosphoric acid?

THOMAS J. GREGOR, U. S. A.

# NOTES IN SCIENCE AND AGRICULTURE.

**Nutrition of the Eye.**—According to the London *Lancet*, the most interesting discovery of the year in physiology is that made by Boll, that the retina possesses in health a peculiar red color, which is constantly being destroyed by the influence of light, and is as constantly being regenerated by the ordinary processes of nutrition. The "vision red," or "erythopsin," as its discoverer names it, attains its maximum after a night's rest and sleep, or when an animal has been kept for some hours in darkness; it is soluble in solutions of the biliary acids and in glycerine, and probably plays a part in the production of the red reflection from the fundus of the eye seen on ophthalmoscopic examination, as well as in all probability in the ordinary acts of vision.

**The Radiometer.**—Professor Cooke, of Havard College, has made an interesting series of experiments upon the Radiometer, for the purpose of determining the true cause of the force generated in the operations of the instrument. The results of his investigations indicate in the strongest manner that the action of the moving vanes is due to *heat*, and not to *light*. For some time this view has been entertained, but we have Professor Cooke's evidence that almost demonstrates it to be a fact. He considers that the Radiometer is a very beautiful example of a heat-engine, and it is the first that has been made to work continuously by the heat of the sunbeam. As for the manner in which it acts, there is some difference of opinion among physicists, but the results of Professor Cooke's investigations indicate strongly that the action of the vanes is due to the same cause which determines gas pressure; and, according to the dynamical theory of fuses, this amounts to saying that the effect is due to molecular motion.

**Remedies for Insects.**—Messrs. Landreth & Sons, of Philadelphia, have given a detailed account of remedies for some of the insects which prove troublesome in gardens. A summary of the conclusions would be like this: (1) The greenish-black jumping beetle, a tenth of an inch long, feeding on both cabbages and turnips while young, is kept in check by dusting with sulphur and plaster, or by applying slightly a solution of whale-oil soap or tobacco-water. Sowing thickly and repeatedly may secure a crop, or by selecting different localities. (2) The insect which causes the club-foot in cabbage may be repelled by lime and wood-ashes, but to change to fresh land is better. (3) Wire worms, cut worms, and grub worms may be killed by the slow process of digging around the injured plant for them; but the best way is to give clean land, well cultivated and enriched, with frequent waterings to stimulate growth, which will tend to insure against these underground enemies. (4) The green worms are best cleared from cabbages by hand-picking. (5) Plant lice are driven off by whale-oil soap, sulphur, plaster, tobacco-water, etc., if applied early, so as not to injure the taste of the cabbages. As a rule for guarding against insects generally, make the ground rich, keep it clean and mellow, cultivate often, and water freely.

**Anatomical Wisdom Shown by Insects.**—Observers of the habits of insects have learned much with regard to their intelligence in departments which men had been accustomed to consider peculiarly their own. For instance, it is known that some insects possess a wonderful amount of anatomical learning. An ant will show extraordinary deftness in killing his prey, attacking one much larger than himself, and having disabled it will set to work and skillfully saw asunder certain portions of the body, discovering a nice appreciation of the anatomical structure of its victim. A late traveler in the East has been observing the habits of insects, and speaks of the intelligence exhibited by certain spiders in killing wasps, and other large and poisonous insects which become entangled in their web. He noticed that these spiders inflicted two wounds in a large insect like a wasp, one in the neck and the other in the head, and that the wasp was dead in about a minute. Thus the spider indicated a knowledge of the centers of vital function in the wasp, which if reached by its sharp claws, would soon put his enemy out of condition to defend itself.

**A Good Tree to Raise.**—Among the many valuable timber trees of the North is that known locally as red pine in the Canadian Dominions, and through the northern and north-western States as Norway pine, but is entirely different from the tree so called in

Europe, which is a kind of spruce; it is known in Canada as red pine.

The tree is found as far south as Wilkesbarre, Pa., and in the Northwest along with the Lambert pine. In Maine and New Hampshire it is found mingling with the forests of white and other pines, and is remarkable for its tall trunk, sometimes 80 feet in height to the branches, and nearly of uniform size, until it attains the height of 50 feet or more, and for its smooth reddish bark. The leaves are in twos, form long sheaths, are five or six inches long, and free from the bristling, rigid, sharp points that distinguish the pitch pine. This tree may be distinguished at a distance by the greater size of the terminal bushes of the leaves. The wood is white, tinged with straw color, and tough, elastic and moderately strong. It possesses a clear, fine grain, which works up to good advantage, and when dressed presents a smooth, silky finish. It is not liable to shrink, split, or warp much in seasoning, and, technically speaking stands well, which renders it a choice and valuable wood for all mechanical and domestic purposes. It attains a height of eighty to one hundred and twenty-five feet, and a diameter of twenty-five to thirty inches, and is more slender than the pitch pine, yielding commercial timber in logs of ten to eighteen inches square, and from sixteen to fifty feet in length. It is of even growth, with a tendency to slight curvature at the butt. This pine is usually very solid about the center of the log, and has but little sap wood, and is, therefore, one of the most economical and profitable to the manufacturer.

**A Good Hint for Photographers.**—An English physician, Dr. Thomas Buzzard, who was recently undergoing the usual ordeal in a photographer's gallery, conceived the idea of suggesting some arrangement for relieving the eyes during the time it was necessary to keep them fixed upon a given object. In his own case he found that staring at a certain spot caused his vision to become indistinct, and surrounding objects became lost as in a thickening mist, whilst as the sitting was prolonged, a feeling of giddiness and even faintness was experienced. The plan he suggested was to draw upon a piece of card, about four inches in diameter, a clock-face, and add the usual Roman figures. This card was fixed about eight feet distant, and when the sitting began he fixed his eyes upon the figure XII., then upon the I., II., III., and so on all around the clock, shifting his gaze leisurely from one figure to the other. The result was the sitting ended without any sense of strain, and he seemed to have sat without an effort.

We would add that a card with several bright colors arranged so as to rotate, would be an aid in sitting uneasy children.

**Circumventing the Canker Worm.**—For a few days past a gentleman has watched with vexatious regret the devastation of his fine fruit trees, and was about to apply the axe as a remedy, when, noticing how easily the worms are beaten or shaken off the tree, he experimented to prevent their return. He found that fine dry ashes, lime or plaster heaped around the trunk of the tree would surely prevent their ascent; and, being voracious eaters, they soon perish on the ground, or may be readily gathered up and destroyed, as they collect in multitudes, attempt to climb up the lime, and fall back without reaching the firm bark of the tree. The plan has been satisfactorily tested, and the lime heaps about the trees in nearly every garden show the determination to preserve valuable fruit by thus arresting the blighting scourge. A steep slope around the trees may be made with dirt; then cover with fine ashes or lime, and scatter up a little on the bark, and the worms are effectually stopped. They can not climb up a loose, dry, floury substance.—*Practical Farmer.*

**A New Fruit.**—A new and distinct species of fruit always secures attention, but it is long since anything has absorbed as much interest among fruit growers as the recently introduced Japanese persimmon (Diospyros Kaki). The tree itself is highly ornamental, a prolific bearer, as hardy as the American persimmon, and fruits much earlier, thus escaping the astringent quality of the American species, that never ripens before frost. When dried, it surpasses the fig in flavor, and can be kept a long time in excellent condition. Of the half dozen varieties of "kaki," or Japanese persimmon, introduced, one of the principal is described as large, round, and shaped like a Rhode Island greening apple. Its color is rich golden, and the meat juicy, vinous, and firm. Another variety is oblong, resembling in shape a minnie ball. This has a deeper, darker shade than the other, is soft, sweet, and delicious. This variety attains a very large size, and is the one usually dried and prepared like figs for market. Some think this persimmon destined to rival the peach in popularity, which may be the case south of Baltimore. Northward, its hardiness has not been sufficiently tested, although a little winter protection during youth will unquestionably save it permanently. In California, it has already been extensively distributed, but in the East the sale has as yet been confined to the Kissena Nurseries on Long Island, N. Y.

**The Missing Link.**—Professor Rudolph Virchow, of the University of Berlin, has been seeking for the "Missing Link" between man and the lower animals, but does not seem to have found it. He claims that fossils of men have certainly been found in the quaternary age, and admits that it is possible that such remains are to be found in the tertiary. "Not a single fossil skull of an ape has been found that could really have belonged to a human being. . . . . As a matter of fact we must positively recognize that, as yet, there always exists a sharp line of demarkation between man and the ape." And in regard to the progressive development of man, after he had left the supposed lower animal origin, the Professor declares

that "if we gather together the whole sum of the fossil men hitherto found, and put them parallel with those of the present time, we can decidedly pronounce that there are, among living men, a much greater number of individuals who show a relatively inferior type than there are among the fossils known up to this time." Concerning the old cave-dwellers, pile-villagers, and bog people the Professor maintains that they prove to be a very respectable society. They have heads so large that many a living person would be glad to possess such. Professor Virchow does not plant himself in opposition to the theory that man had his ancestors among other vertebrate animals. He would not be astonished if proof should be adduced of such an origin. But he frankly avows that every positive advance made in the study of the subject has "actually removed us farther from the proof of such a connection." So we need not yet be sure that apes were our progenitors.

**An Instrument to Magnify** SOUND.—The world of wonders opened up by the telephone and the phonograph, says the *Scientific American*, is already vastly enlarged by a third discovery called the microphone. Professor Hughes, of Kentucky, the inventor of the type-printing telegraph, now residing in England, has added this fresh laurel to the American genius. It is difficult to give an intelligible description of his instrument, but what he does is to place in the circuit of an electric battery a substance in a fine state of subdivision (as mercury in the pores of carbon), which he calls the transmitter. This substance is found to be extraordinarily sensitive to sounds which to the ear are almost or quite inaudible; and when connection is made with a telephone, these sounds may be heard with great distinctness a hundred miles away. In some recent experiments made in the presence of Professor Huxley, and reported in *Nature* for May 16, "the delicate rubbing of a fine camel's-hair pencil over a smooth wooden surface, . . . . although of course inaudible in the ordinary way, was rendered evident in the telephone by a crackling noise, of which the intensity was almost painful to the ear." In like manner the footsteps of a fly have been betrayed to the sense. Mr. Edison claims, with a good show of reason, that Hughes obtained the chief features of the microphone from him.

**Crystalline Coating for Paper or** WOOD.—Böttger recommends the following for giving paper and wood surfaces a crystalline coating: Mix a very concentrated cold solution of salt with dextrine, and lay the thinnest possible coating of the fluid on the surface to be covered by means of a broad soft brush. After drying, the surface has a beautiful, bright mother-of pearl coating, which, in consequence of the dextrine, adheres firmly to paper and wood. The coating may be made adhesive to glass by doing it over with an alcoholic shellac solution. The following salts are mentioned as adapted to produce the most elegant crystalline coating, namely: sulphate of magnesia, acetate of soda, and sulphate of tin. Paper must first be sized, otherwise it will absorb the liquid and prevent the formation of crystals. Colored glass thus prepared gives a good effect by transmitted light.—*Journal of Chemistry.*

**Home-Made Superphosphates.**—In a letter to the *Farmers' Advocate*, a correspondent writes the following: "I place side by side two old flour barrels, in one of which I put whatever bones come to hand. In the other I put a bucketful of wood ashes from the house stoves, moisten them well and scatter a few bones on the top. The process is repeated as the bones and the ashes are produced, and at the end of the year some five or six barrels are the result. The mixture should be kept well moistened without being wet enough to allow any drainage, and in about eighteen months the small bones will have disappeared altogether, and the large ones will have become soft enough to be easily crushed with the shovel while mixing the compost. The result is a manure which is far too powerful to use without mixing it with at least ten times its bulk of muck, or some fertilizing earth, and which can then be applied with excellent effect, especially to turnip land. I am of opinion that it is almost, if not quite, as valuable as many of the purchased superphosphates, and the plan is worth adopting, if it were only to get rid of dangerous ashes and unsightly bones."

**Salt a Preservative of Wood.**—In the salt mines of Poland and Hungary the galleries are supported by wooden pillars, which are found to last unimpaired for ages, in consequence of being impregnated with the salt, while pillars of brick and stone, used for the same purpose, crumble away in a short time by the decay of the mortar. It is also found that wooden piles driven into the mud of salt flats and marshes, last for an unlimited time, and are used for the foundations of brick and stone edifices, and the practice of docking timber after it has been seasoned, by immersing it for some time in sea-water, is generally admitted to be promotive of its durability. There are some experiments which appear to show that, even after the dry rot has commenced, immersion in salt water effectually checks its progress and preserves the remainder of the timber.

**The Express Business.**—Eighteen thousand men are now engaged in the express business. Express companies cover sixty thousand miles of railroad, and it is estimated that their messengers daily travel three hundred thousand miles. Three thousand five hundred horses are employed, and over eight thousand offices are required to transact their business in, and an amount of capital is invested not less than $30,000,000.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NEW YORK,
AUGUST, 1878.

## CABINET COLLOQUY.—No. 7.

### HOW HAMILTON REFUTED PHRENOLOGY.

NOT long since, we accosted a gentleman who was making the rounds of our cabinet, and scrutinizing our specimens. After pointing him to some casts which possess special features of interest to the phrenologist and reader of history, and explaining briefly their peculiarities of organization, we entered into conversation with our visitor, touching the relation in nature of form to expression. His observations were of such a character that we were soon convinced that he was well versed in anatomy, and by habit accustomed to critical investigation in scientific lines.

"I have not given much attention to your subject," remarked he, "although I confess it has many attractions for a mind constituted as mine is. I will be frank enough to state that in my reading I have occasionally met allusions to Phrenology which were not of the complexion to incline one who is desirous of making the most of his time to enter upon its study."

"You refer to the assertions which certain writers make to the effect that Phrenology lacks an anatomical or scientific basis?"

"Yes, and to assertions that it is but a chimera, whose assumptions were long since refuted by critics like Jeffrey, of the *Edinburgh Review*, Sir William Hamilton, Dr. Carpenter, and others."

"If you have a few minutes' leisure, I would like to show you how thoroughly the attacks of these very men resulted in their own confusion."

"I can give you a few minutes now, and should say that if you can show me a well-authenticated account of the controversy in which Hamilton bore so prominent a part, and demonstrate the unsoundness of his positions, I shall take your statements for granted with reference to the other eminent opponents of Phrenology; for Hamilton is usually referred to among my scientific friends as having demolished the system *ab initio*."

After inviting our guest into our private office and providing him with a chair, we produced two old volumes bearing an Edinburgh imprint, in which the correspondence and documents relating to that celebrated controversy were published at length. Citing the letter of Sir William Hamilton, which under the date 19th January, 1828, was published by him in the *Caledonian Mercury*, we pointed to the fourteen celebrated "Phrenological propositions," and their "Counter propositions" which Hamilton therein sets forth as determining the truth or falsity of the Gallian doctrine. Requesting him to mark the fact that the eminent critic designates these fourteen contested points as "Phrenological," therefore, according to Drs. Gall and Spurzheim the credit or reproach of the data they contain, we proceeded to read them as follows:

I. *Phrenological Proposition.*—"In old age the walls of the skull increase in thickness, and the cases in which the cranial

bones wax thinner as the subject declines in life, constitute exceptions from the general rule."

*Counter Proposition* (Hamilton's).—"The rule is here the exception, and the exception the rule."

"What have you to say, sir, with regard to this, in the light of present anatomical learning?" we asked.

"Simply this, that the first statement is pretty nearly that which physiologists now recognize, from the fact that in old age the brain diminishes in volume, and osseous matter and membranous or other tissue fill up, in great part, the spaces left by such diminution."

"Here then, certainly, the advantage was on the side of Phrenology. Now for the—

II. *Phrenological Proposition.*—"Young and adult *(sic)* persons have no cavities between the tables of the frontal bone; and the real frontal sinuses occur only in old persons, or after chronic insanity."

*Counter Proposition.*—"The absence of the sinus in young and adult subjects so far from constituting the universal law is a rare if not a doubtful anomaly."

"Let us read the three propositions and their counter fellows which immediately follow," we said, "as they bear upon similar points."

III. *Phrenological Proposition.*—"Before the age of twelve or fourteen the frontal sinus never, or almost never, exists."

*Counter Proposition.*—"Before this age the sinus is frequently, if not generally, present."

IV. *Phrenological Proposition.*—"The frontal sinuses are rarely to be found in women."

*Counter Propositions.*—"1. These cavities are rarely absent in the female cranium. 2. Even more rarely than in the male."

sinus, *Phrenological Proposition.*—"The and ex when present, betrays its existence peculiar tent by an irregular elevation of a character, constituting a bony crest or ridge, or blister, and is distinguished from the forms under which the Phrenological organs are developed."

"Now," we said, "it should be understood that these 'Phrenological Propositions' are Hamilton's own interpretations of statements occurring in the works of Gall and Spurzheim, and through them he impugned the validity of their entire doctrine. Dr. Spurzheim protested against the form and evident spirit of several of the fourteen, and declared four of them to be clear misrepresentations."

"It seems to me," said our visitor, "there is much truth, however, in these propositions. Science to-day recognizes this as a general rule, that the frontal sinuses do not exist in children, vary much in size, and are larger in men than in women. Further, their presence, especially when large, is indicated by osseous elevations or ridges. Dr. Gray, high authority in anatomy, you know, says they give rise to the prominences above the root of the nose. But fifty years ago little was known concerning the development of the sinuses, and it is becoming to admit that if the phrenologists made some trifling mistakes in setting forth their anatomical discoveries they were entitled, nevertheless, to consideration for the substantial truth of their contributions to science."

"You perceive then, sir, how the very novelty of their announcements produced unfriendly criticism; men like Gordon, Jeffrey, and Hamilton, who were opposed to the Phrenological doctrine of the mind, being led by their metaphysical prejudices to decry the valuable in what had a strictly anatomical relation, ere they had fairly examined it. You observe that Hamilton positively states that the absence of the sinus in young subjects is 'a rare if not doubtful anomaly;' that it 'is frequently, if not gener-

ally, present' before the age of twelve or fourteen, that it is 'more rarely absent in the female cranium than in the male,' and that 'there is no correlation between the existence and extent of a sinus and the existence and extent of any bony elevation;' if you have had opportunities to observe the structure of the skull in many different human subjects, and have noted these points, you can scarcely agree with the learned metaphysician."

"No, it is clear to me that Hamilton had not examined many crania, for had he, the fact that a large frontal sinus does indicate itself in the contour and prominence of the nasal eminence and the superciliary ridge, must have been convincing to his logical apprehension. In the living person I can determine with some degree of accuracy the comparative extent of the sinuses, and do not consider it a difficult matter."

(*To be continued.*)

## PHYSIOLOGY IN THE PULPIT.

NOT long since we heard a minister say, in the course of a sermon on the duty of a Christian, that one of the most important departments of that duty is the healing of diseases physical and mental, and, with an apologetic preface for alluding to the subject, he remarked that science to-day largely concerned itself in tracing human maladies and infirmities to their sources, and it was found that the most destructive and baneful were transmitted in the germ from parent to child. Measures, then, which would tend to purify the fountains of life and so prevent the descent of vicious physical and mental elements, should be set on foot as an essential part of Christian work.

This is about the length and breadth of that minister's allusion to a subject whose commanding importance among the vital issues of the day is obtaining the earnest examination of some of the best minds in Europe and America. We were pleased when he broached it, but were disappointed by the wholesale and rapid manner in which he treated it. Few ministers, to be sure, have the courage to enter upon the public elucidation of the questions involved in heredity. They fear the disapprobation of prominent men in their congregation for "meddling with matters out of their sphere," and there is, too, the misgiving lest they should incur the censure of the Conference or Synod for uttering things contrary to the precepts of the Manuals or the Canon law. There are, however, a few incumbents of the pulpit who read and observe for themselves in the book of human nature which is spread open before them, and who note the relations subsisting between moral weakness and bodily infirmity, and their discourses are replete with admonition and illustration on the treatment which must be administered to the body and the culture required by the mind. Two or three of these have gone into the statistics of the subject, and to a length which enthusiasm only would lead, but no diminution in their audiences has resulted, and no summons to appear before a grave tribunal to answer charges of heresy, or of teachings inimical to the safety of the Church, have as yet been laid upon their study table.

Why should men fear to announce the truth? Ye "teachers of righteousness," ye that are set "as watchmen upon the walls" for the safety of the people, can ye forbear to tell your people of the causes of the most grievous ills they suffer? You deplore the weakness and folly of society in tolerating many abuses, many festering sores, which occasion a world of expense and care to the industrious and provident; why not show, in the clearest light and with

trumpet tongue, the causes of the trouble? why not take the axe of truth and apply it to the root of the evils?

## ASSURING HONESTY.

IT is proposed by some enterprising citizens of New York to organize a company for the purpose of assuring merchants of the honesty of their employés, the consideration of such assurance being a scale of premiums adjusted to the responsibility of the service. This we deem a good undertaking, and if carried into practical effect it will exert a wholesome influence upon the morality of business life. One of the chief difficulties in the way of making this movement practical will be the adoption of a method for the efficient inspection of the subjects whose integrity is made the matter of insurance. That is, it will be a very intricate mathematical computation which may determine an average of commercial honesty, and we are apprehensive that if the statistics of defalcation, embezzlement, etc., during the past ten years are made the basis of such computation, the premium rates will prove so high as to render the enterprise unavailable to the ordinary tradesman.

There is, however, one method which science proffers in aid of an undertaking of this character, and if its promoters be men of general intelligence—we are informed that they are "prominent"—they can scarcely be ignorant of that method. Of course the reader understands that we refer to Phrenology, and, if conversant with its principles and application, he doubtless entertains the view that a company formed to insure honesty would, from the very nature of its transactions, require the assistance of a trained phrenological examiner. If merchants and employers generally were conversant with phrenological science, they could be their own insurers against the peculations of dishonest clerks, since they would be enabled to discriminate between those who are likely to prove faithful in the discharge of their duties and those who are inclined to irregularity and impropriety.

## The Autumn Session of the Institute.

OUR readers noticed in the SUPPLEMENT of the July number the announcement of the next regular session of the AMERICAN INSTITUTE OF PHRENOLOGY, an institution which has come to be regarded by the friends of the science, as a great reforming agency of the times. It may be a long time before a course of instruction in practical Phrenology will be deemed a prime essential in a teacher of the common school, the professor of a college, and the incumbent of a pulpit; but it will come. Certainly those who deal with the mental faculties can not know too much in relation to the original elements of the mental constitution and the influence of their combinations; and as man is a great factor in the world's history, why should a man know more of chemistry, natural philosophy, and natural history, than he knows of himself, body and mind, especially the mind? One man succeeds in business better than others because he has a better understanding of mankind. People are pleased with him, and they can not tell why. Throngs of people run after certain lecturers and preachers. One teacher is sought after as widely as he is known, others have all they can do to get or keep their places. One man in the realm of statesmanship, without much culture, with poverty to struggle against, with all social disadvantages, nevertheless rises to the highest positions, and when measured by comparing him in any other respect with other men, he is not seen to be greater in

talent, in force, or in moral worth; but he somehow *understands mankind*, and suits his conduct to the special dispositions of those he has occasion to influence. President Martin Van Buren remembered every man's face and name, and though he was thronged with people to whom he was introduced, he would recall the names of groups of men who had been presented to him years before in the very order of their introduction; and that fact made him President of the United States. Of course he had talent and worth, but he made every man that shook hands with him and met him afterward, feel that he was specially remembered.

We have known men, who could say the right word at the right time, mould every man like wax; we have known others who were strong, wise, and grand in all the great essentials of worth, yet failed to comprehend the spirit and disposition of persons, and therefore could not please them, influence them, or govern them. We have no favor for the trickster and sharper, for him who uses his talents to mislead mankind, but we would plead for that knowledge of character which every honest man has a right to possess. There is no good reason why honest, true men should not be as skillful in reading character as tricky politicians, gamblers, and speculators are. Men have a right to be as wise as serpents, but should also be as harmless as doves.

# Our Mentorial Bureau.

"He that questioneth much shall learn much."—*Bacon.*

## 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.*

WE CANNOT 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.*

COURSE OF READING.—T. W. E.—If you are bent toward literature, you need to read in almost every department; for a *litterateur* should know something, as much as possible, in fact, of everything. But literature has its specialties, like all other professions, and if you have a choice of a department, like history or biography, or science or sociology, or poetry or essays or fiction, your reading should have a particular application to the department. Being young, however, you should read the best authors, in as many spheres as possible, so as to form a good foundation. You should read attentively, taking notes of whatever specially interests you. You should not read a page without thinking over the subject-matter of the thought. Endeavor to impress your mind with the views of the author.

SLEEP.—D. C. L.—Man is a creature of habits. By an eminent writer he is termed "a bundle of habits." He is superior to the brutes, and so adapted to live in a higher sphere. He has the teaching of his own experience and of the world for his admonition, and these relate as much to the physical nature as to the mental. Regularity is found to be the secret of strength of body and mind. Proper habits are based upon regularity. People who live the longest are those who follow a kind of routine from day to day, in which the process of physical recuperation largely enters. When tired, a man should rest—that is a law of nature. Habit, however, governs the animal feeling. If a man be given to exercising body and brain at certain hours of the day, and to resting, sleeping, recreating at certain other hours of the day, he finds in time that his powers and faculties adapt themselves to the

order. The men who are given to following a certain order from day to day, if they permit it to be infringed, experience more or less discomfort and unrest. For instance, if a busy man, accustomed to retire to bed at ten o'clock P.M., attend a party or a place of amusement, so that his hour of retirement is deferred until twelve or one o'clock, he finds the next morning that six o'clock A.M., his hour for rising, has come too soon. He is not sufficiently restored, and in the course of the day he will work with inconvenience. There will be a sense of more than usual friction, lack of spirit and vim in the action of his faculties. We believe that a man should have a margin of inactivity after eating heartily; that he should not go from the dinner-table straight to the intense work of the desk or to the hard manual labor of the field. If one eat properly, that margin need not be great. A half hour's repose, we think, would be sufficient in most cases. People who gorge themselves, as animals are disposed to, may require hours to get rid of the heaviness and dullness which follow their meals.

COMPOSING IN SLEEP.—L. A. N.—Biological works abound in reports of similar experience. During sleep certain faculties may be awake and active, and even stimulated, and produce results whose character for finish and perfection exceeds any of the accomplishments of the person when thoroughly awake. Some of the finest works of poetry and painting have been imagined and thought out in sleep, if we are to believe what is recorded concerning their production. But generally one forgets enough of the train of thought or dream which occurred to him during the hours of repose to preclude him from making a practical use of the matter. We have frequently gone over in sleep an article or address upon some subject which had occupied a good deal of our reflections in the day-time, but in the morning found ourselves utterly unable to recall a single sentence, yet we were conscious of having done great things while asleep. The condition of sleep, because of the inactivity of certain organs, prevents that co-ordination of the faculties which is essential to the complete and permanent impression of thought upon the mind.

LIVER DISEASE.—Whether or not the complaint be curable, must depend upon the condition of the organ and the length of time during which the disease has been established. By the use of a very careful hygienic diet, manipulations, and fomentations, you may obtain relief and probably a cure.

SELF-ESTEEM.—J. S.—By endeavoring to act in accordance with one's sense of duty, propriety, and the perception of what is adapted to the circumstances; by accepting obligations and responsibilities, and working earnestly toward their successful performance; by the assertion of personal right and privilege; in other words, claiming what is your due and resisting aggression or encroachment, you will in time acquire more of this desired quality.

RED ANTS.—G.—Some housekeepers resort to hot water for relief from these closet pests, which must be often repeated. Some people say that powdered borax is quite efficient in keeping them away from the shelves on which are stored food and sweets. Others say that if cayenne pepper be sprinkled about, it will drive them off. Some housekeepers have tried the experiment of drawing a broad chalk mark around the dishes, and say that it is quite successful.

DEAD HAIR GROWING.—J. M. C.—We have heard that the hair of a corpse has indicated growth, but your story of the growth of a lock of hair after it had been clipped from the head of a deceased person, is too much for our credulity. We think that there has been some tampering with the "locks," and that you are a victim of an adroit imposition.

CHOOSING A WIFE.—ELIA.—We could not give you a satisfactory reply in this way. Your data are insufficient. We should not care to assume the responsibility of advising one with regard to so serious a matter without being furnished previously with the material we deem necessary. The circular entitled "Mirror of the Mind" advises fully on such questions.

TOO TALL.—W. W. M.—Should you take up an employment which required you to work in close or cramped quarters, like mining or tunneling, your stature would probably be diminished, but at the expense of symmetry and grace. You probably appear too tall because you are not sufficiently filled out, so we advise you to live in such a way, normally, of course, as will serve to give you rotundity of outline. Men of full habit do not appear as tall as they really are, while thin six-footers and lank individuals appear to tower beyond their inches.

UNPLEASANT DREAMS.—W. F. T.—In an article published not long since, something was said in regard to the philosophy of disagreeable dreaming. Organization has a good deal to do with one's dreams, especially an organization which has been rendered morbid by improprieties of habit. A person with large Cautiousness, large Destructiveness, large Combativeness, and relatively small Hope, small Benevolence and Self-esteem, may get into the habit of brooding over personal defects, misfortunes, and what is called "bad luck," and so encourage a disposition to unpleasant dreams. This mental disposition is, however, usually accompanied

with more or less biliary derangement, indigestion, dyspepsia, etc., which troubles aggravate and intensify the disagreeable character of dreaming.

FLUTTERING HEART.—L. D.—You may have some organic derangement of the heart, the tendency to palpitation. It might be well for you to obtain the advice of a good physician in regard to the matter. Diffidence, bashfulness, produce agitation, nervous excitement, and where the person's sensitiveness is great, it will in time produce actual disease of the heart. Avoid occasions of excitement; get all the sleep you can take; eat unstimulating food; brace yourself in manly steadfastness.

SUPPRESSION OF VICE.—A. D. L.—We are not aware of the existence of a National Association for the Suppression of Vice, but we know that there have been efforts on the part of social reformers and men of progressive spirit to obtain the co-operation of Congress in the institution of such a society. The National Temperance Society has a name which is cognate, for with the suppression of traffic in alcoholic liquors, the greatest source of vice and crime would be removed.

GROWTH ON THE NECK.—W. H. M.—The brevity of your note does not furnish us with sufficient information to form an idea of the character of the abnormality, although you term it a wen. Had you stated on what part of the neck it exists, it would have been well. Possibly the treatment by ligature would remove it. We know of no method for the cure of such excrescences except by surgical means, and it is not in all cases that such means can be applied successfully.

NASAL CATARRH.—A. H.—We have treated of this subject at length on two or three occasions, but notably in our "Health Almanac" for 1875, which will be supplied at 25 cents.

PHRENOLOGIST — TEMPERAMENTS. — F. A. T.—We do not remember having heard of the person you mention. The Powell nomenclature is based upon the old quartic division of the temperaments, as it was explained in a recent chapter of "Brain and Mind—the Sanguine, Nervous, Bilious, and Lymphatic."

MEMORY.—Will the rubbing of the head in the region of the organs of memory increase their size and improve their faculties?

*Answer:* The mere fact of physical manipulation will not improve organs or strengthen faculties, except possibly through magnetic influence. General exercise will improve the whole organism, but the action of the faculties in appropriate work is the true way to increase the size and power of their organs.

## What They Say.

*Communications are invited on any topic of interest; the writer's personal views being preferred.*

THE MEASURE OF VALUES.—"That wretch is always meddling," exclaimed the Squire. "Now it's the finances he wants mended. It used to be the public health. Just as though the most of mankind did not know what they wanted. He talks as though these professional people were interested in having people unhappy and disorderly; and tries hard to make out the case against them by citing facts to prove the desirability of a different status." It may be, and doubtless is, pleasant to know that when our ability to help ourselves is passed, we shall not at once be consigned to death by starvation. Yet in the course of nature this must inevitably follow. Humanity has elected that superannuated persons be provided for; but it is a mistaken humanity that supports a horde of pets and sinecures as the natural wards of society. Education is good, inasmuch as it makes mankind provident; but that kind of education which assumes the privilege of providing at the expense of others' labor, is becoming rather transparent. There is no need to refer to instances; they are too common where the youth imbibes the idea of absolution from so-called menial labors with the acquisition of Greek and Latin. It is time the truth was generally known in this matter of education, and the sham education heretofore passing current replaced by real instruction. Some timid persons think it will not do to have the truth known at once; that it is better to allow it to be found out by degrees. So the world is a school of deception, and the poor childling must imbibe it with the nurture of its mother's breast. This temporizing policy is called conservative. Conservative of deceit, we admit; but what desirable thing it conserves, it would be difficult to demonstrate. It has been a growing presentiment with us for a long time that there were enough good people on the stage, and in preparation for actors in the drama of life, to make it pay ere long to raise a crop of truth. Possibly we may be too sanguine, yet judging the popular tastes by our own, a desire for a change in the mental pabulum that has been a favorite dish for so long is faintly discernible. F. M. SHAW.

A CONFIRMATION.—In December, 1876, while attending the County Teachers' Institute, held in the State Normal School Buildings at Bloomsburg, one of the ladies present very much attracted my attention; there was something so peculiar about her expression and features that

I could not at first understand. The peculiarity was owing chiefly to a very large development of "something" above the eyes, causing the brows to be rounded and elevated. But what that something was, puzzled me considerably. I made no inquiries as to who she was, but kept looking and thinking, until at last the idea flashed upon my mind that the large development was the organ of Color, and that the lady must be Mrs. Rock, teacher of drawing and painting in the Normal School. I knew by the catalogue that a Mrs. Rock filled that position, and, upon inquiry, learned that I had "hit the nail on the head" for certain. She is spoken of as an excellent teacher, and I have reason to believe that she is, from the fact that a young lady pupil of mine took lessons from her but one term and has painted several fine pictures. An expert painter, an acquaintance of mine, also shows a very large development of the organ.

E. K. WHITNER.

MILL GROVE, PA., May, 1878.

DIET IN TEXAS.—A warm friend of the PHRENOLOGICAL, who resides in Texas, writes: "In your December number I saw an article relating to the formation of a 'Vegetarian Group Home,' which sets forth an object which I deem a good one for *any* latitude. I have one objection to make, however, and that is to the statement that 'in this semi-tropical climate nine-tenths of the people live, I may say die, on pork and smoked bacon, with fine flour, beans, and cabbage cooked with pork,' etc. My observation, and it is not limited in extent, is that vegetables and fruits are about as extensively used in the Southern States as in other parts of the Union, and are just about as well cooked. Too much grease is used by some here in cooking as well as by people elsewhere. Here—Texas—vegetables are used by all classes. People have upon their tables sweet potatoes of the finest flavor, and dried peaches of a finer quality than I have met anywhere else in the Union. My impression is that the hygienic fraternity object to sugar-bearing articles of diet; notwithstanding this, I will state that the ribbon-cane syrup used on our tables is as fine as that found elsewhere.

"A. D. W."

## PERSONAL.

DR. NATHAN ALLEN read an able paper on the Prevention of Disease, Insanity, Crime, and Pauperism, at the recent meeting of the American Social Science Association, in Cincinnati. Dr. Allen's views are based chiefly upon original research, and have a special value in the practical consideration of the subjects named. He believes that *prevention* is the easier method for relieving society of vice, disease, and crime.

MRS. ANNA BOWLES BOWLER, who in her childhood used to sit on Dr. Sam. Johnson's knee, has just died in England at the age of ninety-seven. She was a lineal descendant of Oliver Cromwell.

PROFESSOR SPENCER F. BAIRD has been elected the successor of the late Professor Henry to the position of Secretary of the Smithsonian Institution. Professor Baird was born at Reading, Pa., in 1823, and is consequently fifty-five years of age and in the full vigor and prime of manhood. He is a well-versed naturalist, and by talent and experience is eminently qualified for his new post of duty.

CLARKSON N. POTTER, of Electoral Inquisition notoriety, is described by a newspaper correspondent as having a broad, full forehead, huge brows, wide nostrils, thin lips, double chin, spreading side-whiskers, and flaring necktie. Is that all? Please to give us the mental significance of these, Mr. Correspondent.

MR. C. F. RITCHELL, of Corry, Pa., has invented a flying machine which is a demonstration of the practicability of the idea. Trials of it have been made at Hartford, Conn., which resulted very satisfactorily.

## WISDOM.

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

ASSURANCE never failed to gain admission into the houses of the great.

THE man who minds his own business has a good steady employment.

DON'T eat or talk much this hot weather. Now is a good time to let your mouth take a vacation.

MEN should not think too much of themselves, and yet a man should be careful not to forget himself.—PRENTICE.

THE more enlarged is our mind, the more we discover in men of originality. Your commonplace people see no difference between one and another.—PASCAL.

THERE are some things for doing which one will not repent, viz.:

For hearing before judging;
For thinking before speaking;
For holding an angry tongue;
For stopping the ear to tale-bearers;
For disbelieving most floating gossip;
For refusing to kick a fallen man;
For being kind to the distressed;
For being patient toward everybody;
For doing good as he has opportunity;
For asking pardon for wrongs and mistakes;
For speaking evil of no one;
For being polite to all.

## MIRTH.

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

THE heaviest snorer we have heard of is the man up-town whose wife woke him up during a tempest, saying she did wish he would stop snoring, for she wanted to hear the thunder.—*Port Chester Journal.*

"MY dear," said a gentleman to his wife, "our new club is going to have all the home comforts." "Indeed!" sneered the wife; "and when, pray, is your home to have all the club comforts?"

LEMME 'lone!
Got 'em bad!
Throat—bone—
Ktch! whff! gah! ghrr! hoo! gwphchffaow that shad.—*Puck.*

"WHAT'S your occupation, bub?" asked a visitor at the Capitol of a bright boy whom he met in the corridor. The boy happened to be a page in the House. "I'm running for Congress, sir," he replied.

ANOTHER little fellow went to visit a friend who had purchased a new house, the furnishing of which was not completed. Charlie was asked how he liked the house. "It's nice, all but the *barefooted floors*," he answered.

## 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.*

PETTENGILL'S NEWSPAPER DIRECTORY and Advertiser's Hand-book, for 1878, comprising a Complete List of the Newspapers and other Periodicals published in the United States and British America; also the prominent European and Australian Newspapers. 8vo, cloth, pp. 350.

In this very neat volume we have the marks of business enterprise. And aside from its utility to the man of trade, it offers a field of really interesting study. The names of publications are often suggestive of the intellectual calibre of their conductors, and in this list there are many of great oddity. The statistician will here find material suitable for his consideration; politics, morals, social diversion, art and industry, have their representatives in number surprisingly great and indicative of wide-spread intelligence among our people. We are told that the number of newspapers in the United States exceeds 8,100, and that of the twelve million printed sheets daily spread before the public by the presses of the world, our country supplies one-half.

The value of judicious advertising to the business man is unquestionable, and one can not exercise good judgment in this way unless he be well acquainted with the nature of the mediums through which advertisements are circulated. In this Directory a most valuable help is afforded him for the selection of the mediums he would use, on account of its completeness and accuracy. Several fine portraits of eminent gentlemen of the editorial fraternity illuminate the pages.

HALLOCK'S AMERICAN CLUB-LIST and Sportsman's Glossary. By Charles Hallock, editor of *Forest and Stream*. 12mo, cloth. 50 cents. New York: Forest and Stream Publishing Company.

A convenient compilation for those interested in the sports and exercises of the day. The editor has been to much pains in its preparation, and will doubtless have the thanks of every earnest shooter, base-ballist, rider, boatman, and fisherman. Included with the lists are forms for the organization of sportsman's, rifle, and other clubs, and the recognized rules governing matches and competitions.

SIXTH ANNUAL REPORT of the Secretary of State, of the State of Michigan, relating to the Registry and Return of Births, Marriages, and Deaths for the Year 1872. Published by authority.

We have received this compact volume of over 450 pages from Dr. H. B. Baker, the Superintendent of Vital Statistics for the State; and our cursory examination confirms the opinion which we uttered a while since, that Michigan is in the lead among the States West, with respect to a well-organized system of sanitary inspection, and that few of the Atlantic States sustain so complete a department. As "Vital Statistics supply the most substantial basis for sanitary work," their importance must be evident to every economist and intelligent public man, and the wonder is that every one of our older States has not an organized and efficient Health Board.

In the opinion of the compiler of these records, the low birth-rate of our native American stock "is something to be proud of," instead of to be deplored, as is the opinion of many observers, and he regards it as "good evidence of progress in civilization," and that "our native inhabitants are rapidly learning how to avoid the evils (of excessive reproduction), and a stronger, healthier, nobler, and longer-lived generation is the very gratifying result." The evidences furnished by the statistics derived from the classes in which the birth-rate is large, have convinced

him that it is not an exponent of physical stamina, but rather of low vitality.

The Report generally shows that nearly one-fourth of all the deaths tabulated in Michigan are of children under one year of age; and about two-fifths are of children under five years of age. Of these the larger proportion is of males.

Some interesting data relating to the marriage laws of Michigan are included with the report, by which it is seen that the limitation of consanguineous alliances is more stringent than in most of our States.

POGANUC PEOPLE: Their Loves and Lives. By Harriet Beecher Stowe, author of "Uncle Tom's Cabin," "My Wife and I," etc. With Illustrations. 12mo, pp. 375. Cloth, price $1.50. New York: Fords, Howard & Hulbert.

Another pleasant story of New England life, in the vein so well introduced by Mrs. Stowe in "Oldtown Folk." There is a general similarity in the current of talk and incident between this new volume and the other pen-pictures of Yankee land by the same author. We notice, however, one element of freshness: it appears in the opening chapter, and must impress every reader who is familiar with the special religious coloring usually appurtenant to this author's stories. We allude to the introduction of Episcopacy, whereas heretofore, be it known to the reader who may not have gone beyond "Uncle Tom's Cabin" in his perusal of Mrs. Stowe's contributions to miscellaneous literature, that she has usually given to Presbyterianism, and that of the old stamp, her pen worship. This Episcopal element is made the more interesting because an ardent disciple of the Church of robes and forms is made an inmate—a rather important inmate, too, being the maid-of-all-work—of the family of a Presbyterian clergyman; and as the story unfolds, there are incidental contrasts of faith and mannerism, the outcomes or morals of which seem to incline in advantage toward Episcopacy. Mrs. Stowe's handling of the rude villager is always admirable, and her facility in the use of provincial dialect is scarcely anywhere more happily shown than in the talk of her Poganuc characters. Having located this story in those stirring times of sixty years ago, the author contributes much of sauce to the plot by means of brief glimpses of the popular agitations arising from the fierce contests at the ballot-box between Federalist and Democrat, and from the growth of liberal thought with respect to religious affairs. The chief figure of the book seems to be the little girl Dolly, a portraiture of winsome freshness and grace that is admirably sustained.

## PUBLICATIONS RECEIVED.

MODERN PEDAGOGY, a Poem. By George D. Hunt. 18mo, pp. 32. Published by the author.

THE INTRA-VENOUS INJECTION OF MILK as a Substitute for the Transfusion of Blood. Illustrated by seven operations. By T. Gaylord Thomas, M.D., of New York. Published by D. Appleton & Co. Dr. Thomas is impressed that the use of milk instead of blood is more effective in restoring the vital function in cases of extreme weakness and exhaustion through the operation of transfusion, and the results of certain operations performed by him are eminently in support of that view.

LAPARO-ELYTROTOMY, a Substitute for the Cæsarian Section. By T. Gaylord Thomas, M.D. Published by Messrs. William Wood & Co., of New York.

THIRD ANNUAL REPORT of the Veterinary Hospital, Practical Department of American Veterinary College. This institution is situated in West Fifty-fourth Street, New York city, and in the success of its late session has made an encouraging beginning. Commenting upon the usefulness of veterinary surgery is of course unnecessary.

THE UNIVERSITY QUARTERLY, conducted by the Students of the New York University. April number. A very neatly-printed octavo, with some forty pages of reading matter, much of which evinces a good degree of literary talent and culture. Some views of modern medicine in the editorial department exhibit a catholic spirit which is becoming to the students of the institution whose medical school occupies the front rank in what is called regular practice. The whole affair is in good keeping with the true college spirit and very creditable to the students of the institution which it represents.

THOMPSON'S BANK NOTE and Commercial Reporter, a Directory of National Banks, State Banks, Savings Banks, and Private Bankers in the United States, Canada, and British Provinces.

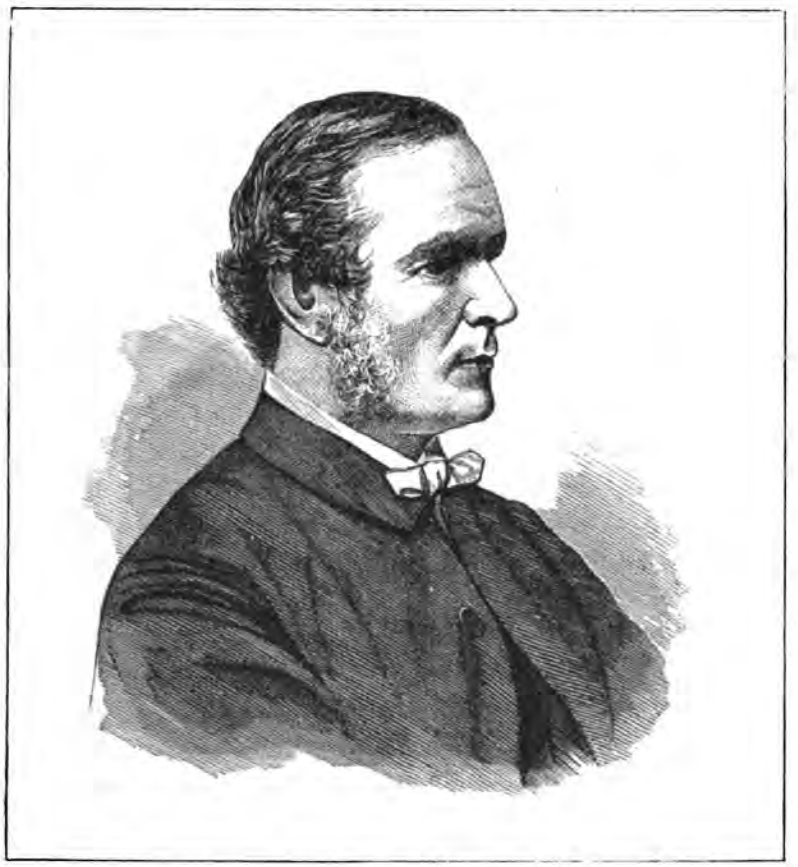
LITTELL'S LIVING AGE—current numbers. This well-known weekly maintains a vigorous life; is especially valuable as a conservatory of the best literature published in Europe and America. Messrs. Littell & Gay, of Boston, supply it at $8.00 a year.

BUSINESS DIRECTORY. We have also received from the publisher, Mr. L. M. McKenny, of San Francisco, California, his voluminous and useful Business Directory of the Pacific States and Territories for 1878. It embraces in its 894 pages the names, business, and address of merchants, manufacturers, and professional men; county, city, State, Territorial, and Federal officers, and notaries public of the principal towns of California, Nevada, Oregon, Washington, Utah, Montana, Idaho, Arizona, and British Columbia, together with a sketch of the different towns, giving description, means of support, population, etc. The lists are alphabetically arranged and classified according to vocation. Price of the volume, $2.

THE PHRENOLOGICAL JOURNAL AND LIFE ILLUSTRATED.

VOL. 67. 1878.

NUMBER 3.] *September, 1878.* [WHOLE No. 477.



## FREDERICK W. FARRAR, D.D.,

CANON OF WESTMINSTER, ENGLAND.

A FEW years ago the attention of the religious community of America was called to a new biographical account of Christ, which had been published in England, and won the highest encomiums of the reading public. It was pronounced by critics to be the best Life of Christ which had been produced in the past quarter of a century, and its very general welcome gave to the author, the Rev. Frederick W. Farrar, D.D., of London, a high place in the world's literature. Previous to the appearance of this important work, Dr. Farrar's name was but little known in this country

outside of the comparatively small circle of readers and students of doctrinal theology.

Of his phrenological characteristics, Prof. L. N. Fowler writes from London as follows:

CANON FARRAR is well-balanced, mentally and physically. Although his mental temperament is strongly marked, yet it is sustained by a good proportion of bone, muscle, and blood; and his temperamental organization as a whole is more complete and better balanced than that of most men. He could work equally well with brain or body. His brain in cubic inches is above that of the average. This, with his culture and quality of organization, give him an advantage over many in clearness and power of mental action.

His head is broad between the ears, hence he has energy, executiveness, love of industry, and resolution. While these powers are subordinate to reason and moral sense, they aid in giving force to his reasoning and strength to his moral purposes.

The prudential qualities, located above the executive, are strongly marked, and these have a powerful influence in regulating his impulses and executive faculties; hence he acts and speaks with great energy and spirit, yet within bounds, and is not so liable to overdo or break down as many who yield to their unrestrained impulses. His head is high in the crown, and he has ambition, sense of character, the desire to excel and to be favorably known. His ambition acts with his strongest faculties, which are the reasoning and moral faculties, and these dominate over all the other powers of his mind.

His Self-esteem is large enough to give him general pride and manliness, and to enable him, if necessary, to take responsibilities and rely on himself, but his reasoning and moral faculties are too strong to allow him to be egotistical, dictatorial, or tyrannical.

His frontal lobe is full, high, and broad, and is particularly large in the upper portion embracing the reasoning, intuitive powers; hence he is more of a thinker than an observer, and has more of a philosophical than a scientific, practical, or experimental cast of mind. He observes when he has an object in view and goes on purpose to see and gain information; but he thinks without intending to do so or being conscious of it. He collects facts and statistics more easily by reading than by observation, and for use rather than for the mere sake of acquiring them. He employs facts to illustrate principles rather than to entertain company.

His intellect works from the superior to the inferior. He starts from the pinnacle and works downward. His Comparison is particularly large, and gives him great power to become acquainted with results, effects, and the application of principles. It enables him to illustrate, compare, contrast, explain, reduce to practice, and make available what knowledge he gains. It enables him to present his ideas in a clear and practical form, and joined with his very large Intuition, aids him in making nice distinctions between the true and the false. He has very great intuitive power and perception of character, human nature, and truth. He has also ingenuity, versatility of talent, power to arrange and systematize his ideas and plans and he can do many different things equally well. The faculty of Language is not large and he is not loquacious. He talks because he has something to say, rather than for the sake of talking; yet having a clear, active mind and an open disposition, he talks with freedom and ease; yet he can write better than talk. His eloquence is not so much the result of large Language as it is of his great learning, scope of mind,

emotional nature, and warm, earnest temperament.

His tone of mind and body, joined to his large Sublimity, Ideality, and Mirthfulness, give scope to his imagination, brilliancy to his thoughts, and liberality to his mental operations.

Owing to the activity of his brain, even the smaller faculties are quite vigorously manifested when he is animated. But the crowning powers of his mind, that have a controlling and guiding influence in action, are connected with his coronal brain. His head is unusually high and broad in the coronal region, and it is also particularly high above the ears. Firmness being very large, he has a strong, determined spirit, ability to make up his mind, to decide upon a course of action, to adhere to his purposes and plans, to persevere in his undertakings, as well as to resist foreign influences and to maintain his position.

His large moral brain gives him a consciousness of his manhood, his importance and value as a moral being, and disposes him to place a high value on human nature. All his moral organs are fully represented. They give tone and strength to his character, a distinct sense of moral obligation, uprightness of mind, strong hopes, consciousness of the future, the spirit of enterprise, strong faith, sentiment, emotion, pathos, a high regard for the superior and sacred.

The largest of all his moral organs is Benevolence, which has almost a monopolizing influence in his character, conduct, and mode of reasoning. The sympathetic portion of Benevolence is particularly strong. He easily becomes interested in other people and in all those agencies that tend to relieve human suffering, increase happiness, and elevate the race. It makes him liberal and tolerant, but he is also positive and distinct in his ideas and opinions, through the influence of his large Conscientiousness.

In summing up the most prominent powers of his organization, I would say he has a strong constitution, good stock and quality of bodily powers, a quick circulation, giving warmth and ardor; a high-toned mental temperament, giving clearness and distinctness of mental action; great energy and ambition, vivid imagination and scope of mind, a clear, descriptive, analogical, intuitive, penetrating intellect, and more than average moral power, sympathy, and goodwill toward mankind.

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FREDERICK WILLIAM FARRAR was born in the Fort of Bombay, in 1831; his father being then a missionary of the Church Missionary Society, and since for many years Rector of Sidcup, in Kent, England. While very young Frederick was sent to the school at Castleton, Isle of Man. His experiences there supplied the foundation of "Eric, or Little by Little," the first of his very interesting tales for school-boys. At sixteen he was entered at King's College, London, where he remained three years, taking a high position for scholarship. In the fall of 1851 he went to Trinity College, Cambridge, and became a foundation scholar in the following year. There his talents were signally exhibited, his excellence in the mathematical department being specially marked. Taking his bachelor's degree in 1854, he at once went into the world of scholastic life as a teacher, accepting an appointment as Assistant-master of Marlborough College. In 1855 he was appointed by Dr. Vaughan Assistant-master at Harrow, where he labored fifteen years, and most successfully, wielding an influence over his pupils which is rarely seen in the walks of even English pedagogic life.

Mr. Farrar had been ordained a deacon of the Anglican Church in 1854, and priest in 1857, and while at Harrow he performed the duties of an English clergyman. He appears to have won attention as a pulpit orator quite early, while his talents and

scholarship gave him prominence among educators. He became a Fellow of the Royal Society in 1864, University preacher in 1868, honorary Chaplain to the Queen in 1869, and Hulsean lecturer in 1870. The following year he was appointed Head-master of Marlborough College. Dr. Butler, Head-master of Harrow School, wrote of him: "As an accurate and scientific scholar and man of letters, and one of the first speakers and preachers of our time, he can not fail to bring fame and force to any institution, however high, with which he may be now or hereafter connected."

In 1872 Mr. Farrar became Chaplain in Ordinary to the Queen. In 1873 and 1875 he was again appointed University preacher, and in 1876 resigning the Head-mastership of Marlborough College, entered upon the duties of his appointment as Canon of Westminster, and Rector of St. Margaret's Westminster. He received the degree of D.D. in 1874, having earned it by writing a treatise prescribed by the Cambridge professors; which is now the rule or test of merit. In his present position he wields a very wide influence in English life and literature, not only on account of the character of the place itself and the prestige of scholarship and usefulness which he has brought to it, but also because he gives personal attention to the wants of the great population by which he is surrounded. We find him earnestly and even enthusiastically helping the organized movements for social reform. While the great mass of the Anglican clergy has appeared to be impassive on the subject of Temperance and the suppression of the traffic in alcoholic liquors, Dr. Farrar has shown the warmest interest in the moral and physical welfare of the masses. Several of his addresses on the immorality and pernicious effects of the liquor habit have been republished in this country and found extensive circulation.

While a teacher, Dr. Farrar published two educational works, "A Lecture on Public School Education," which was first delivered before the Royal Institution, and afterward issued, in 1867, with Notes, and "Essays on a Liberal Education," in which he was assisted by Prof. Seeley and Lord Houghton. In these he advocates the introduction of new methods for the practical instruction of youth, particularly in the classics. As a theologian and Christian orator Dr. Farrar figures perhaps the most conspicuously, and his works of late date have been more or less theological, viz., "The Fall of Man," "University and other Sermons," "The Witness of History to Christ," made up of his Hulsean lectures for 1870; "Seekers after God," a volume of the "Sunday Library," published in 1869; his most important work, "The Life of Christ," published in 1874, has been mentioned already. Its success has been very great, upward of twenty editions being called for in England, while its sale on this side of the Atlantic has been extensive. In the autumn of last year his "Eternal Hope," a compilation of five sermons on the state of the soul hereafter, was published; and quite recently "Language and Languages," a treatise of a philological cast.

As a writer he is distinguished for a graceful, rhetorical style, often approaching the florid, yet never wanting in dignity and strength. Few authors are more fascinating in narration, and whenever he tells a story from the pulpit the effect upon his congregation is intense. Perhaps a quotation from his address in King's College, Cambridge, on the claims of the Temperance movement upon the educated classes, will furnish an idea of the oratorical abilities of the Canon, and of the boldness of his appeals in behalf of moral purity. Had we space, we would gladly print the entire address. In the course of his argument he said:

"But you, it may be, are quite sure that you will never fall on Circe's island, or unmould reason's mintage. But why are you so sure? Is your nature so much stronger and nobler than that of Burns, or than that of Hartley Coleridge, or than that of Charles Lamb, with his sad cry, 'The waters have gone over me; but out of the depths, could I be heard, I would cry out to all those who have but set a foot in the perilous flood?' Or why are you safer than those six hundred thousand drunkards in these unhappy islands, many of them men of keen intellect,

many of them men of noble instincts, many of them men of most amiable character? How did these men become drunkards? Do you think that they were born drunkards? Do you think that they became drunkards the moment they tasted alcohol? Why, gentlemen, you know that there is only one way by which any man ever became a drunkard, and that is *by growing fond of alcohol*, at first in moderate drinking—either by the glass or by the dram—day by day a little increased—year by year a little multiplied—by the solitary becoming the frequent, and the frequent the habitual, and the habitual the all-but-inevitable transgression; till at last, some fine morning, as they awoke, perhaps in the shame of some inevitable fall, it came upon them with a flash that they are drunkards. This perhaps is the commonest method of ruin,

> "'We are not worst at once: the course of evil
> Begins so slowly and from such slight source,
> An infant's hand might stem the breach with clay:
> But let the stream grow wider, and philosophy,
> Aye, and religion too, may strive in vain
> To stem the headlong current.'

"But it is not always in this slow and gradual manner that men have become drunkards. Sometimes they have been moderate for years, and then at last, when they thought themselves perfectly secure, the temptation has come upon them 'terrible and with a tiger's leaps'—in the delight of some boon companionship; in the exhilaration of some sudden good fortune; in the agony of some unexpected bereavement. Gentlemen, if every one of you think yourselves so absolutely and so permanently safe from a temptation to which so many millions have succumbed; or if you think that, being absolutely safe yourself, no single person toward whom you have duties and whom you love—no wife or child, and friend or servant or parishioner—can by any possibility be ever tempted by your example, all that I can say is that, while I can not share your confidence, I most earnestly trust that no bitter irremediable experience may ever give you cause to repent of it in dust and ashes."

In another place he said the following, which applies with almost equal force to the condition of the masses in America as to the English public, viz.: "To me it seems, gentlemen, that there is only one remedy which can indefinitely prolong the national glory of England; there is but one resource which can counteract the dangers which threaten us from the pressure of life, the depression of trade, the growth of a deeply-seated discontent; there is but one way to diminish the ghastly total of crime, to close two-thirds of our prisons, two-thirds of our asylums, two-thirds of our workhouses; and that remedy, that resource, that way, is, that instead of continuing to be a drunken, we should become a sober and temperate nation; and in the present distress, amid the present perils, with the present repeated refusals of the legislature to interfere with the scandalous multiplication of temptations, there is but one way by which we can ever become a sober and temperate nation, and that is by the immense, the voluntary, the all but universal spread of total abstinence. The day may return—God grant it, and it is very far off as yet—when the present peril and the present distress are over, and England, shamed into decency and startled into repentance, may indulge, if it be an indulgence, and if she must indulge in the fermented juice of the grape, without one word of warning; but that day is not yet; and, meanwhile, do not be deceived into easy self-satisfaction by a mere talking about rose-water remedies which become practically an excuse for simply doing nothing."

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HAPPINESS.—Would you possess it, dear reader, with all its attributes? Then do not sit down quietly with folded hands, expecting to be helped to a liberal share, as you would to wedding-cake. It cometh not thus. For happiness, as a luxury, to be enjoyed in its highest sense, you must labor diligently; not only this, but you must continue unceasingly and unsparingly to sow seed of kindness and love toward all, which, like fuel cast upon the waters, after many days will return to you again. A kind, encouraging word to one, a pleasant smile to another, a favor, with helping hand to the third, and so on; and above all, loving, hopeful letters, full of cheer, to the absent ones.

These are gems of worth that will *tell* in the make-up of your existence, far more forcibly than deeds of fame or renown. Should your efforts seem to be unappreciated, do not despair or relax your zeal; the Recording Angel on high never wearies in reckoning the good deeds of the faithful on earth, and be assured that every act of your life given to promote the happiness of others will reappear to gladden your heart in the great coming day; even more, 'twill place a brilliant star in your diadem of glory.

Then persevere in contributing to the happiness of all. "Give, and it shall be given to you," Scripture measure,

GRACE GARLAND.

## RESULTS OF EXPERIMENTS IN NERVOUS FUNCTION REVIEWED.

**Primary Nerve Structure—Cerebrum and Legallois—Cerebellum—The Medulla Oblongata the Respiratory Center—The Spinal Cord and Locomotion—Göltz, Bell, and Magendie—Optic Ganglia.**

I HAVE in previous papers, as occasion required, discussed the differences in function that distinguish cells from fibers, the particular manner in which some fibers are stated to be motor and others sensory, and the mode of communication that prevails between cells, namely, by means of what are known as polar processes. It should be stated that nerve cells are distinguished as unipolar, bipolar, or multipolar. An unipolar cell is one that has but one process, namely, an axis-cylinder process. A bipolar cell generally exhibits an axis-cylinder process entering at one point and emerging at another. A multipolar cell is one of many processes, one, and the larger one, of which may or may not be an axis-cylinder process. There are next purely globular cells, elongated cells, and double cells united by a commissural band. The axis-cylinder process, when it exists, is readily distinguished by three peculiarities. First, it is larger than the mere polar processes; secondly, it is very direct in its course toward its destination; thirdly, it never divides and subdivides after the manner of the purely connective processes. In addition to these distinctions, some histologists, it seems to me without any sufficient reason, classify nerve cells as presiding over vital innervation, as devoted especially to motor innervation, and lastly as sensory cells. It appears to me that it is far simpler and more satisfactory to regard all cells as excitor in the first instance, and as excito-vital, excito-motor, and excito-sensory, according to the prescription of circumstances. From the most careful microscopic investigations I have been able to make, although I have been able clearly to identify the loop terminations of motor filaments, insisted upon by Prevost and Dumas, I am inclined to think that there is no absolute termination of the filaments distributed to muscular tissue. The reader who has ever carefully examined the soft and silken connective tissue, has observed that its structure consists of nucleated corpuscles. From this intermediate tissue spring, on the one hand, the minute fasciculi of muscular fiber, and, on the other, the nervous filaments, which subsequently collect into plexiform loops. It is secure, therefore, to say that, although in general anatomy the loop must be regarded as the typical termination of the motor filament, it has nevertheless no absolute termination, but gradually identifies ifself with the connective tissue in a manner analogous to muscular filaments. The connective tissue of a muscle constitutes, therefore a motor surface communicating with the brain and spinal axis by means of nervous tubes. This surface is conspicuously distinguished by the absence of excitor cells.

In a similar manner the sensory surfaces are distinguished by what are known as axile corpuscles, which are practically brains containing excitor cells with which ultimate nervous filaments communicate.

It is an error popular with physiologists to regard these sensory and motor surfaces as structurally dependent on the central

axis of the nervous system, whereas fœtal development demonstrates that they are independent formations, between which and the cerebro-spinal axis communication is established by filaments. An axile corpuscle on the end of the finger, for example, is not a mere expansion of the filament or filaments with which it is in communication, but a structure of peripheral origin, connected first with a plexiform arrangement of the nerves of the skin, and lastly referent to the central axis by means of filaments. Again, the retina of the eye is a complex brain of vision, connected with the optic nerve that ends in a button in the back part of the eye, but not an expansion of that process. So with the auditory structure, and the olfactory, which terminates in a bulb from which filaments proceed. The primary distinction between these surfaces consists in the fact that the sensory are abundantly supplied with cells, while the motor are deficient in this respect. This may be experimentally demonstrated by obliterating the axile corpuscles of a sensory surface, when all evidence of the sensory function ceases after the lesion has completely healed, or by obliterating portions of the connective tissue of a muscle, when, after the lapse of a sufficient period for cicatrix, the muscle continues in a flabby condition, contractility is impaired, and it finally atrophies.

With these preliminary remarks, I will now proceed to review the history of experiment in this important direction. The medulla oblongata must be regarded as the most important center of the nervous system. The cerebrum may act after extirpation of the cerebellum, or the cerebellum after extirpation of the cerebrum; but the functions of both are obliterated by extirpation of the medulla oblongata, which unites the nervous organism into one compact whole and may be regarded as the vital brain. It is, as Legallois was the first to demonstrate, the great center of the inspiratory movements. The experiments upon which this view rests were repeated by him before a commission of the Institute of France, with the result of settling this question in so far as vivisection can be held to settle anything. In a rabbit a few days old the larynx was first dissected from the os hyoides, thus exposing the glottis, and the brain and cerebellum were then extracted without arresting inspiration, which was marked by four distinct movements—first, a gaping of the lips; secondly, an opening of the glottis; thirdly, a regular elevation and depression of the ribs; fourthly, a regular contraction and expansion of the diaphragm. On removal of the medulla oblongata, these movements simultaneously ceased.

In a second experiment he did not remove the whole vital bulb at once, but exscinded it in thin successive slices. The four movements continued after the removal of the three superior slices, but were extirpated simultaneously by excision of the fourth, which interfered with the origin of the fifth pair of nerves.

His third experiment was conducted in a still more scientific manner. On this occasion, with a view of determining the exact functions of the several pairs of nerves having their origin in the vital bulb, he divided the spinal column near the level of the seventh cervical vertebra, which arrested the motion of the ribs, the other three movements remaining intact and comparatively unimpeded. A second section near the first cervical vertebra, just above the origin of the phrenic nerves, suspended the motion of the diaphragm. Division of the par vagum suspended the action of the glottis, when there remained of the inspiratory movements only the motion of the lips to attest that the vital bulb still retained its excitor energy, and was prevented from exercising its functions by lack of communication with the muscles.

In 1830 M. Flourens repeated these experiments and confirmed them in every essential particular, distinctly tracing the action of the spinal column and the medulla oblongata in all the four classes of vertebrated animals. In the bird tribe he demonstrated that the lumbar and dorsal portions of the spinal column might be extirpated without impeding respiration, but the function was immediately arrested by destruction of the costal portion of the column. In the mammalia removal of the

costal portion arrested the movement of the ribs, but the action of the diaphragm was not extirpated until the phrenic nerves were injured; while in frogs obliteration of all the column except that portion communicating with the hyoidal muscles was attended with no interruption of respiration. In fishes removal of the whole column did not disturb the respiratory movements.

The result of these experiments was a tolerably certain demonstration that the spinal column exercises only a variable and relative influence on the respiration of the vertebrated animals, and that, in descending the scale, it progressively disengages itself from participation in this function, the medulla oblongata tending more and more to concentrate them in itself, until in fishes the functions of the spinal column and the medulla oblongata become wholly distinct, the former being a center of locomotion and sensation, the latter of respiration. The medulla oblongata is thus demonstrably the center of the vital movements.

From a second series of experiments M. Flourens came to the conclusion that there exists a point in the nervous centers at which section produces sudden annihilation of all the inspiratory movements, and that this point corresponds with the origin of the eighth pair of nerves, thus exactly confirming the opinion of Legallois.

My own experiments on this important bulb have had reference only to the determination of the single question whether the excitor vital center is constituted by the cineritious tissue of the olivary bodies, and were conducted on puppies six weeks old, with the assistance of partial anæsthesia, after which, with a real incision, I dissected out the gray layers of the corpora fimbriata with as little injury as possible. The respiratory movements were not wholly extinguished by this excision, but became at once broken, irregular, and spasmodic, demonstrating that the co-ordinating function of the vital bulb had been extirpated. I then laid open the spinal canal, and with a deep longitudinal incision through the posterior fissure of the cord, so as to injure the fibrous structure as little as possible, rapidly removed the central gray portion of the column down to the second cervical vertebra, with complete destruction to the inspiratory movements. Repeating this experiment with a second animal, I obtained the same result, thus demonstrating that the cineritious tissue of the vital bulb is its excitor center, and, by implication, that the pyramidal and restiform bodies are to be regarded as respectively processes uniting the cerebrum and cerebellum to the spinal column, and not as distinct excitor centers.

That the spinal column is a distinct excito-motor center was first demonstrated by Marshall Hall. Legallois appears to have regarded it as the *premier moteur* of the vital functions, and Flourens conjectured that it had the office of associating the partial contractions of the individual muscles into *mouvemens de l'ensemble* necessary to the co-ordinate action of the limbs. The gray interior axis of the cord is now known to be an excito-motor center concerned mainly in instinctive movements and capable of reflex excitability. The serous fluid in which it is immersed is also, according to Magendie, who styles it the cerebro-spinal fluid, peculiarly influential in determining certain phenomena. The quantity of this liquid in the human subject varies from two to five ounces, and is always interposed between the proper serous membrane of the cord (the spider's web tunic) and its vascular tunic known as the pia mater. This membranous bag communicates, of course, with the ventricular cavities of the brain, and in living animals may be made to issue in a weak jet by merely puncturing the serous tunic, its removal or considerable reduction occasioning symptoms analogous to those of rabies in the dog, and its sudden augmentation inducing immediate coma.

The sources of fallacy necessarily accompanying experiments on the several sections of the spinal column, are so many and so interwoven with its complexities of structure that the history of experimental investigation in this important department presents a series of results apparently contradictory. From the fact that it is properly developed from two excitor centers, it would be inevitably concluded that the inferior portion of the gray axis has excitor properties

comparatively independent of the superior, and this has been proved by repeated tests; but beyond this, very little of value to systematic psychology has yet been demonstrated. While, as Brown-Séquard has conclusively tested, section of the posterior white columns extirpates the locomotor function by destroying the connection of the cerebellum with the muscles of the legs, it seems to be conclusively established that the posterior fasciculi of the spinal nerves are specially appropriated to sensation, and the anterior to motion; but, on the other hand, if the posterior cord co-ordinates the function of locomotion, since no decussation between the posterior and anterior occurs in the act of descent, it is very evident that certain portions of the posterior fasciculi must minister to motion, or that, on a large scale as well as a small one, the hard and fast distinction between motor and sensory activity must be abandoned as objectionable. From a preparation of the nervous organism of a mouse, I find that some of the filaments of the posterior fasciculi had a muscular distribution, while the greater portion of them terminate in corpuscles of sensation, but that the distribution of the anterior fasciculi to the purposes of motion appears to have been invariable. This fact points to the hypothesis that the ganglia with which the posterior roots of the spinal nerves are furnished probably participate in those reflex actions that result from irritation or tickling of the hollow of the foot, if they are not exclusively the centers in which such actions originate. In the preparation in question, it may be observed as a general fact, that the posterior motor filaments may many of them be traced into the cerebellum, while the sensory are more generally traceable to the gray axis of the column itself. I have at hand an excellent preparation of the nervous organism of a humming-bird, selected for the experiment on account of its relative compactness, in which the same general arrangement is very evidently demonstrable; also, a tolerably perfect preparation of the nervous system of a young black snake, which furnishes a rudimentary example of the type.

Göltz's experiments with frogs are decidedly demonstrative of the instincto-motor activity of the spinal column. My own observations have been directed to two purposes—first, to ascertain whether the ideo-motor influence of the anterior portion of the cerebrum is exclusively transmitted by way of the anterior cord, and, secondly, to ascertain the commissural function of the thin lamina of cineritious tissue uniting the two crescentiform lateral gray strands. In a puppy seven weeks old I divided (under anæsthesia) the vertebræ down the middle of the back; then carefully pressed an extremely delicate scalpel down the fissure between the posterior cords, completely dividing the lamina longitudinally, with very little injury to the rest. The slight elasticity of the anterior parietes of the canal sufficed to bring the divided posterior parietes together; a fine needle and a little white silk nearly obliterated all external evidence of the lesion. To the usual allowance of milk I now added a moderate allowance of beef tea. The result was what I had anticipated, not an extirpation of the co-ordinate action of the two halves of the body, but a decided and general want of harmony in movements of the instincto-motor type, with evident loss (but not obliteration of it) to the faculty of associating the muscular movements of the hind legs. In my second experiment, by means of a delicately-curved blade, I pretty completely severed the anterior cords, with very trifling injury to the gray axis and the posterior, near the second cervical vertebra. The destruction of muscular movements of the ideo-motor type was not so complete as I had anticipated, although there was an obvious lack of immediate connection between the ideo-motor and the associated classes.

Suspecting from these data that the corpora quadrigemina (optic ganglia) were also concerned in locomotion, I severed the ribbon of fibers communicating between them and the central portion of the cerebellum, in a third animal, when, notwithstanding the integrity of the ideo-motor centers of the cerebellum, and the cord, the animal walked directly against obstacles placed in its way, and although it turned its head as usual, appeared to be incapable of motion except

directly forward. The eyes responded to the stimulus of light, but were fixed in a directly forward gaze. On applying the current of a small battery to these bodies in an unmutilated animal, the muscles of locomotion very decidedly responded to the stimulant, a fact which seems to me conclusive as to the influence of the ganglia of vision on the locomotive function. I then severed the band of fibers connecting them with the cerebellum, and the current was ineffective. This band is, therefore, rather an extension of the optic system to the cerebellum than a general commissure uniting the latter to the cerebrum. I will merely ask investigators to verify these facts, without entering into further description of them. According to Magendie, who regards the posterior white cord as a conductor of sensation and the anterior as appropriated to motion, the slightest puncture of the former elicits symptoms of intense suffering, whereas the anterior white cord manifests very little evidence of excited sensibility under similar circumstances, and the gray axis may be seriously lacerated without occasioning any evidences of pain.

*(To be concluded in October.)*

## BRAIN AND MIND.

### CHAPTER VII.—*Continued.*

#### IDEALITY.

THE situation of this organ is in the second frontal convolution of Ecker near the vertical frontal fissure. On the cranium its place is found in the temporal region of the frontal bone, directly above Constructiveness. (Fig. 17–21.) Dr. Gall called this the organ of Poetry, because he invariably found that the

Fig. 54.—IDEALITY LARGE.

region which it occupies was large in the heads of living poets whom he had the opportunity to examine, as well as in the pictures and busts of all who had been eminent for the gift of poesy. Dr. Spurzheim, however, considered it impossible "that poetry should be confined to a single organ," and after a careful analysis, declared its function to consist in giving to the mind inspiration, rapture, and exaltation of sentiment. Hence he named it Ideality; the capacity for forming ideals of beauty and perfection. In general terms the faculty may be designated as the sense of the beautiful, the poetical sentimental, since it imparts when active, elevation, refinement, taste, and a love of the beautiful in nature and art; and is essential to the musician, the painter, and the sculptor, as well as to the poet—giving to their productions an exquisiteness and finish which the other faculties, however perfect, could never produce.

"What are the flowers which deck the fields," Mr. Combe says very appropriately, "combining perfect elegance of form with the most exquisite loveliness, delicacy, and harmony of tint, but objects addressed purely to Ideality and the subordinate faculties of Coloring and Form? They enjoy not their beauty themselves, and afford neither food, raiment, nor protection to the corporeal frame of man; and on this account, some persons have been

led to view them as merely nature's vanities and shows, possessed of neither dignity nor utility. But the individual in whom Ideality is large, will in rapture say that these objects, and the lofty mountain, the deep glen, the roaring cataract, and all the varied loveliness of hill and dale, fountain and fresh shade, afford to him the banquet of the mind; that they pour into his soul a stream of pleasure so intense and yet so sure and elevated, that in comparison with it, all the gratifications of sense and animal propensity sink into insipidity and insignificance. In short, to the Phrenologist, the existence of this faculty in the mind, and of external objects fitted to gratify it, is one among numberless instances of the boundless beneficence of the Creator toward man; for it is a faculty purely of enjoyment—one whose use is to refine and exalt, and extend the range of our other powers, to confer on us higher susceptibilities of improvement, and a keener relish for all that is great and glorious in the universe."

In conformity with this view, the organ is deficient in barbarous and rude tribes of men and large in nations which have made the most advancement in civilization. It is small in atrocious criminals; and it has been observed that persons born in the lowest walks of life, whose talents and industry have raised them to wealth, are susceptible of refinement in manner, habit, and sentiment, in proportion to the development of this organ and that of Approbativeness; whereas if it be small, their primitive condition is likely to cling to them through life.

Dr. Gall observed this organ large in an insane patient, and indicated the fact to the physician of the hospital. The physician replied that the patient during his state of alienation continually employed himself in composing verses, some of which showed merit; yet he belonged to the lowest class and had received no education. Dr. Willis also mentions a patient, who, during his paroxysms of insanity, was conscious of the most delightful and elevated emotions, and wrote poetry and prose with great facility. This state of feeling always disappeared when the fit passed off.

Where Ideality is largely developed and the organs of the intellect are ill-balanced or insufficient, the person shows a want of judgment in appreciating the affairs of ordinary life. He appears to live in a sphere of his own, and invites censure or criticism because of his eccentricities of thought and act and his neglect of practical duty. Persons so constituted are often unhappy and dissatisfied because their actual experiences fall much short of their ideal notions of excellence and completeness.

### IMITATION.

The situation of this organ is marked upon the side of the top-head just above Ideality and a little forward. (See Fig. 17–22). In the brain its place appears to be in the second frontal convolution adjoining the vertical frontal fissure and lying against the sulcus which divides the second from the first frontal convolution. If it be large and Benevolence small, the head approaches flatness across the anterior coronal region; while large Benevolence with small Imitation imparts to the head in this region a slanting appearance, like the roof of a house.

Imitation gives the disposition to copy persons or things or to mimic, as in acting. It is essential in all occupations which have to do with working after

models, as well as to those intellectual employments concerned in the representation of the mental traits and manners of others.

Dr. Gall was led to the discovery of this organ by observing the peculiar configuration of the head of a friend who was remarkable for imitative talent. Supposing that there might be a relation between this form of head and the mental characteristic for which the gentleman was distinguished, Dr. Gall at once repaired to a deaf and dumb asylum where a pupil had attracted much attention by his astonishing powers of mimicry. At a little play which was performed in the institution, this boy had imitated so perfectly the gestures, gait, and looks of the director, inspector, physician, and surgeon of the establishment, that they were readily distinguished by the lookers-on. The education of the boy had been totally neglected, and nothing of the kind was expected from him. Dr. Gall found the same region of the head to be similarly developed in this boy as in his friend, and by many subsequent observations he established the organ and faculty.

Fig. 55.—Imitation Large.

The old writers on metaphysics generally admit a special faculty of Imitation, but have been disposed to give it a much wider field of action than Phrenologists attribute to it, since they appear to think the power of acquiring knowledge largely or entirely depends upon it, whereas observation shows that the kinds of knowledge are various, and that those who possess the most active imitative powers may not evince quickness of apprehension. A man may be very successful as an actor, but be far from remarkable for his knowledge of literature and science.

The ease with which some persons adapt themselves to the mood or manner of others and so form desirable associations or obtain their good will and co-operation, depends largely upon the possession of a liberal development of Imitation. Hence the faculty bears a very important relation to success in all the affairs of life which require personal communication of man with man.

Fig. 56.—Imitation Small.

The position of this organ indicates that its function is related naturally to the observance and expression of the moral and perfective attributes of human nature, and, therefore, it is obviously an element in the higher growth of man. In those organiza-

tions which are conspicuous for development of the moral sentiments, Imitation is usually well-marked. Dr. Brown says that it would seem as if "the Creator intended that the legitimate exercise of Imitation should be directed to the copying of virtuous actions and the enhancement of the effectual manifestation of the intellectual faculties.

MIRTHFULNESS.

This organ is also named Wit, and lies in the upper lateral portion of the forehead adjoining the temporal ridge of the cranium and between Causality and Ideality. (See Fig. 17–23). Its function is to impart to the mind a sense of what is witty, ludicrous, and incongruous. Upon its size depends the disposition to be humorous and to enjoy the comical and grotesque.

Fig. 57.—Mirthfulness Large.

The analysis of the part performed by this organ in mental affairs has been the theme of much discussion among Phrenological writers and others, some attributing to it a wider province than that of appreciating the mirthful, and, consequently, including it among the reasoning faculties. Mr. Combe considers the faculty from many sides in his "System," and coincides himself with the opinion of Dr. Spurzheim that it is concerned in the manifestation of any form of intellectual conception combined with the sentiment of the incongruous. In other words, that its function is to inspire witty and ludicrous associations of ideas. Like the other organs, its expression varies in accordance with the mental culture and the influence exercised upon it by other faculties.

Mirthfulness is a very important element in the mental constitution. It would be a dreary world if all men were habitually grave and solemn, and our social gatherings would be deprived of a large share of their pleasurable and even profitable influences if the humorous element were wanting. It imparts an exhilarating influence to mind and body, which is highly conducive to health, and we have Scriptural authority for saying, "A merry heart doeth good like a medicine," while Shakspeare adds his testimony, to the effect that "A merry heart lives long."

In the heads of those writers whose works are remarkable for humor and wit, like Sterne, Goldsmith, Sheridan, Benjamin Franklin, Joseph C. Neal, Mr. Clemens ("Mark Twain"), and in eminent comedians, the organ, or rather the region of the head in which it lies, is very prominent.

AMATIVENESS.

The most careful researches have indicated the cerebellum as the seat of the procreative instinct. The position of the cerebellum is shown in Fig. 11 lying directly under the posterior lobes of the cerebrum. (See also Fig. 17–1). Its size is measured by the peripheral expansion of the parts between and backward from the ears. A faculty or disposition is obviously essential to the continuance of animal life in its successive generations, and it is the function of Amativeness to inspire the sexual feeling incident to such continu-

ance. In the normal activity of this faculty there is nothing that is base or lewd. It exerts a pleasing influence upon the minds of the sexes in their association; awakening in each a kindly interest in all that concerns the other. "In this quiet and unobtrusive state of the feeling," says Mr. Scott, "there is nothing in the least gross or offensive to the most sensitive delicacy. So far the contrary, that the want of some feeling of this sort wherever it appears is a very palpable defect and a most unamiable trait of character. It softens all the proud, irascible, and antisocial principles of our nature in everything which regards the sex which is the object of it; and it increases the activity and force of all the kindly and benevolent affections. This explains many facts which appear in the mutual regards of the sexes toward each other. Men are, generally speaking, more generous and kind, more benevolent and charitable toward women than they are to men, or than women are to one another."

Fig. 58.—Amativeness Large.

In newly-born children the cerebellum is the least developed portion of the brain. Its weight then, as compared with the cerebrum, is as one to thirteen, fifteen, or twenty. It increases greatly in size at puberty, and attains its maximum between the ages of twenty and twenty-five. Its size then, in comparison with the cerebrum, is as one to eight. It is in general relatively smaller in females than in males. While there is much difference of opinion among physiologists with respect to

Fig. 59.—Amativeness Small.

the relation of the cerebellum to muscular movement or motory impulse, high authority, *extra* phrenological, seems to be in accord in locating the sexual propensity in some part of the cerebellum.

### PHILOPROGENITIVENESS.

This organ is marked in the general diagram as lying on the mesial line of the head just above the cerebellum. It occupies in the brain the lower occipital convolutions adjacent to the occipital protuberance of the cranium. Its function, as indicated by its name, is that of imparting an instinctive love of the young, especially of one's own children. It is adapted to the helplessness of infancy and the weakness and inexperience of childhood. Without the fostering care which this faculty inspires, the young of man and most of the lower animals would perish in their infancy, and their races would soon become extinct. But the Creator has made provision for the continuance of His creatures by endowing them not only with a powerful instinct of propa-

gation, but also with an intense love of offspring which leads them to the most self-sacrificing efforts in watching over, protecting, and providing for their progeny. Many animals, by nature most timid, become bold and dauntless when

Fig. 60.—PHILOPROGENITIVENESS LARGE.

their young are assailed, and the most ferocious possess a tenderness for their offspring which elicits the admiration of the observer. There is a pathos in the affectionate solicitude of the lioness and tigress for their cubs which has often turned the hunter from his purpose of destruction. The eagle will fight with desperate fierceness against the attempts of man to approach her nest when it contains a brood, and all are acquainted with the reckless audacity of the domestic fowl when she deems her chick in danger.

"It is a remarkable ordination of nature," says Mr. Combe, "that the direction of this feeling bears a reference to the weakness and helplessness of its objects rather than to any other of their physical or moral qualities. The mother dotes with fondest delight on her infant in the first months of its existence when it presents fewest attractions to other individuals; and her solicitude and affection are bestowed longest and most intensely on the feeblest member of her family."

This organ, as a rule, is much larger in women than in men, and in the females of all animals than in the males. There are, however, notable instances of deficiency of this organ even in women. Dr. Gall relates the case of a lady of Vienna who loved her husband tenderly, but who sent from home as soon as they were born all the nine children to whom she gave birth and for years never asked to see them. She was unable to account for this want of affection toward her offspring, and was somewhat ashamed of it. To satisfy her conscience, she insisted on her husband seeing them every day and taking charge of their education. Drs. Gall and Spurzheim found the organ deficient in twenty-five out of twenty-nine infanticides whose heads they had occasion to examine.

The skulls of the Esquimaux present a great prominence in the region of this organ, and many Arctic travelers have made mention of the ex-

Fig. 61.—HEAD OF A NEGRO.

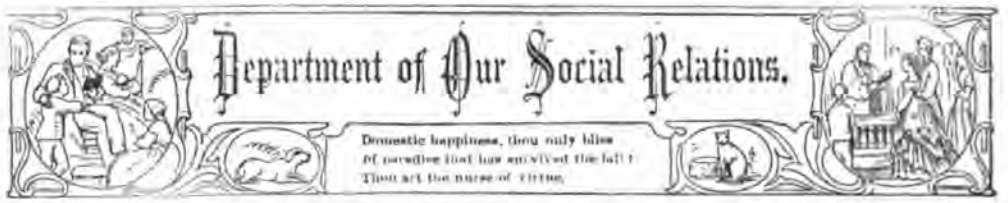
treme ardor of affection which they manifest toward their children. Captain Parry says, in speaking of these people: "Nothing, indeed, can well exceed the kindness with which they treat their children; and this trait in

their character deserves to be the more insisted on because it is in reality the only very amiable one which they possess."

Crantz's testimony is equally strong as to the manifestation of this faculty by this people. He says that "While you will scarce find a Greenlander do good to one another without the mercenary hope of some speedy retribution, there are, on the other hand, traces of a stronger love between parents and children and the many passions arising from it than there are among other nations. A mother can not suffer her child to be out of her sight, and many a mother has drowned herself because her child hath been drowned."

Like the inhabitants of the Arctic zone, the negroes of the torrid are remarkable for their parental affection, and the negro skull is equally remarkable for its occipital elongation or fullness. On the other hand, some of the uncivilized tribes show a decided lack of consideration for their young. Rev. J. G. Wood states that the native Sandwich Islanders are indifferent to their children, often leaving them to hunger and exposure through negligence. In the skull of this race the organ of Philoprogenitiveness is but moderately indicated, and signally deficient when compared with its development in the negro.

*(To be continued.)*




## WHY?

IT was such a bright, cheery sitting-room. The long, southern windows, draped only with lace curtains, admitted the full light of the clear June morning. The sunshine streamed unfrowned at across the warm-hued carpet. It shone on easy-chairs that had evidently been harbors of rest to many weary forms; it shone on bright summer landscapes hanging upon the walls; it shone through green leaves and vines that had gathered around the window to listen to the song of the happy little bird hanging in his cage, and collecting the yellow sunlight on his breast to pour it out of his throat in liquid melody; and above all, it shone on the matronly form and smiling face of Mrs. Clara Meadows, who sat with her basket of darning just behind the group of flowers.

She was by no means the least attractive object in the room. Fifty-five years of age and a grandmother, there were yet no wrinkles on cheek or forehead, except such jolly ones as smiles make. Her fair hair showed few threads of silver among the gold, and like her heart, seemed to reflect all the sunshine that fell to her share. Her dress of a soft, neutral tint was brightened by a blue ribbon at her throat; and altogether, she, with her room, seemed like some lovely *genre* picture, which might be appropriately called Contentment, or any name suggestive of peace of soul. Her very employment seemed to borrow a poetic grace from her surroundings, and suggested comfort, motherly care, and true womanly pride instead of poverty or homely economy.

And how well her name suited her character. Clara Meadows. Clara—clear, bright. Yes, through bright, sunny meadows her

pathway seemed to lead, if one judged of her lot by her countenance; and her favorite Scripture motto was, "The Lord is my shepherd, I shall not want. He maketh me to lie down in green pastures, He leadeth me beside the still waters."

As she darned her stockings this morning, she was thinking about a little poem she once read, likening life to a stocking which we are knitting, and which is ended when we finish off the toe. And she thought, "Many of us, I fear, get holes in our stockings before we 'toe them off,' and we have to wear them with holes, if some one does not take compassion on us and patch or darn them for us. Darns are not very ornamental in a stocking, nor in a life, but they are more ornamental and more comfortable than holes. A patched honor is better than a ragged one; a veracity that is darned and mended is more desirable than one that is all out at the heel."

At this point her musings were interrupted by the entrance of a neighbor, a woman of about her own age, but in personal appearance a contrast to herself.

While Mrs. Meadows seemed to radiate sunshine from hair, eyes, and smile, and even from her attire, Mrs. Unruh seemed to have absorbed all the light that ever fell upon her; absorbed, but never radiated or reflected any. From the sombre hue of her bonnet, down through her lustreless iron-gray hair, her faded brown eyes, her sallow, colorless face, and bloodless lips, to her dead-black dress and dull gray necktie, there was not a gleam of light or color, not a relieving tint to all this shadow and sombreness; and to judge from the discontented lines on face and forehead, her outward appearance was but the reflection of her inward moods.

Rachel Darke and Clara Spring had been schoolmates, and since marriage, near neighbors, and in a certain way friends in spite of the great dissimilarity of character. Mr. Unruh, Rachel's husband, was a man of business, a money-making man, whose thoughts were ever busy with plans and speculations, but who in a certain way enjoyed the elegance his wealth procured. Not in using it at home for personal comfort—Mrs. Unruh would scarcely permit that—but in displaying to admiring friends the fine furniture which adorned the palatial residence, which the architect, at his command, had planned and erected.

When Clara Spring married Arthur Meadows, people prophesied that they would never have anything, for he was only a poor school-teacher; but when, at the age of fifty, just ten years before our story opens, he died, he said to his wife, as he lay awaiting the coming of the last Messenger:

"People made a mistake in their prophesies, didn't they, darling? For we have had a great deal of comfort together, and we shall yet have an eternity of happiness in each other's society."

And though her life seemed more lonely after he was gone, yet these last words comforted her, and the sunlight of hope broke through and dispersed the clouds of sorrow.

"Good-morning, Clara," said Mrs. Unruh, as she entered the room. "You look as happy as ever. I'm sure you are not puzzling yourself over unanswerable 'Whys?' this morning. I wonder if everything in your life don't always come just as you expect and desire?"

Mrs. Meadows placed a chair for her guest as she replied:

"A moment's thought, my dear Rachel, would answer that wonderment for you. True, I expected for some time, but never desired my husband's death."

"Oh, I beg your pardon for my careless words, but I am in such a discontented mood this morning, and you always look so enviably happy, it almost seems as if your every wish must be gratified. I really don't see why it is that I never can have the things I most desire."

"Many people fancy, Rachel, that the wealthy Mrs. Unruh can have every wish fulfilled without any trouble, and yet it seems that you have learned that money will not buy contentment."

"No, money will not buy back the past, nor give to age the gifts and graces of youth. When I was young and had time and talent, I could not have opportunities.

Now I could have opportunities, but have neither time nor ability. I was down street this morning, and as I came home in the horse-car I saw a poor artist whom I really envied. His coat was ragged, and a great darn extended the whole length of his back, but he carried in his hand a package of canvases, on stretchers ready for work, and I thought how happy he is; in spite of rags and poverty he can create around him a world of loveliness, and forget the reality of life in the reality of beauty. Then I thought of Margaret Winslow, who went to Europe to study art, and became quite renowned as a painter. Why couldn't I have gone abroad to study? When we were at school together I know I had more ability in drawing than she had, but she obtained the opportunity which I am sure I could have improved as well as she did. I don't see why I should have all these desires for self-culture and never have an opportunity to gratify them. Why is it, do you suppose?"

"Your natural love for art certainly enables you to be a better judge of artistic productions, and you obtain more enjoyment from the study of a fine painting than if you had none of the natural gifts of an artist."

"I don't know," said Mrs. Unruh. "I do not see that the ability to get up a fine meal adds in the least to one's enjoyment in the eating of it. I'm sure I can relish a good dinner without wishing I were a good cook."

"Perhaps," said Mrs. Meadows, smiling, "it is because the opportunity to be a good cook was available in your younger days that you do not regard it as a lost opportunity. It is human nature to prize most highly the things which we can not obtain."

"Yes, I know that," replied Mrs. Unruh. "It was that disposition on the part of Eve that has caused us all so much sorrow. Like me, she was always asking 'Why?' and 'Why not?' I wish, though, that she had been content with the good things permitted her."

"We might not have been so much better off if she had. She desired knowledge, and risked something to obtain it, and this desire for knowledge, being transmitted to her children, has been one grand secret of the world's success. If we were always contented, where would be our progress?"

"Then you think there may possibly be a reason why I should have not been permitted to gratify my longings, and so become discontented? I can't see, though, what improvement I've made by being discontented. It seems to me I should have been much happier if I could have had what I so eagerly desired; and if happier, why not better in every respect?"

"Did you ever think that the mental gifts that we have may have been given us for some other purpose than to cultivate for our own enjoyment?"

"I'm sure I do not see of what value gifts can be if we can't have an opportunity to use them. Won't you explain yourself?"

"Perhaps I can best explain my meaning by relating an incident in my own life. A few months after I was married my dear old grandmother came to make me a visit. That visit has been of life-long benefit to me, for she taught me many valuable lessons, drawn from the lore of her own experience. One day, a few months before the birth of my oldest child, I was recounting to grandma some of my grievances. Said I:

"'I always thought that after I was married I would not give up my music; but see how it goes: day after day passes by and I can't get a chance to open the piano to practice, and at night Arthur likes to hear simple hymns, and it frets me to play them when I want to be practicing my Beethoven. I don't see why I should have such a love for the highest music and no chance to cultivate it.'

"Said grandma, in her quiet way:

"'Maybe that love was given you for your children more than for yourself.'

"'Why, how do you mean, grandma?' said I.

"'I mean that we can't give away what we have not got ourselves; and therefore what we have must have been given to us by some one who possessed it. Did you ever think that your mother had great musical ability?'

"'Why, no!' I replied. 'She never

played the piano. She had a sweet voice, I know, and used to sing to us children.'

"'Yes,' said grandma, 'her musical talent was mainly employed in lullabys, and so was mine, and yet we both possessed some of the musical ability of our ancestor, who was an organist, violinist, vocalist, and composer. We had no opportunity to cultivate this gift, but we kept it for you. You have had some chance to obtain a personal benefit from its possession. For this you should be thankful and not repine that you have not had more enjoyment from it. Look upon all your gifts, my daughter, as treasures entrusted to you for transmission to posterity, and not merely as means for your own personal pleasure.'

"'But,' said I, 'if I can not cultivate them, they must be wrapped in a napkin, whereas if I had opportunities I might increase my one talent to ten.'

"'That is true,' said grandma. 'If opportunities are given you, and you do not improve them, you are culpable; but if, having ability, you are yet Providentially denied its culture, you can not doubt that you are wisely denied. No one has opportunity to develop uniformly each talent they possess, and yet there must be a reason for their possessing it, and what better reason than that by its possession it may be transmitted, and some one who in the future inherits it may be able to develop it into something grand and noble. I had a friend who, in early girlhood, removed to the Far West with her parents. She was a girl of good natural ability, but in her Western home her educational advantages were few. She desired knowledge. She read eagerly the few books that fell in her way, and improved every opportunity to acquire general information, but many of her desires remained ungratified. She accepted her lot cheerfully, and often said to me: "Perhaps what I can not obtain may yet be granted to my children." And in this she was correct. Her sons and daughters inherited her love of learning, and she has lived to see each one of her gifts embodied in her children. Her oldest son has her musical talent. Her oldest daughter, her literary ability. And her youngest daughter seems to have inherited, with a marked increase, nearly all of the gifts which in the mother were, for lack of opportunity of cultivation, only latent. Often have I sat with her in her elegant parlor listening to the music, the recitations, and home theatricals of her family, and admiring the artistic productions of their skill which adorned the walls, and have heard her say: "How happy I am that God gave me abilities to transmit to my children. This is a part of my immortality. In them I live and shall live and improve forever."'

"Many times after this have I thought of my good grandmother's talk with me that day, and especially of her closing words:

"'My daughter, don't defraud your children before they are born.'

"She would not explain this remark to me, and I puzzled over it a good deal, but in time I came to have, I think, at least a partial comprehension of her meaning."

"Well, I'm sure I can not see what she meant," said Mrs. Unruh, "especially in this connection. If you haven't talents, you say, you can not transmit them, and if you possess them you will transmit them, and I should think that if you could cultivate them you'd transmit them in a still higher degree, and not being able to cultivate them, would in reality be defrauding your children. Seems to me that is an argument on my side."

"Yes, one might, at first glance, think so; but there are several views which may be taken of the subject. If a woman, having a gift or talent, without opportunity to develop it to the fullest extent, frets and worries over this inability, her child may possess her talent, but it may also possess such a discontented, unhappy disposition as to be utterly unable to make any real use of the talent. Look at Lucy Manson. Her mother, you know, had a good voice, but could not have training. She was always repining that she was deprived of musical culture. She would never sing without making so many apologies for herself because of this lack of training that one was wearied before she began, and did not listen half as leniently as if she had said less. Her great anxiety was that Lucy should be a

musician, and so she had her musical education begin very young. But with her mother's genius she had inherited her mother's petulance and discontented spirit. She found fault with her teachers. She was disinclined to do the hard work of laying the solid foundation of excellence. She could play so nicely by ear that she saw no need of playing by note, or drilling in scales and finger exercises. As she grew older she was very impatient of correction, and she has grown up to be a very self-willed, conceited young lady, with a fine voice, and yet, in spite of the best of opportunities, she has failed to improve them because of the lack of certain elements of character which are necessary to success in any field."

"Do you, then, consider her mother to blame for these defects of Lucy's character?" asked Mrs. Unruh.

"Why not?" said Mrs. Meadows. "We have the power to give evil as well as good gifts to our children, and our defects are as likely to be immortalized in our posterity as our virtues and graces."

"Well, in what other way do you find that mothers may defraud their children?" asked Mrs. Unruh.

"Let me illustrate again by the life of one of our friends. Mrs. Deal has wonderful skill as an artist, and some ability as a poet. Are her children inheritors of her talents?"

"Why, yes; they are all talented, but they haven't strength enough to do anything. They've as much as they can do merely to live."

"Then they were defrauded by not having physical endurance given to them, were they not?"

"But how was their mother to blame for that? She did not 'have the say', as to what their physical strength should be."

"Didn't she? Let us go back to our original proposition, that we can't give to another what we don't possess ourselves."

"That's it exactly. Mrs. Deal hadn't health herself, so she could not give it to her children."

"And that," said Mrs. Meadows, "is just where she defrauded her children in not having health to give them."

"Oh," said Mrs. Unruh, "I think, Clara, that is going a little too far. It is easy to say, 'She should have health,' but it is not in every one's power to be healthy."

"Perhaps not to be in perfect health, but Mrs. Deal could have done much more for her children in that respect than she did. You know what her life has been—one of fashionable dissipation from early girlhood. She herself was defrauded of physical stamina by her own mother, and she knew no better way of doing than the way in which she was brought up. I do not mean to say that she is morally guilty because her children are puny. She was ignorant; but ignorance, alas, does not save us from the penalty of violated physical law. Not one of her children was desired, and so they were defrauded of the loving welcome to life that the good mother gives to her little child. She took no special care of her health because of their coming. She kept just as late hours, ate just as stimulating and innutritious food, dressed as fashionably and unhealthfully, lived no more devoutly, or even cheerfully, and what wonder that the poor little ones have feeble bodies and unhealthfully active brains. The genius which they have inherited, with their delicate structures and small vitality, is like a devouring flame which will destroy the fragile house of clay or else shatter the beautiful mechanism of thought and reason and leave the mind a blank."

"Oh, dear me, Clara, you put a dreadful load of responsibility upon the shoulders of mothers. What appalling thing have you to say next? Why, just to think of it! We are to blame if our children are not smart, or healthy, or beautiful, too, I suppose; and we are to blame if they are smart, but too hateful or lazy to use their abilities? I am glad I did not believe anything of that sort."

"On the contrary," said Mrs. Meadows, "I think if every mother did believe fully and completely that the future welfare of her children is largely under her own control, she would have less reason for anxiety, and would be able to bear more courageously the hours of anxious waiting, knowing that Divine wisdom lays upon no

human being a responsibility greater than she is able to bear; and besides, she would feel how high is her position, how great her glory, in thus being entrusted with the molding of a life both for Time and Eternity."

"It is too much for a puny mortal," said Mrs. Unruh. "I am sure I could not bear it."

"But, can you not see, Rachel, how such views would increase woman's respect for herself; how it would ennoble her life, and how, instead of repining because of the interruption of her pleasures by the advent of maternity, she would rejoice in the thought of sending down to future generations the best elements of herself, both physical and mental? I have a friend who does not believe in the immortality of the soul. She says, 'My immortality is in my posterity. To my children I have transmitted my life, and through them it will go on forever. Insomuch as I am better and nobler, in that much will they be made better and nobler, and my immortality be more worth the having.' Now, while I believe with her in this earthly immortality for ourselves through our children, I carry it still farther, and hold that our heavenly immortality may be enhanced in happiness by having given a noble possibility on earth to those whose lives and opportunities are not bounded by Time, but to whom Death opens a boundless future of purest happiness."

"You do not, then, regard mental defects and physical deformities, disease and death, as Providential dispensations?"

"Yes and no. All of these things come in accordance with a law known or unknown, and as the law and the penalty are ordered by God, we may call them Providential dispensations. Just as we may say that it was a dispensation if a man were to fall into a stream and be drowned. He may have fallen in while endeavoring to rescue a child from death, but the nobleness of his motive did not annul the law, which is, that water, under certain circumstances, will destroy life. A man has a fever. There are laws which govern the propagation of the poison which produces fever, its introduction into his system, its growth, and its elimination from the system, and in accordance with those laws and their relation to his own vitality, he will die or recover. Was it Providential or not? Certainly it was. And yet a wider knowledge of sanitary laws might have prevented his having the fever, or having it, might have enabled him to recover. Law governs everything, great or small, and penalty follows disobedience; and this is the Divine plan, and therefore a Providential dispensation."

"It was, then, a Providential dispensation that I should have these desires, and also that I should have no opportunity to cultivate them?" said Mrs. Unruh.

"Certainly. The desires or talents came to you through the law of inheritance; the lack of opportunity was in accordance with the law of your surroundings; and if the All-Father had seen fit to give you opportunities, He could have done so without violating law."

"But as He did not give them to me, was I not justified in thinking those talents were not to be cultivated?"

"There are various ways of cultivating one's talents," said Mrs. Meadows, "and as you desired them to be also transmitted in a high degree to your children, it was your duty not to wrap them in a napkin and bury them."

"Tell me just what I ought to have done," said Mrs. Unruh.

"That is a difficult thing to do," said Mrs. Meadows; "for I might seem to be censuring you in the past."

"And now," said Mrs. Unruh, "it is too late to repair the error; but still I might be able to help some one else if I saw where I had made my mistakes."

"Your talent," said Mrs. Meadows, "was with your pencil. Did you practice drawing any after you were married?"

"No. I could not draw to my satisfaction. I could have no teacher, and so I did nothing with it, unless it was to grumble about it."

"Did you ever try to teach your children to draw simple objects on the slate, when they were little?"

"No, indeed. I wanted them to learn, and thought they ought to have a teacher; but as they could not then have one, they did not learn to draw, and that has always been a great sorrow to me, for Albert, I think, really had talent. Drawing was not taught in schools in those days."

"Couldn't you have taught them to draw straight lines, triangles, squares, and simple things as stools, chairs, or tables, and then leaves and flowers, cups and saucers, and so on?"

"Why, yes, I suppose I could."

"Then you would have been helping them and cultivating your own talents too. But when you looked at fine pictures, what were your thoughts?"

"Always rebellious that I could not have had advantages of study, and have been able to make beautiful pictures too. But what difference would it make to my children what I thought in looking at pictures?"

"If, in seeing things of beauty, you had made them a joy to you, had made them studies of form or color or composition, or if you had only made them ministers to your own happiness, your children would have been more apt to inherit from you a true artistic taste, a more perfect æsthetic nature than if you poisoned the stream of inspiration by unhappy and rebellious thoughts; do you not think so?"

"All this that you say, Clara, reminds me of a neighbor of ours when I was a child. Old Dr. Clark was the best physician in all that region. He had but one child, a daughter. Every one said what a pity that Ellen Clark was not a boy, so that she could take her father's practice when he died, and I think the old doctor sometimes felt so himself. Ellen seemed to inherit her father's love for medical studies; but it was then thought improper for women to know anything about physiology; and if any were so bold as to wish to have such knowledge, they were too modest to speak about it. Ellen and I were little girls together, and I remember she never played with her dolls as the rest of the girls did, in dressing and undressing them, but her children were always sick, and she was doctoring them. She was not a very successful physician, however, for her dollies always died, and then she would preach a funeral sermon over them. As she grew older, she used to go to her father's office when he was not there, and read his books. When he found it out, he forbade her going to his office, and said if the Lord had wanted her to be a doctor He would have made her a boy; and she said in reply that she didn't think the Lord showed very good sense to give her such a liking for medical studies if it was so very wrong for her to study them, and then she was punished for her irreverence. So she was educated like all the other girls, in the common branches and a few accomplishments; but after she was married she developed a marvelous talent for nursing, and used to be sent for far and wide, and the doctors all said that Mrs. Edson was worth more to the patient than the doctor himself. She got books, too, after she was married, and read a great deal, and really knew more than many of the M.D.'s of that time and place. She had quite a large family of girls; and I asked her one day what she would do if one of her daughters should want to study medicine as she did when she was a girl.

"'Do?' said she. 'Why, I'd give her every opportunity in my power, and bid her God-speed.'

"And so it turned out. Her eldest daughter, Mary, took to medicine, and after graduating at some fine school, went to a medical college, took a diploma, and now has a good practice in the West. Her second daughter had a theological turn of mind, and she is studying for the ministry, so that her talents *are* finding occupation now, are they not? I had not thought of it before in regard to the theological daughter, but I remember well the sermons Ellen used to preach over our poor dolls that died.

"Do you not, then, begin to see why we may have talents which we have no opportunity to cultivate, according to the generally received opinion of cultivation? We can always find some simple, perhaps, even, homely way of making them conduce to the happiness or well-being of ourselves and others, and thus we can pass them on to

the next generation unimpaired, and even to some extent improved by having been in our possession, and the world for all time is made the better for our having been entrusted with their keeping."

"Yes, Clara," said Mrs. Unruh, as she arose to take her departure. "I shall return home not one whit more satisfied than when I came in, but my dissatisfaction is changed. Then I found fault with every one but myself. Now I find fault with no one but myself, and for me now it is too late. Why is it that we can't learn our errors early enough in life to repair them?"

Mrs. Meadows smiled as she replied:

"You depart, Rachel, as you came, puzzling yourself over a 'Why?'"

MRS. CHILION B. ALLEN, M.D.

## MOUNT HOR.

THE accompanying engraving represents that singular peak in Arabia-petrea, or "stony" Arabia, which is called by the above name. It is regarded as the tallest summit among the mountains of Seir or Edom. Its towering mass is a landmark to the wanderer in the desert of rolling sand, which occupies so large a portion of the country. Dr. Stephens writes:

"If I had not visited the top of Mount Sinai, I should think that nothing could exceed the desolation of the view from the summit of Mount Hor. Its most striking objects being the dreary and ragged mountains of Seir, bare and naked of trees, and ever heaving their lofty summits to the skies as if in the vain and fruitless effort to excel the mighty pile on the top of which the high-priest of Israel—Aaron—was buried." In the twentieth chapter of Numbers an account is given of that very interesting occurrence in the wanderings of the Israelites, after their escape from Egypt, as follows:

"And the children of Israel, even the whole congregation, journeyed from Kadesh, and came unto Mount Hor.

"And the Lord spake unto Moses and Aaron in Mount Hor, by the coast of the land of Edom, saying,

"Aaron shall be gathered unto his people: for he shall not enter into the land which I have given unto the children of Israel, because ye rebelled against my word at the water of Meribah.

"Take Aaron and Eleazar his son, and bring them up unto Mount Hor;

"And strip Aaron of his garments, and put them upon Eleazar his son; and Aaron shall be gathered unto his people, and shall die there.

"And Moses did as the Lord commanded; and they went up into Mount Hor in the sight of all the congregation.

"And Moses stripped Aaron of his garments, and put them upon Eleazar his son; and Aaron died there in the top of the mount: and Moses and Eleazar came down from the mount.

"And when all the congregation saw that Aaron was dead, they mourned for Aaron thirty days, even all the house of Israel."

The name "Hor" appears to have been anciently given to the whole mountain range of Seir. And when superseded by the latter designation, continued to be preserved, and applied to the particular summit on which that great leader of Israel died. The elevation of Mount Hor above the Mediterranean is said to be nearly five thousand feet. From it Mount Sinai is clearly distinguishable on the south, while the boundless desert expands before the observer on every side. The supposed tomb of Aaron is shown by Mohammedan priests who live in the vicinity, and is inclosed by a small modern building, with a cupola such as usually covers the remains of Moslem saints. The rock system of this mountain is peculiar—in some particulars reminding the traveler of the country in some regions of our Rocky Mountains, particularly in Colorado. It offers an interesting field for the study of the geologist. All travelers mention with admiration the beautiful and varied appearance of the valleys and cliffs of that mountain range.

It should be stated that two accounts are given in Scripture, concerning the death and burial of Aaron. In the passage from Numbers which has been quoted it is sta-

ted that Aaron died on Mount Hor, but in Deuteronomy we are told that Aaron died in Mosera and was buried there. This discrepancy has occasioned a deal of comment. Dr. Wells, however, explains this anomaly by attributing it to error in transcribing, as in the text of the Samaritan Bible, or what is regarded as the old Hebrew text, the passage in Deuteronomy agrees with that in Numbers.

MOUNT HOR.

"WHAT is your secret?" asked a lady of Turner, the painter. He replied, "I have no secret, madam, but hard work." Said Dr. Arnold, "The difference between one man and another is not so much in talent as in energy." What produces the energy, Doctor?

# MY HOME KINDERGARTEN.

No. IV.

MY unvarying rule in teaching was that each bit of knowledge should be thoroughly mastered before passing to anything else; it saved time and insured thoroughness. Ralph, who came to us two years after Dora's birth, claimed a share of my time and thoughts, but as he was managed much as Dora had been, the only trouble was the added noise of the nursery and the demands of two upon my time.

When the study of arithmetic was commenced, the child had already learned to count objects, as beans, leaves, stones, etc., to the number of a hundred, and to make the figures representing these numbers; she could also add mentally considerable sums, having been taught by "littles," day after day, as a pastime.

Notation was quickly mastered; and when she could readily write numbers containing five places of figures, the principles of addition by "carrying" to the higher orders were taught, and ten examples for practice were given her each day, which were neatly written, added, and proved; for months she worked thus, then passed to the other fundamental rules until each was as thoroughly understood as a child can comprehend. It is lack of drill upon the elements that makes arithmetic so blind and intricate to most students. If each principle is comprehended and sufficient examples are performed to nail it down, it is learned forever, and serves as a stepping-stone to farther knowledge. In "denominate numbers" Dora weighed, measured, and counted different substances until thoroughly familiar with the whole process and meaning of reduction, and at thirteen years of age was an expert arithmetician.

The child was not allowed to undertake many branches of study at once; enough for a necessary variety, but not enough to distract and too greatly divide the attention. From five to seven years of age Dora learned the alphabet, to spell about a hundred words, and read fluently in words of one syllable; to tell quickly the notes upon the piano, to strike double notes and play the C scale, to draw straight lines, to distinguish colors and match shades, to name all common trees, shrubs, and flowers, to speak correctly, to sew quite neatly, and to observe accurately. From seven to nine years she learned to write quite neatly, to recite many pleasant poems and prose selections, to draw all possible combinations of short, straight lines, to read and spell words of two syllables, to run the major scales and play many exercises, besides a great amount of practical knowledge of vegetable, mineral, and animal productions, which can not be enumerated.

When nine years of age, Dora began arithmetic and composition, and her school-hours were increased to four. For themes in composition, my pupil took plants, trees, and houses; she would mention the parts of each and their uses; gradually she came to describe persons whom she knew, then she would write out in her own words incidents in the life of some individual, then simple stories, or letters describing her work, walks, and studies, and every day she wrote a list of words, nouns, adjectives, and verbs, that she might have them ready for use. I taught her to examine with care any object she described, and speak only of those prominent and peculiar points which would plainly define the object, leaving minor details to the imagination. I wished that the child should not make her descriptions tediously minute or prolix. The quality rather than the quantity of her writing was deemed of most importance.

Dora commenced no other branches until she was thirteen, then she spelled correctly, read well, wrote a neat hand, and drawing and music had become pastime to her; she was fully prepared to enter upon higher studies. She still read each day a short poem or prose article, dwelling upon any peculiar turn of expression, or new thought, also spelling unusual words, and writing a few lines for practice in chirography and composition, kept up the regular lessons in

music, drawing, and mental arithmetic, also commencing geography and grammar.

About this time I learned something of the science of mind as taught by Phrenology, and was gratified to know that my teachings had been in the right direction, cultivating first the perceptive faculties, deepening all impressions by repetition, training the affectional and moral nature in conjunction with the physical and intellectual in order to produce a full, well-rounded development of the whole nature. The classification of the faculties of the mind was of great use to me in understanding the mentality of my children, and showing me how to improve the qualities they had, and how to develop those of which only germs existed.

It did not seem necessary or wise that Dora should cumber her mind with all the details set down in modern geography. After learning the preliminary definitions, she passed to the study of the five great land divisions and the oceans, drawing maps of each until she could delineate them off-hand from memory, then she learned in the same manner their subdivisions, the great cities, the great rivers, ranges of mountains and volcanoes, then seas, bays, and islands; lastly she studied concerning the governments, religion, manners, and national peculiarities of each country. Then she read accounts of celebrated localities, descriptions of Niagara Falls, the Natural Bridge, Mammoth Cave, the Grotto of Antiparos, the Alhambra, the Pyramids, etc. This served to enliven and freshen her study, and she acquired in a year more real geographical knowledge than students usually gain in a half-dozen years.

The method of learning grammar which Dora pursued was simple yet thorough: first oral definitions of the parts of speech so perfectly comprehended that she could tell them at a glance, then knowledge of subject, predicate, and object, and the use and office of adjuncts, finally syntactical parsing, and acquaintance with "fine-print" notes; these last were made a particular object of study and thought, as in them all the subtleties and niceties of grammatical knowledge are collected. Rhetoric followed grammar, and was rendered a very fascinating study by the selection of fine poems, narratives, and essays illustrating different rhetorical points.

As French is the polite "court" language of nearly all nations, and as all who travel in Europe must understand it in order to enjoy and profit by a foreign tour, I thought it best Dora should acquire it, not that there seemed any certainty of her taking a foreign tour, but she might; there was abundant opportunity to learn, and it would be an elegant accomplishment; true, I sacrificed a new dress the year she commenced, a new bonnet the following season, but I did not over-value dress when the good of others weighed against it. Monsieur L. was engaged, for I would not trust myself, as time and disuse had dulled the edge of my French accent. During his lessons I remained in the room, attended carefully to his pronunciation, studied each lesson, and thus fitted myself to assist Dora and teach the younger children. Now at the close of her thirteenth year Dora's father called upon her to read aloud nearly every evening, and she read so clearly and with such excellent tone and emphasis that he preferred hearing her to reading himself. In addition to French, music, drawing, and composition, she studied algebra and rhetoric.

The other children were not neglected because I speak only of Dora. The methods described were so effectual in advancing and unfolding her mind that I pursued much the same with their education. Neither were social duties neglected. Wednesday afternoons and Thursday evenings were devoted to receiving friendly calls, Saturday afternoons to returning them. All household duties that recurred regularly had certain hours allotted to them; thus by mapping out my time, and taking care of our health, so we need not lose time or vigor by sickness, I did not experience the interruptions so many complain of who try teaching their own children, and often relinquish the attempt in despair of "finding time." Nobody will "find time" who seeks it in the careless manner so many order their lives, never having a certain time for the performance of fixed duties. The fashion many ladies have of receiving and paying calls

any and every day of the week is a means of wasting much time. Every lady should have set times of receiving and returning visits. There is too much of that soulless round of calling, where half the callers hope those they call upon may be out, and half who are out are glad they missed the visit. Every mistress of a house might have semi-monthly evening gatherings or receptions, when all with whom she exchanges calls should consider themselves privileged to come and spend an informal, social evening, where conversation, music, and quadrilles even are the amusements, and light, plain refreshments are placed upon a sideboard or table for any who chose to partake.

Cards should be banished; in themselves harmless, they have become so debased by association with thieves, drunkards, and gamblers, that anybody ought to feel almost insulted by their appearance in her presence. "Fancy" dances are indecent. Why should a man hold a lady in his arms, his embrace in a public gathering, in the dance, when the same thing, offered in a private parlor, would rightly be deemed an insult? Every one takes a mental coloring or taint from association; we should "beware even the appearance of evil." Many argue that these things being harmless in themselves can not be wrong if not abused. If not actually wrong, they have always been associated with the bad; none would adopt a style of dress or ornament that was notoriously the badge of the notoriously bad; why then adopt their amusements? Quadrille dancing is not objectionable; the young must have some sprightly amusement—active natures demand it; this is decorous and graceful, and at proper, healthful hours, may be indulged. But it may be said the taste for dancing once acquired will not stop here; true, if children are brought up as eye-servants, they will undoubtedly disregard your wishes and advice, but if they become thoroughly impressed with the truth that excess in dancing is immodest and wrong, they will avoid it as they avoid other wrong deeds.

Dora was endowed with a good constitution, and had enjoyed uniform good health. She was not obliged to intermit her studies while passing into womanhood. I watched her carefully, required only short lessons when it seemed best; for, regarding health as beyond price, I would not impose upon the unfolding maiden, tasks that would too much weary and perplex her. Mind and body are then in a transition state, from which they emerge either strengthened and improved or weakened and debilitated. The health, consequently the happiness and life of many young girls is often completely wrecked during this portion of their lives. If girls fully comprehended the danger to their health and beauty by careless exposure in "low-neck" dresses, light slippers, and gossamer stockings in the dead of winter, they would certainly be content to leave summer dress for summer days.

After Dora had finished algebra and rhetoric, she took up English literature, American history, geometry, and the sciences in the most careful, intelligent way, writing abstracts, biographies, and essays upon these various subjects, making them really and wholly her own by the thoroughness with which she studied and thought.

When Dora's nineteenth birth-day came it was celebrated by a birth-night festival, in which she was duly ushered into society. How charmingly she looked, smiled, and danced! I was almost proud of my darling. How much nearer was she to me and I to her, than most mothers and daughters. I had not only been to her all a mother generally is, but I had been beside companion, friend, teacher. Our minds and hearts were more closely united and understood by each other than they could have been under any other circumstances. "She is as good as beautiful," I whispered to myself when her floating figure moved in the dance. Dressed in a gleaming white fabric, with her brown curls upon her shoulders, and the soft color rising and fading as she moved or rested, the happy, innocent eyes turned again and again toward her parents. I had reason to think her beautiful. But other eyes than mine sought her face, looking after her, and a jealous pang shot through my heart at the thought, "She will learn to love some of those who are gathering round her, and I shall lose my flower, my loved one." I

almost wished I had kept her at her books; she was happy and content, but here there was danger. Leaving the parlors and the house, I sought refuge in the garden, but still the dancing-music smote upon my ear, while bitter tears coursed down my cheeks; my husband following, gently chid me. "Was it not the fate of all mothers to have their children turn to other loves? Did I not the same? Had I loved or honored parents less, that I had loved him more?" Somewhat calmed, I returned to the entertainment of our guests, but a shadow had fallen upon my heart. I clung to my daughter's love, trying by every means to wind myself deeper and deeper into her heart. I entered into the lists against that unknown one who should dispute with me my daughter's best affections. She was lovely in heart and mind as in features. Her affectional and moral nature had been as carefully trained as had her intellectual nature. She was kind, thoughtful of others' comfort and pleasure, ready to deny herself for others' good, sympathizing with the poor, the unhappy, and the wrong-doer, always mild, amiable, and tender-hearted, soft-voiced and sweet-mannered, who would not have felt a pang at the thought that lovely and loving as she was she was all the more susceptible to shipwreck from an ill marriage.

AMELIA V. PETIT.


True philosophy is a revelation of the Divine will manifested in creation; it harmonizes with all truth, and can not with impunity be neglected.

## JEAN L. E. MEISSONIER,

### THE CELEBRATED FIGURE PAINTER.

YEARS ago the late Mr. A. T. Stewart, of New York, purchased a picture in Europe entitled "Eighteen Hundred and Seven," a battle piece, having for its leading feature Napoleon I. on horseback surrounded by his staff. The importation of that picture made no little stir in artistic circles on account of the very large price which the merchant-prince paid for it—upwards of $60,000. Of the painter of that picture, whose name stands at the head of this sketch, we have now somewhat to say. At first, however, with regard to his Phrenology.

The engraving, said to be a good likeness of the artist, shows a combination of the mental and motive temperaments, with a fair support from the vital. The mental temperament gives him clearness, the motive temperament imparts strength and intensity, while the vital temperament gives that sustaining power which enables the mind and the muscles to work with vigor toward any desired object. That portrait is full of character and talent. Positiveness is written all over it. Everything about that organization is endowed with emphasis; his every movement and word, all his thoughts and purposes are as positive as the clenched fist may be said to be as compared with the open hand.

The features are fine, yet strong. The great elevation of the nose, with its finely-cut outline, means earnestness, courage, enthusiasm, and that right-onwardness of spirit which goes from premise to conclu-

sion as straight and as quickly as possible. His very salutations are dogmatical; his persuasions are mandatory; his requests are commands; even his gentleness is so full of vigor and nervous earnestness that people submit to his suggestions rather than contend against his will. If he were dancing, his partner would feel compelled to conform to every motion of his; if he were walking, he would seem to be the master of the promenade. A horse driven by him, if it were a horse from the livery stable, accustomed to being driven by all sorts of men, would instantly recognize his authority and consent to work all day freely without the whip; would pick up his feet and put himself on his best behavior. There would be such an intimation to the sensitive, experienced horse that would teach him there was power behind him, and that obedience was the only law for that day.

The eye is full, sharp, dark, piercing; his perceptions are intense and clear; his power of expression in words is at once copious and terse; every sentence has grip, every statement is a conclusion. He would have made a fine linguist, and so have used language as a teacher that would have been fraught with meaning. He is almost too positive for a teacher, yet he would express so much and so clearly that his words would be very instructive. If he had been a dramatist instead of an artist, in another direction, he would doubtless have taken the highest rank.

He appreciates character; is a critic of a high order; detecting excellences or errors and flaws in everything that he comes in contact with. He has a high temper, yet rarely has a quarrel with those who are acquainted with him, because it is natural for those who know him to conciliate him. He molds and fashions whatever is around him to his own purposes and will, and people adapt themselves to him as water does to the ship which plows through it.

He is a man of courage, ambition, determination. His firmness and courage combined with his ambition would lead him to aspire to anything he desires. He is not the one to wait for an invitation, but pushes forward and onward with an independence which is sometimes regarded as audacious.

He does not appear to be wanting in respect for age and sacred subjects; has reverence for power and authority where he recognizes it as being superior to himself; but when moving among men whom he considers not his equals or superiors, he acts with a spirit of authority or of patronizing condescension — rarely as a co-equal. Among his equals he wishes to rise to a superior position; among inferiors he is willing they should feel the difference between himself and them. In the presence of those who in any respect are his superiors he is respectful and conciliating, unless they undertake to make him feel their power, and then he would confront sovereignty or ignore it. He is warm in his friendships, bitter in his hatred, earnest in his opposition, cordial in his support of what he believes to deserve it; in fact, he is sharp-cornered on every side, and is probably regarded erratic and singular. In his professional line and in every line he works according to his own plan and purpose; does not copy or conform, but absorbs what he likes and sends it out with his own sign-manual upon it.

As in oratory some men have a style of their own which defies many of the canons of criticism, yet because of its brilliancy and intensity enables them to win laurels everywhere, so in art a man organized like this will make his own style and command for it the respect of the world. In looking at that face and constitution, studying its temperament and quality, we think of steel springs and fiddle-strings—whatever has positiveness combined with elasticity. He is organized on the high-pressure system, and yet he is able to hold his power within his own control. He never loses his poise or the mastery of his position. The hammer and file of the blacksmith mold and fashion the dense yet malleable material on which they work; so some natures retain their own individualism and subordinate everything with which they come in contact, and that which can not be thus subjugated they avoid. Consequently, wherever they work they make their mark. Lord Wellington, Carlyle, and Edwin Forrest, though differing in the line of their thoughts as widely as possible, had each this characteristic—force, positiveness, individualism—and though perhaps not great in all respects, not full-orbed and complete, yet were so positive as to make a mark in history and command the respect and the memory of mankind.

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JEAN LOUIS ERNEST MEISSONIER was born in Lyons, France, in 1811 or 1813—the precise date not being known, it seems, as authorities differ. He commenced the study of art early in life, having shown a decided predilection for it; was sent to Paris for the purpose, and there received instruction from M. Leon Colmiet and others. In 1836 he exhibited a picture entitled "Little Messenger," which drew attention to his pecu-

liar characteristics as a painter. Devoting himself to one class of treatment he has become perhaps the most popular and the best paid of living French painters, and is said to have done more than any other artist for the maintenance or rather preëminence of the *genre* school. Comparatively few of his works have been brought to this country, except, however, in engraving or photograph. His most characteristic features are smallness of canvas and great delicacy and finish in execution. The artist's own claims to fame rest upon the fineness or closeness of his observation and his manual skill, and so uncommon are these qualities, and so high the degree of excellence to which he has brought them, that he stands unrivaled in his own department among the painters of the world.

His canvases rarely exceed twenty inches square—even where numerous figures make up a group. His figures are portraits faithful to life. It is said that his fidelity in this respect was attained from the habit of sketching the subjects life-size first. Among his best known pictures are "The Chess Players," "The Reader," "A Game of Piquet," "The Painter in his Studio," "The Skittle Players," "The Body-guard," and "The Reading at Diderot's." Some historical works have been wrought out by him, to wit: "The Emperor at Solferino;" "The Charge of Cavalry," which was sold for something like $30,000 and is now owned by a gentleman of Cincinnati; "A Barricade, June, 1848;" "Eighteen Hundred and Seven," which was purchased by Mr. Stewart, had been sold while in an unfinished condition to an Englishman for two hundred thousand francs, but on the offer of a hundred thousand francs more by Mr. Stewart's agent, Meissonier sold the subject again, but is said to regret the transaction—not so much on the score of its irregularity as that in his opinion it was taken to a country where there is little appreciation for the high grades of art. It is said that at the sale of a part of Mr. Stewart's collection, which occurred soon after his death, "1807" was secured by an English purchaser.

Meissonier has designed for several publications, notably, Balzac's "Comedie Humaine" and "Paul and Virginia." In 1846 he was made a knight of the Legion of Honor, in 1863 a member of the French Institute, and has also been honored by several decorations of a character very highly esteemed in Europe, and which are the gifts of royalty. It is said that notwithstanding his great pecuniary success and renown, Meissonier exhibits a keen jealousy of his competitors in art, and even resorts to very questionable methods for their subordination. His friends and pupils never ask him his opinion respecting any other painter. The artists of France as a class are esteemed for courtesy and complaisance, but M. Meissonier is an exception to the rule; many incidents being related of his rudeness and even insolence.

## SOME EXPERIMENTS IN MAGNETISM.

WHEN first the PHRENOLOGICAL JOURNAL began to convey to the minds of the general public its strong practical truths and significant suggestions, it aroused in country towns and villages an interest that led to experiments, the results of which were valuable for their trustworthy character.

The JOURNAL gave to the inhabitants of many rural districts their first definite idea of the nature of mesmerism, psychology, etc., and, "for the fun of the thing," experiments were tried, which often resulted in phenomena strange and startling, which students and thinkers found themselves puzzled to explain. Facts of Phrenology were often demonstrated in a manner which forever set at rest all doubts of their truth in the mind of every candid observer.

A gentleman now living in New York city, but formerly a resident of Granville, Washington Co., N. Y., instituted a series of experiments in what was called mesmerism. He discovered that he had strong magnetic power of his own, and he was careful in the selection of subjects. He un-

dertook nothing of the kind except in his own house or in the houses of personal friends, and being a man of unquestioned veracity, a good deal of interest was for the time aroused by his investigations, which continued from the year 1848 until 1852, and perhaps later. One of his first subjects was a man of strong and well-developed physique, tall and straight, with fair complexion, light eyes, and sandy hair. This gentleman was well known among his friends as a great lover of mirth and sharp at repartee. He had no confidence in the power of any man "to put *him* to sleep." The operator soon discovered, however, that he was a good subject and could be readily controlled. He was first made to perform various antics by the exercise of will. Next the operator excited different organs of the subject's brain by rubbing his fingers over them, and the response was directly manifest by his becoming excessively devotional, affectionate, or combative, as the case might be.

The skeptic, even at this late day, is wont to exclaim: "Oh, it was but the operator's mind; specific organs had nothing to do with it. As the operator *willed*, so the subject performed." True! it was as he willed, and as he did not will also, for in attempting to excite the organ of Secretiveness, the operator once made a mistake and rubbed his fingers over Combativeness, when instantly the subject, with clenched fist, drew back his arm for a blow, which was only averted by the operator's arousing his own will power in time to stop the arm, which he did, leaving the man in a fierce, pugnacious attitude, but unable to move. When brought back to his normal condition the gentleman would not believe that he had been unconscious or that he had been performing the feats which were ascribed to him; he again asserted that no man could put *him* into a mesmeric sleep.

In order to convince him, and perhaps with a little desire to return some of the many practical jokes which he was wont to play upon his friends, the operator invited him to a test in a parlor filled with their mutual friends. A few moments sufficed to render him oblivious to everything except the will of the magnetizer, who then told him that he was in a flood of water, and that there was no escape for him but to swim. At once he placed himself in a swimming attitude on the parlor carpet, and while he was going through with what seemed to be a powerful physical effort, with his limbs extended and with panting breath, he was brought to consciousness amid roars of laughter, and in a position which nothing would, voluntarily, have induced him to assume. He would never again allow himself to become magnetized.

The next subject of this experimenter was a young girl, a member of his own family, and one in whose truthfulness he could place perfect confidence. The results varied little from the former, being confined mostly to the phrenological tests. At one time he made the same mistake in his endeavor to excite Secretiveness which he had made with the former subject by carelessly passing his fingers across Combativeness instead, when instantly she leveled a blow at his head which he was not quick enough to escape. He aroused the action of Tune in the same way, when his intention was to excite some other organ, and though in her normal condition she never sang, she now at once essayed a song. At several different times he aroused the action of Philoprogenitiveness, and the effort she would make to pet or caress some object, and the maternal character of her movements, left no doubt in the minds of those present as to the accuracy of the location of that organ as laid down in the received scheme.

About this time or a little later people became much interested in the lectures of Dr. Lewis, a colored gentleman (afterward professor in a college at Edinburgh, Scotland), who passed through the country. His themes were Phrenology and Magnetism. He had a very strong magnetic power, often bringing a large portion of his audience under control during his lecture. A meeting was arranged between these two strong magnetists, but no results followed except that each could for a time see rings of light around the eyes of the other. The lectures of Dr. Lewis, however, gave a new impetus to investigation, and in every village store

or other place where men gathered, no question was more common than, "Had your head examined?" or, "What do you think of this magnetizing business?" and everybody wanted to go to New York and have their heads examined. To-day may be found in many homes, put away among old choice papers, charts that were given by the "Fowlers" during those few years of excitement upon these themes.

Soon after the visit of Dr. Lewis, the operator before mentioned instituted some experiments in the home of his uncle, Mr. Allen Gifford, who lived some forty miles south of Granville, in the town of Easton. This gentleman had a family of grown sons who, like himself, were men of intelligence and integrity. In their family was an Irishman by the name of Timothy, and their efforts proved him to be a remarkable subject. At first, when he had once yielded to the spell, he was perfectly rigid, could neither move nor speak. The operator made a few passes upward, which relaxed the muscles, and he was then found able to respond to questions. He was in a profound mesmeric sleep, but would go wheresoever the magnetizer directed. He sent him to his old home in Ireland, but the poor fellow seemed very unhappy to find himself back in that famine-stricken country. He talked with his mother, asking her questions, and repeating what he said were her replies.

Perhaps nothing in the history of this science is more remarkable than the sequel of this experiment, for upon that very night that mother saw her son Timothy and talked with him, the conversation corresponding with the notes made by this experimenter at the time. This is proven from the fact that a letter written by her directly after was received by a friend of Timotny, in which she makes the statement, and asking if Timothy was dead, for she could in no other way interpret the strange visit of her son.

Upon that same evening another visit into the privacy of an Irish home was made. Mike was a man employed in the family of the operator forty miles away; he had never been in the town of Easton, nor had Timothy ever been in Granville; yet Timothy, upon being requested, went to the home of Mike's mother in Kilkenny, and in answer to questions, told who were there, asserting positively that there were two sisters living and that a third was lying a corpse in the house. This statement could not be credited, for Mike had often spoken to his employer of two sisters, but never of a third. Timothy, however, was fixed, and they could not induce him to change the statement. Again, he exclaimed that they had just received a pile of money, and that they must be very careful or they would lose it. Over and over he seemed to enjoin it upon them to let no one know they had the money or they would lose it. The experimenter knew that Mike had just sent home twelve pounds, but did not suppose it had yet reached its destination. So he inquired how much money had they? "Twelve pounds," said Tim. Now the sequel to this also presents a puzzle. For it was afterward ascertained that upon that night the money was received, and upon that night an adopted daughter of the old lady was lying dead in the house. And more than this, the priest learned of the arrival of this sum of money and took nearly all from them, it was alleged, for some debt.

Now what power in the human mind enabled this ignorant man to present himself to his mother, or to converse with strangers thousands of miles away, read their secrets, and *foretell* the fate of their money? Verily, facts are stranger than fiction.

MRS. HELEN M. SLOCUM.

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HOW ONE'S PEN TRAVELS.—Some one has been calculating the length of line a writer makes upon his paper, and gives us these interesting results:

A rapid penman can write thirty words in a minute. To do this he must draw his pen through the space of a rod, 16½ feet. In forty minutes his pen travels a furlong. We make on an average sixteen curves or turns of the pen in writing each word. Writing thirty words in a minute, we must make 480 to each minute; in an hour, 28,800; in a day of only five hours 144,000;

and in a year of 300 days, 43,200,000. The man who made 1,000,000 strokes with his pen in a month was not at all remarkable. Many men, newspaper writers, for instance, make 4,000,000. Here we have, in the aggregate, a mark of 300 miles long to be traced on paper by such a writer in a year. In making each letter of the ordinary alphabet we must make from three to seven turns of the pen, or an average of three and a half to four. Perhaps some equally ingenious person will next inform us how much ink a journalist can save by not dotting his "i's."

## THE YOUTHFUL HEART.

Ah! the shadows come and go,
Smiling Yes, and frowning No.
Hark! the whispers, soft and low,
Round the youthful heart!

Wonder, with great eyes, is there;
Hope, with laughing, careless air,
But no withering, gnawing care,
Near the youthful heart!

Love, with every dimpled smile;
Love, with every cunning wile;
Love, who loiters all the while,
With the youthful heart!

Curious, stretching out in space,
Blending mystery with grace.
Ah! what future thou wouldst trace,
Throbbing, youthful heart!

Musings pensive, soft and mild;
Actions often grand or wild,
When by sordid thoughts beguiled,
Is the youthful heart?

Ah! the Gods are ever young!
So the ancient poets sung.
Choicest gifts on earth they flung
For the youthful heart!

GRACE H. HORR.

RUSSIAN LOSSES IN THE LATE WAR.—We have it from official returns that the Russian losses in killed and wounded during the late war amount to 89,304 officers and men. Among these were 10 generals killed and 11 wounded. One Prince of the Imperial family, and 34 members of the higher nobility of Russia fell on the field of battle. Of the wounded, 36,824 are perfectly recovered, and 10,000 more will, it is expected, be able to leave the hospitals during the next few weeks; 121 men were prisoners in the hands of the Turks when the armistice was concluded. The proportion of killed and wounded to the total number engaged was very large; one out of every six men who went into action being either injured or left dead on the field of battle. In the great actions of the late Franco-German war the proportion of killed and wounded to men engaged was very nearly the same: being one-sixth in the battles of Wörth and Spicheren, and one-eighth in the battle of Vionville or Mars-le-Tour. At Gravelotte the proportion was only one-eleventh, and at Weissenberg one-twelfth. In some of the earlier battles of the present century, however, the losses were far heavier in proportion to the numbers engaged; amounting to one-third of the entire forces engaged at Salamanca, Borodino, and Eylau, to one-fourth at Marengo, and to one-fifth at Friedland. Further, the returns show that one out of every el ven wounded men received into the Russian hospitals died from the effects of the injuries received.

During the whole campaign, it is added, only two men were punished with death: one for the crime of desertion, the other for robbery, accompanied with violence. On the other hand, 20,000 rewards were given in the form of decorations, promotions, or awards of money, the 8th corps, which so long held and defended the Schipka Pass, receiving the greatest proportion.


## LYING FALLOW.

THE following is a literal report of a conversation, taken down stenographically, between two ladies; both of them intellectually above the average, wide awake, and one a literary woman:

"Oh, Mrs. Hill! how comfortable you look! I wish I could find time to lounge as you do."

"Well, there is another couch, Mrs. Vale, and I should be delighted to have you spend the morning with me"

"Oh, you're very kind! but I have run over now in a great hurry to see if you will be kind enough to loan me the pattern of your new wrapper. I have a dress-maker."

"Mary"—this to a servant dusting the bureau—"open the lower drawer and give Mrs. Vale the package marked 2." Mary produced it.

"You don't seem to have as much writing to do as you used, Mrs. Hill."

"Oh, yes! quite as much."

"Are you ill, then?"

"Never was better in my life. I am simply lazy."

"I don't write, to be sure; but if I should lie down in the forenoon I should expect everything to go to destruction. I don't find any time to be lazy."

"I *make* time for that especial purpose, calculating as much for the idle hours as the busy ones."

"But don't you constantly feel as if you ought to be at work?"

"Not at all. I feel I ought to be indolent because I *want* to be indolent."

"That is a very pleasant theory, surely; but what if my husband, instead of going to his business in the morning, should say, 'I think I won't go to work, to-day. I feel like being lazy'?"

"It might mean temporary disaster to your husband's affairs, because he had not previously made arrangements for such relaxation. A half hour spent in preparing for the rest he stands so much in need of, would enable him to take it; and an occasional day of uninterrupted quiet and freedom from the strain of business would give him firmer muscles, better digestion, and, my dear Mrs Vale, a longer life."

"Why, if my husband is obliged to stay home from the office a single day on account of illness, he is the most nervous man you can imagine. He knows things won't go on properly. Why, I'd rather take care of a whole orphan asylum than him at such times."

"Precisely. Your husband has made himself a pivot round which the complicated machinery of his business must revolve. Possessed with the idea that no one else can do his work or take his place in an emergency, it is quite natural he should be nervous; but, Mrs. Vale, this nervous apprehension is entirely the result of your husband's egotism."

"What! You are quite mistaken. Mr.

Vale hasn't sufficient self-esteem to keep him comfortable."

"Except in his business. There he is the all-competent and the all-powerful. Had your husband begun by training his clerks and subordinates to assume the responsibilities belonging to their several positions, his routine labor—that which wears the nerves and undermines the brain—would have been materially simplified. Now he is the frictional part of the machinery. Like two-thirds of our business men—yes, seven-eighths—he's a bundle of screws, levers, over-shot wheels, valves, clamps, stocks, briefs, red tape, and a million other things representing care and nerve drain. Do you know how common that dreadful disease, softening of the brain, is becoming among business men? It is attributable to no other fact than the ones I have just mentioned, and can be summed up in two words, nerve tapping."

"What is the remedy?"

"Education. I teach my children to be industrious, and I also instruct them how to be restful, or lazy, as my neighbors would doubtless call it. If business men could be made to see the error of their ways, and induced to turn round and begin anew, not only would *they* reap the physical and spiritual benefits, but their children and grandchildren would step into an inheritance of nerves which would redeem the race. I mean, my dear Mrs. Vale, if the mothers of the race do their part also."

"Oh, dear! It is so hard to tell what one's duty really is. I don't see how I could possibly shirk one bit of my work or do a stroke less. You talk about making time to be lazy. I infer from that, that you have finished your engagements and have no especial literary work for to-day."

"On the contrary, I have an unpostponable engagement. It is now eleven o'clock, and by to-morrow morning at eight I must have at least two columns of matter ready for the printer. After you go I shall doubtless sleep till lunch time, for I am in the extreme of laziness to-day. After lunch I shall read Dickens and laugh till my oatmeal is digested. Then I shall take a bath, and if my matter is not safely tucked into an envelope by dinner-time, I shall be greatly mistaken."

"What will you do this evening?"

"Play some game with my husband or read aloud to him while he lounges, or entertain company or something equally agreeable."

"When do you darn your stockings?"

"That don't belong to my department. My chambermaid is perfectly trained to all such work."

"When do you make your cake and fine pastry?"

"Never, unless I am expecting a guest addicted to such stuff. Then I do my best to give her what she's accustomed to."

"But why, if you think such things injurious, do you not make a stand against them, and give your guest what you think would be good for her?"

"Possibly, because I haven't sufficient moral courage, and possibly because it is easier to make a lemon meringue or a rich cake than to preach to my guest with the probability of being entirely misunderstood."

"You will pardon me, I hope, but I'm trying to discover where you get so much time for recuperation. Your children are always well dressed, and you all look as if you had enough to eat. Now, it honestly takes me all my time to make, mend, pick up, and cook."

"And yet you have two servants!"

"Yes."

"Then it is your own fault."

"Will you be kind enough to tell me your ordinary bill of fare? I do not mean this as an impertinence, but just to see where the difference lies."

"This morning we had for breakfast a sirloin steak, roast potatoes, boiled hominy, and milk. This noon we eat oatmeal and milk, perhaps some bread and butter. For dinner we are to have boiled mutton with egg sauce, potatoes, peas, with bread and butter, and apple and quince marmalade, and plenty of milk for the children."

"And dessert?"

"No dessert."

"We are to have vermicelli soup, roast beef, chicken salad, oyster patties, batter pudding, and cream meringue. It will take

me at least two hours this afternoon to do my part of the work in the kitchen. And you will have nothing to do there?"

"Absolutely nothing; and with all the added expense, and added labor of your most elaborate dinner, I wouldn't change my plain and inexpensive one for a dozen such."

"What would you advise me to do?"

"Whatever seemeth to you wisest and most desirable. You began elaborately. I began plainly, first for hygienic reasons, next for economical ones, the economy both of time and money. I want to live and be a comfort to my husband and children, and I want them to live to be a comfort to each other and to me. No other way of living would accomplish this, therefore a plain table and plain clothes, and plenty of time to lie fallow." ELEANOR KIRK.

## AGUE-AND-FEVER.

PATHOLOGY—CAUSES—TREATMENT.

INQUIRY has been made lately with regard to the nature and treatment of what is commonly termed "fever and ague." In some districts the disorder is simply "chills." As the ague usually precedes the fever, it is properly named "ague-and-fever." This disorder is so prevalent in the United States, particularly in the South and West, that nearly every one who has arrived at years of discretion knows something of its symptoms and of the mode of treatment in vogue with physicians who use drugs. Briefly, then, we will say that ague-and-fever belongs to the intermittent class of fevers. "Intermittent," because the attack appears at certain times—it may be every day, or every second day or third day—and names are given by medicists which distinguish the different types, according to the recurrence of the fever. If the attack be renewed once in twenty-four hours, it is termed *quotidian;* if it appear at intervals of forty-eight hours, it is termed *tertian;* and if at intervals of seventy-two hours, *quartan.* The most common of these types is the tertian; the subject expecting his "chill" about noon of alternate days. There is scarcely any disease of which the phenomena are more definite and similar. The first symptom which heralds its approach is a creeping chilliness along the spine, with a sense of languor or fatigue, then the countenance becomes pale, the cheeks sink in, the nails assume a livid or blue hue, the temperature of the skin falls, and a feeling of great coldness supervenes, with shiverings and rigor, during which the teeth will even chatter. These symptoms may be accompanied by nausea at the stomach, a sense of oppression at the heart and lungs, but these last symptoms are related chiefly to cases of long standing, and then, particularly, the patient complains of heaviness and pain in the head and temples, of an aching back, and a disagreeable taste in the mouth. The tongue is usually white and more or less coated with morbid secretions. Sometimes there is vomiting, which tends to shorten the chill period. If the pulse be examined it will be found constricted, small, weak, and accelerated. The patient also feels dull; mentally lacking the disposition to talk or think.

This condition having lasted from half an hour to two hours—in rare cases it may occupy even four—the next stage or *fever* begins with flashes of heat alternating with rigors. The temperature of the skin begins rapidly to rise, accompanied with congestion and flushing of the face and a sharp headache, with throbbing temples as an accompaniment. The pulse becomes strong and full, and now the hot stage is fairly developed, which may last two or three hours or more. The appearance of perspiration on the forehead and breast announces the termination of the fever. It extends rapidly over the whole body and becomes profuse. Now the headache subsides and all the previous symptoms disappear. The bodily functions appear to resume their wonted tone and a sense of exhaustion only remains, which may be in a great part removed by a period of sleep, into which the

patient often falls. The duration of the attack is from four to sixteen hours; it commonly lasts about six.

Agues of the tertian and quotidian types are most prevalent in spring; adults of a bilious temperament being the most subject to them. The quartan type is most prevalent in the fall, and appears more frequently in young persons and women—those with strongly-marked vital or lymphatic temperaments. The tertian is the mildest and most amenable to treatment; sometimes disappearing of itself, particularly on the approach of winter. A quartan ague is tenacious, and is removed with difficulty, particularly if the attacks occur in the autumn, and then it is likely to continue till the following spring.

These types are convertible—one running into another—and may lead to sub-types termed "irregular" and "complicated," which are more difficult to cure, as they indicate degeneration on the part of the organs, to the disturbance of which the disease was originally due. When long periods occur between the attacks, the patient has a good prospect for recovery; but if during them he complain of debility, heaviness of head, coldness, want of appetite, etc., it is almost certain that the formative stage of the fever is still present—or, in other words, the condition of his system is favorable to the continuance of the disease.

There is one form of ague-and-fever, known chiefly in the South and called dumb-ague, which is an imperfectly-developed type of intermittent, and leads to unfortunate constitutional results if it be not checked by proper treatment. In general, however, the subject of the "chills"—whether the attacks be every day or alternate days or every third day—becomes weaker, loses flesh, and acquires a complexion of a sallow hue. There may in time ensue obstructions and enlargements in the visceral organs. In this country enlargements of the spleen and liver, with loss of stomach power, are common as the resultants of protracted subjection to the disease.

Intermittent fever can seldom continue long, even if it be of the mildest form, without considerably impairing the vital energy and the vascular tone of the viscera—those of the abdomen especially, hence out of it comes complications which may result in remittent or continuous fevers, more or less inflammation and structural change, dropsical effusion, dysentery, diarrhœa, congestion of the liver, lungs, and heart, and even rupture of the spleen. At the outset, however, ague-and-fever is related to functional disorder of the liver and spleen; those organs failing to perform their office normally, occasion derangement in the circulatory and glandular apparatus.

### CAUSES.

A word now as to the causes of this disease. We find that it is the most prevalent in miasmatic localities, new regions of country, low, damp, marshy neighborhoods, where there is dense foliage, decomposing vegetation, stagnant water. The best authorities attribute to atmospheric malaria its exciting cause, but there are predisposing causes, such as improprieties in diet and life: in the great majority of cases the system has been rendered susceptible to malarious impressions, and a consequent production of the disease by irregularity of habit. The eating of food which tends to impair the digestion, render the liver torpid, and interrupt the activity of the assimilative function, conduces to the appearance of intermittent fever. We have known persons to live in malarious neighborhoods without suffering a single attack. They were careful in their diet, ate nourishing food, avoided crowding their stomachs, dressed in such a way as to promote the free action of the skin and thorough circulation, avoided exposure to the dampness of early morning and night; kept their nervous system quiet, exercised a good deal during the day in vocations of an out-door nature, without overworking, and so found health and enjoyment where their neighbors appeared to find only sickness and discontent.

### TREATMENT.

The older methods of treatment include diaphoretics and warm fomentations in the cold stage, and refrigerants in the warm; blood-letting, emetics, mustard poultices,

opium, turpentine, quinine, calomel, camphor, ammonia, arsenic, etc. Quinine is very extensively used to-day, and is regarded by a large class of practitioners as specific. Some physicians of the old school, however, condemn it as productive of constitutional derangement, even more serious than intermittent fever itself. The best remedial agencies are water and hygiene. Stoll many years ago recommended hot fomentations, among other things, for the cold stage, and cold applications in the hot, in which respects he was correct. It is of primary importance that the diet of a patient should have a special regard to nutrition and ready digestion, nothing being eaten which naturally tends to obstruct the excretory ducts. Fruit, fresh or cooked plainly, is found to be conducive to good effects in this respect. All stimulating drinks, and food which serves to heat the blood or disturb the circulation or irritate the brain and nervous system, should be carefully avoided. Comparatively little or no flesh meat should be eaten during the time of treatment. The bowels should be well cleansed, enemas of tepid water being taken where there is constipation, nausea, or bitterness in the mouth; an occasional warm-water emetic is beneficial at any stage, while a daily towel bath with water at a temperature of about sixty-five degrees, followed by a brisk rub from head to foot, will stimulate the action of the skin, and distribute the circulation. When the attack comes on, and in the cold stage, warm water of about a hundred degrees should be applied freely to the trunk and feet, and during the hot or fever stage, water of about sixty or sixty-five degrees should be abundantly poured upon the body—the head, however, being wrapped in cloths wrung out of cold water to reduce the congestion and headache. For the convenient application of water in the treatment of this disorder, we know no more convenient apparatus than the Fever-cot which has been described in these pages. In fact it is specially adapted to bathing purposes, being so constructed that water may be applied to any part freely without occasioning the discomfort and trouble of wet bed-clothes, and water dripping at different points upon the floor.

This cot is now used in several hospitals and private houses, and is very warmly commended by physicians. The patient should be removed from a malarious quarter; should exercise a little daily in the open air, but be discreet in the use of his strength, reserving for the use of lungs, liver, heart, etc., the larger share of his physical vigor, that they may be well supported in their efforts to acquire their normal tone and vigor.

## LOW BEDSTEADS.

"THE higher you get, the purer the air;" so says an eminent scientist and physician.

Upon what principle, then, of hygiene or humanity are constructed the low modern bedsteads? Not that we would see in their place the unwieldy four-posters of our grandmothers' times — stepladders would then become indispensable; but a good sensible height, say two and a half feet from the floor, where one can breathe something beside the impurities just above the floor, especially if it be carpeted with a woolen one, which should never be found in sleeping rooms, matting or hemp being far preferable, with, in winter, a warm rug at the bedside.

If not for health's sake, for humanity's, I would that all these low modern affairs were replaced with higher ones; that those long-suffering creatures, nurses, might not have their lives shortened, as their bodies have to be, with the bending down and lifting of their charges. For the sick themselves I feel stifled, as I see them "low-lying," boarded in all around, in a fashionable bedstead.

It would seem that all informed upon the benefits of pure air in sleeping rooms need not be told how these bedsteads hold, in the embrace of high head, foot, and side boards, the impure emanations of the body.

A few years ago, a neighbor of mine died of consumption on one of these beds. She

had for nurse a younger sister, a tall, slender girl, and as I watched the painful efforts of that devoted sister, to give ease to the sick one, the bending of her poor aching back nearly to the floor, in giving medicines or adjusting pillows, until at last she had to go down upon her knees a half hour at a time, to bathe and minister to the wasting one, I felt like anathematizing the bedstead and the maker thereof. Though the most patient of nurses, that poor girl admitted to me that her two months of nursing had seemed to take years out of her life.

While the sick are ever with us, and the hard duties of nurses indispensable, *ought* we not to see that those duties are made as easy as possible? Why sneer, oh men, at the stupid fashion of "pull-back" dresses, when you manufacture such *pull-down* bedsteads?

Then there are the poor chambermaids of our large hotels and boarding-houses. Think of the weariness, after mounting flights of stairs, of bending to the making of dozens of beds just above the floor. These chambermaids are humble individuals; the great world in its search for large fields for its charitable operations may almost scorn such humble affairs, none the less are they God's suffering children that it is some one's duty to look after. Let it be mine to speak a word for "the least" of them.

How this generation declaims against the old-fashioned trundle-beds. And they were "black holes" of Calcutta in impurity. But what have we gained but trundle-beds for adults as well as children?

Delicately-painted chestnut and maple, massive black walnut ones, with headboards like Monadnock towering aloft. Oh, the gloomy things down under the windows; why, I would not exchange my simple cottage bedstead with low open-railed head and foot boards, from which on waking I can look out over hill and valley, and in which sleeping is made healthful and waking glorious, for any price. Why, that outside view is worth all the painted landscapes on the foot-boards of all the modern bedsteads in use.

Now, dear friends, manufacturers of these things, who may have your stores packed with them, don't scowl! Can't you raise their bottoms, and so send out upon the community something less injurious, something less painted and trimmed, if it must be, but more healthful? Think of your poorer brethren and their burdens, and seek to lift their bedsteads and burdens a little. COUSIN CONSTANCE.

## MEDICAL SCHOLARSHIP.

A MOVEMENT has been under way for some time which has our cordial assent, and doubtless that of the community at large. We allude to the effort on the part of leading physicians to improve the tone and character of the medical profession in the United States by insisting upon a higher grade of scholarship in the applicant for admission to the medical schools, and a more extended and thorough study of the different branches constituting a medical course, than has been the custom to require as conditions for a degree and license. In no department of affairs connected with every-day life is there more need of reform than in the medical. So easy has been the method of obtaining a diploma from chartered institutions, that hundreds of untrained and avaricious men have obtained authority to practice their ignorance and quackery upon the public, and with impunity torture and poison the unfortunate ones who seek help and health at their hands. It is strange that the public did not rise in its might long ago and demand justice in the punishment of the knaves who not only trifle with the lives of people, but do it brazenly, and with the assistance even of newspaper publishers.

The American Academy of Medicine demands as a requisite to membership into its order, that the applicant shall have had six years collegiate or academic training and three years of study under proper medical

guidance. Harvard University, appreciative of the want of competent physicians, has raised its standard of requirements for graduating, and other institutions have followed, or will soon follow, Harvard's lead. With a better knowledge of their business, which includes, of course, all valuable sanitary methods, physicians will give more satisfaction to their patients, and the profession at large will soon recover its lost ground in the confidence of the public.

## MRS. BODKINSON'S DAUGHTER JANE'S BABY.

"Why, how do ye do, Mrs. Potter, I'm glad you have called to-day;
I'm awfully tickled to see you—Come in, and sit down, I pray.
I went, as you know, on a visit, to stay for a month with Jane,
She lives in the city of Portland, 'way down in the State of Maine.

"She's got a wee chunk of a baby—a girl, you must know, at that;
The dear little innocent darlin'—I never saw one so fat.
But take off your things, and I'll tell you the whole of their goings on;
They treated me just like a stranger, and Jane, she was worse than John.

"From six in the mornin' I traveled until it was nearly five;
They jolted me so that I reckoned I'd never come out alive;
And little I thought, as I journeyed, my visit would fruitless be,
Or that I was goin' to Portland such ignorant folks to see.

"I went with my heart overflowin' with love for the little dear,
And took it some cakes and some candies I'd bought before leaving here.
Of course, I was met at the depot by John, in his snow-white vest,
And Jane, too, I found, on the door-step, all smiles, in a cashmere dressed.

"Soon as the greetin' was over, I asked for my darlin' pet,
And Jane, goin' into the bedroom, says, 'Mother, she's sleepin' yet.'
Says I, 'I am goin' to kiss her—that's why I come all this way.'
Says Jane, 'I am sorry you can not—to-morrow I guess you may.'

"'O pshaw!' says I, and determined to kiss the little one—when
Her husband came into the room, with more airs than a dozen men.
Says he, 'You had better retire, and leave the dear child to sleep,
That baby must not be disturbed! is a rule we try to keep.'

"The rest of the evenin' passed slowly, though John did the best he could
To make things nice-like and pleasant—but 'twasn't a bit of good;
I wouldn't quite swallow such treatment, and so I told John and Jane.
Why, gracious! when she was a baby I've took her up time and again.

"I'd only to hum a low ditty, while time with the cradle I'd keep,
And that, or a spoonful of syrup, was sure to send her to sleep.
But they, law! they aint got a cradle, and John thinks it's awful smart;
And Jane, with a little conceited grin, just up and takes his part.

"When the next night come, what fine doin's! Says I, 'Why, for mercy's sake!
You never undress the dear child, and put it to bed awake?'
But Jane, with a smile most provokin', says she, 'It's our reg'lar rule.'
Says I, 'You're a hard-hearted creature, and act like a stupid fool.'

"'Why, mother!' says she, 'mayn't we bring up our babe in the way that's best?
It only wants nourishment, exercise, water, and air and rest.'
Did ever you hear all your life through, such a monstrous speech as that?
It struck me all in a heap. One would think they were rearin' a cat.

"And what do you think every mornin' that poor little thing went through?
'Twas bathed all over in water! 'twould have killed either me or you.
And as for the cakes and the candies I took for my own grandchild,
They actually said it was trash which all babies should be denied.

"I've tried, but no use, to account for their doin's, so odd and queer;
But of one thing I'm quite certain, that baby won't live a year.
A week in their house was enough; it showed me their goin's on;
I was afraid that somethin' would happen; they'll be sorry—that Jane and John."

THOS. R. THOMPSON.

# NOTES IN SCIENCE AND AGRICULTURE.

**The English Scientists and** PHRENOLOGY.—The *Daily Chronicle* of London has the following paragraph among its reports for June 21st:

"Last night a meeting of the Psychological Society was held at the Hall, Chandos Street; Mr. Serjeant Cox in the chair. Mr. Coffin resumed the debate on the paper by Mr. Serjeant Cox, entitled 'The Theory of Phrenology,' delivered at a former meeting. He said that there could be no doubt as to the brain being the seat of the soul, and it was connected largely with the phenomena of the senses. It was often said that the heart was the seat of the tender impulses of nature, in the same way as it was held in former times that some of the feelings were secreted in the intestines. Consciousness and the mind could not be examined, because they could not retain them in the body when it underwent examination, and after life, these two processes of thought disappeared. It was often asked whether consciousness was a mere function of the nervous substances of the brain, or whether it was some independent substance that was only known through the action of the brain. It was an old idea that all the thoughts were mixed up together in the brain; but that supposition was now dispelled, as our feelings were materially acted upon by the nervous system. Phrenology was supposed by some to be opposed to medical and anatomical observation; but that was not the case, as the new science largely supported it. When Phrenology was in its early stage it was supposed to be opposed to all religious belief and supported materialism and fatalism views. Now that idea was soon dispelled as the study of the subject progressed, and now it was admitted to be the organology of the mind It was admitted that every small portion of the brain was divided into individual proclivities of the organ. On the examination of the head the character of the individual could be ascertained to a great extent, in the same way as it was discovered by Gall that prominent eyes was an indication of the power of language and the ability with which the party could retain what he had learned. Phrenology divided the brain into three divisions—intellect, feeling or sentiment, and will. Gall divided the brain into two parts, viz.: intellectual power and propensities; but to that division Combe subdivided the latter into sentiment or emotion and propensities. The broadly laid-down principles of modern Phrenologists could not be made to agree with respect to the formation of the human brain with that of the lower animals, as the faculties were reversed. That the brain was the instrument of the mind there could not be a doubt, as was seen in every human being, and then psychological truth slipped in and helped to show that the brain was the medium by which the thoughts, feelings, and emotions of men were made known. The debate was continued by other members, and at the close, a vote of thanks was accorded to the chairman; it being the last meeting of the season."

**Transmission of Color in Man.**—In M. Victor Maignan's "Aux Antilles" (In the Antilles) are some interesting accounts of how color or complexion is affected by a crossing of the races. He says:

"The child of colored parents of different tints—such as a quadroon and mulatto, or mulatto and black—will be nearer the tint of the darker parent. If both parents are of the same color, the child will be a shade darker; and, singularly enough, the second child will be darker than the first, the third darker than the second, and so on to the last. In other words, a colored community left to itself is fatally destined to return to the original African black after a limited number of generations. Thus, while each new alliance with an individual of pure Caucasian blood brings the negro a step nearer to the white standard, the reverse is the case the moment the Caucasian element is withheld, as the color retrógrades from light to dark.

"A curious proof of this is found in observations made during some time in one of the islands. A mulatto woman had a female child by a white man; this young girl gave birth to a quadroon by a white father, and this recrossing with the white race was kept up for six generations. An identical process of recrossing had been simultaneously noticed in another plantation. The children resulting from the seventh crossing in both of these families were of remarkable physical beauty; they had blonde hair; their complexion was of such transparent fairness that they might have been taken for Albinos but for the vigor and gracefulness of their limbs and their brilliant intellect. The most experienced eye could not have detected in them the slightest indication of their African origin. They intermarried. Their children were dark-complexioned, and the children of their children are very dark mulattoes.

"This inexorable law of nature is given as one of the principal reasons why the Creoles refuse to intermarry with families who have the faintest tinge of negro blood in their veins, though their skin may be as fair as that of Europeans. The Creoles wish their posterity to remain what they themselves are—white."

**How Much Rum is Drank.**—The Moffett Liquor Register is teaching the people of Virginia some sober truths. The *Lexington Gazette* is startled by the revelation that in that place, with a population of less than 2,900, the liquor sold and taxed amounts to $25,979 a year, or more than double the

whole county levy for roads, schools and carrying on the county government. It sensibly adds: "If we can stop this drain upon our wealth, all other burdens will be but as a drop in the bucket."

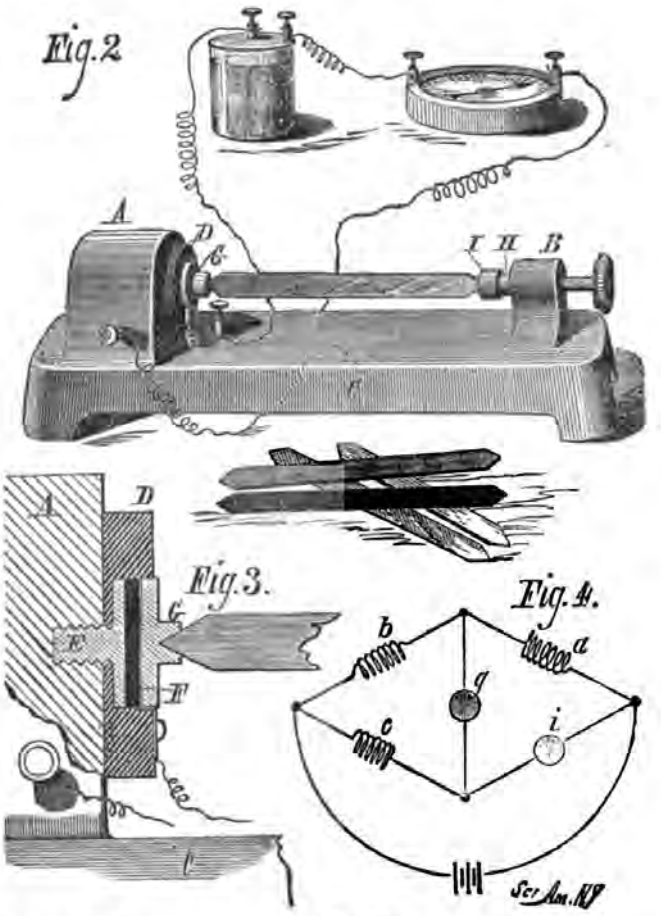
**The Tasimeter,** another of Mr. Edison's inventions, is designed to indicate minute variations of temperature, and is the outcome of Mr. Edison's experiments with his carbon telephone. It consists of a rigid iron frame for holding a disk of carbon which is placed between two platinum surfaces—one fixed, the other movable—and in a device for holding the object to be tested (see Figs. 2, 3, 4), so that the pressure resulting from the expansion of the object acts upon the carbon.

In the illustrations it will be seen that two stout posts, A, B, project from the rigid base piece, C. A vulcanite disk, D, is secured to the post, A, by the platinum-headed screw, E—the head of which rests at the bottom of a circular cavity in the center of the disk. In this cavity, and in contact with the head of the screw, E, the carbon disk, F, is placed. Upon the outer face of the carbon is a disk of platinum foil, which is in electrical communication with the battery. A metallic holder, G, is placed in contact with the platinum disk to receive one end of the strip of whatever material may be employed to operate the instrument.

The post, B, is about four inches from the post, A, and contains a screw-acted follower, H, which carries a holder, I, between which and the holder, G, is placed a strip of any substance whose expansibility it is desired to exhibit. The post, A, is put in electrical communication with a galvanometer, and the galvanometer is connected with the battery. The strip of the substance to be tested is put unde a small initial pressure, which deflects the galvanometer needle a few degrees from the neutral point, and its position when at rest is noted. Thereafter the slightest subsequent expansion or contraction of the strip will be indicated by the movement of the galvanometer needle. A thin strip of hard rubber, placed in the instrument, is found to exhibit extreme sensitiveness to variations of temperature—it being expanded by heat from the hand when that is placed near the rubber—the expansion causing the galvanometer needle to move through several degrees. A strip of mica is also sensibly affected by the heat of the hand, and a strip of gelatin is instantly expanded by moisture from a dampened piece of paper, although held off two or three inches.

These indications are given by an ordinary galvanometer, arranged in connection with the tasimeter, as in Fig. 1. But for more delicate investigations it is connected with a Thomson's reflecting galvanometer, and the current is regulated by a Wheatstone's bridge and a rheostat, so that the resistance on both sides of the galvanometer is equal, and the light-pencil from the reflector falls on 0° of the scale. The principle is illustrated by the diagram, Fig. 4. Here the galvanometer is at *g*, and the instrument which is at *i* is adjusted, say, for example, to ten ohms resistance. At *a*, *b*, and *c* the resistance is the same. An increase or diminution of the pressure on the carbon button by an infinitesimal expansion or contraction of the substance under test is indicated on the scale of the galvanometer.

Among the uses to which the tasimeter may be employed, one of the more important




THE TASIMETER.

is in astronomical observations; its extreme delicacy even extending to a fifty-thousandth of a degree, Fahrenheit's scale, and being capable of measuring variations in the heat of star-spectra, as well as that of planetary radiation. Mr. Edison accompanied an astronomical party to Colorado, where observations were taken of the July eclipse of the sun, and the tasimeter was brought into use to ascertain the nature of the corona.

**Narrow-gauge Railroads.**—The *Railway Age* has compiled a table, giving the localities, names, and length of all the narrow-gauge railroads in the United States, to which is appended a summary here copied:

| | Miles. | | Miles. |
|---|---|---|---|
| Alabama | 5.50 | Nevada | 119.75 |
| Arkansas | 73.00 | Nebraska | 26.00 |
| California | 210.05 | New Jersey | 63.17 |
| Colorado | 370.05 | New York | 56.29 |
| Georgia | 90.00 | North Carolina | 21.50 |
| Illinois | 214.50 | Ohio | 317.19 |
| Indiana | 63.86 | Pennsylvania | 265.43 |
| Iowa | 156 43 | South Carolina | 45.00 |
| Kansas | 84.00 | Tennessee | 36.41 |
| Kentucky | 23.50 | Texas | 164.50 |
| Louisiana | 5.50 | Utah | 186.75 |
| Maine | 15.00 | Virginia | 53.00 |
| Massachusetts | 34.16 | Washington Ter. | 53.50 |
| Michigan | 40.50 | West Virginia | 19.40 |
| Minnesota | 30.00 | Wisconsin | 75.50 |
| Mississippi | 81.00 | | |
| Missouri | 81.35 | Total in U. S. | 3,082.24 |

Remarking upon the table, the *Age* says: "All of the roads named are three-feet gauge, except thirteen of three feet six inches, one of three feet four inches, one of two feet, and one of ten inches. The three-feet measure is, therefore, the established narrow gauge of the country; although it is not at all improbable that a still narrower gauge may come into use to some extent."

**Antiseptic Chambers.**—Mr. W. Thompson, F.R.S., of Manchester, England, proposes the construction of a room, or series of rooms, for surgical purposes, that shall contain only air that has been so thoroughly filtered through layers of cotton-wool as to be entirely free from germ-life. His experiments have satisfied him that such a plan is feasible.

**A Model Barn.**—This plan, which was put into practice by an intelligent farmer, appears to us to possess several features of value. He says: "With a farm of 174 acres, I had an old style barn, with barn floor in the center, stabling for thirteen head of cattle in stanchions. I put a fourteen feet addition to each end of this barn, and it now stands 40 x 78. Fourteen feet off for barn floor leaves two rows of stabling, each fifty feet long, which stables (in stanchions) seventeen head of cattle each, or thirty-four in all. The haymow is in the center of the barn, the stabling on each side, the cattle facing the mow, which is fourteen feet wide by fifty long, same length as the stabling. The other addition is a back stable 14 x 40; can be used for sheep, or partitioned off to suit your convenience. Above the stabling the barn is all free for storing hay or grain."

**Through the liberality of a** friend of intelligent agriculture, the trustees of the Massachusetts Agricultural College are able to offer a free scholarship (worth $300) to every worthy student who may apply for admission to the next Freshman class. The Entrance Examination in Arithmetic, Grammar, Geography, United States History, and Algebra to Quadratic Equations, will be held August 29th.

## ASPIRATION---RETROSPECT.

### BOYHOOD.

An old farm-house, with meadows wide
And sweet with clover on each side;
A bright-eyed boy who looks from out
The door with woodbine wreathed about,
And wishes this one thought all day:
"Oh! if I could but fly away
From this dull spot the world to see,
How happy, happy, happy,
How happy I would be."

### MANHOOD.

Amid the city's constant din,
A man who round the world has been,
Is thinking, thinking all day long:
"Oh! if I could only trace once more
The field-path to the farm-house door,
The old green meadows could I see,
How happy, happy, happy,
How happy I would be!"

**Agriculture and National Decline.**—History advises us that the broken-down nations began their decline at the moment when agriculture was abandoned to serviles and slaves. Previous to the commencement of Roman decay, the most exalted citizens were proud of the farmer's occupation as of the soldier's profession. A famous author tells us that "Ancus Martius recommended to the people, as next to religion in importance, the culture of the soil and the care of the flocks." The most illustrious names in Roman history are of men who had attained excellence in the art of raising particular cattle, or of cultivating particular plants—such as Lentulus, Piso, Cicero, Cincinnatus, Terrannus, etc. In the country, no distinction existed, and the titles of noble and plebeian, which prevailed in the city, were merged in the general name of laborer. In those ages of simplicity the Romans were all laborers, and the laborers were all soldiers. It is to this union that the fine sentiment of patriotism and virtue so frequently displayed in their history may be ascribed; because, as Cicero justly observed, a country life may be regarded as the school of simplicity, temperance, and justice. The simple and moral life produced by agricultural occupations continued until the introduction of luxury into the State—that bane of national and individual virtue.


MRS. C. FOWLER WELLS, *Proprietor.*
H. S. DRAYTON, A.M., *Editor.* N. SIZER, *Associate.*

NEW YORK,
SEPTEMBER, 1878.

## A CABINET COLLOQUY.—No. 7.

### HOW HAMILTON REFUTED PHRENOLOGY.

*(Concluded).*

"NOW let me call your attention to Sir William's next compound of inference and assertion:"

'VI. *Phrenological Proposition.*—In ordinary cases the sinus only extends an obstacle over two organs (Size and Lower-Individuality), or, at most, partially affects a third (Locality).'

'*Counter Proposition.*—In very ordinary cases the sinus covers a greatly larger proportion of the supposed organs, and frequently affects more than a third part of the whole thirty-six.'

"The frontal sinuses," remarked our visitor, "have been mentioned to me by scientific friends as one of the chief stumbling-blocks to your doctrines. It seems that Hamilton was clever enough to avail himself of them in his effort to demolish Phrenology. Well, how do you meet him?"

"We think that you will agree in a few minutes with us, for we shall appeal to the bones directly. If you will excuse me for a moment I will bring some witnesses." Saying this, we went to a case, and selected two or three human skulls which had been sawn open horizontally, close to the eye sockets, and vertically through the center of the forehead, so as to show the character and extent of the sinuses. Placing these on the desk before our visitor, we continued—

"Here you at once perceive the structure of the frontal sinuses and their relation to the exterior surface of the cranium. These are all adult skulls; the frontal sutures are ossified, have quite disappeared, in fact. You can select by its exterior appearance that in which the sinuses are largest?"

"Certainly," said he, "this which shows the most super-obiter ridge."

"Now let us examine it interiorly. You at once perceive that the sinus on the right side is a trifle the larger. By applying our rule we find it one inch wide, and extending from the root of the nose upward half an inch. It also dips for three-quarters of an inch, showing a pointed fissure below the orbiter ridge, and immediately adjoining the inner angle of the orbit. Comparing the space covered by this sinus with our marked bust here, or, with what is better, this skull on which the intellectual organs are mapped, it is seen that the sinus may be thought to affect the determination of Form, Individuality, and Size. The Lower-Individuality of Gall is our Individuality. His Upper-Individuality is our Eventuality. Locality can scarcely be said to be affected, as the thin upper margin of the sinus but trends upon its border. Instead of a third part of the phrenological organs being affected by this rather large sinus, it extends over, at the most, a twelfth of those admitted by Spurzheim. To say that it affected a third, or twelve organs, would be to admit that it covered the whole intellectual space."

"How absurd! It seems to me that Hamilton could not have examined the structure of the sinus with care; yet it is almost incredible that a man of his reputation should not have made himself thor-

oughly conversant with the points of objection before going before the public."

"We agree with you, sir; but these are his own words in the attempted reprehension of the phrenological system, and when Spurzheim protested to the character of Hamilton's assertions, particularly their offensive insinuations against the moral and scientific standing of the phrenologists, the lofty professor of metaphysics threw back in the teeth of Spurzheim the latter's motto, *Res non verba quæeso*, thus inviting comment which could not be favorable to the professor's cause, on the score of redundant and gratuitous talk, for Spurzheim in his letters is brief and to the point."

We then read the Seventh and Eighth Propositions and Counter Propositions to our visitor, and will not occupy space by their recitation here, for the reason that they are unwarranted by the early literature of Phrenology, and Dr. Spurzheim publicly denounced them as inventions on the part of Hamilton. Furthermore, they have no very important bearing on the essential data of the science. Next we proceeded to the—

'IX. *Phrenological Proposition.*—The whole brain (encephalon) does not in general attain its full complement of size till thirty, and in many individuals not till forty years of age.'

'*Counter Proposition.*—From the age of seven the cerebral mass gains little or nothing in volume; and the increase of the head about the time of puberty, and afterward, is determined by the greater development of the cranial bones, muscles, integuments, and hair.'

"Why, my friend, he refutes himself," exclaimed our visitor in open astonishment. "Nobody who knows anything of physiology will deny that the brain in a normal state grows until the man is thirty. The phrenologists were very safe in that opinion. Some authorities to-day claim that the brain may not attain its full development until fifty, but employment and organization have much to do with cerebral growth. I am quite satisfied with the statement as obtained from the phrenologists; it is clear that your Gall and Spurzheim were no superficial observers."

"The next proposition, sir, relates to the one just read to you.

'X. *Phrenological Proposition.*—The cerebellum only attains its full relative proportion to the *brain proper* from the age of eighteen to twenty-six.'

'*Counter Proposition.*—The cerebellum reaches this proportion many years before puberty, and even probably as early as three years old.'

"That is much of a piece with what you read last; the errors are with Hamilton. The cerebellum does not attain its maximum until twenty-five or later; in some cases not till the person is full forty years old."

"The next two," we resumed, deeming it quite unnecessary to discuss the point involved in the tenth proposition, as our visitor had given his vote for Spurzheim, are closely related:

'XI. *Phrenological Proposition.*—In male animals the cerebellum, proportionally even to their larger brain, is generally greater than the cerebellum of females of the same kind; and this difference is still more decided in men than in the other species of animals.'

'*Counter Proposition.* The cerebellum of women (and the analogy holds true throughout nature) is, on an average, *in proportion* to their smaller heads, much larger than the cerebellum of men.'

"What! another evidence of ignorance on the part of the physiology of his time?"

"Yes, sir; for Hamilton but represented the learning of his Edinburgh library on these subjects. However, let us proceed with the—

'XII. *Phrenological Proposition.*—As the female cerebellum, even in proportion

to a lesser brain, is relatively smaller than the male, the ratio of its inferiority in size will be greatly increased if the two parts are compared directly with each other, according to their absolute proportions.'

'*Counter Proposition.* — Though on a smaller head, the cerebellum of women (and probably the same is true of other females, as compared with other males) is, on the average, *absolutely* larger than that of men.'

"Sir William is so confident in this last statement that he emphasizes it by the use of the adverb, and that italicised. May we ask your opinion with regard to this cerebellum business?"

"You have a copy of 'Gray's Anatomy' in your library, I suppose?"

"Yes, sir."

"Let us see what he has put on record in regard to it."

Referring to the author mentioned, we pointed to these statements: "The proportion between the cerebellum and cerebrum is in the male as 1 to 8⅓, and in the female as 1 to 8¼" (page 600). "The average weight of the brain in the adult male is 49½ oz., or little more than 3 lbs. avoirdupois; that of the female, 44 oz." (page 580).

"A little calculation based upon these figures will give us their proportionate sizes." We then took a pencil and rapidly went through the simple process required, our visitor looking on.

"What do you find as the net result?" he asked.

"That the weight of the average female cerebellum is 5⅓ ounces, and that of the average male cerebellum is very nearly 5⅞ ounces."

"A difference of about half an ounce in absolute size on the side of the male. Enough. You said, I think, that there were fourteen of these propositions."

"Yes, sir, and we can dispose of them as promptly as we have those which we have examined. But I fear that I have already taken too much of your time."

"No. I wish to see the end of this wonderful attack by the champion of Scottish philosophy. Strange, that with such conspicuous evidences of its weakness, if not puerility, that it should be referred to to-day by intelligent men as a refutation of your system."

"The gentlemen, sir, who refer to Hamilton have in mind his eminence as a metaphysician, and have not in mind any views on Phrenology which have been formed through a personal examination of the science. In fact, they have borrowed a few stock expressions which are resolved into Pooh-pooh! and Pshaw! from individuals as ignorant or indifferent to the true nature of the subject as themselves."

"An eminent name has conduced to the perpetuity of many errors in modern science. Well, let us proceed—

'XIII. *Phrenological Proposition.* — In women, as more frequently actuated by a strong natural propensity to devotion, the organ of Theosophy, or Veneration, is in general more largely developed than in men.'

'*Counter Proposition.*—The manifestation can not be denied; but those dimensions of the head, which determine the size of the supposed organ of religious sentiment, are, proportionally, even to the smaller size of the female head, much less on the average in women than in men.'

"If you have observed the shape of heads much," we commented, "you have probably noted that women, as a class, have a more rounded and smoother outline in the superior region of the head. A man's head is generally better filled out here (showing the bust) at the location of Firmness, or here at the location of Benevolence, than at the intervening region of Veneration. We find in our personal examination, that to one man

whose head shows a good development of Veneration, there are at least three women who possess such a development."

"My own observation has not been special in this respect," remarked our guest, "but it has appeared to me that the heads of American men are inclined to be knobbish, that is, they run up to that point (indicating Firmness), and then fall off backward, while women have a greater elongation, or a level contour from the forehead to that place."

"I am willing, sir, to leave the determination of this question to you," we replied.

"It seems to me," he rejoined, "that the subject matter of these propositions is unimportant as compared with those which precede."

"We, however, deem it important, since Sir William introduced it among his indictments; and to us the fact of the larger average endowment of Veneration in woman is so notorious, that we are disposed to urge its consideration upon you. Here are two Indian skulls, male and female. See how much more rounded and full in the crown this of the squaw is; and the religious instincts of the aboriginal woman are known to be more conspicuously manifested than those of the brave. But not to detain you, we will consider the last or

'XIV. *Phrenological Proposition.*—As the "knowing faculties" are in full energy at a much earlier period than the "reflective," the lower region of the brow, along which the organs of the former are distributed, is found more largely developed in children than the superior parts of the forehead, in which are situated the organs of the latter.'

'*Counter Proposition.*—The manifestation is notorious; but the heads of children are peculiarly and remarkably distinguished from those of adults, by the greater development of the higher region of the brow, as compared with the smaller development of the lower.'

"Read the Hamiltonian part again, if you please," asked our guest. We did so.

"He convicts himself of superficial observation, or his authorities of sheer anatomical ignorance with reference to the growth of the immature or infant brain. Whether it be phrenological or not, the fact is that in the infant the anterior lobes are small and basilar in structure; for the finely-convoluted cortex which is found at the age of eight or ten does not exist then. Immediately subsequent to its birth the child evinces but the instinctive desire for nutrition, and for a few months the exhibition of intelligence is scanty. The child of a year shows a different contour of forehead from that of a week old, and is strikingly different mentally.

"That is just what was claimed by the early phrenologists, and as the perceptive organs are situated in the basilar parts of the anterior lobes, it can not be otherwise than natural that they should be first exhibited. As the shape of the lower part of his forehead approaches a decided outline the child's intellect becomes more definite in its apprehensions. I am very much obliged to you, sir, for giving me so much of your time this afternoon, and for your candor in considering the matters which I have brought to your attention."

"No thanks to me," replied our visitor, as he rose to depart; "rather, I feel indebted to you, for I have learned in the course of this interview several things of importance; and particularly has it been shown to me how a man of profound learning and good mental balance can be led into the commission of deliberate error by the earnestness of his zeal in defense of old opinions and practices."

## EUROPE AT PEACE.

THE Congress of nations, which assembled in Berlin to consider the affairs of Turkey, and to adjust upon a solid basis the claims of Russia, adjourned on the 13th of July, its chief object, the preservation of the peace of Europe, accomplished. The long treaty which has been everywhere given to the public through the newspapers, we will not discuss, but simply comment that its outcome is some territorial aggrandizement to England and Austria, some maritime privileges and territory to Russia, the formation of a few independent and semi-independent States, among those principalities which were in almost constant disorder, on account of religious and political enmities; and neutrality in the navigation of the lower waters of the Danube. Turkey, although shorn of considerable territory and reduced in importance as a power, is given a "new lease of life." Her autonomy is unimpaired; her Asiatic policy and institutions will continue to throw their barbaric shadows upon the civilization of Europe.

We are told that the plenipotentiaries of Great Britain were received on their return from the Congress with great demonstrations of applause, and the results which had been obtained were made an occasion for rejoicings in which the people at large generally participated. These rejoicings indicate clearly enough that the masses were not so much bent on war a few weeks ago, as it was asserted by the press and by Parliamentary demagogues, and now that the governmental crisis is past and peace assured, there is a spontaneous outburst of mutual congratulation. Well may the English people rejoice, and well may Europe rejoice in the accomplishment of the Berlin Congress in so far as the preservation of peace is concerned.

But it seems to us that the statesmen who so calmly discussed the affairs of Russia and Turkey, lost an opportunity to place on record an amicable expression of personal if not of national opinion, to the effect that henceforth, when a serious disagreement should arise between nations, an effort should be made to adjust them, in an assembly of ministers appointed specially by those nations to whom the issues of such disagreement were important. One will say, perhaps, that the Berlin Congress in itself morally expresses a sentiment of this nature. Yes, but a definite provision recorded and attested by such men as met in the German Capital would have a practical effect in the policy of individual nations which moral suggestions or inferences would utterly fail to produce. When the great peoples of civilization formally and positively agree to submit their misunderstandings and difficulties to a court of arbitration then indeed will a step be taken which will introduce an era of prosperity and happiness, that period indeed in which nation shall no longer lift the sword against nation, and when the pruning-hook and the plow shall supersede the sabre and the cannon.

THE COURSE OF INSTRUCTION IN THE AMERICAN INSTITUTE OF PHRENOLOGY, which opens on the first day of October next, promises to be largely attended. Our readers, who have perused the Institute Supplement connected with the July number, will have learned something of the scope of the topics taught, and the importance of such instruction to the community as a means of mental and moral progress. What object in life can compare with that of self-improvement, and what study equals in importance and dignity that which reveals human nature and the laws of the intellectual, moral, and social forces? As man is

the crowning glory of the Creator's works, and as mind and character constitute the crowning excellence of man, it is indisputable that the study of Mind is the chief of studies, and the knowledge thus gained the highest of all knowledge.

# Our Mentorial Bureau.

"He that questioneth much shall learn much."—*Bacon.*

## 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.*

WE CANNOT 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.*

STUBBORN CHILD.—G. S. B.—A little boy organized as you describe, with large Destructiveness, Firmness, etc., combined, as is usually the case, with a strong motive temperament, should be judiciously disciplined. In correcting him you should be very careful how you exhibit temper yourself. You should be calm, very thorough in showing the nature of his fault and the necessity for correction. When the parent exhibits irritation, ill temper, he excites in the child feelings of a similar character, in opposition to his own, and the natural result is that the child is not benefited in the least, but rather injured. If the child have large Benevolence, you can influence him through it. The spirit of kindness is a very powerful instrument for regulating the insubordinate. Your boy may have other qualities which may be operated upon—large Friendship, for instance, or strong Approbativeness. It is always better to govern children who are excitable, given to fits of sullenness, discontent, opposition to their parents' will, through their affection or disposition to please. When the spirit of opposition is aroused in a child, it is disposed to do things which it would not do in its common mood. One with large Destructiveness and large Firmness would be likely to resort, when excited, to acts of a vengeful nature. Even grown people, thus constituted, are often found cruel and inhuman when their temper is aroused; whereas, free from excitement, they will show kindness, sympathy, even tenderness. A child, of course, can not be expected to indicate the thought and consideration of maturity, and so must be worked upon through the affectional, mirthful, and sympathetical nature more than through the intellect.

SODA-WATER.—H. P.—Soda-water is not essentially harmful if it be drank under proper conditions. As commonly taken, it is harmful. In hot summer-weather people rush while sweating profusely to the soda-water fountains, and hastily pour down large glasses of the ice-cold mixture. The effect of flooding the stomach with fluid ice-cold when a person is in a heated condition, can not be otherwise than injurious. Many drink soda-water, simply because they like it, and at times when their system has no need of fluid. We think that many a good stomach is ruined by such drinking. Aside from the mere matter of drinking soda-water, there is the fact that many of the flavorings, fruit juices, so called, are chemical preparations having poisonous qualities.

BATHING.—The frequency of bathing, by which we mean the ablution of the entire body, must depend upon the constitution. Some persons are refreshed and invigorated by an every-day bath, and others would be weakened by such practice. For one in average health, we think that a pretty thorough towel-bath three times a week, or on alternate days, is sufficient. Water at sixty-five degrees is cold enough. To immerse the hands deeply in water and to bathe the neck with it, helps one to cool off quickly.

ORGANS AND MANIFESTATION—CALCULATION.—Here and there persons are found who have a mental organ largely indicated, so far as place in the brain is concerned, but which is not manifested in their life. We have known some with large Combativeness so related in business and social affairs that the disposition to irritation and contest was very rarely indicated, and they passed for quiet, gentle, unobtrusive

persons. Lack of exercise induced a passive condition in the organ. Usually an intellectual organ, when large, manifests itself in some way; yet an intellectual organ may be isolated and may lack opportunity of excitation. As to your question in regard to Calculation, we would say that we scarcely understand how the faculty, if its organ be large, has not shown itself, and we are of opinion that its external indication is due to the structure of the skull rather than to its actual development in the brain.

UNIFORMITARIAN.—M. A. W.—The term uniformitarian is applied to a class of thinkers or scientists who regard the world of nature as having reached its present condition gradually, and that the same causes or influences are at work now that have been hitherto in producing changes in the form of the earth. This class stands in opposition to the catastrophists, who believe that there have been a series of abrupt changes or revolutions in the structure of the earth's crust, and that new orders have suddenly sprung up upon the ruins of old orders of life.

DURHAM, ILLINOIS, AND OTHERS.—It would be well for our friends who communicate with us by letter to read the paragraphs in italics at the head of this department. It would save them some annoyance and perhaps exasperation. A great many letters containing inquiries of a personal nature are received by us which we would answer considerately, were it not that no return postage has been inclosed. If an answer to a question of personal interest be not worth a three-cent postage stamp, which is all we expect from a correspondent—being willing to furnish the time, paper, and ink essential to its preparation—the inquiry certainly is not worth as much, and one might save his time and perhaps his temper by not writing.

HOW TO PREPARE WHEAT FOR THE TABLE.—The article in the August number on "The Roman Soldier and his Food" has brought several inquiries with reference to the method of cooking wheat. As a general answer we must refer to our little "Hygeian Home Cook-Book," which contains a large number of recipes relating to the preparation of the different farinacea for the table, and also the dressing of vegetables, fruit, etc. We have a larger work entitled the "Hydropathic Cook-Book," in which the philosophy of food is discussed at considerable length. But the small manual will be found sufficient for ordinary purposes, and bound up with it are numerous advertisements which furnish information as to where flour, meal, and grains of good quality may be procured. Price only 25 cents.

LARGE HOPE.—Large Hope is a very desirable thing to have; but lest its florid promises prove too much of an incentive and lead one to rashness and a disregard of consequences, there should be counteracting influences, such as Caution and a fair Intellect. Consider the consequences of all undertakings; do not jump at proposals or appearances. A good examiner lays down a course of action suited to the development of the subject. Your large Hope may mislead you in the matter of your own capabilities. Carefully examine yourself; endeavor to do your best, and you may exceed the average of your capacity as declared by the examiner.

The reflective Intellect matures at different times in different persons. It is usually more active after the age of twenty years. The organs of the Intellect may continue to grow until one has reached fifty. Some authors make forty-five the climacteric period of mental energy.

LEAD-PENCIL POISONING.—Graphite, the substance used in the manufacture of pencil leads, being simply carburet of iron, is not reckoned among poisons. Of course, we would not advise you to swallow an ounce of the substance, as it would not help your digestion. It would be a good deal like swallowing an ounce of common earth.

## What They Say.

*Communications are invited on any topic of interest; the writer's personal views being preferred.*

PROCRASTINATION.—Of all the many evils with which we are surrounded there is none that I regard with such fear, such utter loathing, as the sinful habit of procrastination. This habit of delaying if indulged in will grow into our very nature, and will gradually become the greatest tyrant with which we have to contend; yea, it will even rule us as with a "rod of iron." If once allowed to enter the family circle, it will surely work rapid destruction. The occasional little delays, though the effects may at first be imperceptible, will break up the loving confidence they once had in each other; it will snap asunder the sacred ties of home-life, and thus destroying the harmony that is necessary to the peace and happiness of the family, will eventually scatter them to a cold and unsympathetic world. How it makes me shudder when I think of the misery and unhappiness that I alone have witnessed, caused by this fearful tyrant Procrastination. A little putting off to some future time, some more convenient season, how often has it made the silent tear to flow, and the heart to ache with unutterable anguish. How much sorrow and wretchedness, ruin and disaster, might have been averted, were it not for this dangerous

habit! We can not live to or for ourselves alone; the most minute action of our lives must have its effect, first, upon ourselves, and, as an inevitable consequence, upon the world with whom we associate. Little acts and thoughts all go together to build up the character; then how important that we guard well the time and talents entrusted to our care, and that we should endeavor to overcome this injurious habit of procrastinating, since little delays may work great evil. There are some persons on whom this habit can have hardly any effect. The strong mind and quick determination overpower it, but with the great mass of human nature it has a powerful influence, which in many cases is as deadly in the end as that of the wine-cup.

TABBIE RENNISH.

THE MAGIC WAND—HOW IT WORKS.—Our answer to a correspondent on this topic in the June number has brought us the following communication:

SMYRNA, N. Y., *June* 25, 1878.

*Editor of the* PHRENOLOGICAL:—Noticing the reply to H. W. S. in the May number, and having had some experience with the magic wand, I offer a few remarks which may interest, if not enlighten, the inquirer. A man of much practice, whom I formerly knew, preferred a currant branch; but I do not find much difference in using different kinds of timber—any of our common woods will do. Select a branch that divides into two equal twigs and cut it two or three inches below the fork, where it should be about the size of your finger. Point the large end and trim the twigs, then hold your hands before you with the palms up, and grasp a twig in each hand, in such a way as to have the thumbs toward the tops, pressing it firmly against the balls of the thumbs and holding the point a little elevated before you. Then if you stand directly over a subterranean vein of water (such as supply our never-failing springs and wells), you may notice no effect; but move a little forward and the point of the stick may turn over toward your face; or if you move backward, it may drop toward the ground. By observing the angle at which it stops, you may judge of the depth of the vein. The influence can frequently be felt for twenty or thirty feet, or even farther, on each side of the vein; and when holding the twigs very firmly, I have had the timber twist so as to loosen the bark on a green stick, and it would move gradually to its position in spite of all efforts to restrain it; but in the hands of some persons (perhaps the majority) it will not move at all.

I have attributed the action to a force of the nature of an electric attraction. I do not think it is owing to any mental action, for it seems to be independent of thought and feeling, only requiring a proper position of the individual, and an observer can note the result. Whatever it may be, it is evidently one of the unseen forces of nature with which we are surrounded, and because unseen, many are skeptics in regard to the facts and the utility of them; but a little practical experience or observation with an expert will convince any candid person of the actual and reliable nature of the movements.

J. P. KNOWLES.

FACIAL SIGN.—An Illinois correspondent has been taking notes of character as exhibited among his associates, and finds what he deems a new physiognomical expression. He says that "those who look ahead, count the cost, try to avoid mistakes and unwise decisions, have lines or folds running from a little below the middle of the nose toward the outer angle of the mouth, and the more extensive and perpendicular these lines or folds, the more the person looks ahead. A face which is smooth from the lower part of the nose outward toward the ear is lacking in business acumen and foresight, and not original in planning and invention."

We think that in "New Physiognomy" our friend will find some remarks akin to this subject. Something is said there about lines perpendicular and otherwise neighboring the extremity of the mouth indicating character. Deep lines nearly perpendicular, running upward toward the nose, are described as marking a man who is quiet, self-possessed, deliberate in thought, careful and economical in the management of his affairs.

REMINISCENCES OF A PHRENOLOGIST.—After a year's study of the science of Phrenology, during which time we had received instruction from the lectures of Mr. Samuel Kirkham, the author of a Grammar, and an assistant of Mr. O. S. Fowler in the publication of a work on Phrenology, we commenced giving public lectures in December, 1838. We entered the phrenological field because we had received benefit from a science which taught the true principles of mental philosophy, and also from a desire to do something for the amelioration of the condition of the human race. Born with a hereditary taint of melancholy, which at times poisoned our existence, we found by the aid of Phrenology the cause of this destroyer of human happiness, and took means to escape from the doom incident to that worst of human ills—a disordered manifestation of mind!

There was decided opposition to Phrenology by many religious teachers at the time, but its opponents were not such inveterate haters of it as the friends of Slavery were of the Abolitionists. In the winter of 1839, when arranging for a course of lectures in Bucks County, Pa., we went to a member of the school committee, who had charge of the room where lectures on differ-

ent subjects were frequently held, and solicited permission to use the room to give a lecture on Phrenology. He listened to our request and then asked, "Is Phrenology another name for Abolitionism?" We gave him assurance that it was not, and he cheerfully granted our request. We gave our lecture, and no demonstration of opposition was manifested toward a science which had for its object the welfare of mankind.

In the spring of 1840 we gave a course of lectures in a town in Pike County, Pa., and by invitation visited the office of a noted physician, who had a collection of human skulls and prepared skeletons. A number of the citizens of the place were present to hear what the phrenologist would say of the men who once were the owners of the skulls in question. Among the skulls presented for examination was one that we described as indicating superior mental ability, sound practical judgment with a special gift for arithmetic, and a capacity to excel as a surveyor. When we had got to this point in the examination, the physician whispered in our ear, requesting us to suspend our delineation of the character. And he afterward told us the reason of his request, which was that the skull examined was one which he had procured a few years before, and it represented a man who was in life a noted surveyor, whom some of the men present knew, and who he feared would be inclined, from our remarks, to find an accusation against him of robbing a grave. This gentleman also showed us the skeleton of a young woman who had died of consumption, whose ribs were lapped an inch upon the breast bone, the result of tight lacing. P. S. BUELL.

## PERSONAL.

MR. JOSEPH HEWITT, of Oppenheim, Fulton County, New York, was born in that town, and is now over eighty years of age. He is the father of nine children, seven grandchildren, and two great-grandchildren. One reason asserted for this remarkable longevity is their almost total abstinence from the use of drug medicine. There has been no death in the family since 1815.

MADAME LITVINOW, a Russian lady, has lately received the degree of Doctor of Philosophy from the Philosophical Faculty of the University of Berne. Her examination was of such excellence that the faculty agreed to attach the highest mark to her diploma.

PROFESSOR SIMON NEWCOMB, of Washington, has received the Huygens Medal of the Society of Science, at Haarlem, Holland, an honor which is awarded once in twenty years to the astronomer who has during that time contributed the most to science by his discoveries and investigations.

MR. J. R. DODGE, the Statistician of the Agricultural Department, Washington, has resigned, and in his letter of withdrawal enters a "protest against the incompetency and recklessness" of his superiors. Mr. Dodge has been a most excellent officer, and, as the *Tribune* says, has been regarded generally by the agricultural press, and by all familiar with Washington matters, as about all there was of the Agricultural Department.

MR. JAMES ACKLAND, of the class of 1876, has succeeded Miss Chapman as Phrenologist and Examiner, in Boston, Mass. He has issued a circular in verse, in which occurs this:

"Whoe'er thou art, 'tis wise to scan
The ways, the heights, the depths of man,
The grandest book in scope and plan
On nature's shelf,
(Through modesty you ne'er began)
'Tis your own self.

"Where Spurzheim, 'priest of nature,' died,
In town of intellectual pride,
I launch my boat, and should the tide
Auspicious flow,
'Twill only be when you've replied,
'I'll go, I'll go.'"

We wish him success.

## MIRTH.

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

AN orator declaring that fortune knocked at every man's door once, an old Irishman said, "When she knocked at mine I must have been out."

A PLACARD in the window of a patent-medicine man in Paris reads as follows: "The public are requested not to mistake this shop for that of another quack just opposite."

"How nicely the corn pops," said a man who was sitting with his sweetheart before the fire. "Yes," she responded, "it's got over being green."

"WHAT is your business, sir?" asked the Court, in a sharp voice. "A conchologist." "What's that?" said the judge. "I opens clams."

YOUNG lady on horseback (doubtful about the road)—"Will there be a bridge by and by across a little brook?"

Small rustic—"Wall, I dunno' 'bout by 'n by, but there's one there now."

A COLORED cook expecting company of her kind, was at a loss how to entertain her friends. Her mistress said: "Chloe, you must make an apology." "La! missus, how can I make it? I got no apples, no eggs, no butter, no nuffin' to make it wid."

## 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.*

HOW TO TAKE CARE OF OUR EYES, with Advice to Parents and Teachers in Regard to the Management of the Eyes of Children. By Henry C. Angell, M.D., Professor of Ophthalmology, in Boston University, author of "A Treatise on Diseases of the Eye," etc. 16mo, cloth. Price 50 cts. Boston: Roberts Bros.

We do not know the value of our eyes until they become impaired and unable to perform the duty which we expect of them. People at large are much too careless with regard to their eyesight, and the need of a little manual like the above is manifest. Dr. Angell considers, in a brief, clear style, adapted to the average intelligence of the lay public, the structure of the eye and its prevalent weaknesses and affections in young and old. He gives practical hints with regard to the use of spectacles and the care of weak eyes. His advice on the treatment of children who are troubled with defective sight is exceedingly valuable.

HOW TO BE PLUMP, or the Science of Physiological Feeding. By T. C. Duncan, M.D., editor of *The United States Medical Investigator*. Chicago: Duncan & Bros.

The author of this pamphlet appears to consider leanness as a disease, and would have every man and woman indicate less of bony structure in face and form. The prime factor in the author's method appears to be water, a moderate quantity of which is to be taken four times a day. His judgment is sound in respect to forbidding cold water to be drunk at meals. We regret to say that "he has no serious objection to tea or coffee if they are well milked." Some of his homeopathic brethren will scarcely sustain his view of the propriety of taking these beverages, whether "well milked" or not.

TWENTY-FIVE-CENT DINNERS for Families of Six. By Juliet Corson, Superintendent of the New York Cooking School, author of a cooking manual, "Foods, their Sauce," etc. Price 15 cts.

Quite recently Miss Corson published a little tract on cookery, entitled "Fifteen-cent Dinners," the motive being to show working people, whose wages are small, how to prepare a good dinner for fifteen cents. This new compilation is an advance upon that, not only in respect to the expensiveness of one's dinner, but in respect to variety and quality of dishes. Believing that the cheapest sorts of food are often the most wholesome and strengthening, the author furnishes some practical directions for its selection in the market. We notice that she urges some sound principles on the use of tea and coffee and beer, but might have been a little stronger in her dissuasion. We notice also the introduction of more hygienic philosophy in this collection of receipts than in her former ones, yet the amount of seasoning and shortening recommended for some of the common dishes is considerable.

### PUBLICATIONS RECEIVED.

THIRTEENTH ANNUAL REPORT of the National Temperance Society and Publication House. Presented at New York, May 7, 1878. A very full and encouraging statement of the work done by this most excellent Association. The past year has been one of extraordinary interest in the cause of Temperance Reform, notwithstanding the stagnation in the book business and the great efforts of the friends of rum. There have been stereotyped and published under the auspices of the Society sixty-seven new publications, making a total of 581 since the formation of the Society. It is fitting to state that the character of the literature recently published by the Society has been particularly good, indicating a marked advance upon the quality of previous years.

THE VOW OF THE RECHABITES, and Reasons for Abstaining. By the Rev. Canon Farrar, D.D., F.R.S. Price 10 cents. Published by the National Temperance Society of New York. This essay has special reference to the International Sunday-school Lesson for April 28, 1878.

TWENTY TRACTS ON TEMPERANCE. By Miss Julia Colman. Price 18 cents by mail. A valuable series of tracts for general circulation. She treats the subject in a simple, fresh, and scientific manner. Published by Nelson & Phillips, New York.

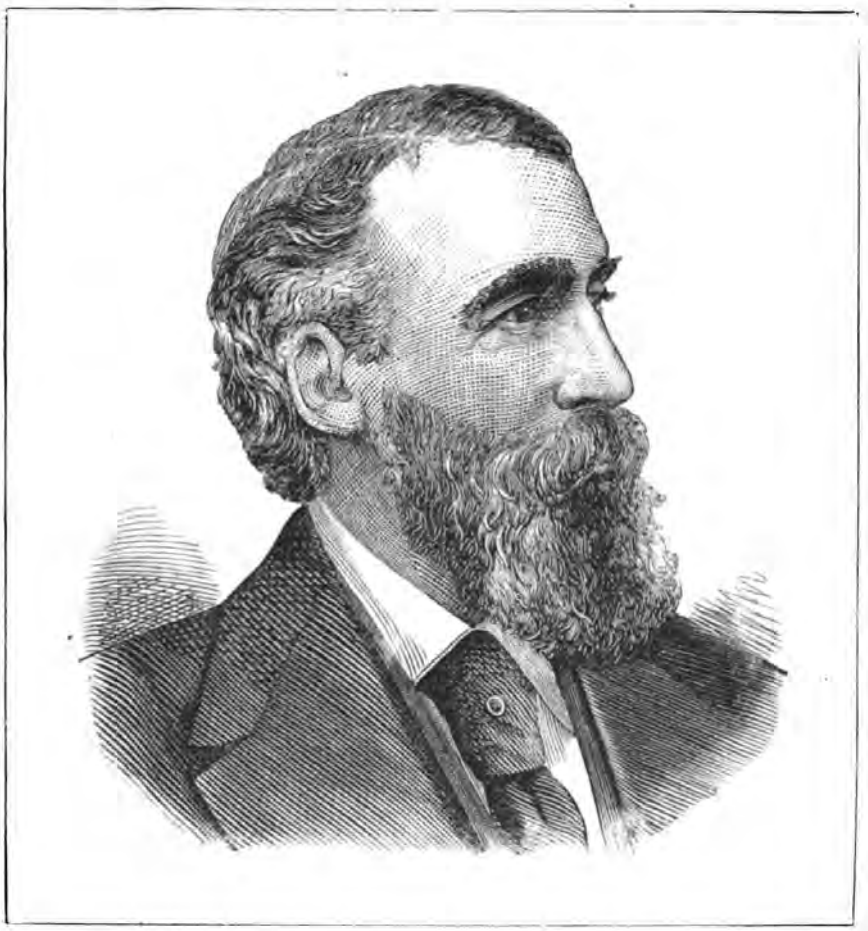
THE PAMPHLET MISSION FOR FREEDOM, Fellowship, and Character in Religion. Publishing Committee: Robert Collyer, of Chicago; C. W. Wendte, Cincinnati, and others. The subscription price, $1.50. Publication Office, Chicago. An excellent biography and critique of Voltaire occupies the body of this number.

THE LAW OF POPULATION, its Consequences and its Bearing upon Human Condition and Morals. By Anna Besant. 12mo, pp. 47. New York: Asa K. Butts. This work exhibits a great deal of careful research and hygienic discrimination. The author appreciates the principles of prevention, and would have the laws of sanitary integrity, as enunciated by high scientific authority, applied to the relief of society from the vast weight and destructive bearing of vice, crime, pauperism, and abuses.

THE PHRENOLOGICAL JOURNAL AND LIFE ILLUSTRATED.

VOL. 67. 1878.

NUMBER 4.] *October, 1878.* [WHOLE No. 478



## EDWARD KIMBALL.

THE gentleman whose portrait is before us has recently become known throughout the country by his efforts to raise the means for paying off church indebtedness.

During the late years of inflation, or what was supposed to be national prosperity, many elegant and costly churches were erected and heavily mortgaged for the payment of a portion of the expense. The result has been that with the great decline in

values and income, most of these churches are, or were, burdened with more debt than it would now cost to build them anew.

It has been a world-wide wonder what qualities Mr. Kimball possessed which enabled him to go into a congregation of strangers and inspire them to contribute a hundred thousand dollars or more, in times of depression, when they had been struggling for years to raise only the interest on their church's debt and to pay their current expenses. It has been called a fictitious enthusiasm, a fanaticism.

When Murphy, the temperance evangel, goes into a neighborhood, thousands of men seem to rush forward to register their pledge against the use of intoxicating drinks; when Moody and Sankey arrive in a town, men flock in great numbers to their religious standard, accept their teachings, and enter upon a new course of life; and when Mr. Kimball appears in a church and announces what appears at first sight a fruitless, thankless effort—an endeavor to raise the millstone of church debt, and to raise it by the offerings of men who have been bearing the burden and struggling under the load, and many times feeling almost persuaded to give it up—somehow or other in a few hours or a few days the list is complete, the money pledged, the church free.

The portrait shows us a healthy, cheerful, well-harmonized, vigorous man. To embody a physiological idea in a single phrase, he carries with him a happy and healthy magnetism. If he had a hard, weazen, angular face, which put every man on his self-defense in looking at him, the case would be different. There is an open, manly countenance, a straightforward, earnest look about him. The development across the eyebrows is very prominent, and through those faculties he is able to call people's attention to particulars; to fix and fasten their thought on the one idea which he represents.

From the root of the nose upward to the top of the forehead, the development is very prominent, indicating the power of Memory and discrimination, and especially the ability to read character. He looks at a man and knows his weak and strong points, and undoubtedly many a thousand dollars has fallen into the coffers of the church treasurer just through one earnest, straight, magnetic look of Mr. Kimball. But this is not all. This is merely the natural and secular view of the subject.

Let the reader observe the great elevation of the front part of the top-head, that part of the head which is covered by the hair above the line of parting. In front is the location of Benevolence. Just back of that, in a line drawn half way between the eye and the ear perpendicularly, is the organ of Veneration. On either side of that is Spirituality, and backward from it, Hope. That group of religious organs is the one through which his wonderful power is exerted. He awakens men's religious sympathy; he arouses their religious enthusiasm; he excites their religious benevolence; he acts upon their Hope, and the combination of these faculties, when thus heated to the point of fusion by the active energy of Mr. Kimball's moral and spiritual faculties, compels the pocket to yield its benefaction. Men become religiously enthusiastic under his administration. If he had been educated for and devoted himself to preaching, he would doubtless exert an influence in that field equal to the power he has evinced in the field he occupies, and he would be the means of filling the churches as well as paying for them.

There has not been a man since the days of Howard whose development of head was better adapted for just the work he has

done. In addition to this strong moral and spiritual magnetism, he has the practical and secular elements which work right into business channels and awaken men's business enthusiasm. If he were simply a minister and knew nothing about finance, nothing about business operations, he might not be half so efficient in church-debt raising as he is. But he brings the spiritual elements to bear in conjunction with practical business ideas, and thus he operates upon business men on business principles; and by inspiring their religious and spiritual enthusiasm and awakening their generosity, he accomplishes his results.

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The engraving of Mr. Kimball was prepared from an excellent photograph, and is given to the reader just as it came into our hands; but we will say that had we undertaken to make a portrait from which could be deduced the powers and influence which Mr. Kimball has exerted, we could scarcely have succeeded better. We put it forth, then, as a pre-eminent phrenological illustration of the activity and influence of those moral faculties when heated to fusion by the energy and practical talent which Mr. Kimball's front and back-head are well calculated to arouse.

Concerning Mr. Kimball's life prior to his activity in behalf of distressed churches, we have scarcely more than the merest outline. He is a native of New England, and when about fifteen years of age became a clerk in a Boston store, where he remained several years. Then he embarked in the furniture business, but, it is said, with no great amount of success; for the reason, doubtless, that his strong moral and religious nature did not work in entire sympathy with his secular operations. That he was deeply interested in religious affairs, is evident from the fact that he was efficient in church and benevolent work at that time, and was conspicuously active as a member of the well-known Mount Vernon church, of Boston. While thus related, he introduced Mr. Moody to public notice, and was the chief instrumentality in starting that extraordinary revivalist upon his great career.

He found it expedient to settle in Chicago a few years ago, and his business since has been that of a traveling salesman for a house engaged in the manufacture of school furniture. While thus engaged his interest became awakened in behalf of the many religious societies which he saw were scarcely able to bear up under the heavy weight of money obligations which they had assumed at times when they were considered strong and vigorous. He thought to himself, here is a field for some one to work in; some one who has courage and force and enthusiasm, to relieve the churches of the burdens which are exhausting their energy and dwarfing their influence. He did not regard himself as the suitable person to begin it; but as time went on and his observations multiplied, he was drawn into making an effort himself. It happened in San Francisco, where he offered his services to a burdened church, and was successful, contrary to all expectation, in raising a fund sufficient for its relief. Next he proposed to Dr. A. L. Stone, of the same city, a clergyman well known in the East, to help toward extinguishing a very large mortgage claim upon his church building. The astonished minister exclaimed, "Are you an escaped lunatic?" Mr. Kimball was not daunted by this expression, and obtained Dr. Stone's consent to make at least a trial of what he could do with a disheartened congregation. He went before the people, pleaded their own cause in his earnest and magnetic manner, and was successful.

He had made his mission, had discovered a new sphere, and his success at the outset inspired him with confidence and zeal. He has gone from one place to another prosecuting his unique labors, and now, after the lapse of scarcely a year from the time he commenced them, upward of forty church societies have, by his help, disposed of their debts. According to the *Illustrated Christian Weekly*, the aggregate indebtedness of thirty-seven churches which he has relieved, is upward of a million and a half of dollars. In some cases the obligations of a single congregation amounted to fully two hundred

thousand dollars, and it was deemed by minister and people as an utter impossibility to raise even half. Yet Mr. Kimball went to work, and in a few days astonished every one by obtaining a list of subscriptions which canceled the entire debt.

One of his later successes was with the Berkley Street church in Boston. For fifty-two years it had been carrying a load which almost crushed it. Several attempts had been made to cast it off, but in vain, and more than once the question was raised whether it were not better to let the property go. When Mr. Kimball came and proposed to try to lift the load, no one felt inclined to venture a favorable response, but the leading men entreated him not to undertake a thing so hopeless. He calmly told them that he considered it the most hopeful case he had seen, and when Sunday night came the entire twenty-five thousand dollars had been provided for.

## CONCEPTIONS OF THE SOUL AND FUTURE LIFE.

### I.—THE NEGATIVE.

A MODERN philosopher has truly observed that "when speculating upon the subject of a hereafter, the minds of many men rapidly liquefy and run off into an incomprehensibility." The common notion that the soul is immaterial, for example, involves an impossible conception, unless, indeed, it means that there is no soul. Modern science and criticism, while they have done much to dispel such vapory conceptions, have not only failed to furnish anything in place of them, but have created grave doubts concerning the doctrine itself of a future life. Hitherto men of science have generally regarded the great problem with becoming modesty, and if they have not accepted the prevailing faith, have been content to say: "We are ignorant; this is a subject which lies beyond our province, and indeed transcends earthly knowledge." But recent discussion, called forth by Mr. Harrison's novel theory of (im)mortality, would indicate the tendency of modern scientific thought to be in the direction of a negative answer to this transcendent question.

*Materialism.*—The testimony of material science touching the subject, though circumstantial, is none the less weighty. The mental and moral faculties which are commonly supposed to make up the attributes of the soul, together with the light of consciousness, are utterly dependent for their action and integrity upon the action and integrity of the body. In short, the body marks the high and low tide of the soul; and when the complex action of the one is arrested, the other is correspondingly affected. The two are inseparably connected and interdependent; and hence the stroke of death, which destroys the one in its personality, as surely extinguishes the other.

*Evolution.*—Moreover, the modern theory or law of evolution has an important bearing upon the question. When the first life sprung from the labors of earth, followed soon by the first death, then (according to the modern philosophy) arose the problem of a future life. If all life is related and linked together in a series of infinite gradations from the lowest to the highest form, where in reason can we open the tremendous breach between mortality and immortality, whereby to consign one side to extinction, conferring upon the other life eternal? And why, if such a division is to be made, should the line of demarkation be drawn between man and the next lower order, rather than elsewhere in the great chain? And when it is argued that man has capacities undeveloped and aspirations unsatisfied here, the skeptic can reply that the impulse which, over and above the laws of heredity and environment, impels all forms of life to higher expressions, not attained at death, gives promise of another life to them also as well as to man. And who shall deny that every life has a consciousness proportionate to its advance in the scale of existence?

Such considerations afford urgent reasons to many minds for answering the question

in the negative, and we can not but admire the heroism which can calmly content itself with such an answer and be persuaded that belief in another life is a vestige of ignorance and superstition.

Are we, then, the toys and sport of Nature, floating for a brief moment upon the sea of life, haunted with "the pleasing, dreadful thought of immortality," but destined soon to be swallowed up and swept into the all-absorbing vortex of the Power whence we emerged? Then is nature a monster devouring her own offspring, and should we not wonder that she has imparted to her children a gentler instinct?

### II.—THE AFFIRMATIVE.

But the momentous problem is yet far from being solved by such reasoning. There are unknown factors entering into the great equation of life, which have not yet been stated, much less eliminated and expressed in terms of the known.

There is a class of facts or phenomena, notably those of clairvoyance, mediumship, etc., which, although commonly scouted and denied by the scientific and religious worlds alike, are the only witnesses which can lay the slightest claim to *direct* testimony of another life. They are knocking loudly at the doors of science, but because they have often failed to satisfy the tests imposed by men of science; because they depend upon "abnormal conditions;" because their professed doings seem to infringe upon natural law and to remit us to the days of miracle and superstition; because they come from unexpected quarters to be the bearers of any useful truth and wear no badges of authority; because they are mixed with many rank growths—frauds, heresies, insanities, free loves, and other excesses and monstrosities; and because many rattle-headed agitators and sickly emotionalists have rushed to the embrace of the "new faith," it is little wonder that science, at least *popular science*, turns a deaf ear and denies admission to the new-comers until better credentials shall be shown. What if it should come to pass that here, as elsewhere, a soul of truth is coming up through much error and corruption? There could hardly be so much counterfeiting without some genuine coin. Already science has been forced to extend her explanations well-nigh unto the miraculous, and the interpretations now given by scientific authority to certain extraordinary facts, require a degree of credulity well-nigh sufficient to enable one to accept the most extravagant claims of believers.

*Objections of Materialism.*—If, now, we assume as true the doctrine of a future life, how may we explain the objections which skepticism has raised? With respect to the dependence of the mind upon the molecular action of the brain, we are impelled to think that since this is the case here, it must be so hereafter; if the future is to be a continuation of this life, and unless we can believe that we bear within us a super-sensuous, but not immaterial organism, corresponding to, but surviving the outer perishing form, subject likewise to unconscious states and other temporary vicissitudes, the skeptics' verdict should not too hastily be rejected. But it should be remembered that what we call "unconscious states" are states of which memory has as yet given no report, and that memory is the keeper of impressions which are not always recalled at will, but, waiting till the right spring is touched, slumber often for years, or for a life-time, before coming to the surface of consciousness to show their faces.

Moreover, Nature has many garments, and those that our eyes do not see are far more numerous than those which are revealed to sense. Nature is extravagant of her dress, and is constantly changing her styles and casting off her old clothes for new ones; and when we think the last has been laid aside, lo! having woven for itself another and finer form, of which the body is now the dross, Spirit again peers forth, with familiar face, no less personal or impersonal than before.

*Objections of Evolution.*—Again, as to a future life for lower forms than man, implied by the law of evolution, we have here to choose between the ideas of uniformity and purpose, both of which are manifest in nature. We may suppose that all forms of life, in common with man, inherit another

life. Infinite space has room enough for the souls of all the countless families of earth and other worlds. But we are not driven to such a chaotic conception. Nature works by uniform methods, but always an ultimate purpose or tendency is discernible. Lower forms are steps leading up to man as an ultimate. They are broken arcs of the circle which in man is complete. He is the flower of creation, in whom blossom the long-growing buds of mind, and the fragrance of aspiration is exhaled. And having made the complete round of earthly life, and used all that earth has to bestow, the soul of man, *i.e.*, the inner body, seeks other spheres for further development in its immortal career. Immortal! shall we say? What mind can realize such a thought, and what proof short of an eternal experience is adequate? The realization of another life is but a step in the infinite journey, of which this life is perhaps the first step. And this brings us to the consideration of a new and, to my mind, a very plausible theory which may be based upon the law of evolution.

*Evolution of Spirit.*—The philosophy of evolution teaches that nature will not always be integrating and individualizing; that there will come a time when matter, having been, so to speak, put through all forms, will tend back to unity, or homogeneity, whence all have emerged, thence to repeat again and again the grand process of expression with finer materials at every new beginning. The process of nature is not a continual blossoming and prolification, but there are eras of growth and decline of forms, and we are now living upon the rising tide of life, to be followed by an ebb tide, which will carry all back to the primeval chaos, or perhaps forward to another chaos. And what if this be true of the spiritual universe as well as the material? Is the law of evolution comprehensive enough to embrace both sides of the universe—the seen and the unseen? and does it still hold good of man in the light of the truth of a future life? Consistency would require an affirmative answer to this question from the disciples of Spencer.

Let us inquire what, if any, application of this philosophy can be made to the doctrine of a future life. How shall all return to unity—even the souls of men? The answer would be, inversely, as we have emerged thence and by degrees. not through a single dissolution, but through many. And by what law? In the language of science, by the law of *attraction* and *repulsion.* Philosophy calls the same law *association.* Religion and poetry would name it *marriage.* Two drops of water are married when they blend in one. The sunlight, by absorption, works another marriage. The rain-drop, which has found its way from the sea far inland, does not regain its ocean home by a single leap from the hillside stream in which it fell, but by gradual stages. So will the soul, through long and varied pilgrimages, return to its universal self. We shall not be losing consciousness, but with every dissolution and union shall gain, or rather regain, what had been relinquished, and thus be gradually coming back to ourselves, or rather to ourself; for if this be true, we are all one, and what we are wont to call ourselves are but different members, or projections of the ever-changing All.

*Personality.*—What, then, shall we say of this individual consciousness, which seems to be the very root and essence of our nature, and which gives to each a sense of separateness and even solitude? Call it what we will—self, Ego, personality—is it more or less than the Immanent Principal of things which has shaped itself into diverse forms, and looks out through different *media;* but most of all, through human eyes and human minds it asserts itself and contemplates its own works and being.

The Deity circulates in all things; and through like forms, be they blades of grass or congenial minds, nods acquaintance and relationship. If God is everywhere, He is everything. Two things, whether material or spiritual, can not occupy the same place at the same time. Continuing personality is but a name for slow and uniform methods of change and transformation. We are continually transformed and are transforming ourselves. I do not so much resemble my boyhood self as I do my friend of equal age and congenial mind. What a transfig-

uration from infancy to manhood and from manhood to age! what changes, then, may a few centuries of eternity work! Manifestly, nature has some higher purpose to serve than the perpetuation of individual lives. Else what means this lavish waste of life which makes of earth a vast "funeral barrow"?

The soul has now its own inter-affinities which preserve its separate integrity against all outside attractions. But it may not always be so, even though it survive its earthly body. "Alas!" sighs Alger, "how widely yawns the moat that girds a human soul; each one knows its own bitterness, its own joy, its own terrors and hopes; and no foreigner can ever really touch, but only more or less nearly approach and exchange signals, like distant ships in a storm. No solicitation can woo, no power can force admission to that final inviolate sanctuary of being where the personality dwells in irreparable solitude."

It may not be ever so; but where are friends or lovers dear enough that each would willingly lose itself in the other for a new being? Well, there are no such affinities now, and if ever there are we shall not fear for self. There are gifted minds who have already noted experiences of this "universal consciousness," which may give some hint of the destiny of all in this respect. In 1874 the poet Tennyson wrote to one: "I have never had any revelations through anæsthetics, but a kind of 'waking trance' (this for lack of a better word) I have frequently had, quite up from boyhood, when I have been all alone. This has often come upon me through repeating my own name to myself silently, till all at once, as it were, out of the intensity of the consciousness of individuality, the individuality itself seemed to dissolve and fade away into boundless being; and this is not a confused state, but the clearest of the clearest—the surest of the surest, utterly beyond words—whose death was an almost laughable impossibility—the loss of personality (if so it were) seeming no extinction, but only true life."

To much the same effect writes Emerson: "Standing on the bare ground, my head bathed by the blithe air and uplifted into infinite space—all mean egotism vanishes. I become a transparent eyeball; I am nothing; I see all; the currents of the Universal Being circulate through me; I am part or particle of God."

Truly, man is greater than he knows. The injunction of Socrates—γνῶθι σ'αυτόν—could we obey it, would solve the problems of the universe. The saying that man is a microcosm, becomes more luminous with truth and philosophy as we learn of ourselves. He is not only *multum*, but *omne* in *parvo*, containing all elements and forces and possessing universal affinities. He reveals in his growth the history of all life. In him are the Knowable and the Unknowable, Nature and God. It is as if we should find in an arm of the sea the perfect outline in miniature of the ocean beyond. He is the flower of creation, where blooms the all-pervading Power, whom no words can describe, no thought conceive; our wisest introspections are but passing glimpses of the Supernal presence within.

Thus is he truly the "image of his Maker."

C. S. W.

## THE POSTMAN.

Could we the fleeting clouds;
Could we when breezes blow;
Could we the lightning's flash,
Or the gently falling snow;
Could we the rushing storm,
Or the beams of morning light;
Could we the fairy world,
Or the ghosts that walk by night;
Could we the birds of air,
Or the dwellers of the deep—
Could we these agencies
In subjugation keep,
Would they more surely come?
Would they more surely go,
And, tireless as Time,
Flit ceaseless to and fro?
Would they go round and round,
And over sea and land
Swift messages convey
At every one's command?
Behold how easily
The miracle is done!
The Postman with his burden
Is swifter than the sun.

T. P. WILSON, M.D.

## BRAIN AND MIND.

### CHAPTER VIII.—*Continued.*

#### INHABITIVENESS.

THE discovery and location of this organ are due to Dr. Spurzheim, who was of the opinion that the space in the occipital lobes on the mesial line between Philoprogenitiveness and Self-esteem should be allotted to it. (See Fig. 17–4). Mr. Combe concluded from a series of observations that a part of the space, at least that bordering on Self-esteem, was the organ of a faculty which gave a tendency to concentrate the mind within itself, and to give continuity to impressions, and deeming the evidence in favor of Dr. Spurzheim's

Fig. 67.—INHABITIVENESS LARGE.

discovery insufficient to warrant the acceptance of Inhabitiveness as an independent organ, did not include it in his classification. We are of opinion that the organ is fairly demonstrated, and entitled to be accepted by mental philosophers even in preference to Concentrativeness, although the latter has the support of so acute a reasoner as Mr. Combe. Our reasons for this opinion will appear when we come to discuss that faculty.

The function of Inhabitiveness is to give a love of home, or an attachment to the place where one was born or has lived; since all men can not inhabit one place, or choose their abode in the most favored localities, it contributes to contentment and satisfaction with our dwelling place, although its location may possess many positive disadvantages.

A great English poet* writes:

"The shuddering tenant of the frigid zone
Boldly proclaims that happiest spot his own;
Extols the treasures of his stormy seas,
And his long nights of revelry and ease.
The naked negro, panting at the line,
Boasts of his golden sands and palmy wine,
Basks in the glare, or stems the tepid wave
And thanks his gods for all the good they gave.
Such is the patriot's boast, where'er we roam—
The first best country ever is at home."

This faculty is not only manifested by man, but by nearly every variety of animals. Birds return to the same spot, year after year, to occupy the same nest, to deposit their eggs and to rear their young; and when the chilly winds of autumn blow, they fly away again to their winter home. Even fishes, after spending the winter in the trackless ocean, make their way back to the same stream in which they were hatched, or where they have deposited their eggs.

This organ is especially powerful in the inhabitants of mountainous regions. The Swiss and Scotch may be cited as examples, and they are peculiarly liable to nostalgia, or homesickness, on a change of abode.

It also, as may be naturally inferred has much to do with the sentiment of patriotism, and those who have the organ large are more inclined to exhibit a warm interest in the affairs of their native country, while those in whom it

* Pope. "Essay on Man."

is moderate or small, may show decided indifference to the claims of birth-place.

ADHESIVENESS, OR FRIENDSHIP.

This organ is found in that part of the brain, termed by Ecker the gyrus angularis, lying at and above the middle of the posterior edge of the parietal bone. On the head it is indicated between Inhabitiveness and Combativeness. (See Fig. 17–3). When large, it adds breadth and fullness to the upper occipital region.

The function of this organ is defined to be the manifest action of attachment,

Fig. 68.—FRIENDSHIP LARGE.

friendship; the disposition to cling to any object which is capable of feeling affection. Amativeness is the source of a special attachment to the opposite sex. Philoprogenitiveness is devoted to the child, the nurseling, but Adhesiveness embraces all creatures which are capable of experiencing fondness. It not only disposes us to friendship and sociability with our fellow-men in general, but also inspires the feeling of attachment for dumb animals under our care. The fondness which many men bestow on horses and dogs, springs from the instinctive activity of this faculty. It is the bond of union among men, and the basis of society. In the lower animals it is exhibited in the gregarious instinct. Some animals, as the lion, the tiger, and the eagle, live by themselves, and never associate with others of their kind. On the other hand, sheep, horses, cattle, and many varieties of birds, fishes, and insects, are bound together by a community of feeling which appears to afford them pleasure and satisfaction, and which occasions them much uneasiness when they are separated from their fellows. Pigs sometimes refuse to eat, and horses and oxen have been known to pine and become sick when deprived of accustomed companions.

The case of Mr. Sprague, of South Deerfield, Conn., which has been previously referred to, is an interesting instance of disease in this organ. While yoking cattle, he was struck on the head by the horn of one of them. His wife related that although formerly very kind and affectionate, after he had received the injury, he grew morose and irritable to such a degree, that he could scarcely tolerate her presence. When his former friends called to see him he would order them at once out of the house, while he was courteous and affable toward strangers. After his death his brain was dissected, and it was found that the organ of Adhesiveness had become extensively diseased.

Persons distinguished for zeal in philanthropic works have the organ large. Such was the case with Robert Owen, the hopeful, enthusiastic humanitarian, as is shown in the cast of his head; while those who are cold, reserved, solitary in disposition, are lacking in Adhesiveness. Notorious criminals are generally deficient in social feeling,

hence experience little or nothing of its instinctive hostility to a warfare on society. Dr. Benedict, of Germany, found in the course of an extended series of researches into the cranial organization of criminals, that they were generally lacking in upper-occipital development. The organ is but moderately shown in Fig. 69.

### CONCENTRATIVENESS.

As has been already stated, Mr. Combe rejected the organ of Inhabitiveness as defined by Dr. Spurzheim, but accepted it in part as performing a different function. We are inclined to consider Mr. Combe's Concentrativeness as not so well established as Dr. Spurzheim's Inhabitiveness, for reasons which may be stated in brief, thus:

Fig. 69.—CONCENTRATIVENESS LARGE.

To Concentrativeness is attributed a property which is mainly related to the intellect, viz., "to give continuity to *impressions*, be they feelings or ideas" (Combe). This being considered the law of grouping, to which phrenologists attribute a very high importance, is evidently transgressed by the location of an organ with such a faculty in a part of the brain so remote from organs with which it is alleged to coordinate chiefly.

The strength and intensity of the organs generally are dependent upon their size and activity, and any one which happens to be dominant in the character possesses the quality of Concentrativeness. Combativeness, when large, needs but an exciting occasion to awaken its sentiment of defense or bold aggressiveness, and the strength of its manifestation is usually proportioned to the degree of aggravation. The larger the organ of Cautiousness, the more alert the faculty in its apprehension of danger or insecurity. The more developed the perceptive elements of the intellect, the more rapid and comprehensive their acquisition of facts and impressions. Hence, persistency or continuity of action, inheres in the very constitution of an organ, and is expressed according to the organ's strength.

Many of the most illustrious men in science and letters, spheres in which concentration is indispensable to shining success, do not show that part of the head assigned to Concentrativeness as a special faculty large in their heads. The casts of Spurzheim, Sir John Franklin, W. E. Channing, Henry Clay, William Godwin, Benjamin Constant, Fuseli, Prof. Morse of telegraph fame, and Silas Wright, do not indicate a fullness in the region bordering on the lower margin of Self-esteem, but the contrary.

Again, the evidence furnished by extended observation and the facts of personal history lead us to the conclusion that the power of intellectual concentration is "the product of a well-balanced series of cerebral organs." Dr. Brown, who rejects Concentrativeness, very pertinently says on this point: "When long-tried experience discloses the fact that some men renowned for superiority of genius were but scantily

endowed with the organ, upon the largeness of which concentration of the mental powers was, by some eminent men, supposed to depend, when such is the case, there is afforded positive assurance that there does not exist any special single organ capable of causing the simultaneous concentrated action of so wide a range of mental qualities differing intrinsically from one another, and which have the power of acting in harmony only when the several organs upon which these qualities depend are well developed and harmoniously balanced with those of Time and Order."

The advocates of an organ for Concentrativeness, however, are numerous, and some of them of pre-eminent ability, whose opinions command the respect of scientific men generally. One was the learned Vimont, who defines its function to be that of giving a disposition to dwell on feelings and ideas for a length of time, till all, or the majority, of the other faculties are satisfied in regard to them; thus imparting thoroughness to the mental operations by disposing us to hold the other faculties to a train of thought, or a course of reasoning, till we arrive at a legitimate conclusion.

"Some persons," says Mr. Combe, "can detain their feelings and ideas in their minds, giving them the quality of continuity; while others can not do this. The minds of the latter may be compared to the surface of a mirror, on which each feeling and thought appears like the shadow of a moving object, making a momentary impression, and passing away. They experience great difficulty in detaining their emotions and ideas so as to examine and compare them; and, in consequence, are little capable of taking systematic views of any subject, and of concentrating their powers to bear on one point. I have observed this organ to be large in the former and small in the latter."

## CHAPTER IX.

### THE SELFISH SENTIMENTS.

#### CAUTIOUSNESS.

THE sense or dread of danger is generally recognized by metaphysicians as a primitive faculty in man and in animals. Dr. Gall attributed to the sentiment a property of foresight, and called it *Circumspection, Foresight.* Dr.

Fig. 70.—CAUTIOUSNESS LARGE.

Spurzheim, however, did not accept this opinion, believing the organ to be related simply to the feeling of fear or insecurity, and named it Cautiousness. Later phrenologists generally accept Spurzheim's analysis.

The situation of the organ is in the central parts of the lower parietal convolutions, and is indicated in that part of the cranium where it begins to round off to form the crown; in other words, its place is near the middle of the parietal bone. (See Fig. 17–11).

The activity of this organ leads an

individual to apprehend danger, and thus disposes him to caution and prudence; to hesitate and to look well to the consequences before he acts. Such a mental faculty as this is obviously essential to creatures who are hedged about on every side by laws whose violation subjects them to inconvenience, to suffering, or to death. The great majority of our misfortunes result from a lack of prudence and forethought which it is the function of this organ to awaken. It is an ever-present monitor, whispering in our ear, beware! take care!

A deficiency of this organ renders a person careless, heedless, and reckless, especially if Combativeness and Destructiveness be large; and he may suffer a thousand misfortunes in the little affairs of life which can clearly be referred to a constitutional want of precaution. On the other hand, a too large endowment of this faculty produces irresolution and hesitancy, which unfit the individual for occupying positions requiring vigorous and decisive conduct. He sees dangers where none exist, and magnifies the difficulties which lie in his way. He is often a standing cause of ridicule to his less cautious neighbors, who look upon his forebodings as trifling and absurd.

In its morbid activity, this organ produces sensations of fear and apprehension which are highly distressing. Gloom and despondency pervade the mind, and no ray of hope lights up the dark and dismal future. Life to an individual in this state often appears an intolerable burden, and he flies to self-destruction as the only means of free-ing himself from misery.

Pinel, under the head of Melancholy, mentions several cases of disease of this organ. "A distinguished military officer," says he, "after fifty years of active service in the country, was attacked with disease. It commenced by his experiencing vivid emotions from the slightest causes. If, for example, he heard any disease spoken of, he immediately believed himself to be attacked by it; if any one was mentioned as deranged in intellect, he imagined himself insane, and retired into his chamber full of melancholy thoughts and inquietude. Everything became for him a subject of fear and alarm. If he entered into a house, he was afraid that the floor would fall, and precipitate him amid its ruins. He could not pass a bridge without terror, unless impelled by the sentiment of honor for the purpose of fighting."

Dr. Gall also mentions two fathers of families who, though in easy circumstances, were tormented night and day by the fear that their wives and children were liable to die of hunger. No amount of reasoning could convince them that this fear was groundless. This phase of its derangement is familiar to physicians having charge of lunatic asylums.

Cautiousness is an element in the mental constitution of all the lower animals, and it is a faculty clearly essential to their very existence, since almost every species is the prey of some other species, and life is maintained by almost constant vigilance. It would seem natural that in the lower animals the female should possess a larger endowment of this faculty than the male, because of the greater protection which she requires in her offices of motherhood, and this, accordingly, appears to be the fact. The organ is usually large in children, and those who have it small are remarkable for their tendency to accidents and rash conduct. The portraits of Charles XII. of Sweden exhibit Cautiousness very small, in

keeping with his recorded disregard of personal safety. Hoppmer's portrait of Nelson shows the organ small, and in the bust of George III. of England it is decidedly moderate.

APPROBATIVENESS.

The best metaphysicians admit the existence of a primitive faculty in man which inclines him to desire the good opinion of others, and which tends to render society harmonious by its promotion of individual forbearance and good-will. The circumstances which led Dr. Gall to discover the organ of this faculty, induced him to treat of it under the names of Vanity, Ambition, and Love of Glory. Dr. Spurzheim, however, carefully analyzed the sentiment, and designated it as now generally received.

Fig. 71.—Approbativeness Large.

Approbativeness lies in that part of the brain known to the later physiologists as the *gyrus angularis*, or angular convolution. On the cranium its place is a little above the lambdoidal suture, upward and a little backward from Cautiousness. (See Fig. 17–12).

It is its function to produce the desire for admiration, approval, praise, and fame. It takes its direction from combination with other faculties. If the moral sentiments are predominant, it will inspire the person with ambition to be esteemed for moral excellence. Combined with intellect, it will seek to shine in science and literature. Or, if the animal propensities are in the ascendency, the man will find gratification in being esteemed the biggest eater, the greatest fighter, or the most daring rogue of his class. It impels the poet, the painter, the orator, and the artisan to strive after excellence in their various pursuits, and is thus an important element in human progress.

In general society the influence of this faculty is immense. It is the chief source of fashion, pomp, and show, which are so generally courted, and to obtain which so many sacrifice comfort, health of body, and peace of mind. When too active, it is thus the source of much unhappiness to its possessor. Few, indeed, attain the summit of their ambition; to the great majority life is a continual and vain struggle after riches, honor, or fame. Yet to such minds a becoming appearance in the eyes of the world is a matter of the greatest importance, and in maintaining this, they invite poverty and distress.

"A due endowment of this faculty," says Mr. Combe, "is indispensable to an amiable character. It gives the desire to be agreeable to others; it is the drill-sergeant of society, and admonishes us when we deviate too widely from the line of march of our fellows; it induces us to suppress numberless little manifestations of selfishness, and to restrain many peculiarities of temper and disposition from the dread of incurring disapprobation by giving offense; it is the butt upon which wit strikes, when, by means of ridicule, it drives us from our follies. To be laughed at is worse than death to a person in whom this sentiment is strong.

"The feeling which is most com-

monly experienced when this organ is large, even when favorably combined with other organs, is anxiety about what the world will think of us. A youth in whom it is powerful can not do this thing, because everybody will look at him; or can not do the other, because people will wonder. In older persons it produces a fidgety anxiety about the opinion of the public, or of the circle of acquaintances who compose the public to them. This anxiety about public opinion, when too great, is subversive of happiness and independence. It renders the mere *dicta* of the society in which the individual moves, his code of morality, religion, taste, and philosophy; and incapacitates him from upholding truth and virtue, if disowned by those whom he imagines influential or genteel. The want of a philosophy of mind allows wide scope to the aberrations of this faculty; for, in the absence of well-defined principles of taste and conduct, individuals of high pretension dictate with success, fashions, however absurd, which the herd of mankind follow."

The French, as a people, exhibit conspicuously the influence of Approbativeness; it imparts to their language and manners the character for courtesy and affability which has so long distinguished them. In the English people Self-esteem is comparatively predominant, and the language of compliment does not flourish among them.

This faculty is manifested by the horse, the dog, the peacock, and others of the lower animals. "Every one knows," says Dr. Gall, "that in the south of France they decorate the mules with bouquets when they travel well. The most painful punishment which can be inflicted on them is to deprive them of their bouquets and tie them to the back of the carriage. I have a female ape; whenever they give her a handkerchief, she throws it over her, and takes a wonderful pleasure in seeing it drag behind like the train of a court-robe."

As would be expected in a man so much given to "sacrificing to the Graces," the busts of Lord Chesterfield show a very large development of this organ. In Napoleon's head it was very salient. As a general rule Approbativeness is larger in woman than in man, in correspondence with her more sensitive and emotional nature.

*(To be continued.)*

## RESULTS OF EXPERIMENTS IN NERVOUS FUNCTION REVIEWED.

*(Concluded.)*

**Facial Nerves—Pneumogastric, etc.—Theory of Sensation—Results of Vivisection—A New Classification—The Cerebellum and Reproduction—The Psychological Side of the Subject.**

IN his experiments on the spinal nerves, Sir Charles Bell seems to have conclusively demonstrated that the posterior roots alone transmit filaments of sensation—that is to say, communicate with the various and myriad corpuscles of the sensory surfaces. He divided the posterior roots of the nerves supplying the lower limbs in a rabbit. The animal was able to crawl. In his second experiment, after stunning the rabbit and laying open the spinal canal, he irritated the posterior roots, inducing no motion in any part of the muscular organism; but on grasping the anterior roots with the forceps, the muscles supplied by the irritated nerve immediately contracted. With puppies six weeks old, in which it was not difficult to cut through the vertebræ with a sharp scalpel, Magendie subsequently confirmed Bell's views. In his first experiment he divided the

posterior roots of the lumbar and sacral nerves, and on pressing the lower limbs violently, or pricking them with a sharp instrument, no muscular response was elicited, and no sensation followed. The motor function was, however, comparatively uninjured. Two repetitions of the experiment were attended with the same results. On dividing the anterior roots in a fourth animal, the hind legs became immediately flaccid, although their nervous sensibility was obviously unimpaired; but on cutting, both motion and sensation were completely arrested. This was in 1822.

Subsequently the same experimentalist (*Journal de Physiologie*, tome ii, page 336) administered sufficient doses of nux vomica to produce violent tetanic spasms, and divided the anterior roots of the nerves supplying the hind legs. The result was, that while the rest of the muscular organism was involved in violent convulsions, the hind legs remained motionless and flaccid. When, however, the posterior roots only were severed, the convulsions involved the whole muscular system. It is evident from more exact experiments that the motor and sensory functions are not isolated by any exact anatomical boundaries; for when without division the anterior roots are irritated, the motor phenomena are accompanied with slight, but decided evidences of sensibility, while, stimuli applied to the posterior roots under similar circumstances, occasion slight muscular contractions—the latter probably reflex phenomena. The evidence of the galvanic current is more conclusive, for if, after division of both roots of the lumbar and sacral nerves, the battery is applied to the ends not connected with the spinal column, one after another, the anterior nerves respond with energetic muscular phenomena, and the posterior with muscular contractions of a less decided cast.

The pathology of insulated paralysis in the human subject offers demonstrative evidence of the general indisputability of these results. A very decided case is described by Dr. Royal Collard, in which an invalided soldier, Sprevale by name, was for seven years totally incapable of motion of the limbs, though they were not deficient in sensibility. On *post mortem* examination of the spinal canal, a pultaceous softening of the whole anterior section of the spinal column had taken place, and the anterior roots of the spinal nerves had lost their consistency, while the posterior portion of the cord was comparatively healthy. Bell and Magendie both quote equally conclusive cases. Dr. Rullier reports a similar case in the *Journal de Physiologie*, tome iii, page 173, and Dr. Koreff describes another in the succeeding volume, page 376.

I shall not discuss the remarkable *experiences sur le principe de la vie* in support of the first crude views of Legallois as to the relations existing between the heart and the spinal cord. The main idea of the theory was that the principle that animates the different organs of the body is resident at the roots of the spinal nerves supplying them—an hypothesis that Dr. Wilson Philip's experiments very conclusively refuted by showing that the circulation continues as long as respiration can be continued by artificial means, after complete removal of the spinal marrow, while suspension of respiration suspends the action of the heart. Flourens subsequently confirmed Dr. Philip, and demonstrated that the circulation is secondary to respiration.

Experimental inquiries concerning the encephalic nerves have contributed very little to the current theories of physiology. Mr. Herbert Mayo appears to have been the most successful of the elder experimentalists in this department. He demonstrates that integrity of the third pair is essential to the motions of the iris, and that their section is followed by full dilatation of the pupils, which at once cease to be affected by the stimulant action of light. If, after division of this pair, the ends communicating with the eye are irritated, the iris immediately contracts. Flourens has demonstrated that extirpation of the corpora quadrigemina is productive of paralysis of the iris, and that irritation of those bodies induces contraction of the same. According to Mayo, division of the optic nerve is attended with a similar result. On dividing the optic nerves within the cranium of a recently decapitated pigeon, irritation of the sections connected

with the eyes elicited no response, but when the ends connected with the brain were irritated, the iris immediately contracted. These experiments clearly indicate a reflex action between the optic nerves and the third pair, and that the stimulant of light acting first upon the retina, is propagated by the optic nerve to the optic ganglia, and reflected as motion of the iris through the agency of the third pair. The fourth pair appears to co-ordinate, according to Bell, the insensible and instinctive rolling of the eyeball and to associate it with winking of the lids. The sixth pair co-ordinates the external muscles of the eyeball. Bell classes the portio dura of the seventh pair among the respiratory nerves, which is no doubt an error, as it supplies all the muscles of the face except those of the under-jaw. According to Bell, its section induces no evidences of pain, but Mayo denies this alleged absence of sensibility. Its section in an ass was followed by cessation of the movements of the nostrils, but had no other effect on respiration. Mr. Mayo infers from his experiments that the three divisions of the eighth pair (the glosso-pharyngeal, the spinal accessory, and the pneumogastric) are all nerves of both motion and sensation. Irritation of the former causes contraction of the muscles of the pharynx, but not of those of the tongue. Irritation of the spinal accessory produced both muscular phenomena and evidences of suffering. Section of the pneumogastric has been practiced since the days of Baron Haller, and is always followed by death after a longer or shorter interval. Piccollomini and Willis contended that the result was due to arrest of the movements of the heart, and Haller that it was to be sought in disturbance of the digestive function. Dupuytren, the eminent surgeon, was the first to trace the fatal result in these cases to asphyxia, a view which Legallois afterward established by experiment. In young animals, owing to narrowness of the aperture of the glottis, death supervenes very suddenly on section of this pair; while in adult animals the asphyxia is the immediate consequence of serous and mucous effusion into the tubes and air cells of the lungs. Dr. Wilson Philip has experimented with reference to influence of the pneumogastric nerve on digestion, and demonstrated that its section immediately arrests that process. On the whole, the eighth pair must be regarded as distributed both to motor and to sensory surfaces. The lingual nerve (ninth pair) supplies the muscles of the tongue, but irritation of it causes symptoms of suffering. On division of the fifth pair in a living animal, by Bell, the under-jaw dropped, but on irritation of the sected end the jaw was shut with a snap. On exposure and irritation of the superior maxillary trunk of this nerve, the lip was observed to hang low and the animal to give evidences of acute suffering. All the experiments taken together, of Mayo, Bell, and others, establish pretty conclusively that the fifth pair is distributed to the sensory surfaces of the face and its appendages, in the first instance, and to the motor surfaces of the under-jaw in the second. Its filaments are connected with the sensory surfaces involved in the act of sneezing.

In summing up the results of experimental inquiry in this direction, it must be confessed that vivisection has added very little to the information of the physiologist, and really nothing that would not have been concluded from facts of structure and function; but in what it has done it has strikingly confirmed the general principles of physiology and placed them on an experimental basis. The lingual trunk of the fifth pair, according to pathological observations, supplies the sensory corpuscles of the tongue. Colombo describes a case of congenital privation of taste, in which, on *post mortem* examination, this trunk was distributed upon the occiput, instead of being expanded upon the surface of the tongue. It also supplies the interior structure of the teeth. To the reflex action of this nerve is, therefore, to be ascribed the gritting of the teeth when attacked by a sharp acid, also those instinctive movements of the face that follow the contact of a disagreeable article of food with the sensory or tasting surface of the tongue; and although it is not concerned in olfaction as such, it distributes itself to the sensory nasal surfaces in such a manner that its reflex action is the cause of

the act of sneezing, in which the olfactory bulbs are not probably at all concerned.

In classifying the nerves proceeding from the cerebro-spinal axis, I am inclined, from various considerations, to reject all previous attempts in this direction, based upon the mere division into motor and sensory classes, and to adopt what seems to me a more natural system, somewhat as follows:

I. The group of the higher senses—vision, audition, and olfaction—originating in special ganglia and terminating in very complex ganglia. With the exception of the last, these nerves are connected by reflex action with special motor pairs subservient to their function, and communicate directly with the central or locomotor tract of the cerebellum. The olfactory bulbs are, on the other hand, connected directly with infero-lateral anterior convolutions of the brain by pulpy commissural pedicles, and thus refer themselves at once to the ideo-motor and perceptive tract. I am inclined to think that the instinctive nausea occasioned by fetid odors is due, not to the olfactory nerve, but to reflex action of the fifth pair. Each of these nerves passes backward, from the orbit, inclining toward its fellow, and decussates with it just beneath the sylvian fissure in a very complex manner, sending a few filaments upward to the third ventricle, and, after separation, to the pons tarini, a cerebral continuation of the gray commissural lamina of the spinal axis. Hence the instinctive shudder occasioned by the sudden vision of something terrible. They now wind backward adhering to the crura cerebri; send fasciculi to the posterior ends of their respective optic thalami, thus communicating with the coronal regions of the brain, and finally merge into the corpora quadrigemina, or ganglia of vision, on the posterior surface of the cerebral crura, from which by a flattened band they communicate with the locomotor tract of the cerebellum. In the course of their route along the cerebral crura, the latter sends off a pair of nerves known as the third pair, having their origin in the cineritious layers on their surfaces, which are distributed to the muscles of the eyeballs and control their voluntary motions as well as the contraction of the iris. The first series of reflex actions resulting from impression of the retina thus occurs in the cerebrum, and consists of voluntary motions of the eyeball. The second series is instinctive. From the nervous ribbon uniting the corpora quadrigemina with the locomotor tract, spring two minute nervous threads, which pass forward, enter the orbits of the eyes, and are distributed to the superior oblique muscles. From the cerebellum comes the instinctive stopping and shrinking back when confronted with a sudden obstacle. The actions of the optic thalami and the cerebellum are now associated, and the person thus confronted deviates from direct forward motion and avoids the obstacle. Another pair of nerves (the sixth) originates in the corpora pyramidalia, and are distributed to the abductor muscles of the eyes, responding like the rest to the impressions transmitted backward by the optic nerves; while, in addition to these relations, the corpora quadrigemina spring from the olivary bodies and thus connect the impressions of vision directly with the great vital centers. In a similar manner, having received the sonorous impression, the auditory nerves pass obliquely backward and inward beneath the crura cerebelli, and merge into their respective ganglia, known as the fasciolæ cinereæ, after sending filaments to the corpora restiformia, from which spring the so-called facial nerves. These ganglia are, again, directly related to the locomotor tract of the cerebellum. The facial nerves which represent the reflex motor action of the auditory originate also in the restiform bodies and accompany the latter as they pass forward and outward, being so distributed to the ears and to the muscles of the face and neck as to make provision for the instinctive movements associated with condition.

II. The trigeminal group is generally known as the fifth pair, the sensory roots of which spring from the olivary bodies, and the motor roots from the pyramidal bodies. The impressions of the nerves of taste are received by filaments from this pair, connected with the axile corpuscles of the tongue and other sensory surfaces adjacent, and transmitted to the Gosserian ganglia, which oc-

cupy the positions assigned by Phrenology to Alimentiveness. Its reflex action by many of the trunks distributed to the nasal muscles, to the muscles of the jaw and lips and throat, to the glands of tears, and to the integuments of the forehead, specially concerns the various modes of facial expression indicative of the vital instincts, and the various associated muscular movements of the act of mastication.

III. The vital group, consisting of the eighth and ninth pairs, the former including the glosso-pharyngial, the pneumogastric, and the spinal accessory, and the latter only the hypoglossal. All these spring from the medulla oblongata or vital bulb. The general distribution of the first is to the tongue and pharynx, some of its filaments being traceable to the salivary glands, others to the base and external margin of the tongue and to its larger axile corpuscles, others to the muscles of the tongue and pharynx. The second concerns itself with deglutition, digestion, respiration, and circulation. The third participates in these functions. The fourth (hypoglossal) is distributed to the muscles of the tongue and larynx, and originates in the pyramidal bodies. The associated action of these two groups is essential to articulation; and in their special communication with interior sensory surfaces they may be termed nerves of organic sensation.

IV. The spinal nerves, consisting of thirty (rarely thirty-one) pairs, which in their distribution to interior sensory surfaces are nerves of organic sensation, in their distribution to peripheral surfaces nerves of peripheral sensation, and in this distribution muscular tissue nerves of motion. From recent and very careful dissections, under a very powerful dissecting microscope, of the nervous organism of male mice, I am inclined to think that minute anatomy offers demonstrative evidence of the influence of the cerebellum on the reproductive function, because, first, the ultimate filaments distributed to the very distinct and peculiar sensory corpuscles connected with this function appear to ascend by way of the posterior cord and to be traceable to the cerebellum, and not, as a rule, to terminate in the cineritious tissue of the spinal marrow, although some of them certainly terminate in that manner, and because, secondly, as is demonstrable from dissection of the human subject as well as from those of the inferior animals, the associated movements concerned in reproduction appear to be referable to the posterior cord by way of the posterior roots of the spinal nerves.

It is thus clearly obvious that experiment and observation have, since Gall and Spurzheim lived, eventuated in little more than verification upon verification of the views first advanced by those eminent investigators, and it is evident beyond all controversy that the scientific psychology of the future will minutely correspond with their leading propositions. It is obvious also that the hard and fast distinction between sensory and motor nerves, introduced by Sir Charles Bell, must be abandoned in favor of a more natural view, regarding the excitor property of the nerve cell as ultimate and sensory and motor phenomena as springing from that property. In one aspect of these investigations, the demonstration of a certain quadruple polarity of the excitor energy of the human brain, with the pons varolii as a center and the four crura, namely, the crura cerebri and the crura cerebelli, radiating from it, the phenomena of Mesmerism have a satisfactory scientific solution.

It has been my intention in the series of papers, of which this is the last, to lay the foundation for a thoroughly scientific system of psychology, and one resting solidly upon facts of structure and function, while embracing and elucidating the higher phenomena and the more spiritual aspects of human life. It must be remembered always that the excitor property of nervous tissue is the last induction of physiology in the direction of the spiritual—the link that connects physics with metaphysics, and matter with consciousness. The physiologist travels beyond his orbit when he enters so far upon the domain of transcendental psychology as to venture upon any denial of the spiritual being of the soul. It is his to offer a scientific basis for the higher nature of man, which man himself comprehends as a fact of consciousness and as a subjective

entity akin to the Infinite in its activities and transcending in its being the narrow limits and necessities of mere material phenomena. I offer these pages, with their inadequate endeavor to furnish a scientific basis for the higher yearnings of human life, as a contribution to an inductive psychology, at issue on many and material points with accepted modern authorities, but in accord in all essential particulars with the views of Gall and Spurzheim, those long-contemned masters and founders of inductive method in this important department. FRANCIS GERRY FAIRFIELD.

## HENRY M. STANLEY, THE AFRICAN EXPLORER.

THIS portrait indicates in a marked degree the elements of force, and is allied in its general characteristics to that order or class of contour and expression which we find in the portraits of adventurous men generally. Dr. Livingstone, Gordon Cumming, Barth, Cook, De Soto, show a similar combination of temperament and organs. The motive temperament predominates, while of the mental and vital there is a nearly equal proportion. The strongly-knit frame, capacious chest, and broad shoulders belong to the man of fortitude, vigor, and endurance—to the man who believes in action and carries his plans into performance by personal effort. The perceptive organs are well marked, giving him a higher appreciation of external life, of things concrete, than of ideas, thoughts, and mere opinions. He believes in seeing in order to know. His perceptive faculties have a critical, specializing tendency. While most men with large observing faculties are inclined to cover a wide field of view, Mr. Stanley, we think, is disposed to limit the scope of his scrutiny, to apply himself to the examination of a few objects, and pursue them to an ultimate. He is not satisfied with general statements, but aims to affix the peculiar properties, features, values, or utilities to objects severally.

He is very strong and steadfast in his opinions and beliefs. Combativeness, which, as we infer from the features, is larger in his brain than Destructiveness, contributes a high degree of positiveness and resolution, and also renders him in disposition inclined to irritability and harshness when opposed. He takes offense easily when slighted or criticised unfairly. He has a good opinion of his capabilities and merits, and expects the world to accord him a full measure of respect for whatever of worth he may have accomplished.

His social instincts are fairly indicated, giving him the tendency to form acquaintances and ties of friendship and to enjoy fellowship everywhere, but he subordinates social interests to whatever of work or enterprise he may seek to achieve. We have heard men speak slightingly of his abilities; for instance, that almost anybody, under similar circumstances and with like support, could do the same things. Such remarks are made without reflection or in ignorance of the requisites for successful effort in a line so beset with dangers and sufferings as that of the explorer. There have been but few successful travelers in new and unknown regions; for the reason that a certain combination of mental faculties, supplemented by a certain physical constitution, is essential to success. Many, perhaps hundreds, may be willing enough to enter upon the life of the African traveler, but most of them would fail, as many brave men have failed, in the outset of the attempt.

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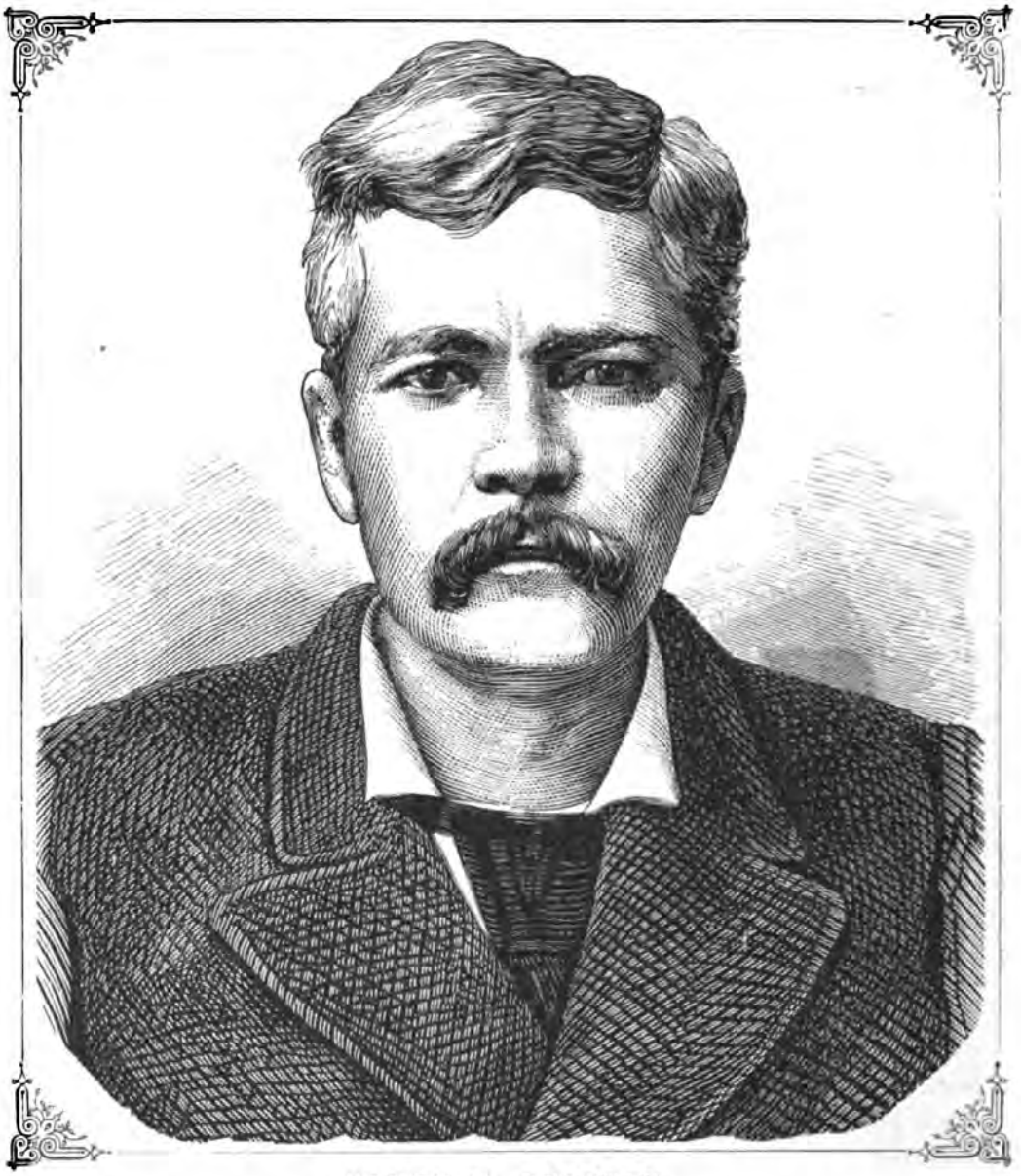
The subject of this sketch was born in Wales, near the town of Dinbych, in 1840. One account has it that he first saw the light in a Welsh poor-house, the truth of which appears unlikely, from the fact that

his early education was better than that of the average Welsh boy, and, of course, far above that given to the dependents of charity. His father and family were known in the country by the name of John Rowlands or Rollant. How he became a Stanley will be seen further on. When a mere youth he occupied the position of an assistant teacher in the public school of Llanelwy, afterward of Treffynm, and still later of Wyddarug.

The adventurous spirit was strong within him as a boy; whether or not it was inflamed by reading flash novels, remains to be investigated. At any rate he was scarcely more than fifteen years old when he embarked as a cabin boy on a steamer bound for New Orleans, where he landed. He was without means and friends in the great Southern city, but his native energy tolerated no misgivings or despondency on the shore of a great and prosperous country. He sought and readily obtained employment in



HENRY M. STANLEY.

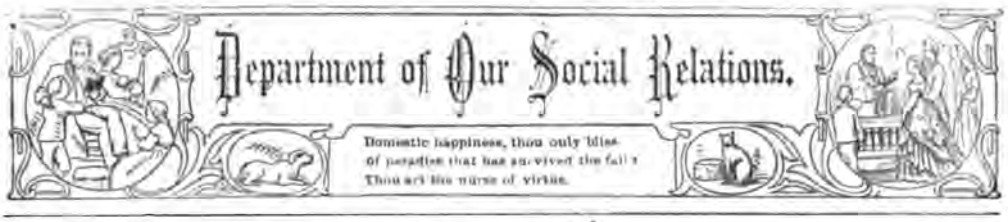
the business of a Mr. Henry M. Stanley, who became attached to the youth, and having no children of his own, adopted him and gave him the name by which he is known the world over through his achievements in African travel and exploration.

Unfortunately, or fortunately, as the reader may consider it, the young man had but become well settled in his new home when his benefactor died, and as no provision had been made for him, Stanley was compelled to go and seek his livelihood elsewhere. A few years later the Civil War opened, and Stanley concluded to enlist, which he did on the side of the people among whom he lived. Early in 1862 he was taken prisoner by the Union forces, but succeeded in making his escape and returned to Wales, where he visited his mother, who then lived in the little village of Bodelwyddau, near Rhyl. In 1863 we find him again in the United States and serving in the navy as an ensign on the iron-clad *Ticonderoga*. At this time he wrote the letter or letters which secured him an engagement as a newspaper correspondent, after the war closed, when he traveled in Turkey and Asia Minor. In 1866 he again visited his mother in Wales and also his native place, Dinbych, where, although it was well known that his adopted name was H. M. Stanley, yet he was addressed and referred to by those who knew him as John Rowlands, and it was "John Rowlands" that he registered on the visitors' book when visiting the ancient Dinbych Castle.

Leaving Wales for the third time, he came to New York and entered upon the profession of journalism. He accompanied General Hancock's expedition against the Indians, in which service he displayed great courage and proved himself a writer and correspondent with descriptive powers of no ordinary degree.

In 1868 he was engaged by the *Herald* as a traveling correspondent, and in that capacity accompanied the British army on its expedition to Abyssinia. Upon his return to London he was visited by his mother and other near relatives, and not long after this he again paid a visit to his native Dinbych, taking with him many relics and curious things from Abyssinia. From there again, as correspondent of the *Herald*, he traveled over the Continent, and while in Madrid, Spain, in October, 1870, received instructions from Mr. Bennett of the *Herald* to organize an expedition to learn the fate of Livingstone, the African explorer, of whom only rumors had been heard for upward of two years. He reached Zanzibar in January, 1871, and toward the end of March set out for the interior with a company of 192 men. After eight months of toilsome journeying he found Livingstone, who was living in a state of almost complete destitution near Lake Tanganyika, and furnished him with supplies and means for further exploration. Mr. Stanley set out on his return journey in March, 1872, and in July reached England, where he was received with distinguished honor by the Queen and the learned men of England. He published in the same year an account of his expedition, under the title of "How I Found Livingstone," which has obtained a wide reading.

Tidings having been received of the death of Dr. Livingstone in Central Africa, Mr. Stanley was placed at the head of an expedition, the cost of which was jointly undertaken by the New York *Herad* and the London *Daily Telegraph*, and the object of which was to explore the lake region of Equatorial Africa. He left the coast in November, 1874, at the head of 356 men, and, after many hardships and some severe contests with the natives, reached Lake Victoria Nyanza, February 27, 1875, having lost 194 men by death and desertion *en route*. For nearly three years more he was engaged in the work of exploration, penetrating, with unsurpassed courage and fortitude, the most dangerous and difficult regions, and triumphantly carrying through his undertaking to open up to civilizing influences parts of Africa hitherto almost unknown to the trader or missionary. He has recently published an account of these travels in a work entitled "Through the Dark Continent; or, The Sources of the Nile, around the Great Lakes of Equatorial Africa, and down the Livingstone River to the Atlantic Ocean."




## BOOKS FOR BOYS.

THE demand for this class of books is shown by the avidity with which everything purporting to belong to it is seized as soon as issued from the press. The heavy sales of every book announced to be for boys has tempted publishers and authors of good standing, as well as those less scrupulous, to engage in their manufacture. If the fundamental principles of Phrenology were more widely circulated among the majority of people supplying this great natural want, they would be more careful with regard to the organs appealed to, and thus stimulated by their works.

Any parent who has book-loving boys and has examined the books they bring home, from even their Sunday-school libraries, must be convinced that there is great need of reform in this matter. Those who neglect the important duty of examining their boys' reading matter, under any pretext of work or lack of time, will as surely be severely punished in after-life as if they neglect the less important items of healthful food and warm clothing. For possibly some sensational story of a boy about his own age, who has been driven, by the harshness of a stern parent or the meanness of a miserly guardian, to leave his cheerless home in the dead of the night, and, after sufferings which seem very light on the printed page, he has become a famous man, may tempt your own boy to rebel against authority which, however reasonable or even indulgent, will often seem unkind to an impetuous boy who is longing for a chance to imitate his hero. Ah, worldly father, there will be time then from day-book and ledger! Fashionable mother! there will be time from dressing and shopping or, even in their midst, for many regrets. Even you, weary toilers of the farm or in the kitchen, will think a load of hay more or less, a pudding or pie less among the dishes which you deem indispensable, because some one else always has them on her table—a small matter compared with a desolate home and broken hearts.

Your only boy is a wanderer, you know not where! Neither do you know, for you "had not time" to examine into the matter, that the fictitious hero of nearly every book he has read since he learned to read in two syllables, was made a wanderer. A wanderer who, through a series of fortunate circumstances, which would be impossible outside a "Book for Boys," after encountering more foes than Don Quixote, and meeting more wonderful adventures than Baron Munchausen, has at last, while still in early manhood, returned to the home of his boyhood to rejoice the admiring eyes of all his friends, to triumph over and then magnanimously forgive all his enemies, and to evince his constancy to the young girl schoolmate who has always believed in him, thus making her the object of the repentant envy of all the young girls who once sneered at and slighted him.

Another stereotyped phase of boy literature comes with moccasin feet, but tomahawk in hand, to defeat the peaceful precepts of many a Christian parent. It is the Indian style. Mere boys prove keener of eye and surer of aim than veteran hunters, and defend exposed garrisons or bring them relief when companies of stalwart men have failed. How many boys in peaceful homes, in sight of the school-house and the church, are longing for a frontier life and repining because there are no Indians to combat.

Stories of college life, with its "jokes," which in law would be "crime," with its abuse of unsuspecting youth, whose only

offense is rural verdancy, with the constant tendency to exalt intellectual smartness above the patient plodding which in actual life is often the first to reach the goal of success, are among the "Books for Boys" now more salable than they would be if library committees and parents would give as much care to this matter as they would bestow upon the feeding of a favorite colt.

An intelligent boy of thirteen paused over his lesson the other day to ask with regard to the probability of war with Mexico, and if he were old enough to be received as a volunteer. His mother, who had far other plans for her youngest boy, turned back in memory to the host of war stories which flooded the land about the time of his first interest in literature, and regretfully thought that perhaps it had been well that she had not allowed patriotism to vail the insidious nurture of Combativeness.

What organs are most constantly appealed to in the present literature for boys? Combativeness, Destructiveness, Self-esteem, Firmness, Acquisitiveness, and, in some books, Mirthfulness and Secretiveness. All very good and useful organs when subordinate to and directed by the higher ones. Unfortunately, however, these are the very organs which, in a majority of boys, are already too large and active in proportion to those which should direct and control them. Of course, the present style of sensational literature for boys—which promises to give us in due time a harvest of tramps and murderers of our own, instead of being obliged, as now, to import the most of them—is the natural reaction of the goody style of a past age. Most adults can recollect the stories of good little children that died and were so crippled and poor and afflicted in their short lives that we could not help at least a sigh of relief when they did die. Then there were children who committed some slight offense and were in all sorts of trouble and distress of mind for years afterward in consequence of it; while the bad children, in the same book, seemed to slip along very easily until the end, when some sudden calamity overtook them, and the one who tried so hard to be good, at last succeeded. The juvenile reader was left painfully in doubt if the good child had not endured the heavier punishment. Literally translated, by those old enough to understand it, the lesson was that a sensitive conscience, improperly excited by ignorant teachers, "blind leaders of the blind," might become an instrument of torture to its possessor, compared with which the far-off fires of a supposed hell might lose half their brilliancy. Unluckily those who read this class of books most, were the ones who were least able to comprehend this truth or to use it in the service of youthful humanity.

There is, of course, a happy medium between these styles, and blessed be the few writers who have found it. Occasionally we are surprised upon examining a book intended for boy-readers to find it healthful in its tone, free from affectation of piety, yet full of faith in God and humanity, full of real life, yet without the marvelous incidents of sensationalism. We do not wish our boys to become milksops, neither do we wish them to be fire-eaters. Our mental tastes, as well as our physical ones, are much governed by habit. As plain food is best relished by those who have not acquired a relish for condiments, so history, biography, and travels are most interesting to those who have not wasted their mental appetite upon the pages of highly-wrought fiction.

Science, too, is beginning to prove herself "a creature not too bright and good for human nature's daily food," and speaks to us through our monthlies, and even our daily newspapers, in words that even the unlearned can understand. We trust a better era is dawning. God help us all to speed the day. MRS. JULIA A. CARNEY.

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INSULATING BEDSTEAD AS A CURE.—An Englishman who insulated his bedstead by placing underneath each post a broken-off bottom of a glass bottle, says that he had not been free from rheumatic gout for fifteen years, and that he began to improve immediately after the application of the insulators. A local paper quoting this item adds: "There's many a fellow who could cure his gout, if he would break off the bottoms of his glass bottles in time."

## FACES WE MEET OFTEN.

TO one who lives where population is comparatively dense, the variety of physiognomy offered to his observation every day seems unlimited; yet, as time passes and his mere glance of curiosity becomes scrutiny, he learns to distinguish faces and forms by typical indices, and to trace relationships between certain lines of contour and expression and certain employments, methods of thought, and age. People at large may be said to become skillful without effort in determining age from the physiognomy; mere association compelling observ-

GRANDMOTHER.

ation in that respect. So there are other classes of facial outline with which we become familiar and accurately interpret them off-hand. For instance, there is the genial, compassionate, loquacious grandmother. One glimpse of her profile and neatly-arranged cap is sufficient to satisfy us of the fact of her double motherhood, and we quite envy the household which claims her as one of its members. Her prudent counsels, wide experience, ready hands, are of priceless value in family emergencies. She is forbearing even when sharp reproof would be appropriate; and her sympathy with the little ones, who crowd at her knee, appears to know no limitation. She has a Sportive, artless, free, curious to know all that is being done in her neighborhood; especially interested in the semi-whispered gossip of her adult friends, her open eyes, mouth, and ears taking it in when they can as of world-wide importance. She is never at rest from the hour of waking to bed-time, and then reluctantly yields to sleep; tongue, hands, and feet are constantly alert and responsive to every opportunity for their her for their recital, and her tongue never seems to tire in relating them. Dear old lady, the home circle is sadly broken when the inexorable Reaper takes you from it!

Then, in fine contrast to grandmother, is the girl just on the margin of maidenhood. the side of indulgence. She has an exhaustless fund of stories and incidents from her early life; the children know this and beset strong will and well-known humors, but where the young are concerned they lean to exercise. She will at one moment appear deeply interested in describing some school occurrence, but she has scarcely reached the denouement when she breaks off to ask you a question about some entirely remote matter, a thought of which has suddenly entered her mind. She is a problem to you, a mixture of incongruities; at one time surprising you by a remark which seems to be the outcome of a deep, philosophical humor, so profound are its issues and relations. At the next moment she betrays an arch, yet exasperating, stupidity with respect to the most simple and apparent truths, and you are inclined to consign her teachers and immediate friends to a limbo of dire condemnation for negligence in the ordering of her education. She can, however, in her turn, and with an almost infantile artlessness, put you to the blush by pouring upon you a broadside of questions, which in sudden amazement you find yourself entirely at loss to answer in a categorical manner, and you endeavor to save your dignity and adult superiority by evasive sophisms. Look at her in our picture—keen, bright, ready, pert, yet coy and confiding—our little, fun-loving sprite, who gives brightness and life wherever she moves.

The inhabitant of the town recognizes at once the rugged, masculine profile of our next portrait. Its owner is too active, ardent, and "progressive" a man not to be known pretty generally among the people with whom he may reside. He is your man of ideas that are very fresh and new, and of a world-reforming nature. Usually of artistical belongings—a painter, draughtsman, or photographer—he deems his art an authoritative passport to your respect; and if his grand schemes or discoveries do not awaken your admiring consideration, he mentally pronounces you wanting in culture, or one who is wrapped up in his own selfish purposes. Nothing can shake the self-possession of our esthetic acquaintance in any emergency affecting his personal dignity; his glib tongue can frame with extraordinary deftness pretext after pretext for conduct, howsoever inexcusable, in a truly practical sense. He is shiftless, unsound, and extravagant in the esteem of solid elderly people, but he flings back their half-uttered judgment by openly declaring them superannuated fogies, obstacles to progress, dead weights, etc. It is quite certain that so far as pecuniary results are concerned, this gentleman rarely has any to

"Our Kitty."

exhibit; his wonderful theories ultimate in no bank account or bonded investments. In middle life we find him a teacher of drawing or mathematics, or perhaps of French or German, in some school of moderate reputation, but his style and bearing are the same, and he is still ready to entertain you with his marvelous schemes, and "guarantee" to you the most surprising results, if you will but apply your hard-

"Professor" Smith.

earned dollars to their evolution under his superintendence. He is a striking figure in any community, and contributes in many ways to enliven the routine of its affairs, his contrasting moods and eccentric philosophy affording us amusement, and occasionally suggesting an idea which is not altogether unprofitable. H. S. D.

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Hygiene in Japan.—Professor Edward L. Morse, who holds a professorship in the University at Jeddo, a city of 1,000,000 people, is now in this country. He recently delivered a lecture on the manners and customs of that people, in which he alluded to their careful treatment of children, the invariable cleanliness of their houses, resulting in the entire absence of diseases such as scarlet fever, diphtheria, and other afflictions so common in this country. The people are of gentle manners, and particularly kind and careful of their animals. During his residence there he never heard a cross word uttered by a native, saw no fighting, and heard no profanity. These people are heathens!

## FEELINGS.

"AUNT JANE is awful cross this morning," said Ella Gray to her sister Fanny; "I wish I could get out of the house; I think she is perfectly hateful when she has one of these contrary fits."

"Well, you don't mend matters when you reflect her crossness and answer her as you have this morning."

"I don't care; I don't think it is fair for me to submit to such treatment, and I won't—so there!"

"You know Aunty is sick, or she would never be so unreasonable," said the gentle Fanny; "she has dyspepsia, and a dozen other ailments; and she fancies that she is neglected and uncared for, and—"

"Yes—and," interrupted Ella, sharply, "and, and, and, to the end of the chapter. She has no business to fancy; she knows that we do everything that we can for her."

At this point of the conversation there was a step at the door, a rustle of crisp muslins, and a pretty woman of thirty-five entered, with a laughing "good-morning."

"Why, Aunt Grace!" screamed both girls, "how glad I am to see you!"

"Particularly glad this morning," said Ella, "for Aunt Jane is in a tantrum, and the house is getting too hot to hold *me*."

"What is the matter?" asked Grace—Mrs. Thorne.

"The same old story—I am all out of patience; I think sometimes that we should be all better off if—"

"Don't say it," interrupted Mrs. Thorne. "Jane has been good to you all your lives. I can remember when she adopted you, after your mother's death, and what care and thought she gave to you, sickly babies that you were."

"We are not to blame for that," said Ella.

"No, and it isn't of that that I want to speak. I can give you a clue to Aunt Jane's ill temper, that you little suspect. She has a sensitive, loving heart, combined with small power of self-control. She feels badly, and at once gives way to the feeling. By revealing the inharmony within her, she makes her surroundings inharmonious, and then suffers still more; this added unhappiness she plainly shows, and so adds to the disagreeableness of conditions, and at last she is practically insane; her nerves have lost their natural tension, her thoughts their natural order; her heart rebels against the coldness that she has invoked; she has produced in you, whom she loves, dislike, and that dislike she can't bear."

"Yes, I see," said Fanny. "Aunt Jane feels bad a little, and is cross in consequence. Then we react from her mood, and she grows worse; then we react more than ever, and so it goes on. The trouble might all be saved if Aunty would hide the first degree of bad feeling."

"Exactly; I don't believe she can help herself after her nerves have reached a certain irritation. When the condition of dislike on your part is brought about, then her heart, a very tender one, feels itself alone; all her troubles press upon her, and she is like a delicate instrument all out of tune; you try to escape the discord, and increase it by so doing."

"But what can we do?" said Ella.

"Bear with Jane's infirmities. I am afraid she is too discordant ever to be tuned again in this world. It requires an immense effort to control disordered nerves; I know that by experience."

"You! Aunt Grace?"

"Yes; I suffered once much as Jane suffers now; and for a while, not long, I was in danger of becoming a nuisance to my friends."

"I wouldn't believe it if anybody but yourself said so," exclaimed Ella; "but tell us how you cured yourself."

"By controlling the beginnings of irritation. If I awoke in the morning feeling cross, I took especial pains to smile and speak pleasantly. In that way I evoked a smile and a pleasant word from husband and children. The little strain of melody cheered me, and I had strength to smile again, and with more warmth; so, little by little, my jangled nerves were harmonized—my chilled heart was warmed."

"I see," said Fanny, "you made sunshine for yourself, and then got warm in it."

"Yes, just as you would make a fire on a cold morning—the colder the day the more fatal to sit down in inaction and fret about the freezing temperature; and the day is very cold to a sensitive woman who has spent her vitality too freely, perhaps too generously, and has lost the balance of health."

"So it is," said a voice full of tears.

"Why, Jane! Why, Aunty!" burst from the lips of the three women.

"I have heard it all," said Aunt Jane—"every word. If I had begun years ago, I might have conquered, as Grace did; as it is, girls, you will have to bear with me; perhaps I shall be of use to you as an example."

"It will be no trouble," said the impulsive Ella, "if you speak to us always as you speak now."

"Take the girls into your confidence," said Grace, "and take God into your confidence. While there's life there's hope."

I can not say that Aunt Jane became an amiable woman henceforth; but there was more harmony in the little household—more effort on the part of the invalid for self-control, more sympathy and patience on the part of the young girls.

Ella and Fanny had good sense and kind hearts; and from the mistakes of one aunt and the wisdom of the other they learned to be careful how they gave way to feeling.

"The more delicate the organization," said Mrs. Grace Thorne, "the more carefully should we protect it from the storm of passion and the corroding influences of jealousy and suspicion. Feelings are only light clouds scudding across the sky; but weighted by the will, they shut the sunshine from our lives." MRS. M. F. BUTTS.

## GENIUS.

MANY think genius to be some occult power which impels the possessor on to distinction with very little effort on his part. Never was there a more mistaken idea. Buffon says: "Genius is only patience." Surely we can all cultivate that to some degree. Lord Derby's definition of genius is in some degree similar, but apprehends with more distinctness the essential principle. He says "that it is a *capacity* to take an infinite trouble about things." Samuel Johnson said: "Genius is large general powers turned in a particular direction." I have heard it stated that one down in a deep well can see the stars above him in the daytime, though they are invisible to others not so situated. So we think geniuses, by having their spheres circumscribed, can see further into matters than those who have no particular aim and expend their energies on many different things. Another author says: "Genius is a disposition of mind which qualifies a man for a particular pursuit." The larger number of those who have accomplished much in any special line have been what are called "one-idea men." Lord Chesterfield affirmed, "The power of applying our attention, pure and undissipated, to a single object, is the sure mark of superior genius." While still another author humorously remarks: "Genius is the power to look at the point of a fine cambric needle half an hour without winking."

It was one of Mr. Dickens' theories, according to Arthur Helps, that men differ in hardly anything else so much as in their power of attention. Dr. Temple, of Rugby, wrote: "What genius does is to inspire the soul with a power to persevere in the labor that is needed; but the greatest geniuses in every art invariably labor at their art far more than all others, because their genius shows them the value of such patient labor and aids them to persist in it." Lord Lytton was of the same opinion: "What men want is not talent, it is purpose; in other words, not the power to achieve, but the will to labor." So whatever genius is, be it inherent capacity or high mental endowment, it is nothing without earnest, painstaking labor; and that, too, in some special direction. The true genius is none of your "Jack-of-all-trades, master of none." Nature points out his vocation and he sticks to it. That habits of perseverance can be cultivated, we know by experience. That ev-

ery one has some adaptability to a certain work, and can do that better than he can anything else, should be established as an axiom.

The object, then, of every one should be to find out that for which he is best adapted, and to bring all his powers to bear in that direction. How many failures there are in this world because this is not carried out. How many have missed their true vocation and are occupying niches which they do not fit and in which they are cramped and bruised. We know one gentleman who is by nature and education a good architect and artist, but, through a mistaken sense of duty, he is laboring in the ministry, for which he is poorly adapted. There may be "calls" to preach when one can do that better than anything else, but I am sure the Lord would never spoil a good architect to make a poor preacher.

CHRIS.

## THE STUDENT-WAITERS.

[The papers inform us that students from Harvard, Amherst, Bates, Bowdoin, Tufts, and other colleges have acted as waiters in some of the hotels at fashionable resorts the past season. The students did their work well, won the respect of those they served, and earned by honest labor the means to aid them in their studies.]

Willing to work with honest hands,
As well as ever he can,
The student-waiter bravely stands,
A modest serving man,
And no well-bred, good-mannered guest
Will put him under ban.

He cancels all his college bills
Whenever they are due,
And every obligation fills,
To friends both old and new;
He helps himself with hearty cheer,
To push his studies through.

And is he less a gentleman,
With a white apron on,
Than if he joined the clique and clan,
And sat down with the ton,
Whose fathers have to pay their debts
With money they have won?

Good manners with good grammar go,
Like graces, where he goes.
His labor is skilled labor, though
He only polished shoes;
But he waits at the table where
Are cheeks of snow and rose.

If angels minister to men,
Shall man, who renders aid
To man, turn red with blushes when,
Like graceful Ganymede,
He serves in honor and good faith
The gentle guest with bread?

He serves a hungry host to-day,
To-morrow he may be
The master many will obey.
A student waiter, he
Has "learned to labor and to wait,"
And carve his destiny.

GEORGE W. BUNGAY.

## THE GLORY AND DECLINE OF VENICE.

IN the month of April, 1797, the Republic of Venice fell a prey to the vengeance of Napoleon Bonaparte. Apparently it was the dispersion of that gay pageant which had dazzled Europe for a thousand years—its origin lost in the gloom which gathered over the ruins of the Roman Empire, its decay scarcely noticed in the intense glory of modern civilization. First we hear of a band of fugitives founding a city in the sea. Then of a vigorous commonwealth repelling the Huns, stealing down the Adriatic, ranging her armaments from the pillars of Hercules to the deltas of the Nile, bearing in holy vessels the zealous crusaders to the Land of Mystery, raising the Lion of St. Mark over the conquered cities of Palestine, passing the Bosphorus, exploring the Euxine, and leading adventurous caravans to India. We see her breasting the Atlantic, threading the English Channel, scouring the Baltic, and braving the terrors of Northern Seas. We see her reducing the cities of Italy—Padua, Verona, Brescia, Trevise; absorbing in her capital the wealth of a world, beautifying it with the remains of three civilizations—the Greek, the Roman, the Oriental;—making it a mart of pleasure,

a symbol for gayety, the Paris of the middle ages, the metropolis of Europe. Was Venice to become the mistress of Christendom? Evidently not. A time came when the Lion of St. Mark did not roar so terribly as formerly. Cyprus, Candia, the Morea, glided from beneath her unwilling hand; her Italian cities were achieving autonomy or falling to others; her alliance was no longer courted in the conferences of Europe, and Venice felt her empire slipping from her with no power to constrain it, even as the stream glides from the fountain. At the close of Napoleon's Italian campaign the pageant was gone, and the tragic story of the Venetian Republic was ended.

National ascendency is rooted in the energy and hearty integrity of citizens. John Rutledge maintained that religion and humanity had nothing to do with national success; but John Rutledge was wrong, and his philosophy is akin to that spirit of inquiry which seeks in the subtlety of its diplomatists, and in the steady flow of fortune's favor, for the secret of a State's advance. There never yet existed the nation which maintained its glory beyond the duration of a single dynasty, whose happiness can not be referred to the virtues of its people. Venice preserved her independence for thirteen hundred years; and in the day of her splendor there was none like her. But it was not because her star was in the ascendant; it was because there were qualities in her citizens which would speedily render our own Republic mistress of half the world. Energy was the underlying element in all Venetian character. It had its birth in adversity. Its early development was among barren islands, whither the patriots of the infant State had fled for refuge. They were alienated from the continent—their city was "Ocean's Child;" * and the sire was to become the slave. There they had fought calamity for a thousand years; and the restless Italian character, disciplined and hardened by stern poverty, became the vigor of the age of Dandolo. The nature of the early government was protective; and each citizen fancied the welfare of the State was identical with his own. His personal interest in the commonwealth was set aglow by the enthusiasm of success, and streamed abroad—a dazzling glare of national ambition. He restrained its rashness by keen prudence. He ennobled all by the spirit of a hero. The latter was the outgrowth of vital religion. The early fishermen of the lagoons had received the holy faith of the New Testament as it had extended along the Mediterranean; and it was their grandest legacy to posterity, that through all the years of pride to Venice a spirit of pure Christianity should breathe in her noblest sons. It turned them from dishonor. It rendered them foremost in danger, and careless of life. It was a Godlike tetrad—vigor, prudence, religion, national ambition. By such energy Venice had wrested from the King of Hungary three hundred islands and five hundred miles of sea-coast. In recognition of such ambition, the French ambassador stirred up the German conference, charging that Venice had formed plans for bridging the Don, the Rhine, the Seine, and the Ebro. By such prudence, Sparta-like, she discouraged the growth of petty States about her, and reaped a plenteous harvest from the bounty of the crusaders. In the generosity and self-sacrifice inspired by such vital religion, her citizens surrendered every private interest to the cause of the commonwealth when the siege of Chiozza threatened destruction to the city, and, grandly arraying against Fatality, had discomfited Fortune and saved the Republic of Venice. But every sleepy zephyr that glided up the Adriatic, mingling its murmurings with the rhythmic chant of the gondoliers, seemed dissipating the strength of her character. The fifteenth century had barely dawned ere it was plain that Venice was losing her vigor. As yet her vessels were sailing as far as of yore; but her citizens had begun to commute personal service in the field for its value in gold. Venice began to rely upon her mercenaries, and there was no Chandos to redeem her chivalry. The tendency was natural, inevitable. Art, literature, commerce unfit men for fighting. It was only imitating what sister States were doing about her, yet it was significant of her fate.

* Shelley.

Soon a foreign chieftain led her armies; the wars of the Republic became bloodless, and success was at an end. In painting and architecture there were somber forebodings of waning religion. John Bellini painted in the fifteenth century, and was the last of the sacred painters of Venice. Throughout his works there breathes a spirit of purity and reverence. Titian followed with the tints of the rainbow; but the eye is caught by flash of armor;* and the spirituality of conception is gone. In architecture, the lofty ideality of the Aras and Lombard was degraded to the mysticism of the Renaissance. Religion had become formalism. There was still the same process of worship, but it was only meaningless ceremonial, such as the marriage of the Adriatic had become, when the Turk could chase a merchantman within sight of the watch-tower of Venice. Vital religion had expired, and with it every sense of honor and every noble impulse. There were few heroes now to die for the nation! Ambition from a legitimate impulse was perverted to private lust by the decaying vigor of the State. Prudence could only be sustained in integrity. Subtlety still remained; for subtlety is the child of weakness and degeneracy. Subtlety begets intrigue; subtlety is selfish, and does not scruple at means, provided the end be well assured.

These changes in national character were soon acting upon the Constitution, modifying and corrupting its policy. The Government was an aristocracy, risen from the citizens of democratic Venice by the irresistible influence of property. At first the designing aristocrats had prudently—as they supposed—restricted the influence of the commonalty upon the administration; but afterward, when selfish greed was following close upon the decay of vital religion, when patriotism was dead and prudence buried in the same grave, this identical aristocracy excluded the people from all interference with the gubernation, this time obeying the injunctions of prudence as interpreted by their own inordinate lust for power. In the blindness of degeneracy they fancied that the perpetuity of the State depended upon the perpetuity of the Senate; and to save the Senate, they endeavored so to emasculate the citizens of Venice that a popular uprising would be beyond the compass of their feeble possibilities. The Senate imagined that their own vigor could supply the place of popular morality; and so looked with favor upon the mad frenzy of the people which would gratify itself by the bewildering rush of pageantry, which sought repose in a continual holiday, which found luxury in the coarse revelry of sense. They decreed holidays and festivals, and encouraged every vice ever tolerated by law. They allowed their zeal for the community to swallow up their concern for individuals. They avoided political dissension by undermining the body-politic. They remedied one evil by committing a greater. So the Scythians put out the eyes of their slaves; but it was a questionable advantage. The Utopians reckoned that he who could find no other way for correcting the errors of his people than by taking from them the conveniencies of life, knew not what it was to govern; and they were right. The Senate realized their purpose. The streets of Venice ceased to resound with the cries of opposing factions, and for the last three centuries of her existence the chronicles of the Republic were unsullied by the record of civil strife. But it was not the healthy repose of confidence and sympathy. It was the ghastly quiet of the chamber of death. The Senate forgot in their blindness that government is for the people; that no system can ever supersede the necessity for individual virtue and action. The result was inevitable. The foundation of the superstructure rotted away; the shadowy fabric alone remained, destined to fall in ruin with the slightest concussion.

Meanwhile the Venetian Empire had been undulating vastly. By impassable shoals nature had kindly shielded the young State from the blighting effects of barbaric invasion. Favored, too, by the obscurity of her origin, the young Republic was not discovered by the rulers of the East or West, till her expanding sway was not easily to be repressed. Vigorously protecting the Adri-

* So Ruskin has said.

atic against the pirates, she soon became its mistress, as Athens had gained control of the Ægean. Ere long her bold merchant mariners, obeying a natural impulse, had found a wealth in the Orient, and speedily the galleys of Venice were gliding to all the ports of the Mediterranean. Civilization on the North had not yet begun its march; and these rude nations, as yet offering no opposition to the growing importance of the Venetian State, were even dependent upon her for the amenities of life. Venice became a channel for commerce between the two northern continents. The golden stream enriched the city, filled her civilization, and diffused a benign influence upon her art. Meanwhile the rude generosity of northern chivalry had been kindled by the burning words of Peter the Hermit into an uncontrollable passion to rescue the tomb of our Lord. There was but one power in Europe which could supply the ardent pilgrims with the means of crossing the Mediterranean, and to that power their prayers were addressed. Venice did not reject the request. Full of ardent vigor, the flower of European chivalry sailed from the city. Constantinople fell before their irresistible force, and a way was opened for Venetian traffic with India. On the fields of the Holy Land, Venice achieved much honor, but greater wealth. The worn-out palmers returned to Europe and carried with them the knowledge of an Eastern culture strangely contrasting with their own rude ways. While it ultimately awoke their energies, it at first merely created a greater demand for luxuries, with which Venice alone could supply them. Thus, befriended so far by the character of her citizens, by her location, and by the peculiar spirit of the age, the Republic built up a glorious fabric of wealth and power, only to crumble in days to come, like boyish dreams of greatness.

In the midst of this unexampled prosperity, when the Republic was flaunting her banners all the way from the Ganges to Britain, when Fortune had already paused for a thousand years above the domes of the city, the national heart seemed suddenly to beat with wild and irregular throbbings. At the same time a shadow of impending disaster seemed to hang about her eminence, filling the national mind with gloomy forebodings, and bewildering the undeviating address of the administration. So far her empire had been over the sea. Now Venice laid aside her individuality, and began to incorporate to herself the cities of Northern Italy. She might hope to maintain these acquisitions for a time; but northern civilization was becoming ambitious, and this foreign policy of the Republic merely wounded the pride of the continental powers—an injury to be avenged at some future day. Already they were becoming independent of Venice; already their vessels were beginning to question the domain of Venetian commerce; already they were setting up their manufactories; already the Hanseatic cities had leagued themselves for the protection of northern trade, when a second league, fraught with far more direct injury to Venice—a league whose animating principle was hatred to the Republic, a league which had for its purpose the utter annihilation of Venetian independence, a league in which were united the potentates of Europe, spiritual and temporal—sprang up at the conference of Cambray. Scarcely had it begun to waste away the strength of the State, when that wonderful child of Genoa challenged the heroes of the Atlantic, penetrated to the wilderness of America, and turned the stream of navigation beyond the Mediterranean. The cheers of his countrymen had barely died away, when Vasco Da Gama, the bold Portuguese, weathered the Cape of Storms, and the gorgeous wealth of the East no longer went to enrich the haughty City of the Waves. Then Tamerlane, the Tartar, burst upon Tana, the Venetian port of the Euxine, and obliterated the last vestige of her overland Indian traffic in the smoke of her burning dépot. To the south the infidel was marching steadily up to the Bosphorus, and Constantinople fell before him. Is it strange that there were sad presagings of approaching calamity? Compressed on three sides, and her primitive strength gone forever, Venice began to defend herself by diplomatic subtlety. But the religion and humanity which John Rutledge decried,

were needed to combat the lust of the Turk and the organization of the North. The Turk fired on Candia, and it fell; on Cyprus, and the blood-curdling shrieks of Bragadino told too well that the reign of Mahomet had begun. Their rattling shots were heard over the Morea; and that, too, was gone. The Senate were beginning to learn that intrigue is an uncertain support. It is the curse of tyrannical governments that their ascendency is maintained by frivolous subtlety in execution, and not by the generous administration of a wise and comprehensive constitution. For as malice befouls the soul which cherishes it, as humanity disowns the God who loves it, so intrigue beguiles whoever trusts it, whether government, society, or individual. The oligarchy of Cumae once wished to be rid of the popular Aristodemus, and sent him off with rotten vessels, and a scant supply of troops, to reinforce a besieged city, expecting him to be destroyed by men or gods. By good fortune, however, he returned in triumph; and in the sudden outburst of popular favor at his safe return, the oligarchy was overthrown. The aristocracy of Venice, in establishing itself, had sealed completely the doom of the State. Down the Alpine valleys Napoleon was marching for the city; and the Senate were trusting to purchase security by inglorious concession. But the spirit of the league of Cambray still slumbered in the heart of the conqueror; and the worn-out Republic heard with terror the awful menace, that there should be no more Senate and no more inquisition. The national character was degraded. An exigency had risen which diplomacy could not meet, and the State which had so often bade defiance to the infidel hosts and the allied powers of Christendom, fell at the feet of the French General without a stroke or a prayer for liberty.

The Fabric of the ages had crumbled in shame. There was to be no more joy for Venice, save as the soft Italian sun, sinking behind the Alps, should pour full upon her noble piles an ocean of glory, and memories of the mighty Past should come flooding in resistless tides over the dreary wastes of a sorrowing Present; and all through the slow rolling years of a century every wave which day by day was beating against her marble palaces, and every breeze that softly crept over the Lido, seemed to murmur with somber warning that the nation which forgot its God had perished. But he who can trace the progressive consummation of an Eternal plan in the vigorous youth of the Venetian State, in the glittering splendor of its maturity, in the trembling dotage of its age, will speak kindly of the nation which had turned full upon the gloom of Europe the radiance of civil and religious liberty, of the nation which had given to Italian art an impetus still throbbing in the world of culture; of the nation but for which the Turkish wave had rolled over the continent, overwhelming every principle of progress of the nation which had fallen at last, because, in the fullness of time, the age had come when unknown seas should lose their terrors; because the day was breaking when a new world was to turn the tide of adventure away from the Orient; because the moment was at hand when favoring Fortune should abandon the cities by the Midland Sea, the day of whose glory had passed, and in the far West, in the Land of Promise, should watch over a new civilization, accelerate a dawning splendor, and foster the growth of a generous system, far nobler than the faithless masquerade of the Mystic City of the Sea.

GRANVILLE M. TEMPLETON.

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THE TWO SIDES OF THE FACE.—We should expect the convex cast of one side of the face to fit, line for line, into the concave cast of the other; but it is doubtful if there is to be anywhere found one single head of this ideal perfection. Neither the contour of the cheeks, nor the lines of the countenance, are the same on both sides, and they are all the less so because every one unconsciously tends to perform many unilateral facial movements, which in time cause a divergence between the two sides of the face. Besides, the head, projecting as it does freely into air, is more dependent than we imagine on wind and weather. Suppose a person were

to sit constantly at a window, turning one side to the cooler atmosphere out-of-doors, and the other toward a hot stove—the result would be a twofold growth of the facial muscles. One side of the face might become rounded, the other flat or concave; and, though such faces are not unfrequent, we do not notice the anomaly, simply because we are accustomed to it. In the Lapp we have a good illustration of this unequal development. Just as the trees of his native land are stunted, so, too, his features become monstrous, irregular, and one-sided; the frontal bones are forced, as though by spasm, down on the maxillaries, producing the most singular combinations and contortions of the features. A not uncommon form of asymmetry, in more favored lands, is the presence of a dimple on one cheek, while the other has no such indentation, or but a very faint one. In such cases the face has, as it were, a summer and a winter side, just like the apple, which is round and ruddy on its summer side, but on the shaded side flattened and wan."—*Popular Science Monthly.*


## MENTAL AND MORAL EFFECTS OF FOOD.

Byron's Fierce Roast-Beef—Hog or Bird—Feeling like a Turnip—Nurse's Milk—Blood Eating—Tendency of a Flesh Diet—The North American Indian—The English—The Power of Ideas—The Christian Religion.

THERE is a sort of general impression abroad that man's mental and moral nature is affected by the food he eats. Just how this is done or to what extent, the idea is rather vague. Usually, however, it is supposed to result from a direct sympathy with the moral or mental character of the animal of which the eater partakes.

### BYRON'S FIERCE ROAST-BEEF.

This is the interpretation usually given to Byron's saying, that it made him fierce to eat beef. Gossip fails to tell us whether his exquisite moral sensitiveness could detect any difference between the effects of bull-beef and cow-beef. We would like to know, also, if he ever tried the mollifying effects of mutton, or better still, of lamb.

If he partook of veal, did it make him act or feel like a calf? These, it will be perceived, are questions of no mean import, because there is certainly a vast difference in the dispositions of these different animals, and we would like to make the most of our opportunities for choice, for our own sakes and the sakes of our friends, as well as of our success in business pursuits. The hunter ought to find a vast deal of difference between the effects of venison haunch and bear-steak. When he is on an excursion in a really wild country, he ought, on the peril of his life, to avoid dining upon rabbit, especially if he has no warren of his own to flee to. Wolf or panther flesh would make a far more suitable meal, and even the fox should not be beneath his notice.

### HOG OR BIRD?

If we can judge at all by outward appearances, we should say that there would be,

on this principle, a great difference between the results of eating "hog-meat" and bird-meat. But if the lady who eats the latter feels any greater degree of "lightness," we would next like to know whether this most affects the heels, the heart, or the head. We have seen and bewailed the slaughter of the little birds for the sake of their plumage, but if our musical people should take it into their heads that their voices could be improved by a diet of singing birds, we fear the world would be the loser. Certainly, if the "improvement" should be in the line indicated by that greatest of all devourers of singing birds, the cat, we should have the most serious reason to regret the propagation of this theory.

### FEELING LIKE A TURNIP.

When we turn to vegetables the theory becomes still more ridiculous, if possible. If any one has any peculiar feelings after eating turnips, would he suppose that he feels like a turnip? And though quite as great a variety of results may follow the eating of different kinds of vegetable as of animal substances, and perhaps greater, yet no one attributes it to any moral or mental quality of the food, because we are not aware that it has any. If, then, we can assign to the partaking of different vegetable matters such extreme moral and mental results as the ecstasy of the hashish eater, the obscenity and duplicity of the opium-eater, and the general wickedness of the partaker of alcoholic beverages (including even silliness and ferocity as results of the same beverage), we have strong reasons for believing that the moral and mental effects of what we eat are due to something very different from any sympathy with the moral and mental qualities of the food of which we partake.

### NURSE'S MILK.

An exception may *seem* to exist, however, where there is a direct impartation of vitality, as in the case of nursing. Many suppose that the mental and moral qualities of the nurse are communicated to the child by means of the milk, though I am not aware of the existence of one particle of proof to this effect. That the parents may communicate their mental, moral, and physical natures to the child pre-natally, is entirely a different question, and one which we shall not discuss here, though we have been greatly interested in its discussion, and especially in the practical manner in which it has recently been presented to the public by Mrs. Kirby, and quoted so effectively by Joseph Cook in one of his recent lectures.* Hence, while it is considered of the greatest importance among the royal families of Europe that the mother of a child be of royal blood, the nurses are merely common healthy women, and sometimes very uncultured at that. A nurse ought to be healthy, that she may give wholesome milk, and so impart physical health and vigor; but if she could impart temper or taste or disposition by the same means, it would be likely to be discovered and acted upon where there is so wide a field for observation. The child may be affected by the conduct, the words, and the looks of its nurse; hence, as soon as weaned, it is put under the care of a more refined and intelligent governess; but that coarseness and vulgarity could be imbibed with its nurse's milk is not generally believed, and we find no proof of it. Bringing up a child on cows' or asses' milk makes it neither a calf nor a donkey, while usually its physical vigor is not so great as it would have been on healthful human milk, partly because it does not get it direct and by the natural mode of sucking, and therefore while fully vitalized, and partly because it is not its natural food. It is worthy of notice that what might be called the vitality of milk departs with its warmth, and that immediately structural changes ensue which deteriorate its character.

### BLOOD EATING.

This vitality of animal fluids is recognized in a most repulsive manner by the prescription of warm blood by some modern physicians, and in order to take it warm, the patients resort to the slaughter-houses where they not unfrequently witness the death-agonies of the very creatures whose blood is immediately brought to them to

* TRANSMISSION; or, Variation of Character Through the Mother. By Georgiana B. Kirby. S. R. WELLS & Co., Publishers. Price, 25 cents.

drink. At first the scenes are horrible, and the blood repulsive, but the patients soon become accustomed to both, and rather enjoy them. That by so doing, however, they assume in any measure the *nature* of the animals is not conceded, for to the latter the very smell of blood is terrifying.

There is a Divine command to abstain from blood. It is supposed by some to have been recognized even prior to the giving of the Mosaic law; its injunction certainly was plainly and definitely continued in the Christian churches (Acts xv. 29, etc.) We know it to be very unfit for food, at first on account of its repulsiveness, and it also decomposes quickly. Its recuperative qualities are praised like those of many new nostrums, but there is reason to believe that its physiological results are not fully understood. A story is of late going the rounds of the papers of a young wife in a low state of health restored to vigor by drinking the blood from her husband's veins, at his own instance. But her greed for blood became so imperious, and the drain on his vitality so great, that he deserted her in disgust. We have no means of verifying this story, but we have reason to believe that such experiments have been tried, and since there is a Divine prohibition, we should doubt the existence of any permanently desirable results, for God's commands are always reasonable. It is scarcely possible to believe that anything but demoralization could come to the human race from the free use of blood. We notice in this incident that the partaker did not *imbibe* the generous sentiments of her victim. Perhaps it may be pertinent here also to remark that the fiercest of all animals, the Bengal tiger, instead of becoming humanized by the taste of human blood, becomes only the more fierce after partaking of it, and eventually refuses all other diet. We believe the same is also true of the African lion.

### TENDENCY OF A FLESH DIET.

That a meat diet is conducive to ferocity, agility, and effectiveness generally is a very common impression. I find it very well embodied in a quotation which I will make from a hand-book on Eating and Drinking, to which I resort sometimes as a tolerably complete collection of all the popular fallacies on that subject: "The most powerful nations and the greatest and best men everywhere are flesh-eaters." That is, they eat some flesh. If it is the flesh that "does it," the more flesh the better. In this country, where we eat so much flesh, the bulk of our food is still vegetable. With one or two kinds of meat we have half a dozen or more kinds of fruits, grains, and vegetables. We make no meal entirely on flesh meat, while many of us make one or two meals a day entirely without flesh meat. It is far easier and far better to live entirely without flesh than entirely on it, and we are speaking now in view of many experiments, continued for a long time by people in ordinary health, and in civilized countries.

Of nations who live largely on flesh meats,

### THE NORTH AMERICAN INDIAN

is largely quoted for his fierceness in fight and his diligence and acuteness in the chase. But when it comes to close application, to continued labor and intelligent enterprise, the quotation stops. The male Indian is emphatically a lazy being. He will not *work* if he can help it. He will hunt and fight because his traditions, inherited from his ancestors, teach him that it is manly to hunt and fight. He will probably bring his game home because that, too, is a part of a hunter's business. But when that is done he leaves his squaw to do the rest, while he eats and sleeps, and basks in the sun. He has no idea of improving his time. The squaw, eating the same food, is really industrious. She takes care of the game when it is brought home, cooks the food, dresses the skins, makes them into clothing, and plants the corn and beans, and harvests them. She is usually busy about something. The Indian is eminently conservative; the squaw more so; but in neither is it due to their food, so much as to their traditions. It is extremely difficult to civilize or to educate the Indian, while his flesh-eating, according to the popular theories, ought to have placed him in advance of the Europeans long before the discovery of America. Clearly, civilization is not all due to diet. The Mexican Indians used more vege-

tables, fruits, and grains than the Northern Indians, and yet they were far more civilized. The Esquimaux live almost entirely on animal food, and they can scarcely be called civilized at all. All these cases occur on the American continent where the races have been comparatively undisturbed by causes outside of themselves. In Europe, we will specify

ENGLAND.

The first we hear of the ancient Britons they were an exceedingly hardy race, defying the Romans in the bold language of their Queen, Boadicea: "*We* can endure hunger, thirst, cold, and sunshine; *they* live in tents and houses; baked meats, wine, and oil are necessary to them; if these fail, or the summer sun oppress them, they languish and consume; but to us every herb or root is meat, every juice an oil; water is pleasant wine, and every tree affords a habitation."

But this was not enough to give them much impetus. Their association with the Romans brought them slowly onward with doubtful advances, and they became immense eaters of flesh. Marked progress in civilization came only after the introduction of Christianity, imperfect as was its development. By far the most rapid progress has been made since the introduction of the free use of fruits and vegetables which commenced in the time of Queen Bess, and more important still the prevalence of a purer form of Christianity. That the latter is the true and acknowledged source of their power, witness Queen Victoria when she answered the question of the Abyssinian prince by presenting him with a Bible. "This," said she, "is the source of England's greatness."

It is an easy matter to run a theory over everything else rough shod, especially on a subject with which we are really so little acquainted as that of diet.

THE POWER OF IDEAS.

In all probability it is true that great improvement of the race may come to us through a correct diet, but the power of ideas is far greater. Give a man food and he eats it and wants more, but give him a vital idea and he goes to work and produces not only food, but many other things.

As we look back over the past, we see that the people of Greece and Rome, which represent also the most of the other great civilizations of the past, came up in vigor on a simple diet, grew luxurious, and having no great moral power or religious principle to restrain them, gave themselves up to all sorts of extravagant expenditures, but especially to the indulgence of the appetites, and were ruined. Many who see not the one great difference between them and ourselves predict a like downfall to us; and, indeed, I see not what is to prevent it but the restraining and directing influences of

THE CHRISTIAN RELIGION.

This brings conscience to bear on our expenditures. This teaches self-denial, the purity of the body. This originated temperance societies, which flourish nowhere outside of Christendom. It is true that the Mohammedans have a prohibitory law, but they regard the letter only, not the spirit; and it does not prevent their getting drunk on hashish, rum, and whisky. Real temperance thrives only in Christendom, or rather, among people who faithfully observe the precepts of Christianity in their daily life. With all the leading nations, as with England, the Bible is the secret of their power, and they are strong and powerful in proportion to the prevalence of its precepts. Take the Bible to heathen nations, and immediately they begin to be civilized, or improved as respects their common habits, if they accept it. Observe that the South Sea Islanders, whether cannibals or vegetarians, are changed by its spirit and civilized by its precepts, even before any change of diet, if introduced, would have time to work a change in their tendencies and dispositions. But changes of diet are no part of the programme in their cases. We hear nothing about these, excepting, of course, the cessation from cannibalism. That diet affects the health, and health affects the mental and the moral natures of man, brings us to the true line of inquiry, which we may perchance prosecute in some future paper.

JULIA COLMAN.

## THE USE OF COFFEE AS A BEVERAGE.

PHYSIOLOGISTS are awaking to a sense of the injurious properties of coffee, and some are bold enough to publish their convictions. Dr. J. H. Miller, of Abingdon, Ill., recently addressed the Military Tract Medical Society on the effects of this widely-used beverage, when he passed in review its characteristic effects. From his address we glean as follows:

In both raw and toasted coffee an alkaloid called *caffein, caffeine, cafforinum*, is present. In the toasted berry a part of this alkaloid has been changed to a substance designated *coffeone*, and which is obtained separate by distillation of a strong infusion of the roasted coffee. This distillate differs both in ultimate composition and in properties from the alkaloid. To its presence in the beverage some symptoms are quite attributable—notably those pertaining to the circulation—and to it is also due the well-known aroma. Raw coffee is almost purely a nervous stimulant, affecting but slightly the circulation of the blood. The alkaloid *caffeine* alone affects the pulse more, and preparations of the roasted berry to a still greater degree. But with all the stimulation of the nervous system maintains the prominent place in their action. Coffee is thus peculiarly adapted to the cravings of this nation of over-wrought nerve systems, and correspondingly injurious in the reactive effects. Under the influence of coffee the intellectual functions are most active, and the physical system is freed from all unpleasant sensations of languor and fatigue. Somewhat similar effects are experienced from the primary action of other drugs, as *opium*, or *Indian hemp*. These latter, however, produce more or less *altered* mental and physical processes, not apparent in the action of coffee, and which are readily recognized, even by the general observer, as abnormal. The secondary effects being also less a change of function than of simple reaction, in the case of coffee, the unpleasant depression seems more due to variation in vigor and condition than to the influence of the beverage. Hence the true cause of distress is apt to be overlooked, and herein lies the great danger of abuse. Those who should know enough to be on guard are lulled into forgetfulness, while others are with difficulty made to believe it can be baneful in its ultimate influence. Judiciously used, carefully moderated in quantity and occasion, it may be made subservient to good, even apart from its excellence as a proper remedy for the cure of disease.

Emotional and head symptoms we naturally expect to find strongly marked among the effects of coffee. The intellectual activity already alluded to is not unfrequently met as a distressing symptom in cases of disease causing sleeplessness. The beautiful effect of dynamized coffee in sending the patient off into quiet, refreshing sleep, is the therapeutic action of the remedy most familiar perhaps to all of us.

Yet how often are we called upon by nervous persons whose chief complaint is that they can not sleep well, and where the cause of this habitual sleeplessness in the constant use of coffee is overlooked by ourselves no less than by them. I have remarked in those whom I have—for this and other reasons—induced to abandon its use, that a diminished wakefulness was among the very first indications of returning health. In vain will we seek the remedy for this condition until the cause is first removed. Together with this symptom of sleeplessness will not unfrequently be found associated periods of confusion of thought. A state not of unconsciousness, but of inability to pursue with constancy and clearness a train of thought. Instead, there will be a wandering from one idea to another, and imperfect recollection. One patient whom I long treated for these and other ailments I could not induce to believe that coffee was injurious to her, and, in spite of frequent remonstrance, she would, after perhaps a few days' discontinuance, return, as she thought, undetected by me, to its use. Finally she did abandon it, and after the lapse of a week or two she was, for periods of two or three days at a time, so constantly drowsy that it was impossible for her to keep fully awake day or night. Gradually

with other abnormal symptoms these spells wore away. With myself—not an habitual coffee-drinker—an extra few hours at night of wakefulness and activity, obtained by the use of coffee, even though followed by seven or eight hours of sleep, is sure to be offset next day by a period of extreme drowsiness and want of power of concentration.

Headache is an early symptom of too much coffee, and as certainly assails the habitual user upon temporary discontinuance. The pain is almost always of an oppressive, heavy nature; constant and steady to a degree well-nigh unbearable; sometimes it is a sensation of soreness or bruisedness. A symptom of Hahnemann's, starred in Allen's Encyclopedia, viz., "Headache renewed and aggravated after eating; it disappears in the open air, but returns in a short time in the room," I have more than once experienced as proving, especially the latter part of the symptom. A lady who suffered from the effects of coffee until she abandoned its use, could not ever after toast the berry without experiencing a severe headache; within a few minutes after the volatile elements began to make themselves apparent to the sense of smell, the pain commenced and would last for several hours. This was in her case a severe, boring, pressing pain, at a small spot in each temple, and caused a dullness of the eyes—an appearance as if she could scarcely hold them open, and with the expression as of much suffering.

The vertigo of coffee is not of that overpowering, intoxicated character belonging to disordered circulation, but rather a confused sensation in the brain. It most frequently comes in sudden, short attacks. Wood writes, in treating of coffee, that in his own person a single cup of it taken for his breakfast produced, with other symptoms, "swimming or vertiginous feeling," and adds that he never walked in the street without fear of a sudden attack of such sensations, which, when they came, took away all mental energy. This language expresses what I have myself frequently suffered in a less degree, and which I had attributed to coffee before noticing this testimony. In my own case it is always very transient, a sudden sense of reeling, and, as it were, a momentary loss of thought and will. I am not aware, however, that any irregularity of motion actually takes place which would attract another's attention. Patients have told me they had a strange sensation in the head, which yet they refused to describe as dizziness, and in such patients other symptoms present have indicated coffee as the producing cause.

The senses of sight and hearing are likewise affected. In the provings of crude coffee, such symptoms, however, are less prominent than might have been expected. As in the intellectual sphere, so the functions of these organs seem to be exalted rather than deranged. Wood records having experienced *muscæ volitantes* and sounds as of pounding and of bell-ringing in the distance.

Nowhere is the influence of this beverage more manifest locally than upon the digestive organs. The author already quoted says: "Were coffee less habitually used, there can be no doubt that it would be very serviceable in dyspepsia, the very disease of which, through its abuse, it is among the most frequent causes." But these disagreeable effects are almost always those of secondary action. At first, unless taken in such immoderate quantity as to produce excessive stimulation of the whole nervous system, the sensation produced in the stomach is warming and invigorating. Hence and because certain experiments have shown that in order to sustain an individual while performing a given amount of labor, less food is required if a moderate quantity of coffee be also ingested, it is claimed to be in itself nutritious. In an article upon coffee, found in the *North American Journal of Homeopathy*, for November, 1862, Dr. F. W. Hunt says: "Though coffee is more especially marked by its stimulating powers, it possesses also some nutritive qualities, which have favored its general adoption as an article of food." He then proceeds to consider this claim, but the article closes almost at the beginning of such consideration, and I have been unable to find the continuation, if any, of the essay. Wood, however, argues that its only effect in this direction

arises because of its stimulating the digestive organs to more powerful and thorough work in disposing of the food presented, thereby utilizing much that would otherwise be excreted unconsumed. This seems a rational explanation and one confirmed by experiment. This unnatural stimulation of function, when long continued or frequently repeated, results in permanent weakness. Then we have the protean symptoms of indigestion, habitual constipation, and torpidity of the liver.

I once attended a child of about two years of age, girl, blonde, very nervous organization, who had a persistent diarrhœa. The stools presented scarcely any regularity either as to appearance or time of aggravation. Usually they were light colored, perhaps frothy, watery, with lumps of fœcal matter and undigested food. For several days I vainly sought the remedy. The child was playful, yet irritable, had a fair appetite and little or no fever, yet the diarrhœa persisted, and I did not know what to make of it. Finally I learned that her grandfather, a confirmed coffee-drinker, scarcely ever failed to give her a portion from his own cup at each meal. I desired that this be discontinued. At once the trouble ceased, and for two weeks did not return. Scouting the idea that coffee would cause diarrhœa, the grandfather again gave it to the child. Within three hours the loose stools were as frequent as before, and ceased as suddenly when the coffee was withheld.

Palpitation of the heart is a very frequent manifestation of the ill effects of coffee. This, unlike the gastric symptoms, is a primary effect, due to the over-stimulation of the nerve supply of the heart. As the nervous centers become more and more deranged and irritable, they react with greater constancy and distress upon this organ.

## OUR FEVER COT IN USE.

IT is two years since a discussion of the philosophy of the treatment of fevers with the use of the cot-bed invented by Dr. Kibbee was opened in the pages of the PHRENOLOGICAL JOURNAL AND SCIENCE OF HEALTH, but the attention of the medical profession in general was very slowly drawn to it because the applications were of water. A few eminent and liberal practitioners, to be sure, gave the treatment their sanction when its virtues were exhibited in their presence, but it was not until within a month or so that any emphatic approval has been given to the public. An elaborate article by Dr. T. Gaillard Thomas in the New York *Medical Journal* demonstrates the efficiency of affusions of cold and warm water in controlling the high temperature consequent upon important surgical operations like ovariotomy, and particularly mentions the Kibbee Fever Cot as a most valuable adjuvant in the water treatment. Eight cases are described by Dr. Thomas in which the cold affusions were effective in producing a desirable result; and he closes his paper by saying: "I venture to record mine (conviction) to the effect that the practice of cold affusion by Kibbee's method for the control of high temperature is sure in the future to earn for itself a position of honor and trust from ovariotomists."

Later, we have testimony from the fever-stricken region of New Orleans, whither two of our cots were sent with instructions for their use, but which instructions were not closely observed—there being no one in attendance acquainted with the method we have prescribed for the employment of the cot. The New York *Herald* of August 27th reported:

"At the Charity Society to-day Dr. Samuel Choppin tried an exceedingly interesting experiment, which, if successful, will revolutionize the treatment of yellow fever, and justly be regarded as one of the most important medical discoveries of the age. The patient was in a moribund condition, having been sick with yellow fever twenty-four hours without attention—his only medicine being a Seidlitz powder. The temperature of his body indicated 105 2-5 degrees. His pulse beat 100 a minute, and he presented the appearance of one who would die in a very few minutes. The patient was stripped naked, placed upon one of Dr. Kibbee's Fever Cots—which has a network cover and india-rubber receptacle beneath — and

sprinkled with ice-water from a sprinkling-can for two hours and a quarter. At the expiration of that time the temperature of the body was reduced to 58 degrees and the pulse to 90.

"MARVELOUS RESULTS.

"When the sprinkling ceased the temperature of the body returned to the normal heat in health, the fever disappeared, and the patient fell into a gentle sleep, which still continues. At the present writing this first experiment in cold-water treatment is attracting widespread attention among physicians, and should the patient recover, it is predicted that the disease will be mastered. After the sprinkling the patient was covered with a sheet."

As the report was by telegraph some errors occurred in transcription, as will be apparent to the reader. The figures 58 and 90 have been improperly placed, and 90 should read 99, as appears correctly in the New York *Times* as the degree of temperature. The water used was much colder than we advise in such cases, yet the reported result was a remarkable one as compared with the old or usual methods of treatment. We should not, however, expect good results always from the treatment of "moribund" subjects, and would advise the application of the method in the earliest stages of this dread malady.

There ought to be at least a hundred of these cots in every Southern town where the yellow fever is ravaging; and were we able to send a supply to them, we should be glad to do so and await a "convenient season" for our remuneration.

As matters are, the simplicity of the treatment should find universal favor. Had the cot been in active service from the commencement of the epidemic, we are sure that few lives would have been lost in the plague-visited cities.

# NOTES IN SCIENCE AND AGRICULTURE.

**How "Hard" Water may be** MADE "SOFT."—The *Popular Science Monthly* recently published an interesting article under the caption of "A Piece of Limestone," from which the following is taken: "The suggestion may be useful to engineers, as well as to others who may desire to learn a simple process of rendering 'hard' water 'soft.' But, though insoluble in pure water, carbonate of lime is lightly soluble in water which is already charged with carbonic acid; and as all rain-water brings down carbonic acid from the air, it is capable of taking up carbonate of lime from the soils and rocks which it filters; and it thus happens that all springs and rivers that rise in localities in which there is any kind of calcareous rock become more or less charged with carbonate of lime kept in solution by an excess of carbonic acid. This is what gives the peculiar character to water which is known as 'hardness;' and a water hard enough to curdle soap may be converted into a very 'soft' water (as the late Prof. Clark, of Aberdeen, showed), by the simple addition of lime water, which, by combining with the excess of carbonic acid, causes the precipitation of all the lime in solution in the form of insoluble carbonate, which gradually settles to the bottom, leaving the water clear."

**Why Shoe Horses?**—A writer in the London *Times*, remarking upon the slipping of horses on the London pavements, recommends that horses go unshod, and says that for twenty-five years he has employed many (often 200 at a time) on all kinds of roads and in all kinds of work, without having one of them shod and without injury to their feet, being careful only not to put a newly unshod horse at once upon a bad road. Has there been any such experience here?

**Vegetable Might.**—The power of growing vegetables, even the most fragile, is something little short of wonderful. So delicate a structure as the mushroom can, under certain circumstances, exert the most extraordinary power, for, according to a good authority, it is well known that a mushroom will "lift a paving-stone many times its own weight; rather than turn over and grow sideways, which it would appear so much easier for it to do." An experiment tried with a growing squash vine in the agricultural department of Amherst College, showed that the vine was able to grow and mature under a pressure of 4,000 pounds. The fact is also a curious one, that tree roots will throw over immensely strong walls against which they have grown, though one would think the pressure against the softer soil would give room for their development, without the necessity of their expending so much force against the wall.

**Rowing and Health.**—Drs. Bradford and Cutter, of Boston, have investigated anew the physical consequences of rowing races. They found that 113 Harvard men had rowed in intercollegiate races up to 1870. Of these, ten were killed in the war, and two

died of diseases contracted in the service. Of the remaining 101, one died of Bright's disease, five of consumption, one of neuralgia, one by suicide, two by accident, and one from an unknown cause. Of the eighty-seven who are still alive, sixty-seven say that they are in perfect health, and nineteen have not definitely answered the question. The average health of all these oarsmen is rated as having been above the average. Dr. Bradford says: "Although the few facts we have been able to collect are insufficient to prove that the practice of rowing and training is beneficial to the health, they appear to show that it is by no means certain that rowing and training are as injurious as is often supposed."

**A Natural Prodigy.**—A pair of twins now on exhibition at the New York Aquarium, attracts much attention from physicians and others. The children are girls, and were born Dec. 28, 1877, at San Benoit, a town about forty miles north of Montreal, Canada. From their heads to the first lumbar vertebræ, the children are perfectly formed and entirely distinct, but below that point their bodies merge into one. There is not the slightest deformity, however, in any of their organs. They have two distinct sets of internal organs and four arms, but only one abdomen, and two legs. Each child controls one set of organs, but only one leg. Piercing one leg with a pin will produce signs of pain in the face of one child, while the other will be perfectly free from any sensation. They do not act in unison. While one laughs and plays, the other sleeps or cries from hunger. Sometimes they both sleep together, and when both are awake, have the greatest desire to play with each other's hands. The limbs are as large as those of an ordinary child. Where the two bodies grow into one the bulk gradually decreases into the usual size. The children have been named Rose and Marie.

The parents are Sinn and Anne Drouin, who were born in Marseilles, France. Their grandparents are still living there. A few years ago Mr. and Mrs. Drouin emigrated to San Benoit and engaged in farming. They are young and have only one other child, a girl who is two years old, and who enjoys the best of health and has no deformity. The father is tall and stout. He weighs 180 pounds, is six feet high. The mother is short and stout, and weighs about 150. Both parents are of dark complexion. One child looks very much like its mother, while the other bears a striking resemblance to the father. A very neat cradle and canopy covered with blue silk have been constructed at the Aquarium for the twins. Many eminent physicians have examined, and all pronounce the pair to be one of the most remarkable freaks of human nature that they have seen.

**Cost of Fencing Land.**—Statistics show that there are 250,502,614 acres of land in the United States enclosed by fences which must have cost nearly or quite one and a half billions of dollars. If we assume these to be of wood, and to last on the average ten years, the annual expense, which is really a tax, although an indirect one, on the community, is at least $150,000,000. The figures are probably under-estimated enough to allow of the subtraction of all the permanent fence in the country from the calculation, without necessitating a change in our figures.

**A Lunar Volcano.**—A matter of interest in selenography is a recent discovery by Dr. Hermann J. Klein, of Cologne, who for twelve years has made a study of the moon. For the last century, and especially since the investigations of Herschel, Schröter, and Mädler, the moon has been thought to be an entirely dead planet, cold and inactive. This opinion must now be abandoned, as Dr. Klein has discovered an active crater near the center of the luna disk, the opening being larger than any continuously active crater on the earth, with the single exception of Kilauea, in the Hawaiian Islands. Professor Hall, of Washington, is said to have promised to examine into the matter, and Mr. J. Ward, of Belfast, has seen the volcano in the place assigned to it by Dr. Klein, and describes its crater as black, with a soft edge.

**Small Fruits in Gardens.**—But few people, says the Chautauqua *Farmer*, seem to know the value of small fruits to a family, when grown in their own gardens. You commence with strawberries; they continue about a month. You pick, perhaps, from six to twelve quarts a day. You have them on your table as a dessert, if you please, at noon, and your tea-table is loaded with them at evening, and you want but little else but your bread and butter. Your family consume, in one way and another, about eight quarts a day, and while they last, no medicines for bodily ailments are required, as a quart of strawberries daily will generally dispel all ordinary diseases not settled permanently in the system. After strawberries, raspberries come to continue about three weeks; then we have blackberries when the climate is not too cold for cultivated varieties; then the currants ripen, which remain until the early grapes mature; and taking the season through, any family with a half acre of land in a garden can grow small fruits that make country life delightful, and at the same time many dollars can be saved in the supply of the table.

**American Progress in Hard Times.**—Notwithstanding the times, it is doubtful if the country ever made greater or more rapid progress in substantial wealth than during the past seven years. From a comparison of the statistics of the census of 1870 with those furnished by the Bureau of Agriculture for 1877, it appears that there were 31,000,000 more acres of land under cultivation last year than in 1870, an increase of 34 per cent. The percentage of increase in the number of corn produced was 22½; of wheat, 52; of rye, 42; of barley, 35; in tons

of hay, 34; and in pounds of tobacco, 91 per cent. The live stock over the aggregate of 1870 was, horses, 44 per cent.; mules, 45; cows, 26; oxen and other cattle, 29; sheep, 25½; swine, 28 per cent. The aggregate increase in the number of live animals amounted to about 25,000,000 head. The excess of the grain crop of 1877 over that of 1870 was nearly 550,000,000 bushels. Our exports for the year ending June 30, 1877, exclusive of gold and silver, amounted to $632,980,080.

**How to Clean an Engraving.**—Put the engraving on a smooth board, cover it thinly with common salt finely powdered; squeeze lemon juice upon the salt so as to dissolve a considerable portion of it; elevate one end of the board so that it may form an angle of about forty-five or fifty degrees with the horizon. Pour on the engraving boiling water from a tea-kettle until the salt and lemon juice are all washed off; the engraving will then be perfectly clean and free from stains. It must be dried gradually on the board or on some smooth surface, being secured by drawing or other pins. If dried by the fire or in the sun it will be tinged with a yellow color.

**Tarred Paper in the Chicken-House.**—"I have lined my poultry buildings throughout with tarred paper for two years, putting it between every piece of board or timber, and even into nests, and so far have not seen a louse about. I had a hen-house overrun with lice two years ago, but upon lining it with tarred paper they disappeared and have not been seen since."—*Poultry World.*

**Division of Labor in Science.**—St. George Mivart remarks on this subject: "The principle of the division of labor renders necessary the application of one man's almost entire energy to a more and more restricted field of scientific labor. Only intellectual giants can now hope for eminence in widely remote areas of study and research. To take an example from one science, men have not only almost ceased to be general zoologists, and become ornithologists, entomologists, etc., as the case may be, but we hear of lives being devoted to the study of small sections of natural orders, and that this naturalist is a *Carabidist* (that is, devoted to that family of beetles termed *Carabidæ*), and that a *Curculionist* (devoted to the long-snouted beetles termed *Curculionidæ*), while a German naturalist has even published a quarto volume, with large plates and numerous tables, the whole being devoted to the anatomy of the lower part of the hindmost bone of the skull of the carp."

**Moths in Carpets.**—A good way to kill them is to take a coarse towel, and wring it out in clean water. Spread it out smoothly on the carpet, then iron it dry with a good hot iron, repeating the operation on all suspected places, and those least used. It is not necessary to press hard, heat and steam being the agents, and they do the work effectually on the worms and their eggs. Let housekeepers try this method on the new carpet moth which has acquired a reputation for fertility and pertinacity.

**Evolution of River Courses.**—From an examination of the surface geology of Southwestern Pennsylvania and portions of Maryland and West Virginia, Professor Stephenson concludes that after the submergence of the glacial period the continent rose to a greater height than it had before attained, or that the ocean was drawn off to a lower level than before, the result being the same in either case, to depress the mouths of the great rivers, increase the fall of the streams, and therefore cause a rapid deepening of the water-ways.

**Washing Windows.**—Some one advises on this subject that it is not an easy thing to wash windows so that they will look clear and well polished, and if soapsuds are used, it is quite impossible to do it. The old-fashioned way of taking out all the windows, and washing them in soapsuds, and setting them aside to dry, after the suds have been rinsed off, is, to be sure, the easiest way of cleaning them, but it is also the worst way to make them look clear and bright. First brush them off well with a sponge or brush that comes for the purpose, and then wrap a bit of cloth about a sharp-pointed stick, and wipe out the dust that adheres to the corners, then take some weak tea, boiling hot, and add to it a tablespoonful of alcohol and a few drops of aqua ammonia, or a bit of carbonate of ammonia, the size of an English walnut. Dip a piece of sponge or old flannel, or of old canton flannel, into it, and rub the glass one way only until it shines clear. Wipe it off with another cloth, rubbing it until well polished. Newspapers used to be much better than any cotton cloth for washing and wiping windows and mirrors, but now that the paper is chiefly composed of wood pulp, they are the worst things that can be used, as they cover them with a linty substance.

**Flour Mills in the United States.**—Our milling industry, the *American Miller* maintains, ranks next to that of iron. The number of mills is over 25,000, affording employment for more than 60,000 men, whose annual wages are about $20,000,000, and turning out yearly 50,000,000 barrels of flour, of which 4,000,000 barrels are exported to foreign countries. Pennsylvania has the most mills (nearly 3,000), New York stands next with about 2,000, and other States follow with from 700 to less than 100. Minnesota's mills are the largest, and employ the greatest average number of men, namely, five in each. We wish that there were more mills in the country for producing good meal from the whole grain.


MRS. C. FOWLER WELLS, *Proprietor.*
H. S. DRAYTON, A.M., *Editor.* N. SIZER, *Associate.*

NEW YORK,
OCTOBER, 1878.

## PHRENOLOGY ACCORDING TO THE "NEW YORK TIMES."

THE New York *Times* has a funny man who occupies a part of its editorial page with hits at men and things. Lately (August 2d) he had a few paragraphs, headed "Phrenology," in which he deemed it suitable to make this wholesale assertion:

"In fact, but one fault can be found with Phrenology, and that is that it is not true, and there is not a trace of a shadow of a ghost of a reason for believing it to be true."

It is very well to be funny, but it is better to be funny within the limits of truth and reasonable probability. We have no objections to writers who "point a moral or adorn a tale" by having their innocent flings at some raw professor of Phrenology, or of any other subject, who dilates to the gaping crowd on a subject of which he in reality knows little. Such men deserve all the ridicule and contempt which honest criticism can heap upon them; but when a man gravely says that there is no truth in Phrenology, we take exception and join issue with him. We are not advised how much the writer in the *Times* knows about the subject. We are certain that if he knew much of it, and had any regard for truth, he would never make such a statement.

A few years ago a certain professor in one of our schools, a man of learning and of scientific attainment, useful in his way, and who well deserves his title, undertook to reply to a lecture of ours given before the Liberal Club of New York, and the substance of his objection, and the only one he then said he entertained, was that skulls sometimes differ in thickness, and therefore it was impossible for a phrenologist to tell how large the organs were, and that sometimes a particular part of the skull was thinner than other parts by the eighth of an inch, and that would, in his judgment, throw Phrenology quite out of its reckoning. We invited him to call at our office, which in a few days he did, and we there told him that phrenologists did not estimate organs by what the world understands as "bumps," little hills and hollows on the surface of the head, but that they estimate the developments by the length of the fibers of the brain developed from the top of the spinal column just as the ribs of a palm-leaf fan are developed from the stem in every direction, and that length of fiber determined the size of the organic development. We took callipers and measured the head of the gentleman himself from front to rear, and then measured a skull which lay before us, and found them to be the same, say eight inches; we then applied the callipers above the opening of the ear in the skull to ascertain its width, and then applied them to the head of the professor over scalp and all, and we found that the skull was more than two inches and a half wider than the head of the professor with its scalp and integuments. Then we measured the height of the professor's head from the opening of the ear and compared it with the height of the skull, and found the professor's head to be

an inch and three-quarters higher, and we informed him that the length of the line from the center of the base of the brain, or from a line drawn from ear to ear through the head, was the measure of development; consequently, the organs in his side-head were small compared with those of the skull, while the organs of his top-head were very large, as compared with those indicated by the skull. Furthermore, we knew the character of the man who once carried the skull and stated its comparative qualities. The professor heard us calmly, and then said: "Is that Phrenology?—if so, I have a new idea. I have alwa s supposed that the last eighth of an inch, and the little fullnesses and deficiencies of the surface of the cranium, indicated large and small organs."

This is an illustration of the views entertained by many editors and funny writers, and occasionally doctors in divinity, and even doctors of medicine, with respect to Phrenology. They know very little about it, and they appear to be content with that little, which, when examined, is imperfect as far as it goes. It is very easy in such cases to condemn a thing and say, "There is not a trace of a shadow of a ghost of a reason for believing it to be true."

Now, what is Phrenology? We trust our funny writer in the *Times* will read our brief explanation of it before he writes another article on "Phrenology," even for the sake of making fun. Phrenology is based on certain definite principles, which are as easily understood as the science of chemistry or the laws of natural philosophy.

*First.* The brain is the organ of the mind. Is or is not that true?

*Second.* The mind has many faculties, some of which may be stronger or weaker than others in the same person. We think no man in these days out of the idiot asylum will dare to controvert this.

*Third.* Each faculty or propensity of the mind has its special organ in the brain. This may be doubted by those who do not want to investigate; but more of this hereafter.

*Fourth.* Size of the brain—if the quality be good—is the true measure of its power. The brain when deficient in size or low in quality is always connected with a low degree of mental power.

*Fifth.* Organs related to each other in function are grouped together in the brain. For example, the organs of intellect are located in the forehead; those of the social nature, in the back-head; those of passion, appetite, and self-preservation, in the side-head; those of aspiration, pride, and ambition, in the crown; those of sentiment, sympathy, morality, and religion, in the top-head.

*Sixth.* A man may be a genius in one thing and find it impossible, by long training, to become respectable in other things. This would not be the case if the mind were a single power and the brain a single organ. As the sense of hearing, seeing, tasting, smelling, feeling, are not always possessed by each person in equal degrees of perfection, these several powers being dependent on different organs, so the mental faculties and dispositions are sometimes very unequal in a given person, owing to the greater strength or weakness of their respective organs in the brain. Partial genius, partial idiocy, and partial insanity sustain the phrenological theory of the mind.

*Seventh.* The quality and temperament of the organization determine the degree of activity and endurance of the mental powers. Some persons with a head of medium size, if the quality be very fine and strong, will manifest more mind or character than some others who may have a larger head. On the same pr nciple, a game chicken

weighing four pounds will flog a shanghai that weighs twelve, and do it so quickly that it is an astonishment, especially to the larger one. Some timber, hickory for instance, is much stronger for its size than pine or chestnut. But in reference to timber and other material, men really judge of quality by certain signs. The question of quality not being understood, is one great reason why people who do not study Phrenology with this point in view, never understand it. People say that they know persons with medium-sized heads who are great, perhaps in scholarly directions. On investigation, we find that the intellectual department of such heads is comparatively large. They do not wear a large hat, to be sure, but that part which has to do with intellect is largely developed, and the quality perhaps is very high. Another objector will tell us that he knows a person with a big head, whose hat was larger than any other hat worn in the school, and yet he was a numbhead, and we presume the same quality went through the whole body. Was he a good wrestler? Could he run? Could he box? Was he smart in anything? or was he like a great Durham ox, without positiveness and without power?

But it is said that the "proof of a pudding is the eating of it;" that the theory may be correct, but practice should verify the theory. And now we make this assertion, and it is not self-assertion: Ten human skulls, the character of whose owners is well known, may be presented to a phrenologist and he will write out the character and capacity pertaining to each in such a way that a disinterested committee will be able to determine for which skull each is designed. Or ten men of marked character may be selected and sent separately to a phrenologist, and he will dictate the character to a short hand writer and say enough on each to fill one column of the *Times* or the *Herald*. No name need be given, simply a number or a letter of the alphabet to designate the persons—each sitter knowing his own number or letter, and persons who are well acquainted with those ten men will read those descriptions and assign to each man of the ten the description that belongs to him. This latter experiment, to the extent of six, was tried by a person residing in Brooklyn a few years ago, on a wager of thirty dollars, and the advocate of Phrenology won easily, by reading the descriptions once. The descriptions were then sent to a person not acquainted with phrenological doctrines, who read the descriptions twice through, and knowing the persons well, assigned correctly to each one of the character that belonged to him.

Nay, more, we will find a man who will go into a dark room in any city and examine ten heads that shall have been selected for the purpose, and describe them so that a committee in the same dark room will recognize in each case which man is under the hands of the phrenologist.

This is proof, practical proof, that, following the principles laid down by phrenologists, the science must be true. Phrenologists do not make up their opinion by the dress and manners, by the expression of the face, by the general appearance; and this we say without invalidating physiognomy. We fancy that we can show to our friends "a trace of a shadow of a ghost of a reason" not only, but solid reasons that would hang any man if bearing upon his case in a trial for murder.

In late numbers we have shown how one of the most eminent of metaphysicians deliberately challenged the advocates of Phrenology to a controversy in which he attempted to refute facts and principles today generally accepted by physiologists;

but in his day they were new, and mainly because they were discovered or brought to the notice of the scientific world by phrenologists, Sir William Hamilton denounced them as untrue and mischievous in their influence.

We do not undertake to indorse all that phrenologists, or those calling themselves phrenologists, do and say; but when they intelligently and honestly apply the principles and methods of the science in their practice, we know that they can describe character and estimate men better than others.

## WHY AND WHAT?

WE are frequently asked, What is the reason for the prevailing stringency in business and monetary affairs? and that, too, by intelligent persons who keep themselves informed with respect to current events. This question has been so widely discussed by the press, by the pulpit, by legislators, by political demagogues, that the array of statistics and arguments for this or that view of it, is so extensive that one feels quite won over to the side which may be advocated for the time being. One will assure you that the causes lie in the immediate consequences of our late great war, and chiefly in the vast national debt which its prosecution entailed. Another is equally sure that the financial policy of the General Government is responsible for the trouble; that the management of the United States Treasury is under the control of bankers and brokers, who have no interest in aught besides their personal aggrandizement, while the great producing classes are ignored and left to flounder amid losses and embarrassments. Another asserts that capital can not find profitable investment; values are so unstable that the men who have money hesitate to embark in any enterprises which require liberal expenditure, and which would employ the mechanic and laborer, and so give a free circulation of capital among the people.

Still another claims that they who have the money of society demand more than is reasonable for the use of it, and subject the workingman to many severe, and even cruel, exactions, even when performing service which is indispensable.

Still another affirms that the general distress is in the main factitious, and the necessary consequence of a long period of superfluity, indiscretion, and extravagance in which all classes shared; that the people have become so much accustomed to excess that they now find it difficult, or are unwilling, to return to the ways of frugality and close economy.

We might instance other opinions, but they would be found related to one or more of those which we have epitomized.

The reader will probably say that each, as stated, bears upon the question, and, therefore, all must be included in its proper discussion. If so, he will be right, and should we ask him to give us a summary of the essential steps toward a resolution of the difficulties under which we labor, would doubtless answer:

Let our representatives in Congress and in the State Legislature consider fairly the need of the whole people, and no longer enact laws for the benefit of one class to the prejudice of another. Let there be no restrictive policy concerning the national media of exchanges. Give to the mechanic, the laborer, the farmer, the producer, at least an equal right to be heard with the capitalist. Let honesty, economy, and industry be accorded a higher place in public esteem than audacity, luxury, indolence, and ostentation. Let us ingraft upon our national escutcheon some of the grand hu-

man principles which made Sparta so powerful and famous among the ancients.

Ah, my friend, how easy it is to suggest measures in the abstract. But we grant you something which embodies, in a degree, such principles, must be done ere we be able to utilize our great resources advantageously, and become a prosperous and happy nation.

## A "TOBACCO HEART."

OUR title may seem strange to most ears; it did to ours. We have heard of a generous heart, a selfish heart, a loving heart, a hard heart, and a black heart. But a "tobacco heart" is a new name, although we have been satisfied for many years that it is not a new thing. Many have learned, to their sorrow, that the use of tobacco has a tendency to disturb the action of the heart. Thousands of people die suddenly from what is erroneously called apoplexy, in consequence of the paralysis of the nerves which operate the heart, by the use of tobacco. In the New York *World* for July 31st there is an account of the failure of a firm of merchants on Broadway. Some of the creditors desired to have the business put into the hands of one of the firm to sell off the goods, and thereby realize all that was possible. The quotation referred to says:

"Mr. W. declined the responsibility, although he freely offered his services in any desired shape. Mr. G. was incapacitated from doing the work by a 'tobacco heart,' produced by excessive smoking, and the business was at last placed in the hands of Mr. J. M. J. as supervising trustee."

The failure of the firm, it appears, was in consequence of the thieving propensities of three clerks, who constituted themselves into a "ring," whereby they were able to rob the firm. The "tobacco heart" of course had nothing to do with the failure, though in not a few instances, doubtless, men become so besotted by the use of tobacco that they are incompetent to conduct their business wisely and well. We hope the thousands of boys and young men who may read this will be induced to stop the use of tobacco if they have commenced it, or utterly refrain from it if they have not commenced its use, so that they may avoid that mournful result, a "tobacco heart."

## WORDS OF WELCOME.

ON the first day of October we shall welcome to the American Institute of Phrenology the members of the Class of 1878. All culture is useful; but what so useful as that which reveals human nature, and teaches us, not only the springs of motive, aspiration, thought, and affection in ourselves, but how to understand the character and capacity of our fellow-men, and, of course, how best to adapt ourselves to them and how to guide, mold, and cultivate those with whom, by parentage or by business and social relations, we are brought in contact?

We have the prospect of a large and intelligent class. The subject is increasing in interest with the public, and more than ever men seek to know what this comprehensive science of first principles can offer them as an aid to self-cultivation, and to the whole work of life. True Phrenology challenges the respect and confidence of the highest and best of men. We trust the time is not distant when a familiar knowledge of the science, in connection with Physiology, shall be considered an essential branch of a good education, especially so for the members of every profession, particularly teachers.

# Our Mentorial Bureau.

"He that questioneth much shall learn much."—*Bacon.*

## 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.*

WE CANNOT 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.*

CONVOLUTIONS OF THE BRAIN.—O. R.—The character of the brain is estimated from the organization and temperament of the person under examination. The depth and number of the convolutions depend upon the quality and development of the individual, but chiefly upon his quality. One of fine-grained organization, as compared with one of coarse composition, will possess a higher order of brain structure.

ACTION AND ORGANIZATION.—J. P. K.—Human conduct, by which we mean all that relates to mental manifestation, whether in word or deed, proceeds first from organization; but the character of surroundings, the environment, affects the character of the conduct. Organization is susceptible to influences proceeding from its environment, so that the actual outcome of organization may be termed a modified result. The type of conduct, however, is indicated by organization. We are told in the New Testament that a tree is known by its fruits. This principle is retroactive—the fruit can be determined from the tree. Were not this the case, the science of agriculture would lack foundation. A good horticulturist by examining a tree can determine whether or not the fruit be of a good class or a poor class. So in the examination of a human organization, it can be determined whether or not the type be high or low.

FUNCTIONAL DERANGEMENT.—J. says: "I feel quite weak at times and nervous; have pain in my shoulders during rainy weather; my skin has a sallow appearance, though my appetite is good. I am very low-spirited in damp, heavy weather."

These are indications which point both to the mental character of the person and to functional disturbance. Your nature, mentally, is not of the buoyant, happy sort. You have large Cautiousness and moderate Hope. Your liver may be torpid or congested, and its influence upon your mental condition is depressing. Try to be cheerful and hopeful; regulate your diet and mode of living according to hygienic principles, and we think that you will feel better.

SLEEP.—A. W.—To explain the exact nature of sleep is a matter of great difficulty; in fact, scientists generally acknowledge that they are not able to solve it in all respects. But from experience it is believed to be the method by which rest for the brain and nervous system is provided. The muscles may be recuperated by repose, or that relaxation which is theirs when the body is in a state of quietude; but nothing will restore vigor to the exhausted brain and nervous apparatus besides sleep. Complete sleep, that which restores the weary man, is dreamless. Dreams or visions, or any of the singular phenomena which are recorded, take place only in partial sleep, some of the mental faculties being awake and active. The phenomena of sleep furnish some of the best proofs in support of the phrenological doctrine of the mind's organization. Were the brain a single organ, subserving the purposes of the mind as an integral faculty, sleep could not happen with a part of it unconscious and a part conscious; at least such a view would be illogical and incongruous.

RED SPOT ON THE NOSE.—F. S. C.—Is this troublesome blotch of long standing? Does it appear to have a solid nucleus? Have you tried a careful hygienic diet? You are not particular enough in your description for us to give you an answer with any approach to definiteness.

MENTAL SUSCEPTIBILITY.—J. W. M.—Persons who act in the fitful manner you speak of, are usually weak in both mental and physical organization and thus are easily wrought upon by their feelings or impressions. We have known persons of naturally strong mind, after a long sickness, to become so weak as to be hysterical and easily made to weep or to laugh. There are cases of inordinate development in one or an-

other organ like Cautiousness and Spirituality, in which the persons experience real enjoyment when exhibiting conduct which others look upon as fantastic.

TEMPERAMENT AND BONE.—*Question:* Does the temperament have anything to do with the thickness of the skull or size of the medulla oblongata?

*Answer:* Temperament is the product or compound of the physical organisms, and according to its grade is the thickness of the skull, size and quality of the bones, determined. A man with a temperament in which the nervous element predominates, will have a relatively thin skull; one in whom the motive element predominates, will have a thick skull and strongly-marked bony organization throughout.

SIZE.—O. R.—One leading principle in the phrenological system is, "Size, other things being equal, is the measure of power." This answers your question.

VITATIVENESS.—J. L. D.—If you will examine a copy of the PHRENOLOGICAL JOURNAL for May, this year, you will find Vitativeness defined, and its relation to the mind fully set forth.

SINGING IN THE EARS.—Please explain the cause of singing in the ears. Sometimes both ears seem to close suddenly, and then a prolonged sound seems to issue, which is sometimes faint, at other times shrill.

*Answer: Tinnitus Aurium*, as this distressing symptom is called, occurs in almost all cases of acute and chronic middle-ear disease, either catarrhal or suppurative. It is generally *subjective* only (*i.e.*, perceptible to the patient), but the writer has seen one case where the noise, a kind of snapping, was audible to others three feet from the patient's ear. In this case the *tinnitus* was undoubtedly due to spasm of the *Tensor Tympani* muscle. The ordinary cases of buzzing and whistling are caused by irritation of the nerve twigs supplying the middle ear, or from pressure on the fluids of the internal ear, etc. A great many things may cause this symptom.

SLEEPING ON THE BACK.—Many persons can not sleep while lying on the back; some can sleep the most comfortably in that position; probably the majority of people sleep on the right side, and find it difficult to sleep on the left. Some say that the difficulty of sleeping on the left side is owing to the action of the heart being interrupted or hindered by pressure of adjoining organs, the stomach in particular. There may be disease or functional trouble which disturbs the circulation, and a certain posture while lying down tends to develop some of its inconvenient results. Thus, there may be adhesions which, when the person is lying on his back, will hinder the pulsation of the central organ. In most cases we take it that habit is at the bottom of the inconvenience of a change of position.

POISONOUS PLANT.—*Question:* Why is it that some people are so easily affected by the "poison-vine," while others can even handle it without the slightest danger to poison?—Z. T. R.

*Answer:* The common running vine, to which you doubtless allude, is known in the East by the name of poison ivy. In some places it is called mercury. The susceptibility to its poisonous influence is a constitutional one, and is of the same nature as that which relates to susceptibility to contagious diseases. Persons whose blood is pure and their health firm, can expose themselves to epidemic influences with little risk, while others who are weak nervously, and have deranged systems, will readily contract disease from malarious and other causes. A wash of dilute carbolic acid or of bromine is useful in cases of poison by plants. The old-fashioned method is the application of dilute sugar of lead. Cold-water bandages are safe, good, and usually sufficient.

WEAK CIRCULATION.—I. S.—You need out-of-door life, pure air, nutritious food, abundance of rest, freedom from excitement. If your troubles have been of long standing, you ought to go to some health institution and remain there two or three months, taking an occasional bath, with the accompanying manipulations, rubbing, etc. You should wear warm clothing, especially over the extremities, thick stockings and thick shoes, and avoid exposure to cold, draughts, and dampness.

*Several* ANSWERS *must be deferred to the 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.*

"BLOOD" AND PHRENOLOGY.—The word "blood," used synonymous with culture and superiority in general, furnishes a large topic for discussion, and for the want of the knowledge of a better term is often used for defining what is conceived to be some superiority in man over his fellow-man. Periodically this word "blood" seems to be brought out; it slumbers for a season, then some one thinks that they have hit upon a new idea to account for superiority or inferiority in the human race, and they sit down and write up "blood," and often illustrate it with cases of individual integrity, and the want of it, and account for all by the terms "good" and "bad blood." This shows an intellectual desire

to account for cause; and the experience of the world proves that men will accept even an unsatisfactory reason rather than remain without some plausible method of accounting for a cause. Many a person has a desire to learn, but would do so by the simple process of asking questions of some one he thinks wiser than himself. Such persons usually have not the intellectual power or mental training to think out an original cause or probable cause for themselves.

It would seem that an unsatisfactory cause was no better than no knowledge of a cause at all, unless, perhaps, as sometimes in the case of a superior mind, it may lead to a further and better investigation; but there are many people in the world whose mental faculties are just developed sufficiently, and no more, to ask promiscuously the cause of something that for a moment is presented very forcibly to their mind.

So we have a host of absurd causes that are no causes at all, as people have causes of wet or dry weather, all on account of the peculiar shape of the moon to us. This class of people don't seem to think that the moon is shining all the while over thousands of square miles of territory where there are all sorts of weather; that it is seen bright and clear in one place, while in another its brightness is hidden by immense banks of dark clouds. And if the moon did have any influence upon the weather, it would have only such as the sun has, though in a much inferior manner, and which is not of sufficient value to talk about.

But of all absurd causes this of "blood" is one of the most nonsensical. Of course the word "blood" is used figuratively, after the manner of the word "heart;" "blood" being commonly used to denote pureness, and "heart" goodness; but because these words were used and accepted as a cause in ages when the world did not know any better, or because there was some satisfaction in having an imaginary cause when a real cause was not available, is no reason that we should hang to them after we have come to know better, or *should know better*. It is certainly ridiculous to hold to any such absurdity when a good, substantial cause—a first cause, as it were, lies before our very eyes—a cause delivered to us by the first great Cause himself.

It seems absurd for sensible people to talk about the pure blood of races or individuals when the physiological fact of poor, thin blood in them is as prominent as the very existence of the nation or individuals themselves. Some people will talk about their aristocratic or "blue blood" and consider themselves as having it, and on that account assume a superiority to the rest of their fellow-men; when the fact is prominently stamped upon their very physiognomy, in the outline of their features, as a whole, that they are of a very coarse and inferior organization. On the other hand, a boor, with not education enough to trace out the most simple cause, may have arteries and veins filled with the very best of blood. The mere quality of the blood, although it has its nutritive effect, is no true criterion of the quality of a nation or an individual. People may tell us that by the term "blood" they mean culture and superiority. We know that this is what they mean, but my point is, Why not seek a better and appropriate illustration of the idea, when it is so accessible and open to all, and especially to those who have what they claim as superior "blood?" Blood is simply an agent in performing a certain end, and can not be good, unless other conditions that precede it are good, and it has little to do with developing character, besides the fact that good nourishment improves and keeps good the kind. The circulation conveys the particles that build up all parts of the body, but it has nothing to do with giving form to that body, at least no more than incidentally in matters of monstrosity, etc., and that in this case is not worth considering, for it is not pertinent to the question. Blood can not make form, texture, or size; it can only nourish form, texture, and size. Form, texture, and size illustrate quality. The better the quality the better will be the texture, the balance of parts, and the size of the whole. The strongest things are not the largest, neither the weakest things the smallest. Iron, for the same strength, may be made much smaller than wood; indeed, some kinds of wood are superior in strength to others.

The same law applies universally. Culture—superiority—is illustrated by certain exact rules that are not difficult to learn, and that are open and available to all who have the ability to grasp them. The trouble for the past half century has not consisted in the want of ability on the part of mankind to grasp these natural laws, but simply in a disinclination. Some worthy, but prejudiced, men have ridiculed this higher cause, so few have had the moral courage to personally seek it, and have settled down to the ridiculous substitute, "blood." A nation or an individual, in order to be in good condition and up to the best working point for accomplishing great results, should have good blood. The way to get this is by diligent investigation of the laws of health, which have been in existence from the foundation of the world. But one great trouble in the world has been that those who have had good "blood," as the world commonly speaks, have not had good blood with which to fight the battle of life, and so they have prematurely gone to the grave, or by sickness have been unfitted for the great work that their great brains would have laid out before them. Their opportunity was lost simply for the practical want of *good* blood. Good blood I believe in, for it gives

health, strength, and vigor to contend against the low and to build up the high and ennobling. Good blood all should seek to attain. Some have it without effort, while with others it is the effort of their lives. But it should be borne in mind that it is only an agent and not a cause, and that Phrenology, and not "blood," will explain the cause of the diverse qualities of men. No man should undertake to sound a cause when he is more interested in making out a cause to suit himself, rather than a cause that is in itself correct and that will stand upon its own base.

Phrenology will not only teach this, but it will enable man to fathom the greatest depths that the mind of man is able to comprehend. In studying Phrenology, as all other sciences, no man can go beyond himself; if he wishes to make the most progress possible, let him so drill and develop himself that he can, as it were, stand above himself and decide justly and impartially in all things and do justice to all men and things.

I. P. NOYES.

THE HIGHER LIFE.—A pale, haggard man lies at length on the floor of a dark, loathsome cell. He is clad in tattered, filthy garments, that cling closely to his attenuated form. Stretch his hands which way he will, they come in contact with the cold, slimy walls of his narrow prison. Disgusting reptiles creep over him and burrow in his matted hair. His bed is but a wisp of decaying straw; his food but husks that the swine refuse. Black, impenetrable darkness envelopes him like a pall; and the close air of his prison is filled with unwholesome vapors. Outside, the fields are green and beautiful; the soft west wind scatters the perfume of a thousand flowers about its pathway; the birds are trilling their sweet notes of thanksgiving and praise; and all is light and purity and happiness. But this man has lain so long in darkness and misery that he knows not of the bright, beautiful world outside his noisome cell. He is unconscious alike of his own misery and of the joy and happiness which he is losing.

Time rolls onward. Some change has come over the great world outside; for the first time a slender, quivering ray of light shoots through the grated window of his cell and rests full upon the man's face. Every day afterward that ray of light finds its way into the gloomy cell, and each day it grows lighter and stronger, until the poor prisoner grows to love it and long anxiously for its coming. From wishing and longing for it, he tries to hasten the time of its coming by crawling nearer to the grated window. And not satisfied then, he climbs up the steep wall of his prison, first cleansing his garments of the dirt which adheres to them. Each day he strives to rise higher. At last his efforts are crowned with success; he reaches the window; fascinated by the prospect that meets his eye, he bursts the grating and emerges from his narrow prison; next he is breathing great draughts of God's pure air and basking in the blessed light and sunshine. He has entered the higher life and he feels that he is free, free, free!

Are there not many to-day who are in as bad a situation as the man above described? Methinks I hear them answer: "Our minds are confined to a narrow sphere. Evil habits cling closely around us. Let our thoughts go out which way they will, and they come in contact with the walls of Ignorance. The ghosts of unholy acts haunt our brain and have ever a lodgment there. We are resting upon the rotten fabric of some dead creed or dogma, and our mental food is vile and degrading. The ever-deepening gloom of ignorance shuts from our sight the beauty and grandeur of a higher life."

But such can draw nearer to the light if they will. Each day they can give up some vicious habit; each day they can thrust out some degrading thought; each day they can lighten the load of some sorrowing one; and thus each day they can render their lives brighter and happier than they were the day before. "What man has done, man can do," and we can rise into a higher, nobler sphere, and may surprise ourselves by our success. With so many bright examples, why should we falter by the way?

"Lives of great men all remind us
We can make our lives sublime,
And, departing, leave behind us
Footprints on the sands of time—

"Footprints that perhaps another,
Sailing o'er life's solemn main,
A forlorn and shipwrecked brother,
Seeing, shall take heart again."

JAMES PERRIGO.

## PERSONAL.

THE late Professor Henry made twenty-two inventions and discoveries, none of which he patented, preferring to leave the fruits of his science to all who would profit by it. Quite a contrast to other inventors, who, as a rule, rush to Washington with every little device.

"EXTRA BILLY" SMITH, of Virginia, who has been several times Governor of Virginia, member of Congress, etc., delivered an address recently before the Female Seminary of Warrenton, Virginia. At the age of ninety Mr. Smith's voice and intellect are up to the requirements of an oration to young women.

WASHINGTON IRVING'S home at Sunnyside is said to look old and neglected. The decorations are all cheap, and pictures of the place so flatter it that the reality is in strong contrast.

Miss Fannie E. Kellogg has been appointed postmaster at Sitka, Alaska Territory, where she is engaged by the Presbytery of Oregon as missionary teacher to the resident Indians. She is a native of New York.

Cardinal Alexander Franchi, the Pope's Secretary of State, died on the 1st of August. He was born in Rome in 1819. Much of his official life had been spent as nuncio and delegate to European powers. In 1873 he was made a cardinal by Pope Pius IX., and placed at the head of the Congregation of the Propaganda. Cardinal Franchi was a leading candidate for the late papal succession, and received a large vote.

Senator Beck, of Kentucky, is fifty-three years old, weighs two hundred and twenty-two pounds, and has never taken a dose of medicine in his life. He has left for the plains on a hunting expedition, and says that he can yet walk his thirty miles in a day, provided that some one will carry the game.

The Marquis of Lorne, son of the Duke of Argyle, has been appointed Governor-General of Canada. The Marquis is a man of considerable culture; and the Princess Louise, his wife, is beloved for her good sense and amiability. He succeeds Lord Dufferin, in whom our Canadian friends had a most able chief officer.

Mr. Alexander H. Stephens is now enjoying better health than for many years past. The secret of his vitality is a remarkably sound stomach, which, it is said, during his long illness never failed to perform its functions.

The Rev. Father Brophy, an Irish priest, now an inmate of the Hospital of the Sisters of Providence, Davenport, Iowa, is 106 years old. While in Paris he saw the attempt of assassinating Louis Philippe by the firing of a bombshell while he was walking on the boulevard. He was intimately acquainted with General Lafayette.

## WISDOM.

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

If the best man's faults were written on his forehead, he would draw his hat over his eyes.

Many people are busy in this world gathering together a handful of thorns to sit upon.

Who is powerful? He who can control his passion. Who is rich? He who is contented with what he has.—*Jewish saying.*

The beginning of faith is action, and he only believes who struggles; not he who merely thinks a question over.—Carlyle.

It is easy in the world to live after the world's opinion; it is easy in solitude to live after your own; but the great man is he who, in the midst of the crowd, keeps with perfect sweetness the independence of solitude.—Emerson.

The sweetest songs are those
That few men ever hear,
And no men ever sing.

The fairest skies are those
That farthest off appear
To birds of strongest wing.

The dearest loves are those
That no man can come near
With his best following.

"Habit" is hard to overcome. If you take off the first letter, it does not change "a bit." If you take off another, you still have a "bit" left. If you take off still another, the whole of "it" remains. If you take off another, it is not "t" totally used up. All of which goes to show that if you wish be rid of a "habit" you must throw it off altogether.

## MIRTH.

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

Step up to a citizen and tell him that his father and grandfather were lunatics, and see how quickly he'll crook his elbow. Yet, let that citizen shoot somebody, and he'll bless you if you'll help him to prove that all his ancestors were not only crazy, but the biggest fools in the neighborhood.

The gentleman who attracted attention in church last week by crying out, "Holy Moses," had no intention of disturbing the congregation. He had been tacking down carpets on the day before, and just as he sat down in his pew he suddenly remembered that he had half a paper of tacks in his coat-skirt pocket. We make this explanation in justice to his family, who are highly respectable.

Two sweet little girls sat upon the sidewalk in front of the Elko post-office, one of them nursing a large wax doll. Her companion asked, in tones of deep earnestness, "Does 'oo have much twouble wif 'oor baby?" "Oh, doodness, yes!" was the reply. "She cwies mos' all 'e time. She jes' cwied and cwied ever since she was born. I don't fink I'll ever born any more."

"What's de time o' day, ole 'oman?" said a colored countryman to Aunt Milly, yesterday, trying to poke fun at the brass chain that held her front-door key around that young lady's neck. "Look at de town clock, chile; dat's built for po' folks."—*Vicksburg Herald.*

## 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.*

VISIONS: A Study of False Sight (Pseudopia). By Edward H. Clarke, M.D., with an Introduction and Memorial Sketch by Oliver Wendell Holmes, M.D. 12mo, cloth, pp. 315. Price $1.50. Boston: Houghton, Osgood and Company.

Ere this volume was completed the eminent physician and author had passed away. Undertaken as a partial solace to the pain and malaise of a fatal disease, the subject naturally employed his most serious reflections, and in its gradual evolution in manuscript embraced a most carefully-selected series of personal experiences and of gleanings from wide reading. It will be remembered by the reader of this note that Dr. Clarke was the author of "Sex in Education," a book which provoked a controversy still carried on with some vigor.

As would be expected when the character of the writer is known, "Visions" is for the most part a scientific consideration of the wonderful and strange spectacles which the volume records; an inquiry as to whether visions are figments of the imagination or facts resting upon a physiological basis. Dr. Clarke looks for a satisfactory answer mainly to physiology and pathology, and deems psychological explanations insufficient or insubstantial. The use of narcotics and stimulants has much to do with the cerebral disturbances which produce visions; epilepsy and other forms of nervous disorder are related to false sight also. Whatever the manifest occasion, so far as apparent disease is concerned, Dr. Clarke affirms that the tubercula quadrigemina, the center of the optic function, are the cerebral source of the hallucinations. When visual impressions reach these nerve bulbs, "they are first perceived by the ego," but in these tubercula memory intellection or volition do not reside, they are to be found in the gray matter of the frontal lobes. The tubercula act automatically; the cells of the "higher cerebral centers" retain impressions "through all the changes of cerebral development and action, and these impressions may be reproduced through some incident." Cell groupings and cell modifications, which are frequently formed, acquire the power of being reproduced with constantly-increasing facility.

The volume is enriched with numerous quotations from the experience of many eminent physiologists and writers in the observations of cases allied to those reported by Dr. Clarke himself, and in one or two instances the author's own psychological sentiment reveals itself and appears to obtain a slight precedence over his usually cool, scientific method, and prompts him, in "Visions of the Dying," to speak of phenomena inexplicable by any physiological reasons. "One of the facts of dream-life," he says, near the close of his volume, "hints at a life which has neither beginning nor end, and is bounded by no limits which human thought can compass."

SEQUEL TO "ESSAYS." By Charles E. Townsend, author of "Essays on Mind, Matter, Forces, Theology," etc. 12mo, pp. 102. New York: Charles P. Somerby.

Scarcely more than a year ago the author offered his "Essays" to the world, and it would appear that notwithstanding their discussion of the most profound and abstract subjects, in what we were inclined to consider a most profound and often occult manner, they found appreciative readers, some of whom were inclined to contest his views or to ask for a further treatment of them. The present volume is made up chiefly of replies to notices and letters polemical, interrogative, and otherwise, which Mr. Townsend has received, but also includes some fresh reflections upon topics like "God in Nature and Mind," "Force," "The Harmony of Nature, Religion, and Science," "A Trinity Impossible," etc. Mr. Townsend has a method of reasoning entirely unlike any author with whom we are acquainted; he does not agree with thinkers of the Haeckel stamp, but believes mind to be an immortal, independent, subtile materiality. He accepts, or rather enunciates, a First Cause, an Infinite Mind, Will Force, etc., using such capitalized phrases as descriptive of a God, but rejects the Bible as a divine revelation, and the doctrine of the Trinity as a mere ecclesiastical dogma. He thinks man free to work out his own earthly destiny, and propounds several very strong categories in support of his opinion. Here is an extract from one paragraph, in which he sets forth his "practical, common-sense view of God:" "That His Providence embraces cosmos, but not microcosm; man being left to provide his own needs, through his intelligence, from the bounties of nature, and so to make him an energetic, self-dependent being, rising, through cultivation of his intellect and industry, to become an intelligent co-worker in creation and his own advancement. But for such self-dependence and exertion man would be only a brute, as nature provides no schools for the intellect or for the morals—all such being gained by our own refining cultivation."

Mr. Townsend's discussions in this "Sequel" have two features of style which commend them

to us, viz., their terseness and perspicuity, and for which his "Essays" did not seem to be remarkable. They who have perused that volume should procure this to obtain at least a fair conception of the author's ability as a metaphysician.

SHADOWS ON THE SNOW, and other Poems. By Julia M. Holmes. Brockport, N. Y.: C. N. Thomas and Company. Price 75 cents.

Mrs. Holmes has shown a jealous delicacy in offering this cluster of poems to the public, for she has culled with the utmost care from her stock of published and unpublished verse, and when we have read the little ribbon-bound volume we feel all athirst for more. Other poets of the day surfeit us with a *melange* of good and indifferent measures, perhaps to make up a desired thickness of book, and so fail of that agreeable effect they would have produced had they sifted out the tame and weak themes.

In "Shadows on the Snow" our author discovers a fine play of fancy and sweet appreciation of the deeper feelings of the heart when sorrow lurks therein. There is vigor and force in the "Wreck of the Steamer Atlantic," which contrasts well with the plaintive melody of "Shadows on the Snow." So "In the Dark" and "Footsteps on the Other Side" we have contrasts of sentiment, expression, and measure which are charming, and at all times true to nature. All who know Mrs. Holmes or her poetry must want this sweet bouquet.

A THEORY OF POPULATION, deduced from the general law of Animal Fertility. By Herbert Spencer. With an Introduction by R. T. Trall, M.D. New York: S. R. Wells & Co., Publishers. Price 25 cents.

This essay is very pertinent in this day of agitated discussion concerning the problems of social life and of the nature of man. Mr. Spencer's eminence in the field of sociology is indisputable, and his earlier utterances, of which the "Theory of Population" is one, are esteemed as having almost, if not quite, equal authority with his later. It seems to us, indeed, that his earlier essays are clearer and the more direct in their logical bearings, and so far as they involve the same principles, and, to a great extent, the same data as his later discussions, they commend themselves more to our consideration. The essay, as above entitled, was prepared to answer the alarming doctrines of Malthus and the humorous suggestions of Doubleday, and is one of the most successful answers. A large amount of scientific information is packed in the essay, and the treatment of the subject from beginning to end is attractive and convincing.

## PUBLICATIONS RECEIVED.

GOLDEN SHORE, for the Sunday-school. By J. F. Kinsey. Price 30 cents. Published by F. W. Helmick, of Cincinnati, Ohio. Contains upward of a hundred songs and hymns, with the music, most of them quite new, but all showing the compiler's taste and care in selection.

VICK'S ILLUSTRATED MONTHLY. The numbers for August and September must please the subscribers with their excellent suggestions for the garden and house, and their really admirable and numerous illustrations of flowers and fruits. A year's collection of this magazine will make a beautiful volume for the drawing-room table.

BETWEEN THE LIVING AND THE DEAD, and Reasons for being an Abstainer. By Rev. Canon Farrar, D.D., F.R.S. One of the eminent Canon's Westminster sermons, and a speech delivered at an important Temperance meeting, both powerful in argument and incident as advocates of abstinence from alcoholic beverages. Price 10 cents. The National Temperance Society of New York.

THE UNKNOWN GOD: A Lecture delivered befor the New York Liberal Club, December 29, 1877. By James W. Stillman. D. M. Bennett, New York, Publisher.

HYMNAL TRACT, Number Five, of Standard Hymns and Tunes. C. C. Goss, New York, compiler. This series, entitled "Resignation to Christ," contains about twenty-five hymns.

REPORT ON THE HEALTH OF CHILDREN in the Oneida Community. By T. B. Noyes, M.D. A very flattering exhibition of the Community's method in the physical training of its children.

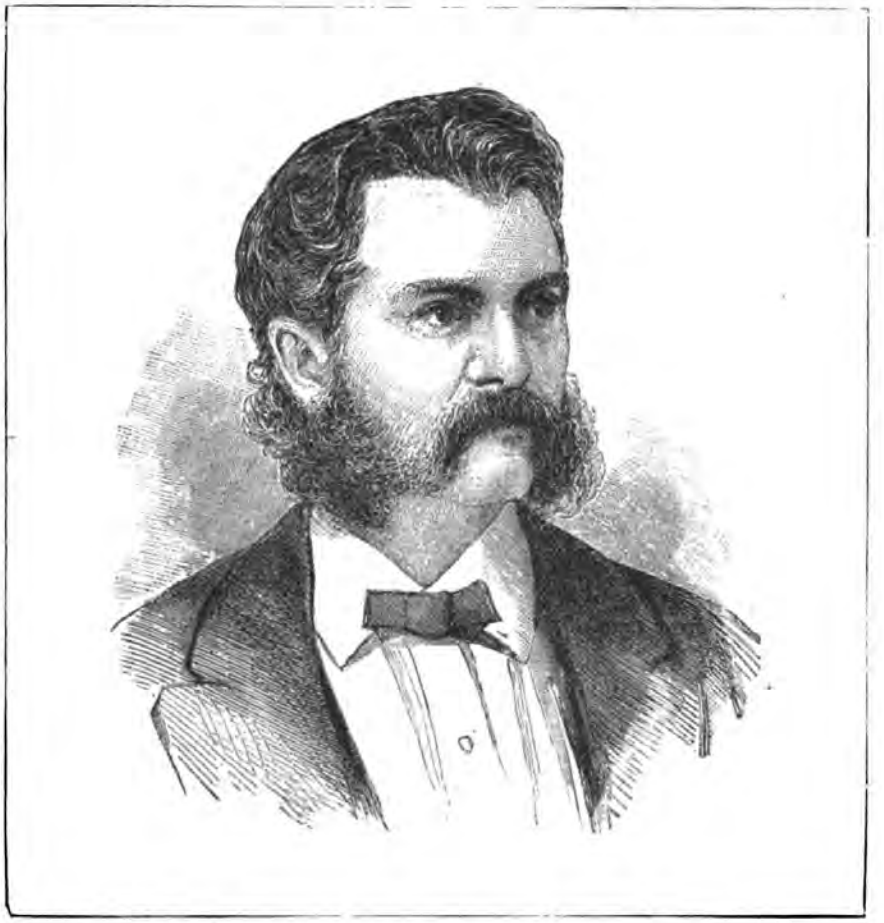
AN ANCIENT MODEL of Youthful Temperance. By Professor Austin Phelps, D.D. The subject, as might be inferred, is Daniel, whose youthful experiences are reviewed in a vigorous and attractive manner. The address is published by the National Temperance Society of New York. Price 10 cents.

THE AMERICAN ANTIQUARIAN: A Quarterly Journal devoted to Early American History, Ethnology, and Archæology. A new venture and a bold one, as its designation indicates. The field occupied is entirely its own, and we judge from the vigorous setting of the first number, that Western research will not fail to supply interesting material, if the magazine find adequate encouragement for existence. The editor, Rev. Stephen D. Peet, is an earnest student in the line selected for his periodical, and will do his full part toward rendering it worthy a large subscription list. The illustrated articles on "Ancient Garden Beds" and "Ancient Trails," the elaborate paper on "The Discovery of the Ohio," and other contributions, show original research and good literary ability. The magazine is a credit to Western Science. Terms of subscription, $2 per annum, or 50 cts. a number. Messrs. Brooks, Schinkel & Co., of Cleveland, Ohio, are the publishers.

THE PHRENOLOGICAL JOURNAL AND LIFE ILLUSTRATED.

VOL. 67. 1878.

NUMBER 5.] *November, 1878.* [WHOLE NO. 479.



## SIMON NEWCOMB,

### OF THE UNITED STATES NAVAL OBSERVATORY.

THE first impression which this picture makes upon the observer may be expressed by the word vigor, and this embodies also the idea of vitality, health, and strength. He has a good constitution, a healthy organization, and in these conditions the elements of power which distinguish him reside. In this organization there

seems to be a harmony of the temperaments; the organic conditions which go to make up structure are so harmoniously related to each other as to produce health and power as well as unity of action. The physiologist instantly sees in that face and figure the power to work, to think, to endure, to enjoy, or to suffer, as if every fiber were alive and instinct with sensation or motion. The observer will also notice compactness, as if there were strength and hardihood. Imagine him a soldier, a seaman, a farmer, a pioneer, an explorer, and the impression is given that this man would be one of a thousand to come out unscathed—were the journey across the torrid wilds of Africa or the frigid regions of the poles. It really is a pleasure to contemplate such an organization.

The type of his intellect is that of intuition rather than dry logic. He seems to breathe the atmosphere of knowledge, and to take in the truths of science as a photographic instrument appreciates and retains the image of objects and all the minutiæ of the scene presented before it. When we say that this body, this face, this build of head, all indicate that the functions of vitality and mentality are in vigorous and healthy condition, we wish to have that thought projected through all that we may have to say, as a cord is projected through the beads of a necklace and sustains them. His success depends more upon this harmonious balance and vigor of organization than he, or others, may think.

Observe how full he is above the root of the nose; and if we draw a line from the root of the nose to the hair, vertically, it seems as if the whole forehead were culminating in that line. Then if we draw a line across the brow horizontally, there is prominence, and there is great length from the opening of the ear to the points on the orbital ridge, showing that the powers of observation are excellent, especially the tendency to recognize minutiæ and detail. He individualizes everything. Nothing escapes his attention, and wherever he is acquainted or has any supervision of the work men are doing, they get an idea that he sees all that can be seen, and that nothing but complete and honest work will be tolerated. His memory of events is indicated by the fullness of the middle of the forehead, and he ought to be remarkable for retaining the knowledge which his faculties acquire and which experience opens to him.

He is a great critic of things and facts. His mind has an analytical force, which is a leading trait of his intellectual life. The memory of places is excellent, and memory of forms, magnitudes, and distance is rarely surpassed. He recognizes Color, Order, and Number, as it respects things, and he would show talent in the realm of practical mathematics. In fact, his mind is particularly practical and analytical, rather than abstract. Practical science, or the phases of science which may come under that designation, would be his forte. His mechanical judgment enables him to appreciate motion, combination of motion, mechanical adaptation, and specially the appreciation of the proper method of accomplishing results by mechanical means.

His head appears to be rather high; hence, we should expect sympathy, respect, and enthusiasm, also thoroughness and determination, amounting to very great positiveness, if not obstinacy. He is ambitious of distinction, but too proud to seek it except through solid personal attainment and desert. He is cautious in regard to his conduct, and would be very thorough in investigation, so as not to bring himself or his cause into danger or disrepute.

His Combativeness qualifies him to fight

the battle of life and push his enterprises with energy and determination. He is rather severe in his spirit when it is aroused. He lacks patience with stupidity and laziness. The very clock that keeps time would be blamed ten times more for running too slow than for running too fast. So of his horse and his hired man, he wants them to push and give him an opportunity to guide and regulate. The idea that he has to spur people to prompt them to appropriate effort, is a source of great annoyance to him.

He is strong in his affections, makes friends readily and holds them. He is capable of expressing himself with freedom and accuracy; is able to talk science, while some men of equal talent in comprehending science are only able to write it. His best thoughts occur to him while he is describing that which he knows of a subject. Hence, he would make a good extemporaneous speaker; and if he had been trained to the law or to the realm of physiology and medicine, he would have become an accomplished speaker at the bar or a fine surgeon and teacher in anatomy. He is organized to teach anything he knows or understands, and he is more successful in his efforts at instructing any person or animal that he needs to teach, than most men, because he has such clearness of comprehension, such intensity of feeling, such earnestness of purpose, and such straightforward and persistent disposition to bring every fact to a focus and every idea to its practical bearings. We predict for him a long life and a brilliant career, if he will remember not to overwork, and thereby undermine his naturally excellent constitution.

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This gentleman is yet in the prime of manhood, having been born in the province of Nova Scotia on the 12th of March, 1835. He is of New England stock, his parents, on both sides, being of families which had emigrated to the province. His father was a teacher of a village school, and possessed but the moderate capabilities of the teacher of forty years ago. He, of course, conducted his son's early education, but the youth having a decided taste for arithmetic, had mastered the subject, as far as his father was able to carry him, before reaching his twelfth year. He also possessed a marked disposition for reading, and the few books which came in his way were eagerly conned. Among them were a Latin and Greek Grammar and Readers. He also studied the rudiments of French with a teacher, but a better opportunity of acquiring a knowledge of that language was found among neighbors who were descendants of early French settlers in the province. Later he studied algebra diligently—a textbook having been loaned to him by a clergyman. Ere he was eighteen he had thus fitted himself to teach, and obtaining a school in Maryland, set out in life for himself.

About the year 1856 the late Professor Henry, of the Smithsonian Institution, had his attention drawn to young Newcomb through a communication on a scientific topic which the young man had ventured to send to him. This led to other correspondence which awakened such an interest on the part of the eminent scientist that he sought and obtained for Mr. Newcomb a position as computer in the office of the *American Nautical Almanac*. Here was a most welcome field for study and effort on the part of the young mathematician. In it he found the material he most earnestly desired, and all the incentives for diligent study. The office of the *Almanac* being then at Cambridge, Massachusetts, he found it convenient to attend as a student the Lawrence Scientific School, where he heard the lectures of Professor Pierce. He studied also the works of La Place and La Grange, and then entered the field of original investigation. At twenty-six he was appointed Professor of Mathematics in the United States Navy, and assigned to duty in the Naval Observatory at Washington.

Professor Newcomb acquired distinction in his branch of scientific inquiry much earlier than the average of men; indeed, he laid the foundation of his fame while a tutor at Cambridge, having then written a paper on "The Secular Variations and Mutual Relations of the Orbits of the Asteroids," in which he exhibited unusual thoroughness and care in his examination of what had already been written on the subject by eminent astronomers, and high ability in his demonstration that the orbits of those small planets could not have intersected unless they had been deranged by some undiscovered cause. To be sure, little attention had been given to the study of asteroidal movements by astronomers hitherto, but the thoroughness, accuracy, and originality of his treatment drew marked attention. A work of considerable importance, produced during his connection with the Naval Observatory, is an "Investigation of the Orbits of the Two Outer Planets, Uranus and Neptune," which is accompanied with elaborate tables. Toward the preparation of these tables Professor Henry contributed valuable assistance by supplying him with necessary funds from the Smithsonian Treasury.

In 1867 Professor Newcomb published his studies with reference to the distance of the sun, a work deemed of high importance by both foreign and American astronomers, who have generally adopted the value of the solar parallax 8".848, which is one of his conclusions as set forth in the work. In 1870 he visited Europe for the purpose of observing the total eclipse of that year, the path of which lay in the Mediterranean. He was appointed by our Government one of the commission to prepare plans and apparatus for the observation of the late Transit of Venus, and as secretary of that commission performed the considerable share of duty which fell to him with his customary thoroughness. In late years Professor Newcomb's labors have been in the main directed to the study of the moon and the possible variability of the sidereal day. He has published several papers on this subject. Hansen's Tables of the Moon, hitherto received as authority, have been found to deviate from observation for several years, and in a very remarkable manner, and that eminent astronomer has assigned as the cause for such deviation an acceleration in the rotation of the earth. The outcome of Professor Newcomb's study is the practical demonstration of such accelerated rotation.

Professor Newcomb's name is not associated with any remarkable discoveries, but owes its reputation chiefly to his accurate and thorough work in mathematical astronomy. A writer in the *Popular Science Monthly*, while alluding to this, says: "Perhaps the secret lies in the unity of purpose which has characterized all his efforts. His special field has been that of exact astronomy, the predictions of the motions of the heavenly bodies from their mutual gravitation, and the perfection of the Tables in their data, from which the *Nautical Almanac* is prepared, in order that the navigator and surveyor may be enabled to find their position by sea or land. When the late Admiral Davis founded the *American Nautical Almanac*, some twenty-five years ago, the tables and other materials for its construction were extremely imperfect, but Professor Newcomb's studies have all tended to their improvement."

Professor Newcomb's latest publication is a treatise on astronomy for popular reading. This has already obtained a wide circulation on both sides of the Atlantic, and is generally deemed one of the most clearly-written and interesting works of its class in print.

He has been the recipient of many academical and society honors. In February, 1874, the gold medal of the Royal Astronomical Society of Great Britain was awarded him for merit and valuable contributions to the progress of astronomical science. The same year the Columbian University, at Washington, gave him the degree of LL.D., which was confirmed in the following year by similar honorarium from Yale. He is a member of the National Academy of Science, and of the American Academy of Art and Science, besides being associate member of several learned societies in Europe, including the Royal Astronomical Society of Great Britain, the Imperial Academy of Sciences of St. Petersburg, and the Swedish Academy of Science.

In 1876 Professor Newcomb was elected President of the American Association of Science. His term expired this year, and at the annual meeting of the Association, which was held in St. Louis in August last, he delivered an address on retiring from the official chair, in which the frankness of the man and the acuteness of the savant are strikingly apparent. After reviewing the difference between the methods of science and that of theology in the consideration of phenomena, asserting that the antagonism between them is scarcely more than apparent, and after indicating some of the more prominent features of modern progress in the analysis of causes, he proceeds to say:

According to the theory of the course of nature, which I am trying to elucidate, the chain of causes which we have described, each cause acting according to antecedent conditions, but without any regard to consequences, is the type of the whole course of inanimate nature as far in space as the telescope can penetrate, and as far back in time as the geological record can be deciphered. An essential feature of the theory is that the laws which connect the several links of the chain, and thus determine the progress of events, do not possess that character of inscrutability which belongs to the decrees of Providence, but are capable, so far as their sensible manifestations are concerned, of being completely grasped by the human intellect, and expressed in scientific language. Without this, the theory would have no practical bearing whatever, because to say that the course of events is fixed, but by laws which we can never grasp, would give us no clew at all to learning what that course shall be, and would be equivalent to telling us that it is enshrined in the same impenetrable mystery with first causes.

A very important feature of the progress of science is found in the constant resolution of the laws of nature into more simple and elementary ones, until we reach principles so simple that it is impossible to analyze them further. Let us take as an instance of this, the laws of the celestial motions. When Kepler discovered that the planets moved round the sun in ellipses having the sun in one focus, he found what were, for his time, simple and elementary laws. They were entirely comprehensible, admitting of being expressed in mathematical language; they enabled him to predict the motions of the planets, and so far as the intellect of the time could penetrate, they could not be resolved into more simple expressions.

In allusion to the doctrine of evolution, he remarks:

. . . . . The most startling attempts in the direction I have indicated are those which are designed to show that those wonderful adaptations which we see in the structure of living animals, and which in former times were attributed to design, are really the result of natural laws acting with the same disregard to consequences which we see in the falling rock. The philosophy of Darwinism and the theory of evolution will be at once brought to your mind as forming the modern system of explanation tending to this result. On these theories the eye was not made in order to see, nor the ear in order to hear, nor are the numberless adaptations of animated beings to the conditions which surround them in any way the product of design. Absurd as this theory appears at the first glance, and great as is the anxiety to secure its rejection, the question of its truth is to be settled only by a careful scientific study of the facts of nature and the laws of hereditary descent. One principle which is to aid in its settlement is universally admitted in quarters where it is fully understood. We are not to call in a supernatural cause to account for a result which could have been produced by the action of the known laws of nature. The question, then, is whether the laws of hereditary descent and of natural selection are adequate to account for the gradual growth of such organs as the hand, the eye, and the ear, and for all the adaptations which we see in nature. If they are, it would be idle to call in any other cause, except we place it behind the laws; and if we place it behind these laws, we must equally place it behind all others. Of course, such a cause lies beyond the field of sight, and does not, therefore, belong to scientific observation. Granting the theory, then, so far as the eye of science can penetrate, the whole result is brought about by laws acting in the same way as the laws of nature, with which we are more familiar.

The address closes with this suggestive recapitulation:

. . . . . To sum up: *First*, When men study the operations of the world around them, they find that certain of those operations are determined by knowable antecedent conditions, and go on with that blind disregard of consequences which they call law. They also find certain other operations which they are unable thus to trace to the operation of law.

*Secondly*, Men attribute this latter class to anthropomorphic beings, or gods, having the power to bring about changes in nature,

and having certain objects, worthy or ignoble, in view, which they thus endeavor to compass. Men also believe themselves able to discern these objects, and thus to explain the operations which bring them about. The objects aimed at by these supernatural beings are worthy or ignoble, according to the state of society; in ancient times they were often the gratification of the silliest pride or the lowest lusts.

*Thirdly*, As knowledge advances, one after another of these operations are found to be really determined by law, the only difficulty being that the law was before unknown or not comprehended, or that the circumstances which determined its action were too obscure or too complex to be fully grasped by the mind.

*Fourthly*, Final causes having thus, one by one, disappeared from every thicket which has been fully explored, the question arises whether they now have or ever had any existence at all. On the one hand, it may be claimed that it is unphilosophical to believe in them when they have been sought in vain in every corner into which light can penetrate. On the other hand, we have the difficulty of accounting for these very laws by which we find the course of nature to be determined. Take, as a single example, the law of hereditary descent; how did such a law, or rather, how did such a process—for it is a process—first commence? If this is not as legitimate a subject for inquiry as the question, How came the hand, the eye, or the first germ into existence, it is only because it seems more difficult to investigate. If, as the most advanced scientific philosophy teaches, creation is itself but a growth, how did that growth originate? We here reach the limits of the scientific field, on ground where they are less well defined than in some other directions; but I shall take the liberty of making a single suggestion respecting a matter which lies outside of them. When the doctrine of the universality of natural law is carried so far as to include the genesis of living beings and the adaptations to external circumstances which we see in their organs and their structure, it is often pronounced to be atheistic. Whether this judgment is or is not correct, I can not say, but it is very easy to propound the test question by which its correctness is to be determined: "Is the general doctrine of causes acting in apparently blind obedience to invariable law in itself atheistic?" If it is, then the whole progress of our knowledge of nature has been in this direction, for it has consisted in reducing the operations of nature to such blind obedience. Of course, when I say blind, you understand that I mean blind so far as a scrutable regard to consequence is concerned, blind like justice, in fact.

If the doctrine is not atheistic, then there is nothing atheistic in any phase of the theory of evolution, for this consists solely in accounting for certain processes by natural laws. I do not pretend to answer the question here involved, because it belongs entirely to the domain of theology. All we can ask is that each individual shall hold consistent views on the subject, and not maintain the affirmative of the question on one topic, and the negative on another. My object in laying before you these ideas has been not so much to propound any new views as to promote consistency of view among those who discuss this theme in its several aspects, and if I can make it clearly appear to a disputant that in discussing scientific questions he is to confine himself to their phenomenal side, and to maintain no theory which is not in accord with his every-day views of life, I shall have accomplished my purpose.

## RIGHT RELATION AND MISRELATION;

### OR, PHRENOLOGY IN MAN AND HIS WORK.

THE sheep that disputed the position and existence of a solid granite rock by the administration of hard knocks with his own head and in the quarrel dinged out his own brains, has this apology for his folly (misrelation), he was only a *sheep;* but what excuse will the world plead for *men* who make a kindred mistake?

Law, eternal and invariable, underlies and pervades all that man *is*, all that he enacts, and all by which he is surrounded; this comprehends his *being*, his actions, and his relations. There is just one source of eternal, essential law—that is God; and there are just two departments of this law, viz., the department of Spirit and the department of Matter. The order of the Creator in the use of these laws is: the law for things of the spirit applies only in the department of spirit; the law for material things applies only in the department of matter.

Obedience to law, whether intelligent or ignorant, wields the force and exemplifies the truth of whatever law is obeyed. Dis-

obedience, whether willful or otherwise, receives the force and illustrates the infraction of whatever law is disobeyed. Obedience to law relates the actor rightly to truth and to external objects—or more broadly, and yet accurately, rightly to God and His universe in the aggregate and the individualities that make up the aggregate. Disobedience to law brings the actor into misrelation to external objects, and the consequence is, truth is against him.

The law of cause and consequence can not be annulled, or effect separated from cause. Obedience is the pivot on which a wise man always turns himself for achievement or the fullest success in the domain of the moral or material; for this is cause rightly related to the intended effect. It commands prosperity—not through luck, but through law intelligently obeyed—and the result is sustained and even insured by the Almighty and the Immutable Creator.

Disobedience is the rock on which rash and ignorant men always wreck their vessels and sink their ventures; for this is *cause* in misrelation to the intended result; this is adversity; and it is directed and insured by the same Almighty and Immutable authority. God has put but one voice in effects in reference to their causes; it is "*Mutatis et mutamur*." In the light of these principles we propose a view of the preaching and practice of some leaders who are not indorsing or promulgating the truth as seen from the stand-point of the actual and the revealed. (I use actual and revealed to embrace the work and word of God; or if you please, to embrace His written deeds and His written words).

Phrenology is the true interpreter or revealer of God's work, *man*—as a being of desire, affection, emotion, imagination, thought, volition, action, and relation. Now, whoever truly loves, reveres, and honors God should embrace the living actual—the man—created in the image and after the likeness of God, as his first, best, continuous text; to be studied in connection with all Bible-truth for the purpose of knowing God as a Creator, as a Governor, as a Father, as a Sanctifier, and as a Saviour; for, says the Spirit by the mouth of Paul (Rom. i. 19): "That which may be known of God is manifest in them."

Man should study man to know the most of God as Sovereign and Saviour. The fact is, there never would have been a Bible—a written Word—if there had not first been a man—a written work; the actual to which the written Word relates. This work of God has the precedence and preference because man was first made and afterward the Bible was written, and the sum of its promises, precepts, prohibitions, and facts is to ennoble, exalt, and perfect man; and it fits his wants as a key does its own lock. But in order to apply the Bible savingly, these wants must be known, not merely as to their existence, but they must also be clearly understood as to their nature or character. It is then and thus the Bible can be applied so that it will be the honored instrument of real salvation.

The Bible can be applied in an effectual way analogous to that in which the intelligent owner applies the key to the lock of his safe. It is not enough that he understand the lock in the abstract and the key in the abstract. To use the safe he must understand and employ this veritable key in right relation to and with its own lock. The result is happy and perfect, because the laws of lock-and-key-being and relation have been obeyed. So when an apostle of the "meek and lowly" understands man as to his desires, susceptibilities, and necessities, and also understands and uses Bible-truth in right relation with these actuals in human nature—beginning, advancing, and perfecting the good and restraining and subduing even unto remission the evil—he is surely a preacher of the New Testament in name and nature, in word and work—for he fulfills the mission of his commission: "Heal the sick; cleanse the leper; cast out devils." In doing this work he is blessed because he obeys the law of man-and-Bible-being and relation.

Now Phrenology is the *sun* of anthropology, and diffuses clear, strong, true light throughout the kingdom of God that is within man for accurately seeing the mysteries, necessities, excellencies, deficien-

cies, and (last and best) *dependencies* of human nature. Then when the preacher sees God's Bible-truth revealed for man's salvation in close proximity with that nature *needing* this truth as much as living lungs need air, he can successfully, as a preacher of righteousness, bring into play and power the law of *right* relation between men needing salvation and the truth which saves, and as truly, as intelligently, and as surely as the man has his intended result who makes a right use of the key of his safe, or who makes a right use of his lungs, so shall such a preacher of the Gospel have his intended and desired result.

There is no more mere chance or lottery in the Gospel properly preached, believed, and performed than there is in the multiplication table properly applied; the results in both cases are governed by infallible *law*.

Then why, oh, why will not the professed and acknowledged teachers and leaders of the Gospel study the living actual—the man needing redemption in the light of Phrenology, which truly reveals him as he is—that they may turn to God and the Bible, drawing upon these sources and applying the truth in the ministry of reconciliation as workmen who need not to be ashamed?

Alas! I pity my brethren who take the place, play the part, and get the result of the sheep existing and acting in misrelation of and with the solid adamantine rock of Phrenological truth. How strange the choice that prefers a destroying ignorance to a saving knowledge and calls it morality!

Phrenology will stand and shine and bless when clerical opposers, who, in attempting to overthrow *it*, have overthrown *themselves* and are forgotten. A. V. D.

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THE WASTES OF PARASITES.—In a lecture on the "Wastes and Burdens of Society," by the Rev. Henry Ward Beecher, the following passage suggests not a little for the political economist: "The next waste that I shall mention is the waste which comes from parasites. I understand the parasite to be an animal which was organized to get its living without working for it. There is a great abundance of them throughout nature. Men have their parasites, and communities have whole hordes of them, for I hold that, setting aside those who are reduced by misfortune, all the men in a community that live without returning an equivalent to society for their livelihood are parasites—every man that lives on other people's industry, on other people's economy, on other people's productiveness, is a parasite. He sucks for a living; he don't work for it. The whole criminal classes are simply parasites; they produce nothing and consume a great deal. The whole class of vicious men, as they are scattered broadcast over the whole community, are parasites. They do not add to the public wealth; they draw it out, and live without gaining a living. The whole multitudinous mass of lazy men are parasites. They earn nothing, produce nothing, use up a good deal, and they are, from top to bottom of society, all criminals, and all vicious men, and all lazy men—parasites on society. It ought to make society ashamed to see what vast hordes there are permitted to nibble, and suck, and consume, but do nothing for a living. I hold it to be a duty to comb out the parasites, and to free the community from the waste and destruction which they make without any restoration or equivalent return."

Among the parasites enumerated by Mr. Beecher were the gambling-house keeper, the keeper of lust houses, and the saloon-keeper, and as a preacher of the Gospel—his business, as people will say to him—he held it to be his duty, in addition to his duty as a citizen, to protest against the abuses thus fastened upon society.

## BRAIN AND MIND.

### CHAPTER IX.—*Continued.*

#### SELF-ESTEEM.

THIS organ is situated in the posterior central convolution, just back of the upper branch of the fissure of Rolando, or the *postero-parietal* sulcus of Huxley. It is shown on the mesial line of the head where the coronal surface begins to decline to form the occipital region. (See Fig. 17–13). When large, it gives height to the head, upward and a little backward from the ear. A line drawn from the opening of the ear through the center of Cautiousness will pass through the center nearly of this organ, as well as of that of Approbativeness.

Self-esteem, when normally active,

Fig. 75.—SELF-ESTEEM LARGE.

imparts dignity, self-respect, self-reliance, and independence of character—that degree of self-confidence and self-satisfaction which enables the other powers to act to the best advantage, free from the restraints imposed by the fear of incompetency. It gives dignity and pride of character, a disposition to rise above things that are mean and trifling, and to despise whatever is unworthy of an honorable and exalted mind.

When the organ is small, a tendency to humility is the result. The individual lacks confidence in himself, or a becoming sense of his importance. He shrinks from undertakings which he may have abundant capacity to carry out. Many persons achieve success through the self-confidence which this faculty inspires. "They are able, because they think they are able." On the other hand, many persons of much greater ability fail in similar circumstances because a lack of Self-esteem makes them hesitate to assume responsibility.

When unduly active and unrestrained by the higher sentiments, it renders the individual haughty, domineering, and ar-

Fig. 76.—SELF-ESTEEM SMALL.

rogant. A child in whom it is very strong will be headstrong and willful, and disposed to disobedience; and such a one may be seriously injured by improper treatment and training, if his parents be not conversant with the nature of his organization.

It is quite common for people who are not conversant with the close distinctions of Phrenology, to confuse the terms pride and vanity, when alluding to the character of others. Dr. Gall

discusses these traits with much care, and says:

"The proud man is imbued with a sentiment of his own superior merit, and from the summit of his grandeur treats with contempt or indifference all other mortals; the vain man attaches the utmost importance to the opinions entertained of him by others, and seeks with eagerness to gain their approbation. The proud man expects that mankind will come to him and acknowledge his merit; the vain man knocks at every door to draw attention toward himself, and supplicates for the smallest portion of honor. The proud man despises those marks of distinction which on the vain confer the most perfect delight. The proud man is disgusted with indiscreet eulogiums; the vain man inhales with ecstasy the incense of flattery, although profusely offered, and by no very skillful hand."

In disease of this organ the individual imagines himself to be a king, an emperor, or even the Supreme Being. An insane man, some years ago, escaping from his friends, took his station on one of the peaks of the Highlands on the Hudson. Assuming that he was the Deity, he issued this command, in a loud voice, to the whole universe: "Attention, all creation! in battalions to the right wheel! march!"

Dr. Gall mentions a patient in a charity work-house who declared that he had been crowned by Jesus Christ, and that he was the young man whom the Queen of Heaven had selected for her spouse. His attitude was that of an arrogant despot. Deeply inspired with the sentiment of his high importance, he crossed his arms; and, to give an idea of the astonishing power which he possessed, he struck his breast and sides with violence. When Dr. Gall asked him to be allowed to touch his head, he replied with astonishing arrogance: "I have no head such as common men possess, but a head peculiar to kings and gods." He turned away, holding him utterly unworthy of approaching him. Another case is given by Pinel. "A patient," says he, "confined in a private asylum in Paris, during his fits believing himself to be the prophet Mohammed assumed an attitude of command, and the tone of the Most High. One day when cannons were fired in Paris on account of some events of the Revolution, he persuaded himself that it was to render him homage; he caused silence to be observed around him, and could not restrain his joy."

In the character of those historic men who distinguished themselves for imperial aggressiveness and self-assertion, like Alexander, Cæsar, Richard III., and Napoleon Bonaparte, Self-esteem was prominent. Martin Luther and John Knox were largely endowed with it. In the busts of John Quincey Adams, Silas Wright, Amos Dean, Dr. Spurzheim, Dr. Fossati, the eminent anatomist and phrenologist of Florence, and Thomas Carlyle it is largely indicated.

### FIRMNESS.

We may define the location of this organ as on the mesial line of the head, directly in front of Self-esteem. (Fig. 17–14). In the brain it occupies a part of the anterior central convolution bordering on the fissure of Rolando. Its size is measured by the height of the head directly above the ears. The contour in Fig. 77 shows the organ to be very large, while in Fig. 76 it is quite the contrary.

It is the function of this organ to give fixedness of purpose, perseverance, and determination to character. It has no relation to external objects; its influence operates upon the mind itself, in-

teriorly and subjectively, contributing the quality of steadiness and persistence to the manifestations of the other faculties. When once a person has determined to act in a certain direction, Firmness imparts the disposition to persevere in the purpose until the object has been attained. We may persevere in any given course from two motives: first, because the undertaking is agreeable to certain faculties, or secondly, because we have resolved so to act. A person in whom Tune is large may persevere in making music, even though Firmness be deficient, because the organ of Tune derives gratification from

Fig. 77.—Firmness Large.

the exercise. So the pleasure which the activity of Constructiveness gives will lead the individual to persevere in any mechanical undertaking irrespective of the influence which the organ of Firmness imparts. But where any given organ is possessed in a moderate degree, and the intellect resolves upon a course which involves its activity, Firmness then comes in to hold it stable to the purpose till the end has been accomplished. This faculty thus contributes greatly to mental poise and to success in any difficult enterprise. The great men of the world, those who, despite difficulties, discouragements, and opposition, have held to a purpose unwaveringly, which their wisdom has perceived to be fraught with important results, owe their final success and triumph to a large endowment of this faculty.

When the organ is very active and not directed by the intellect, or restrained by the moral sentiments, it renders the individual headstrong, stubborn, and obstinate. He adheres to his opinions or his purposes with an infatuation which all appeals to his reason are powerless to remove. On the other hand, when the organ is small the character will be fickle, unstable, and easily turned from its purpose by difficulties and discouragements. Very little reliance can be placed on one in whom this organ is deficient, because of his liability to yield to impulses which, for the time being, have sway. He holds one opinion to-day, a contrary one to-morrow, and never pursues any line of conduct long enough to achieve any important success. "Unstable as water, he can not excel."

Dr. Gall found this organ very large in a highwayman exceedingly hardened in crime, who was kept in close confinement for a considerable time, with the view to forcing him to disclose his accomplices. Imprisonment having no effect, he was cruelly beaten. Unable to bear this infliction, yet determined not to yield, he strangled himself with his chain. After his death the parietal bones were found separated by the great development of the brain, precisely at the organ of Firmness.

In some of the lower animals this organ evidently exists, producing that stubbornness which they manifest when an attempt is made to force them to act contrary to their inclinations. A balky horse or an obstinate mule is a good illustration of the perverted manifestation of this faculty.

## CHAPTER X.

### THE MORAL AND RELIGIOUS SENTIMENTS.

#### CONSCIENTIOUSNESS.

This organ is situated on each side of Firmness, and over the anterior part of Cautiousness. (Fig. 17–15). Dr. Gall did not obtain evidence enough to associate this region of the brain with any special faculty. Indeed, he did not see the necessity for such an organ, deeming Conscience or the Moral Sense the primitive function of Benevolence, of which he considered charity a more earnest or fervent mode of action. But in the course of time Dr. Spurzheim became satisfied that it was related to the sentiment of justice, and he designated it by the title which is now generally accepted as well expressing its office in

Fig. 78.—Conscientiousness Large.

the economy of mind, which is to impress man with an innate sense of right, duty, and accountability. It is the moral sense or conscience within us whispering its approval or disapproval of conduct. Much controversy has existed among philosophers in regard to the ultimate standard of morality, or what constitutes an action right or wrong. Selfishness, utility, the fitness of things, desire to please, obedience to the will of God, for the sake of everlasting happiness, have been severally set forth as the standard by which conduct is regulated. Some philosophers, notably Dr. Reid, Mr. Stewart, Dr. Brown, and Lord Kames, have taught that man is endowed with an internal sense which instinctively discriminates between right and wrong. But Phrenology teaches upon evidence, the same in kind as that by which the facts in a purely physical science are established, that there is an organ in the brain from which spring our notions of right and wrong, which instinctively impels us to choose the right in preference to the wrong, and whose natural language is *Fiat justitia, ruat cœlum.*

An individual in whom this organ is well-developed is disposed to regulate his conduct by the standard which he believes to be the right, and in the performance of his duty may sacrifice personal interest, and not allow himself to be turned aside by considerations of friendship or the ties of family.

In Scott's "Heart of Mid-Lothian," where Jeanie Deans is represented as giving evidence on her sister's trial which leads to her condemnation, we have an instance of this faculty rising superior to every consideration of self-interest and affection, and holding the mind firmly to its convictions of truth and duty.

"The activity of Conscientiousness," Mr. Combe says, "takes a wider range than regard for the legal rights and property of others. It prompts those in whom it is strong to do justice in judging of the conduct, the opinions, and the talents of others. Such persons are scrupulous, and as ready to condemn

themselves as to find fault with others. When predominant, it leads to punctuality in keeping appointments, because it is injustice to sacrifice the time and convenience of others by causing them to wait till our selfishness finds it agreeable to meet them. It prompts to a ready payment of debts, as a piece of justice to those to whom they are due. It will not permit even a tax-collector to be sent away unsatisfied from any cause except inability to pay; because it is injustice to him, as it is to clerks, servants, and all others, to require them to consume their time in unnecessary

Fig. 70.—Conscientiousness Small.

attendance for what is justly due and ought at once to be paid. It leads also to great reserve in making promises, but to much punctuality in performing them. It gives consistency to the conduct; because when every sentiment is regulated by justice, the result is that 'daily beauty of the life' which renders the individual in the highest degree amiable and respectable. It communicates a pleasing simplicity to the manners, which commands the esteem and wins the affection of all well-constituted minds."

Yet a large development of Conscientiousness may exist in connection with large Firmness, Self-esteem, and Combativeness, the moral organs besides Conscientiousness being moderate. and the person so constituted be found occasionally to do or attempt that which would be manifestly unjust. "Do we not in our course through life," says Dr. Browne, "meet with men of the strictest integrity in all their dealings who nevertheless fall short of that true disinterestedness which always characterizes the man in whom benevolence predominates?" "Do we not find some individuals strictly upright in conducting the affairs of others whose judicial vision would become obscured in respect to impartial justice, should their own personal interests be implicated in the adjustment?"

Where this organ is deficient, there will be but a feeble sense of duty and obligation, and the individual will be characterized by a general lack of principle. His conduct will take the direction of his strongest feelings irrespective of truth and justice. If Acquisitiveness be powerful, he will seek its gratification by the most direct means, regardless of the rights of others. If Approbativeness be active, he will adopt any line of conduct which will please, however it may violate justice and propriety. He will be specious and fair to the face of a friend, and affect to join in his likes and dislikes, yet he will not hesitate, behind his back, to make fun of the weaknesses which he flattered and praised to his face, and to join with his enemy in the condemnation of his character. In short, the individual in whom this organ is deficient will be unscrupulous and unreliable wherever truth, honor, and justice are concerned.

In an inflammatory disease of this organ the mind is harrowed by the most awful feelings of guilt and remorse. This phase of its manifestation is familiar to

guardians of the insane. In persons of a religious turn it sometimes gives rise to feelings of utter unworthiness, and when combined with large Cautiousness, there is a fearful looking forward to judgment, and an utter hopelessness or despair which is appalling. A clergyman, from diseased activity of this organ, believed himself to be the cause of all the bloodshed of the French Revolution. Another man who owed nothing, believed that he was in debt to an enormous amount which he had no means of paying, and that he deserved to be devoured by rats. When large, Conscientiousness imparts an elevated roundness to the part of the head in which it lies. The cast of Dr. Gall shows a marked fullness there. In the head of Laura Bridgman, the celebrated blind woman, the development of this organ is extraordinary. In the portrait of Madame Wildermuth, Fig. 78, the organ is so much developed as to cause the head to appear flattened in the crown.

### HOPE.

In the human adult brain the upper frontal convolution has generally a longitudinal fissure running almost centrally with its upper extremity near the superior organ of the convolution. Outwardly from this fissure in the brain matter bordering upon its upper extremity the organ of Hope may be said to have its location, which is directly in front of Conscientiousness. A line drawn upon the head perpendicularly upward from the opening of the ear will pass through the space allotted to it. (See Fig. 17–16).

Its function is to give a tendency to believe in the future attainment of what the other faculties desire. It reaches forward into the future, and ignoring the slow, plodding, and uncertain steps by which success is usually secured, it delights in the contemplation of its consummation. It thus tinges the future with a rosy hue, by dispelling doubt and the fear of failure, and furnishes a powerful incentive to the activity of the other faculties by impressing the mind with a conviction of the certainty of success.

Dr. Gall did not recognize the existence of a separate faculty of Hope, but deemed it an affection of other powers. Dr. Spurzheim, however, was of the opinion that it is a primitive sentiment and quite different in nature and influence from the mere desire or want

Fig. 80.—Hope Large.

experienced by other faculties. He looked for its manifestation as a physical organ in the neighborhood of Veneration, and his own observations, together with those of other inquirers, demonstrated the soundness of his judgment.

A large endowment of this faculty, combined with large Acquisitiveness and moderate Cautiousness, makes the man who, not satisfied with the moderate returns of prudent business effort, launches boldly into speculation and commercial ventures, and is urged on by a belief in the success of his projects. To such a man failure may cause temporary despondency, but he soon rises above it, and forgetting the defeats and misfortunes of the past, leaps again into the

arena of new enterprises with fresh buoyancy.

Where this organ is small and Cautiousness large, the individual will be lacking in enterprise and disposed to take gloomy and despondent views of life. A cloud will hang over his future; he will see mountains in mole-hills, and every difficulty will be a lion in his pathway. If Acquisitiveness be large, he will have a strong desire to become rich, but in compassing his desire will resort to saving rather than to speculation. His favorite motto will be, "A bird in hand is worth two in the bush."

From the existence of this faculty in the human mind an argument of considerable force may be drawn in favor of a future life. Every mental faculty stands in a definite relation to some external object which is naturally fitted to afford it scope for activity and gratification. Cautiousness is given, and we are surrounded by dangers which are to be feared and guarded against. Combativeness is naturally related to the difficulties which beset our pathway, and which it is highly important that we should meet and overcome. Philoprogenitiveness is admirably fitted to the necessities of helpless infancy. The fact that we possess an organ of Veneration is sufficient proof that there must be objects fitted to afford it scope and gratification, and from its natural promptings we instinctively feel that there must be a power to be worshiped and adored. So Hope, instinctively reaching forward into futurity, would have but a limited field for its activity if it did not reach beyond the confines of the present life. The course of life is quickly run, and our hopes and aspirations, our joys and our sorrows, in the course of a few years, are numbered with the things of the past; but even when all our earthly expectations are extinguished in old age, we are not left disconsolate, for Hope still reaches forward to a land beyond the grave where the misfortunes and mistakes of this life will be corrected, and happiness abundantly compensated for the sorrow and pain we have experienced.

The organ was remarkably developed in the head of Sir Walter Scott, and was the secret of his buoyancy and cheerfulness when weighed down by accumulated misfortune, debt, and anxieties. When at the age of fifty-five he found himself pressed by creditors to whom he owed more than half a million of dollars, he calmly set to work to win by literary toil the money due. "Gentlemen," said he, "time and me against any two. Let me take this good ally into company and I believe I shall be able to pay you every farthing."

## AUTUMN.

THE dying leaves fall fast,
Chestnut, willow, oak, and beech,
All brown and withered lie.
Now swirling in the cutting blast,
Now sodden under foot—they teach
That one and all must die.

This autumn of the year
Comes sadly home to my poor heart,
Whose youthful hopes are fled.
The darkening days are drear,
Each love once mine I see depart
As withered leaves and dead.

But is it all decay?
All present loss?—no gain remote?
Monotony of pain?
Ah, no! I hear a lay
The robin sings—how sweet the note,
A pure unearthly strain.

And, of all flowers the first,
Beneath these leaves in spring shall blow
Sweet violets blue and white.
So all lost loves shall burst,
In springlike beauty, summer glow,
In Heaven upon our sight.

M. C. C.

## ITEMS OF SENSE.

PECULIARLY interesting and profitable facts in illustration of the problem, "What we know and why we know, and what's the way we know it in," are derived from the study of the phenomena of the physical senses. How much of this subject lies all undiscovered, except to a few informed minds, is more than we propose to tell; but the few ideas and facts we throw out may help to anticipate how wide a field for investigation lies in the domain of our own susceptibilities.

We are taught to believe we touch, taste, smell, hear, and see. We think little more about it. Yet touch is sometimes said to be the most universal sense, because all our sensuous impressions are derived through the impact of outward forces. A little inquiry shows us how unequally distributed this sense of touch is, when viewed in relations separate from any other characteristically denominated sense. How little we feel in some parts, and how much in some others! At the ends of the fingers and some other places we discern the difference between heat and cold, but at the ends of the severed muscles of the arm a hot iron and an icicle feel both alike. Two sharp points of a pair of carpenter's dividers placed one-half an inch apart and applied to the back of the hand, produce only a single sensation of touch. The individual does not know there are two points pricking him, unless he proves it by ocular demonstration. Remove the points of the instrument three-fourths of an inch apart and place them on a vertical line in front of the lower part of the ear, and the impression is still that of a single impact. Now, while the points are in the same relative position vertically, draw them forward to the angle of the mouth; the individual feels a sensation like drawing two lines diverging from a single point of beginning. If the points are carried round to the other ear, he experiences just an opposite sensation, or one of tracing two converging lines from the angle of the mouth till they reach a single point in front of the lower part of the ear.

The points of the dividers placed at a distance of one-half a line from each other, produce, when applied to the tongue, a double sensation. A whole line's distance is required to produce the same effect on the inside of the last-finger joints. The second finger is more obtuse; the palm of the hand further so; the greatest obtuseness is on the back, upper arm, and thigh. In illustration of one of the nice points in the mathematics of sense, it is said that a distance of sixteen lines on the forearm will fail to produce a double sensation, but eighteen lines will accomplish it. Who, then, can tell the point between sixteen and eighteen lines, where a single sensation ends and a double one begins?

The opinion has gone forth that we ought to make a permanent distinction between *feeling* and *touch*, recognizing the latter alone as that by which we derive nice impressions, and which is limited in its distribution on the surface of the body. Even the anatomy of the respective corpuscles of feeling and touch has been determined to the defining of characteristic differences. At least a functional distinction is also discernible between feeling and taste. Everything perceived in the mouth is not sapience. The pungent sensation of the presence of capsicum is not taste, but simple feeling. Considerable ingenuity has been employed in the attempt to locate the sense of taste. Different investigators have reached different conclusions. The potency of sapid substances varies. One part in one hundred of sugar is not perceptible to the taste. Salt bears a greater dilution; quinine a still further; while sulphuric acid is perceptible if there is one part in ten thousand. As of taste, so of smell; feeling comes in for its share of allowance. Ammonia twinges in our nostrils, but we do not smell it. The proper sense of smell seems to be located in the deeper cavities of the nose, where a millionth part of the vapor of oil of roses, to say nothing of a two-trillionth part of musk, is strongly odorous.

The anatomy of the ear displays wonders never failing to excite the admiration of the intelligent student; but we can not attempt

to describe here what can be better understood by consulting any good text-book on physiology. However, we will mention the peculiar development of a branch of the auditory nerve, in terminating in the cochlea of the internal ear in what are known as the "rods of Corti." Here are no less than eighty-seven hundred microscopical piano hammers, if we may so term them. They vary gradually in length, their use being, as is supposed, to detect the different intensities of sound. There are also in the ear three semicircular canals, whose use is supposed to be to discover the direction of sounds, and why not? for one is horizontal, another perpendicular, and a third oblique. The ordinary exercise of this delicate and wonderful auditory machinery implies a sensation of sound by receiving the transmitted influence of the waves of the air, *i.e.*, if they are not less than sixteen thousand or more than sixty-four thousand in the number of their vibrations in a second of time. The ability to make nice distinctions in hearing varies in different persons; there are those who can distinguish between a musical note produced by twelve hundred vibrations in a second, and another produced by twelve hundred and one.

We are sometimes saluted with the uncouth observation, "It's all in your eye." This remark is one of a great multitude that inadvertently spring into use, and yet embody so much science as to occasion the exercise of our admiration. How many are the pleasures of sight! How many charms are reaped from the glints of the landscape, the tints of the flowers, and the hues of the clouds! And these are all unreal! Pity there had never been any scientific mathematician to dispel the fanciful illusions of sense! But the fact must be admitted, the vibrations of the luminous ether, impinged upon the sensitive retina of the eye, afford all the varying impressions of color. All the degrees of the scale of visible effects lie between the two extremes of the common sensible spectrum. Given a chord one-seventy-thousandth of a millimeter in length, vibrating six hundred and ninety-seven billions of times in a second, and the effect upon the organ of sight is a violet ray; or if the same chord vibrates four hundred and thirty-nine times in a second, the result is a red ray. How simple and easy to be understood!

The benevolent functions of the senses have been frequently asserted. Every child has been taught of the kind administration of that pain which warns him of the approach of a greater evil, and made to understand what a helpless mortal he is without it. The promptness of nature's sensuous warning is illustrated in the experiments of Dr. B. T. Craig, of Washington, D. C., who found that in the hottest season of summer there was only a difference of two-tenths of a degree of heat between bodily comfort and suffering. That the benevolence of the Divine Providence, as implied in the economy of sense, is capable of a higher fulfillment through human consistency and intelligence, we have no doubt. There is not a man who has cultivated temperance and prudence in all things who has not also for all his self-denial realized a nicer touch, a more delicate taste, a keener smell, a quicker ear, and a sharper sight. We have frequent illustration of the quickening of the senses through proper stimuli and thorough education. It is said that lace-makers, whose successful artisanship requires great fineness of touch, deteriorate in skill when removed from the city to the country. The late famous George Sayville, an expert telegraph operator, was once called to witness the effects of cultivated sense in his own calling. Sayville sympathized with the enemies of the Government in the late civil war. His telegraphic feats gave the federal army no small amount of annoyance; it being a trick of his to send false messages and damaging instructions to the Union army posts. At length a loyal operator, in receiving a dispatch, detected something wrong. The message itself might have borne the appearance of genuineness, but the peculiar click of the telegraph machine was altogether too suggestive. So he flashed back over the wires, "Clear out, Sayville, or I'll send the cavalry after you!" It was a correct anticipation, and it happened just in the right time.

C. C. LORD.

## INDIAN SUMMER.

Oh, the sweet Second Summer! How soon it is past!
Yet the halo around it remains to the last!
Its fullness, its sweetness!
Its tender completeness!
That beautiful season, to all hearts so dear,
Which fulls 'mid the gloomiest days of the year!

It is Nature's last benison, sent from above,
And comes, like the last kiss, from lips that we love!
For fullness and sweetness,
And tender completeness!
Oh, fair Indian Summer, best days of the year,
Where mingle, forever, the smile and the tear!

How we turn, 'mid thy pleasures, to days that are gone,
While Memory paints faintly the dear ones we mourn!
With fullness and sweetness,
And tender completeness!
That beautiful season, to all hearts so dear,
It brightens the gloomiest days of the year!

Tho' the freshness and sparkle of spring are not there,
There is beauty and mellowness filling the air!
With fullness and sweetness,
And loving completeness!
This fair Indian Summer, best days of the year,
Where tenderly mingle the smile and the tear!

GRACE H. HORR.

## HANS MAKART,

### THE AUSTRIAN PAINTER.

THE visitor at the American Centennial Exposition in Philadelphia when pursuing his observations in the art department was sure to linger before the very large and brilliantly executed painting entitled "Catharine Cornaro receiving the Homage of Venice." The great size of the canvas and the numerous figures and rich costumes depicted thereon usually drew more attention from the people who thronged the section assigned to Austria than was given to any other painting in that section.

The author of the picture, Hans Makart, belongs to the younger school of painting in Continental Europe, and is one of its most prominent examples. He is about forty years of age, and from early life has devoted himself chiefly to art. His physiognomy is striking. There are few elements in its composition which exhibit those types of organization which we are accustomed to associate with Austrian character. There is the full forehead of the true Teuton, but the temperament has so much of elastic activity and spontaneity, that we would be inclined to regard him as at least two-thirds Scandinavian. He is intensely individual; strongly emotional; highly aspirational; irrepressibly energetic. He is not the man to be restrained or kept down, but must have room; a free track; an open field.

His intellect is of the intuitive order—quick to conceive, rapid in conclusion. He loves not argument—it seems too slow and laborious to him; but figures, similes, metaphors appeal to his convictions and win his consent where reason would fail altogether. He is, nevertheless, keen and nice in his distinctions, and gathers up the import of a subject with lightning-like rapidity. He is a sharp critic in the line of his thinking and working, and his opinions are "law and gospel" to himself, and he expects his friends to accept them with readiness.

It is said that the studio of Makart is one of the noteworthy features of Vienna. One who has seen it, thus writes: "A hall so broad and high that one would suppose it was part of a king's palace, adorned with the most precious works of art from every

country under the sun—Asia, Africa, Europe, and America—all strewn about in the most picturesque disorder, is the studio of this young master, who already enjoys the reputation of being one of the best colorists of the century."

Of Hans Makart it is expected by his many admirers that he will found a school which will revive in this age the brilliant tones and execution of the times of Titian and Rubens, and stimulate to an active realism the art sense of the Teutonic mind which now seems tending to apathy. The picture to which allusion was made in the beginning of this sketch was executed in the studio we have partly described. D.


## THE MINISTRY OF LOVE.

THERE are some people who seem always daintly lifting their feet to pick out a toe-path to heaven for themselves; while others seem to live with axes in their hands to clear out the narrow path, that the weaker of their brethren may walk therein also. What an influence these hearty, whole-souled people carry with them! A sight of the face, or a grasp of the hand of one of them excites a quicker throb of good impulse than the grandest series of well-worded moral recipes to which people listen with a complacent smile that says. Fine speech! very fine speech! Smart speaker!

One of the selfishly religious class of human beings will walk along on his sandstone ledge of moral superiority and cast a look of disdain on the poor wretch wading in the quicksands below, and perhaps think, "the foolish fellow would better get out of that;" and if it happen to be a bright day, and he happen to feel amiable toward the world in general, and himself in particular, he may even stoop down and tap him on the shoulder with his immaculate finger tips, and tell him he *ought to do better!* But your whole-souled man will leap down to him with the first impulse, and without a thought of soiling his own shoe soles, will lay hold of the wanderer and pull till he pulls him out of his living tomb and plants his feet in the humble walks of rectitude, and then stand by him to brace him up amid the temptations awaiting his frail steps.

It is the opposite motive powers that constitute this variance in the bearing of different individuals. To accomplish anything noble, the motive must be so void of private interests as to lift the soul clear above and beyond a thought of self into a moral atmosphere so clear and pure that we experience the *practical meaning* of the command to love our neighbor as ourself; and we may so nearly get rid of self as to consider this command too lenient, and *over* obey it in feeling ready to lay down *life itself* for the good of another.

This state of feeling, we are aware, is a very rare experience; but the reason may be found in the fact that *true men and women* are very scarce, in the high moral development necessary to constitute them such. How few there are who ever give an actual serious thought to the possibilities of good lying right at their doorway!

Most any one, we suppose, would like, in a vague sort of way, to do some good, if perfectly convenient; but selfish wants and pleasures so occupy the average mind that it rarely finds room for a query as to the purpose of its creation. When, however, in a chance hour of reflection such a query does insinuate itself, oh, that the heart would give it audience and follow its reasonings for a few serious moments, that it might turn its scrutinizing glance inward, and, startled and rebuked, banish self out of heart and mind with the withering verdict of its own jury! Then, looking abroad, it would expand to a capacity never before suspected, as its possessor beholds the harvest ripe for the sickle, and almost feels that the whole world's happiness or misery rests on his shoulders.

Once exalted to this view of life, we feel like different beings. Old things have passed away, and behold, all things have become new; and, like one disciple on the Mount of Transfiguration, we want to build us a tabernacle and abide there forever. We chafe with restless wonder that others appear so stupid and insensible while every fiber of our being is quivering with the con-

sciousness of a mission, and the heart flutters like a bird with its longings to be off on the wings of love, ministering to the wants of some neglected human flower.

Our night vigils steal hours from nature's repose and occupy them in multiplying schemes of benevolence and humanity, the results of which are to be our bountiful recompense as we stand obscured from the world and its adulation, or look from the broad shores of eternity and see the little wavelets we have sent out swelling and widening, and still moving on to inclose a larger area of the great human sea in their compass.

In such a state of feeling as this, who is not ready to *work*? Nay, who could *help* working when elevated to such a position for seeing the needs of the world by this great incoming wave of glory, blown by a breeze from heaven to lift the soul on its crest!

The effervescence of the spirit thus imbued with love will radiate like the beams of the sun, and attract and warm every heart within the sphere of its influence. Will such a one be found hesitating to go down into the pit and rescue a brother or sister who may have fallen therein? Will it stop to query what people will say, ere it leaps over the battlements of sin and shame, and snatches the despised outcast from the very jaws of death? It questions of naught but Right, and takes orders of no commander but Truth. Its works are the spontaneous results of Love; and her court is an authority not to be questioned, any more than her eloquence a power to be resisted.

And who, it may be asked, may have this fervor of spirit—this indefatigable zeal of execution? Any and all who truly will. It seeks numerous fields for its operations, usually beginning at home and circling out in proportion to its quality and fervor.

Suppose your brother or sister, with whom you played in innocent childhood, and by whose side you grew to maturer years, were to become ensnared in one of the pitfalls yawning for young and active feet; what would you not dare? to what length would you not go to rescue that dear one and bring the weeping penitent back to your father's house?

Ah! it is our very own brother or sister, whose life is woven into ours with every breath, and whose name and honor are our own. Yes, it would be hard to keep from being a hero in this case; but can we not expand our souls sufficiently to feel individually the relationship to ourselves of every brother or sister in the great human family? Allowing our kindly feelings to embrace our homes, may we not send them out to encircle other homes?

Look at the crimson multitudes of victims to the lusts of sin in all its terrible phases. Can we not in sincerity *feel* that each erring one is *somebody's brother, somebody's sister, some mother's child*? Or if none of these, God pity the heart that would spurn the homeless, friendless outcast!

Sin should be treated as a disease, for which there is an ultimate cause and remedy; and the victim as an unfortunate moral invalid, rather than a willful monster. Also, the morally well, who are comparatively free from the temptations that ensnare the vicious, should constitute themselves nurses of the infirm, rather than severe judges, who make it their righteous business to pronounce on them the uncompromising sentence of social ostracism.

Ways and means will present themselves in infinite forms, if we have deeply and truly at heart the love of souls and an earnest determination to work for their redemption. Love will cover all the ground, and out of it will spring spontaneously the essentials for its own efficiency. Love is not pharisaical, but humbly willing to serve, and joyfully ready to acknowledge good qualities in those considered by society as totally depraved in all their parts.

Noble results must follow the labor of love, because of its pure parentage. Heart language, though the voice be still and small, is as surely divined and understood by the heart as the language of the tongue by the ear; and if the physical lips were dumb, the sweet streams of the love-laden soul would find a thousand openings through which to gush in deeds of kindness and mercy.

MINNIE MYRTLE, JR.

## HOW MRS. MORETON ESCAPED POVERTY.

"GOOD-MORNING, Mrs. Moreton. I just run in a moment to inquire if a bit of news I have heard be true. It is too incredible for me to believe; for with all your practical ideas of life, I can not think you would carry your peculiar notions to such a length as this."

"Pray what have I been doing now, Mrs. Ellis?" said Mrs. Moreton as she quietly arose and offered her visitor a chair. "Your words and looks are ominous. Have I committed such a breach of propriety that Madam Grundy has found it necessary to hurl her thunders of excommunication against me?" and with a pleasant smile the lady awaited her visitor's revelation.

"Why, I am told that you have actually apprenticed Belle to a publisher, in order that she may become a compositor. Every one was talking about it last evening at Mrs. Wilson's party, and all thought it a great pity that so beautiful and accomplished a girl as Isabel Moreton should be withdrawn from that society she is so well fitted to adorn and immured within the walls of a dingy, old publishing house, simply because her mother chooses to sacrifice her child to that Moloch of hers—work. Belle has just graduated with the highest honors; and with her lovely manners and fresh, young face, might command a most eligible match. It is absolutely cruel to sacrifice the sweet girl in this way!"

"Well, Mrs. Ellis, I take up the gauntlet society has thrown down, and I shall fearlessly perform what I conceive to be my duty, though I am never again recognized by one of those with whom I am accustomed to associate. Out upon these aristocratic notions about work imported from lands where despotism grinds with its iron heel the laborer and his offspring! What business have Americans harboring such ideas? It is my aim to make of Belle an independent, self-reliant woman. As to marriage, I am not at all concerned about that. The man who would scorn her hand because that hand was able to earn its fair possessor's support, I would scorn to receive into my family. It is my desire that she may grow up a noble, useful woman, fitted to reign a very queen in the hearts of a true husband and children, should Heaven bestow such priceless gifts upon her. At the same time I want her character to be so symmetrical, that should she never meet one who appreciates her, she may cheerfully fill out her life by devoting herself to some noble pursuit. I think parents commit a grave error in not practically educating their daughters as well as their sons. In it more than in legislation may be found the solution to the vexed question that is now agitating our sex all over the land and breaking out in discontented murmurings everywhere."

"Oh, it is all very well for people to work whose necessities require it," said Mrs. Ellis; "but Belle is your only child and will inherit your fortune. What need has she to work?"

"Because she will be happier if she is usefully employed. Besides, the wheel of fortune is a revolving one; and though to-day we may be rolling in luxury, to-morrow may find us crushed beneath misfortune. Listen while I briefly relate the story of my early womanhood. I would I might write it as with a pen of fire upon the brain of every mother in the land. Oh, I can not tell you what an intense interest I feel in the young girls growing up around me! My heart yearns to urge them to make a specialty of whatever their inclinations prompt them most to do, and then concentrate every effort upon that one pursuit until they excel in it. But to my story: I was the daughter of wealthy parents, the youngest child by several years, and of course a great pet. Of an extremely delicate organization, my kind and indulgent mother shielded me from every hardship, and I grew into womanhood a novice in the art of housekeeping. From a child I was passionately fond of reading, and at school excelled in all my studies. Pleased with the progress I made and proud of my attainments, parents and teachers urged me forward, stimulating my ambition with words of encouragement, until at the immature

age of eighteen, I graduated the most brilliant girl in Madam B——'s school, and carrying off, amid the plaudits of friends and acquaintances, the honors of my class. But alas! I was superficial in many things; for while it had been easy for me to commit my lessons, I found it equally easy to forget them. Keenly did I feel this defect, and in order to perfect myself, I wished, after leaving school, to teach, but so bitterly did my parents oppose this that I yielded to their wishes and returned home. I plunged into a round of gayety and amusement, and from this whirl of excitement I emerged the bride of one whom my parents did not look upon with favor. The young man was an employé in a wholesale house in the city of N. He was poor, but possessed a well-cultivated mind. Unfortunately, however, he had no chosen trade or avocation. Idleness had made me a dreamy, visionary being, and there was a sort of charm about beginning life in poverty. It would be so delightful to toil with and for him I loved so fondly. This is all very beautiful in theory and in practice also, where there are four strong hands to perform the labor; but close application to the desk and breathing the unwholesome city air had seriously impaired my husband's health. We had married at a time when neither was strong enough to battle with the stern realities of life. Dependence upon the salary of a clerk or book-keeper in a large city is very precarious for a family. It was a year of unprecedented hard times, necessitating great economy in business. Hundreds lost their situations, and my husband among the rest. Ah, then began the vain search for employment! For every vacancy there were scores of applicants, and you invariably received the answer, 'Persons of experience wanted.' Oh, I can never forget that weary tramp, tramp, up and down the streets, jostled by a crowd as cold and heartless as the very stones under one's feet! I envied even the servant-girls; but alas! the mysteries of the *cuisine* were as Greek to me, and I dared not apply for so menial a situation as theirs. My poor husband was in wretched health, and almost frenzied at thought of the misery and degradation he had brought upon me. For his sake I hid my aching heart behind a smiling face. One night after he had retired, in hanging up his coat, a vial dropped from the pocket. Picking it up, I found it labeled 'Laudanum,' and then I knew he was beset with the terrible temptation to take his own life. Flinging the vile drug into the street, I sank on my knees, and 'O my God! lead him not into temptation, but deliver him from evil,' was the prayer that went up from my agonized heart. How desolate I felt! In the midst of a great city—friendless, well-nigh penniless, and, worst of all, haunted with the dreadful fear that my husband would commit suicide. From the time we would separate in the morning until we met again at night I lived in a state of absolute torture. At length, despairing of finding anything in the city to do, we turned our faces countryward; feeling that our slender stock of money would last longer than in town. After many weeks of painful anxiety my husband found a situation in a small village, with just salary enough to keep the wolf from the door. How I longed to do something to better our condition; but alas! what could I do? I might have had a fine music-class in the village, but while I played and sang well, I was not proficient enough in music to teach it successfully. Oh, how I wished I had given the time to it I had spent on French and Latin! Many an hour of hard study had I given to these branches, and of what practical advantage had they been to me? I never met any French people with whom I could converse, and had never been able to secure a class in either language, while all the while my knowledge was becoming rusty by non-use. It is painful to recur to this period of my life. I was so unhappy. I expected every day would be the last my husband would be able to attend to business. Finally, driven to desperation by our misfortunes, I resolved to do something or die in the attempt. Attached to the house we occupied was a large lot for gardening purposes, and I made up my mind that out of that bit of earth I would dig our fortunes—or at least, a living—with my own hands. I made horticulture and floriculture a study, and brushed up my lit-

tle knowledge of chemistry. It was hard work and small profits the first year; but having once put my hand to the plow, I never turned back. Our table was bountifully supplied with fresh vegetables and fruits, and what was better, my step had grown elastic, my eye bright, and my cheek rounded with health. My husband, too, found many a spare moment from business to assist me, and in doing so found himself growing strong and well again. Oh, how happy we were! Surely there is a dignity in labor unknown to ease! How proud I felt when I received the returns from my first shipment of vegetables to the nearest market! I counted it over and over. It seemed to possess a value that I had never attached to money in the old days when father had lavished it so freely upon me. Then I would have thought nothing of spending such a paltry sum upon the trimmings of a single dress; now every penny was hoarded with miserly care, for we had resolved upon having a home of our own. Well, to be brief, each year I attempted something more—first a poultry-yard, then the culture of bees, and so on—until, before we were hardly aware of it, our home was paid for. I had carefully concealed every trace of our adversity from my parents. I think I would have died rather than gone home—a beggar. Now that the dawn of prosperity had set in, I wrote, asking them to come and see the little silken-haired girl that, like a sunbeam, danced through our home. They came. Father, accustomed to his broad acres, was astonished at the products of my small plot of ground. He declared I was the best farmer he knew, and should have greater scope for my powers. He bought a fine large tract of land adjoining our grounds that happened to be for sale just then, and made me a deed for it. This is the origin of the country-seat you visited last summer and admired so much. Belle is a fine horticulturist and an accomplished housekeeper. Should she ever be thrown upon her own resources in the country she could make a living, and I wish her to be equally as independent in town. We came to town to superintend her education. She thinks her forte is journalism, and desires, in addition to this, to become a practical printer. And now—can you wonder, Mrs. Ellis, after my experience, that I am trying to have her avoid the errors that well-nigh made my young life a failure?"

"No, indeed, Mrs. Moreton, and I honor you for it. I have been greatly benefited by the narration of your early troubles, and I think you will see the result of it in the future training of my own daughters."

## YEARNINGS.

IT seems strange that some lives must never know anything but ceaseless, unsatisfied yearnings, while some incapable of anything high enough to be classified as a yearning, have enough to put numberless of these lofty longings in the way of receiving satisfaction which they never do receive. They pant and strive toward it, and lead the sensitive, high-strung souls they inhabit such a ceaseless, never-ending struggle, as chafes and wears and irritates the life out of them, long before their time. Not but that they may live hereafter, but they are galled to death and hurried away from earth. Sometimes they keep up a bright and cheerful outside, but the heart within aches itself to death. Sometimes they grieve their lives all out in fierce, impetuous sorrow. After they are dead they may get a little sympathy, but never before. They struggle so hard for something better, that wasted strength leaves them the prey of the very scoffers who have helped to keep them down. They die either amid the rebelliousness of despair, or with the spiritlessness that has grown too weak to feel despair. It is hard that those of superior and noblest natures, in spite of every noble effort, must so often see themselves out distanced in the race of success by those of inferior or lesser grades of merit, and with scarce an effort at all, or only the effort of intrigue and stratagem. A frank, high, outspoken spirit is only the prey of a mean nature possessing the gift of

shrewdness and the deceit of villainy. It is clear to every one how money makes its way, though gained through littleness and knavery.

We have all seen fools in high places, to which wise men—moneyless—dared not aspire. We know how the politician buys his triumph, and how mean measures make their way. We know how "patronage" keeps merit from its due and makes it yearn its life away. We know how the most highly organized long for appreciation which they never get. We know how the brightest lives die for want of it, that might have been the choicest jewels of society and the rarest gems of humanity. It is hard to think that we are here, what we are with no choice to ourselves, and with no choice of circumstances, when it seems that some choose anything they will and possess it. We have seen this. There is no getting around it or shirking the point. It *is* so. Successful merit may argue that it is not, but it is a fact. The least conscientious will push and scramble, and override the considerate, and we have either to fight them with their own weapons or let them take precedence to us. We despise their weapons and so they go ahead. Sometimes they will look behind them and pity us a little, thinking it great magnanimity on their part. Sometimes they will vauntingly boast their superiority, and sometimes they will scoff our efforts down to lowest low.

It is foolish to yearn our lives out in such a world. No one knows it better than the yearners, but how can we help it? We did not string our nerves or make the circumstances that unstrung them. We did not make our hearts or plant in them the seeds of yearning. We did not make our minds or make them forever stretch their longing thought-hands heavenward. We are what we are. We suffer what we do. We have in us an inborn pride for some things, but we are yearning out our lives for something better.

We grow old with yearning. We grieve ourselves to death for what is not. We are weary and sick o'er what is, and crazed for something else. We wonder if God pities us sometimes, or how He can see us suffer so. It is but human that we do. We tremble all over with prayerful, aching longing. Why do we do so? We faint down into the lowest weakness of despairing with our longing. We rise sometimes to heights of thought unutterable with our longing. Why do we do so? We did not make ourselves, and can not tell. Life goes on, goes out amid the grief of yearnings we can not smother. We have lived, but not as we would. We die with death coveted in our despair, and rebelled against because it finds us with life's goal unwon. Yearnings lead us to strife, strife to strength overtasked and wasted, wasted strength to despair, despair to death. Without them we should die some other way, I suppose. We can but die. It is a poor consolation to our sad, unsatisfied hearts that we can but die. We must suffer all the pains of mortality in addition to the pains which some persons never feel. Shall we yearn ourselves into something higher hereafter? We can not tell. Shall we get above it all in some world? We go on yearning without the means of knowing. We die yearning out our existence. Our yearning eyes stretch their gaze to the unseen future!

Our yearning hands stretch themselves pleadingly up to the God we trust. Shall we yearn our hearts to love and brightness? Shall we ever rest? MADGE MAPLE.

## A WORD TO BOYS.

Of all the needless, useless things
That man presumes to do,
I think, indeed, the ugliest one
Is to tobacco chew.

It may be he was made to mill,
But this continual grind
Was scarcely nature's grand intent
In fashioning mankind.

If it had been, then, like the kine,
Some self-sufficient cud
Had been provided for the want
Both innocent and good.

But as it is we all discern
A most perverted plan;
The grinding of the weed alone
Degenerates the man.

I do abhor it, to be plain,
And, speaking through the pen,
I wish to say to every boy,
It don't make gentlemen.

Oh, that the weed would cease to grow!
That some cyclone or blight
Would wither up its noisome leaves,
And stop the trade outright.

There's one thing, boys, that you can do:
Set no new mills to work;
I bid you labor heart and hand,
But this bad grinding shirk. S. L. O.

## THE YUCCA STRICTA.

THE Yuccas, as the reader may know, constitute a large variety allied to the order known to the botanist as the *lilliacidæ*.

They are indigenous to warm parts of the earth, but there are hardy specimens found growing on the sandy shores from Virginia to Florida. As a class their habit of growth is such, and there is so much beauty in their flowers, that they are admirably adapted for garden purposes wherever they may be grown. They develop rapidly from the bulb and flower early in summer. Our

engraving represents a species called the Yucca Stricta, which has some peculiarities, viz., in the character of its leaves and stem, the former being long and narrow and the latter proportionally short, scarcely rising clear of the leaves. The lower peduncles are long, and bear as many as a dozen flowers each. The leaves at the base are numerous and long, measuring from sixteen to seventeen inches, and but half an inch in breadth, tapering off to a point. The youngest of the leaves are somewhat shorter and broader than the others. The upper spike or stem is green in color, and covered with a fine filamentous or hairy growth. It is strong and attains a height in all of from three to four feet. The flowers produced by weak stems are often solitary, and at first of a greenish hue, fading out to a white. The external divisions of the flower are about one and a half inches long and three-quarters of an inch wide; the interior are ovate and somewhat larger. The Yucca Stricta commences to flower toward the end of June. This plant, like other Yuccas, is raised best in a free, gravelly soil, especially where there is moisture. With care in treatment, success will be obtained in a stiff loam, especially if its bed be slightly raised above the surrounding earth. In very dry seasons it should be liberally watered, as this promotes growth and production of flowers, yet the Yucca will bear a long drought with but little injury. There are some hardy varieties which will bear rather cold weather, provided the soil be well massed around them.

## CYNO, OR THE FOSTER-MOTHER.

AT the foot of a lofty range of mountains, bordering on the Euxine Sea, in the ancient kingdom of Media, dwelt a herdsman who had charge of the king's cattle, and whose business was to lead them in quest of the most abundant pasture. Mithradates, as the herdsman was called, was both young and handsome; a stalwart, ruddy fellow, with the strength of a young giant and the bloom of a healthy maiden. He was of a joyous, blithesome spirit, and while engaged in his solitary occupation made the woods resound with cheerful whistlings and merry songs; but for all he was so gay, he was as poor as the birds above him or the beasts around him. They had their nests and their lairs, their plumage and their rough integuments, while he had little more—one suit of clothes, and those of the simplest cut and least superfluity; a single shirt, indeed, and a hut that was barely a shelter from the wintry tempests and mountain storms. But not the King Astyagus himself, sitting on the throne of Media, and living more luxuriously than any other prince in the world, experienced anything like the content, the pure delight in simple existence, that pervaded the heart of the humble minder of his cattle.

Scarcely had Mithradates attained full manhood when his ardent affections found an object in Cyno, a beautiful peasant girl, whose almond-shaped, dark eyes, scarlet lips, and tresses eclipsing the night in blackness, seemed to him an embodiment of all the sweetness and loveliness he had before admired in promiscuous nature. In her he found the exquisite tints of the flowers, the symmetry of the most graceful trees of the forest, while the melody of murmuring waters, the soft whisperings of summer breezes, found their echo in her low, musical voice.

Becoming the herdsman's wife, Cyno found ample scope for her ingenuity in fitting up their hut more comfortably, which she managed to do with only an outlay of womanly skill and systematic exertion. She brought with her as her dowry only her spindle, loom, and distaff, but these proved a little fortune to the happy couple, for through them Cyno converted the flax she raised by her own labor into garments for herself and husband, and with the remainder laid in all the comforts the simple tastes of the twain required.

Something over a year intervened when Mithradates was summoned to court; he went with terror, fearful of some swift calamity from the caprice of absolute royalty, besides being tortured with anxiety at leav-

ing his wife in a very precarious state of health. When he returned, after two days' absence, the fond pair read in each other's faces confirmation of their fears. Cyno, without a word, laid back the coverlet of the bed on which she lay, and showed her husband the end of their mutual desires, a lovely babe she had borne during his absence, now stiff and cold beside her in the freezing embrace of death. They wept together over this dire termination of their hopes, and then Mithradates unfolded his tale of sorrow. He had been sent for privately by the prime minister of the kingdom, who with great secrecy and caution committed to his charge the new-born infant of the king's daughter, commissioning him, in the name of the sovereign, to expose it to the wild beasts of the mountains, as the king had been forewarned by the Magi that his empire was destined to be overturned by this infant when grown to man's estate, and that in order to avert the threatened evil the child must be destroyed at once. Mithradates, with tears in his eyes, brought to his wife a large basket, within whose purple silken linings lay the unfortunate victim of royal jealousy, a fine boy of unusual size and beauty.

As the mother of the dead babe bent with rapture over this living, breathing infant, it waked, and stretching out its dimpled hands, smiled. She snatched it to her aching bosom, and to her inexpressible delight it drew nourishment from her breast. Then she besought her husband to spare the little outcast, and allow her to solace her grief by rearing it; but Mithradates assured her such mercy would be indulged at the imminent risk of his own life; that unless he produced the dead body of the prince in three days, he would be put to a cruel death. But Cyno persisted in her entreaties and held fast the living babe. At last her womanly ingenuity hit upon a plan by which she conceived she might have her desire without risking her herdsman's life. This was to dress her own poor dead babe in the gold and purple vestments of the royal infant, expose it to decaying airs, and when the danger of identification was passed, convey it to the prime minister as the corpse of the princely child. For three days afterward Mithradates attended his herds and guarded the basket with its clay-cold image in the heart of the icy forest. Then he carried the purple-visaged vestige of humanity to the prime minister, and the peasant's child was placed in a royal mausoleum.

The redeemed prince thrived apace and manifested with his earliest intelligence a generous and intrepid spirit. As soon as he was large enough, he began to assist his mother, bringing her water from the spring and wood from the mountain, and while yet a child, became expert in the use of the bow, and supplied her with abundance of game. Knowing the secret of his birth, Cyno was ever looking forward to the time when he should be advanced to the regal dignity. She dreamed that he brought her a bunch of grapes, and the branch shot forth boughs and became a spreading vine that filled the land; this she interpreted to signify a vast extension of her son's power, when he should once attain a crown. When he was ten years old he became acquainted with a wise man in the adjacent village, who, pleased with his frank, pleasant manners, proposed to instruct him. To this the boy eagerly agreed, and went regularly every morning to the teacher's house. Here he met a number of boys who were receiving instruction, and thrown into daily contact with them, became a general favorite. These children, like all others, founded their pastimes on imitation of their elders. Their favorite play was to copy the model of the State Government; and in this sport they chose the foster-son of Cyno their king. He appeared intuitively to understand his prerogative, appointed officers, instituted strict discipline and punished the infraction of his laws with severity. Among his mimic liegemen was a son of Artembares, a Median of high rank, and this boy, proving insubordinate, the miniature king scourged him with his own hand. The young Artembares ran crying home and reported the matter to his father, who taking it as a thing of consequence, complained to the king that his son had been beaten by the child of a herdsman. The king was highly incensed, and ordered Mithradates and his boy to be

brought into his presence, but lo! when the peasant child was introduced, the fire of his eagle eye was unquenched, while the trepidation of his foster-father found no duplicate in him. In a clear voice, with fearless manner and dignified gesture, he justified his course to the king, assuring him of the necessity of maintaining discipline as the very root of law and right. Astyagus was struck dumb, not only at the language and bearing of this poor herdsman's boy, but at his haunting likeness to his own well-remembered youthful features, as well as those of his banished daughter, banished through his own cruel jealousy and envious spite. At length, recovering himself, he questioned Mithradates as to the age and birth of his son, but not receiving satisfactory replies, with the usual barbarity of despotism he subjected him to the torture, when the whole story of the prince's pretended death came to light. Astyagus being then advised by his Magi that the danger to his throne no longer existed, the prophecy respecting the prince having, as they thought, been fulfilled in the accident of his mimic kingship, the hard-hearted grandfather decided to restore the boy to his parents, and he was arrayed in princely vesture and escorted by a regal retinue to Persia, the country of his mother's exile. Her joy at the restoration of her son, endowed with beauty, strength, and virtue, was indescribable. But meantime poor Cyno was left altogether desolate. Mithradates, her husband, died from the torture to which he had been subjected, and the doubly-bereaved woman did nothing but weep. But one day a glittering train stood before her humble door; there were handmaidens, treasures, and costly raiment for her, and in real courtly style the poor foster-mother was conveyed to the presence of him whom in his unconscious infancy she had succored from a cruel death. She lived to see him attain a glorious manhood, excelling in the use of the bow, the art of horsemanship, and the habit of truth-telling, accounted by the Persians, in the days when they were rising to power, the most desirable accomplishment. At least, so says Herodotus. The prince became monarch of a mighty empire, embracing all Western Asia. His conquest of Babylon brought the captive Jews under his authority, to whom he gave the liberty of returning to their own land; and having restored the spoils of their magnificent temple, taken away by the Assyrian monarchs, he generously aided them to rebuild it.

The name of this great, good, and wise king is embalmed, not only in the pages of profane history, but the Scriptures preserve an imperishable memorial of Cyrus the Great.

VIRGINIA DU RANT COVINGTON.

## WHO WAS ROGER WILLIAMS?

FROM none of the writings of Roger Williams can we gain any idea of his parentage, or place or date of birth. The only allusion to either I have found is in a letter, written in 1679, quoted in Backus' "History of the Baptists," Vol. I., p. 421, in which he speaks of himself as being near to fourscore years of age. At that age, however, a matter of five or six years may not have been thought of much moment.

William Williams was a resident of Conroyl Cayo Parish, situated near Lampeter or Llanbedr, Carmarthen Co., South Wales. Here his ancestors had resided for many generations on their own small estate at a place called Maestroiddyn-fawr, in the hamlet of Maestroiddyn. The records of this parish do not go further back than 1694. But we find in the records of the University of Oxford that Rodericus Williams, filius Gulielmi Williams de Conwelgaro, Pleb. an. Nat. 18, entered at Jesus College April 30, 1624. This would give 1606 as the date of his birth.

So late as 1850 there was living at Conroyl Cayo, a man nearly one hundred years old, but whose mental faculties appeared to be clear, and whose memory remarkably tenacious, who stated, "that the great Roger Williams, who was educated at Ox-

ford, and who, after being a clergyman a few years in England, went over the sea, was one of his family. He said his grandfather lived to the age of ninety-eight, and his great-grandfather to be nearly as old, and that there were at one time two letters in the possession of the family which his great-grandfather had received from Roger."

Cayo and Llansawell form a consolidated parish, the great tithes of which belong to the head of Jesus College, Oxford, which College was founded in 1571, by Dr. Hugh Price, to extend the benefits of learning to the natives of Wales. Nothing would be more natural than that a Welshman should choose this College in which to educate his son.

Without further evidence, we should think ourselves warranted in the conclusion, that the founder of Rhode Island was the person referred to in all the preceding.

A number of the *Providence* (R. I.) *Journal*, 1876, says: "Mr. J. W. Thornton, a Boston lawyer, in looking over the Harleian publications for 1874, has found a record which reads: 'Roger, second son of William Williams, Gent., was baptized on the 24th day of July, 1600, in the parish church of Gwinear.' This was six years before the birth of the graduate at Oxford, as shown by their register."

One Roger Williams was in London employed by Sir Edward Coke about 1620. This we are sure was the Puritan, because in after years he held correspondence with Mrs. Sadlier, a daughter of Sir Edward; and some of his letters are now in the library of Trinity College, Cambridge, Eng.; one of which has the following indorsement by Mrs. Sadlier: "This Roger Williams, when he was a youth, would, in shorthand, take sermons and speeches in the Star-chamber, and present them to my father. He seeing so hopeful a youth, took such a liking to him, that he sent him to Sutton's hospital." This was indorsed on what seems to be the last of the series. It is evident she did not agree with him on theological points, for one of her letters to him—written while on one of his visits in England from America—closes thus: "Trouble me no more with your letters, for they are very troublesome to her that wishes you in the place from whence you came."

These letters were discovered by Mr. Bancroft while searching for matter for his History of the United States, and copies were procured for the Rhode Island Historical Society.

Sutton's hospital (referred to in the indorsement spoken of) to which Roger was sent, was afterward the Charter-house. He was elected a scholar of that institution June, 1621, and obtained an exhibition July 9, 1624; the same year Rodericus Williams graduated at Oxford.

Bancroft says: "By Coke he was sent to Charter-house, in 1621, and passed thence to Pembroke College, in Cambridge, where he took a degree."

The records of Pembroke College, Cambridge, show that the degree of B.A. was granted him in 1626–27, and in the signature-book, under date of 1626, is the autograph of *Rogerus* Williams, not *Rodericus*, as at Oxford. This signature is said to bear a striking resemblance to the well-known autograph of the founder of Rhode Island.

Now, if he who entered at Oxford in 1624, and he who took the degree at Cambridge in 1626–27, are the same, as other evidence would seem to show, then he must have gone from Oxford to Cambridge between the dates named, a proceeding not very unlikely. Lord Coke graduated at Cambridge, and as most of the leading Puritans were educated there, nothing would be more natural than if, after entering Oxford, he should have changed.

That the Roger Williams who took the degree at Cambridge was a Welshman, further appears from attempts made to establish a relationship between him and Oliver Cromwell. Cromwell was a Welshman, and a descendant of Richard Williams, who was knighted by Henry VIII., taking the name of his uncle, Thomas Cromwell, who made him his heir.

Williams was intimate with Cromwell, as appears from his writings, in which he speaks of having a close conference with him on the subject of Popery, which they both abhorred.

It is a matter of traditional history, of which, however, we find no recorded evidence, that after completing his studies—which seem to have been thorough, comprising logic, the classics, Latin, Greek, Hebrew, and several of the modern languages—he studied law with Lord Coke. This seems reasonable, from the fact that such documents as were afterward prepared by him, show an acquaintance with jurisprudence and the terms and forms of legal lore not to be expected from one who had not made their principles a study.

But, however that may be, he probably never engaged in legal practice, for it was only five years between the date of his signature in the autograph-book at Cambridge and his arrival in Massachusetts, during which time he had taken orders as clergyman of the Church of England, and had charge of a parish, with considerable reputation as a preacher. In one of his papers he speaks of having ridden with Rev. John Cotton and Rev. Mr. Hooker, to and from Sempringham, Lincolnshire. Mr. Cotton was settled in Boston in that country for several years before he came to America.

L. A. R.


## MENTAL OVERWORK.

IN an article on this topic, published not long since by Robert Farquharson, M.D., of London, the following paragraphs occur, which, on account of their practical soundness with regard to common methods of recreation, are deserving of reproduction:

"To hit off the happy medium between over- and under-work is no easy task, even to those who have the necessary knowledge on the one hand, and the liberty to arrange their own scheme of occupation on the other. But for one person who is injured by doing too much, I quite believe with Dr. Wilkes that many may be found who are sustaining serious damage from not having enough mental stimulus. The listless vacuity in which so many of the well-to-do classes spend their lives, the want of any incentive to exertion, and the absence of any attempt at real thought which the widespread prevalence of ready-made opinions in our periodical literature directly encourages, must cause more or less degeneration of intellectual power. Under these conditions the brain gradually loses its healthy tone, and although quite equal to the daily calls of a routine and uneventful existence, it is unable to withstand the strain of special sudden emergency, and when a heavy load of work is unexpectedly thrown upon it in its unprepared state, then we see all the worst consequences of what may be called overwork develop themselves. It is no uncommon experience to meet with cases in which damage has been done to the bodily constitution by indulging too recklessly in athletic exercises and active physical exertion when the muscles have become flabby and feeble from disuse. A man accustomed to sedentary pursuits takes suddenly to

boating or running or the horizontal bar, and if he escapes straining his heart, he is certain to make himself stiff and uncomfortable. Or he has been told that there is nothing like Switzerland for reviving the faded Londoner; so, without the slightest attempt at preparation, he devotes himself enthusiastically to climbing ice-peaks and traversing snow-passes; and when his brief holiday is over, he comes back worn and jaded, and astonished to find that the glacial air, which has proved so beneficial to many, has done nothing for him.

"Now, the fault here lies in the want of proper preliminary training. Even as we do not prescribe quinine as a tonic until we have ascertained that the digestive functions of our patient are in good working order, so it is most improper for any one to attempt active muscular exertion without bracing up the previously unused muscles by carefully-graduated exercise. And in mental operations the same analogy holds good. If the brain is not habituated to the constant gymnastic influence of steady work, it is liable to give way or suffer more or less injury from any sudden and spasmodic effort. If, on the other hand, however, its healthy nutrition is insured by the free supply of pure blood and the true balance between destruction and repair, we shall find ourselves in possession of an organ which will bear almost any amount of steady strain, so long as certain conditions are fulfilled. So long as a brain-worker is able to sleep well, to eat well, and to take a fair proportion of outdoor exercise, it may safely be said that it is not necessary to impose any special limits on the actual number of hours which he devotes to his labors."

## MILK AS FOOD FOR ADULTS.

**Milk for Babes—Change of Structure in Adults—What say the Books?—Causes Constipation—Use of Lime-water—There are Worse Things—For Hygienists—Unnatural Milk—Brewers' Grains—What shall we do about it?—Oatmeal Milk—Oatmeal Porridge.**

WE often hear milk called the model food. It is well understood that it is a sufficient provision of nature for the young of the "mammalia" until they are old enough to subsist upon other food. Of course, then, it must contain all the elements necessary for rapidly building up the body, especially for the solidifying of the bony structure, which is very deficient at birth. Accordingly, we find phosphate of lime a large ingredient, and, of course, in an organized form, in which it can be readily appropriated by the organism. Milk is easily assimilated, not severely taxing the delicate and simple digestive organs of the infant. Indeed, it is said to resemble so closely the chyle into which our food is converted, that it can be really introduced (if warm and fresh) into the veins and be converted into vital blood, like chyle. We do not give this as a well-proven fact. It is, indeed, but recently announced, while hitherto it has been thought a fatal act to introduce milk into the blood-vessels. The difference, it is claimed, is due to the vitality which resides in it while still warm. If this is true, we shall soon hear more of it; if not, it will sink of its own weight and be lost.

### MILK FOR BABES.

In the meantime, however, it is truly digested in the infantile stomach and converted into true chyle before it enters the little veins. Milk is undoubtedly "good for babes," and, if we may judge from observation, we should say its use might be continued during childhood in conjunction with other food. But the coming of teeth proclaims the preparation for the mastication of more solid matter, which should be more or less gradually introduced. We do not say that the continued use of milk during childhood is necessary. We are inclined to think it advisable. Perhaps we need more experiment to settle this point. At present, however, we propose to investigate somewhat carefully the desirability of its use by adults. Does it follow, that because milk is good for babes, it is therefore good for adults?

### CHANGE OF STRUCTURE IN ADULTS.

The child needs food for rapid growth, while the adult requires only to maintain an

equilibrium. Would not this of itself call for a difference in the food? Why take in all these phosphates, if not wanted? We are very apt to look upon the period of early and rapid growth as a period of unequaled health, and suppose that a return to the food then used will produce the same results. We forget that in the meantime our habits have changed; that the nature of the gastric juice has changed; and that the very shape of the stomach has changed. We pour down milk and we find it does not agree with us, or we, supposing that it *must* agree with us, go on taking it and lay our ailments to some other cause. Or perhaps we have always been accustomed to milk, and taking it for granted that it is good, we are suffering from its use many ills which leave us only when from some cause we do without the milk. Perhaps it will require much experience and many years to convince us that this was the cause of our difficulties; we have so little acuteness in the observation of these things, and we cling so obstinately to old prejudices. But

### WHAT SAY THE BOOKS?

Those books which are responsible for many of our errors? Most of them yet claim milk as the model food, even for adults. But it is surprising to see how many things they are obliged to explain away, while some acknowledge candidly that its value as food for adults has been greatly overrated. Pereira, in his work on "Food and Diet," says: "It frequently disagrees with adults. With some it proves heavy and difficult of digestion, owing to its oily constituent (butter)." But those who have experimented very largely say that the cream is far more digestible than the casein. Dr. Brinton, an almost equal authority, says: "By many persons milk is only digested with difficulty, so that much of the casein, which is at once precipitated from it in the stomach by the gastric juice, may be subsequently traced through the whole length of the bowels but little changed by the action of the gastric juice."

### CAUSES CONSTIPATION.

This is much more reasonable than the solution given by Pereira, and accords with the fact that milk very frequently produces constipation, with all its attendant ills, and that, too, in the case of persons who have used it continually from their childhood up. We could give some very remarkable cases of this kind, where the difficulty was subdued only after entire abandonment of milk as food, and where it has been repeatedly brought back by a return to a milk diet. This has not usually been the result of its use in small quantities as a condiment, but rather where it is used as a drink or eaten freely, as in the usual dishes known as "bread and milk" or "mush and milk." Its free use in custards and puddings and pumpkin pies has a similar tendency.

Another difficulty with some has been its tendency to produce acidity of the stomach after eating or drinking it, and the latest fashionable remedy for this is to add a small quantity of lime-water.

### USE OF LIME-WATER.

We have known medical students to use this freely, and we frequently see it recommended in the papers. We confess we have not tried it, for having seen in the course of time no small evils result from the use of hard water in a limestone country, we have learned to consider lime-water not a desirable addition to the provisions for keeping our system in order. "The lime," says one of these sapient authorities, "goes to build up the bones." Yes, but then my physiology teaches me that there are abundant supplies of the phosphate of lime in an organic form in my common food, and I would just as soon not put in any free, inorganic matter to form concretious or calcareous obstructions. I understand perfectly well that the system *can not* use this inorganic matter, and at best will only be taxed to throw it out, and so *I will not* be deluded into any such violation of a plain law, although I like milk well enough to take some pains to make it wholesome, if it could be done.

We hear other people congratulating themselves on the fact that milk agrees with them; they grow fat and sleek on it; when they are weighing some ten, twenty, thirty, or more pounds now than is good for them. But we need not repeat our opinion of fat just at present.

Others, again, claim that they eat it freely and thrive upon it honestly. We have found no great difficulty in the discovery of flaws in such cases. We will not investigate further than to suggest that they may be doing much better than if they used something worse.

### THERE ARE WORSE THINGS.

The same idea holds in many of the cases where we are told of its wonderful restorative value in various diseases, and we have the assurance of high authorities for the wonderful cures it has performed when given, instead of alcoholic drinks, in cases of typhoid fever. We do not doubt it. We think there are a great many other cases in which it might very profitably be substituted in place of alcoholic drinks, not only cases of sickness, but cases of health. We should not object to see it take their place in all the restaurants and over all the bars; and though we think it might make the partakers a little stupid and yawny, the result would hardly be noticeable compared with the alcoholic stupor, while it would be infinitely preferable to the alcoholic furor. No, no; if it is a question of substituting milk for alcoholic drinks merely, we should not devote one breath to talking about it, though perhaps we should try to clean it up a little.

### FOR HYGIENISTS.

But we are doubtless talking mostly to people who never think of using alcoholic liquors, who perchance think that they are living very hygienically when they are using milk and butter and cheese and sugar and some other equally unwholesome things very freely in place of some other articles that they have given up, and they are blaming the "hygienic living" because they do not see satisfactory beneficial results. Let me remind them that it may require a little time, after years of wrong living, to adjust themselves to right living, and, indeed, some time to find out just what right living is. The science is yet in its infancy, though it is making rapid strides, and if we are determined at all hazards to eat and drink only that which is best for us, we shall make satisfactory progress.

### UNNATURAL MILK.

But there is one more consideration about the milk which we must take into account if we wish to decide its wholesomeness. We get little or no cow's milk that is in a natural condition. Setting aside entirely the consideration that it is made for calves, not for men, still the cow is not in a natural condition. She comes of a race whose milking properties have been stimulated for uncounted generations. The quantity she gives is unnatural, and it constitutes a drain upon her system, through which are carried off many an unwholesome secretion, which but for this conduit would be thrown off in some other manner. One proof of this we find in the fact that the milk of the cow is the only milk with which we are acquainted that is acid in its reaction. The milk of all the other animals is decidedly alkaline. The return of conception also interferes at an early period with the character of the milk, as also does the close and uncleaned stables in which cows are frequently kept, and the imperfect or unwholesome food that is given them. Very often when the parents of a little child suppose that they are taking all due pains to procure the unmixed milk of one healthy cow for their little one, investigation would show the beast badly kept and badly fed, to the serious injury of the child.

### BREWERS' GRAINS.

The impositions upon the poor cows and upon all who use their milk in the vicinity of great cities, indeed we might say within reach of the breweries everywhere, have reached appalling proportions. The feeding of "grains," the refuse of the breweries, is spreading over the fairest sections of dairy farming, and is practiced openly and brazenly. This is partly due to the fact that a great many people consider grains wholesome food, so we will inquire what are the "grains?"

Barley and oats are used largely in the manufacture of many kinds of brewed and distilled liquors. These are first "sprouted," to convert the starch into sugar, then mashed and the sugar washed out and set to ferment and form alcohol, while the washed-

out hull that is left constitute the "grains." There is probably no alcohol in them—we never heard of the cattle getting tipsy on them—but it is easy to see that they are in no good condition for keeping. Any farmer who allowed his grain to stand wet and sprout before feeding it, would be called a fool, and he would expect bad results to his cattle. The feeder of grains expects bad results. He knows the stuff is bad. "They allers stink," says one who sees them constantly. Farmers all through Orange County get them in to feed their cows on, and store them up by the ton for months. True, they turn dark; in fact, they rot and breed fungus growths, but that does not matter, they are "cheap"—cost only about one-third as much as hay. True, it kills off the cows in about two years, but they look sleek the most of the time, and they give large quantities of milk, and so it *pays*, and that is all the farmer wants. Where grains are fed freely, the cow will soon eat nothing else, and so the farmer sells his hay and makes his profits on that. This of itself ought to be a proof against the grains, but the majority of the people have yet to be disabused of their prejudices in favor of the wholesomeness of grains as food for cattle. Many who keep only a few cows feed some grains.

In this way all our milk is becoming poisoned. Bad as it is at best, this makes it ineffably worse. Our best dairy counties are overspread by this blight, the blight of the breweries poisoning the food for our children. In nearly all directions, as we go out into the country, no matter how green the pastures nor how broad the meadows, we see or smell the car loads of grains going to the dairies to feed the cows.

### WHAT SHALL WE DO ABOUT IT?

Kill out the breweries. So long as men drink the beer, they will not object to the cows eating the grains nor to their children drinking the milk. They take the worst part of the product themselves, and it makes them so blear-eyed that they can not see the wrong they do their children, so weak they can not do the right thing for them. This state of things affects very many people, and the money in the traffic gilds it over in the eyes of many more. And the remainder go on helplessly and hopelessly, saying, "We can't do anything about it!"

In many places, and especially in Europe, no little complaint is made against milk as a vehicle for the dissemination of the fatal typhoid fever, either through infected water, with which the dairy vessels are cleaned, or through exposure to a typhoid-infected atmosphere, and science can not determine which, and this thing they acknowledge can not be avoided by any legal regulations. We see, then, how undesirable it is to be so entirely dependent on any one article. Is it not possible to obtain substitutes? As one of these substitutes we beg leave to offer the following recipes:

*Oatmeal Milk.*—To one gill good "C" (coarse) oatmeal (Schumacher's best), add seven gills of water; place it in a double boiler and simmer gently two hours. Then rub it through a medium sieve, salt slightly (if you wish it), let it stand until milk-warm, and eat as a gruel with bread and butter, or sweet or Irish potato, or use instead of tea or milk, to promote the mammary secretion. For children, make it a trifle thicker (six gills of water), and sauce it with stewed fruit, canned berries, etc. Some will learn to like it with simply a little sugar sprinkled over it. Indeed, it is delicious without any dressing. In the season of fresh fruit pour it over a thick layer of strawberries, set the dish upon the stove until it simmers up around the edges, and then serve. If wanted more promptly, make—

*Oatmeal Porridge.*—Wet one gill "A" oatmeal (fine) with one gill water and pour into five or six gills of boiling water; stir until it boils up, and then simmer ten minutes. Some add a pinch of thyme.

JULIA COLMAN.

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EGGS.—An ordinary hen's egg weighs from one and a half to two ounces; a duck's egg, from two to three ounces; the egg of the sea-gull and the turkey, from three to four ounces, and the egg of a goose from four to six ounces. The solid matter and the oil in the duck's egg exceed those in a hen's egg by about one-fourth. According to Dr. Ed. Smith, in his treatise on "Foods," an egg weighing an ounce and three-quarters, consists of 120 grains of carbon and 18¼ grains of nitrogen, or 15.25 per cent of carbon, and two per cent. of nitrogen.

## SOME EXPERIMENTS IN MAGNETISM.—No. 3.

TO relieve pain and eradicate disease through the power of magnetism, were results as unlooked for and as marvelous to the experimenter (of whom I have spoken in previous articles) as they were welcome to the suffering patients. To heal by "the laying on of hands" had hitherto been considered as something belonging solely to the miracles of the past; but now a new light dawned upon this man's mind. He discovered that at least something of the same power existed in these latter days as of old, and that he was himself, in a degree, a possessor of that power. Business, however, prevented his following up and putting in practice the knowledge he had gained, except in some cases of personal friends. A few of these instances I will give:

One evening, upon his return home from a long and very severe drive over the country, he found a messenger in waiting, who desired him to go at once to the house of a neighbor whose daughter was apparently dying with congestion of the lungs. In one hour she was quietly sleeping, and he left her. In a few days she sat up and was soon well again.

At another time a friend, living six miles away, whose wife was very sick of diphtheria, sent for him in great haste to visit her. It was a cold winter night, but he responded at once to the summons. The magnetism of his hands soon relieved the suffering woman, and not only was the diphtheria dissipated, but a *wen* which had been upon her neck for years was entirely gone. Again was the magnetizer astonished at his own work. This occurred about twenty years ago, at a time when diphtheria was prevailing to an alarming extent in different sections of the country.

There were also several other similar instances wherein this man's aid was called, and each time he mastered the disease with little trouble, and after a while he came to feel great confidence in his power over this special malady; experience, however, taught him that death comes sometimes even with the first touch of disease. The eldest son was taken sick in his father's absence, and had been sick three days before he returned. The disease proved to be one of the worst forms of diphtheria. Night and day he attended his son, and at last had the satisfaction of knowing that the disease was conquered; but a younger one was now seized with the fatal scourge. The father took him in his arms and placed his hand upon his head, when a strange feeling came over him, something unlike any of his previous experiences. Turning to his wife, he said: "I fear I have not the power to conquer in this case. I do not feel as though there was any help for the child." This was terrible news to the anxious mother, and at once, by the father's advice, she sent for the best doctor within reach, and soon after called in others. Meantime the father worked over his boy until he was himself exhausted, but the little one died after two days' illness.

I mention this circumstance to show how soon he felt the lack of power to overcome where death had already set his seal, and yet in less than half an hour from the time the child showed its first symptoms the father was trying to relieve him, so that no time was lost, but the destroyer was beforehand with him.

At the close of the war, when so many promising young men were coming home crippled and disabled, William C. Bowen, a young friend of this magnetizer, returned with a withered arm. He had received a bullet in his shoulder, in consequence of which the flesh of the arm perished, and it was drawn out of shape—at least the young man could not straighten it, nor could he use his hand. He carried the arm in a sling and appeared to be hopelessly crippled. Previous to this visit he had consulted physicians North and South, and had done everything he could do to restore the shriveled limb, but all to no purpose. Sad and discouraged, he told his story to his friend, who at once set about trying to help him, through his magnetic power. Mr. Bowen spent one week only with the magnetizer, who each day manipulated the arm with his hands. From "that same hour"

the limb commenced to recover, and soon became whole as the other, and remains so to this day. Mr. Bowen is a citizen of Brooklyn, L. I.—a man of unusual intelligence and refinement and of unquestioned integrity. He often refers to the subject of his having been "healed by the laying on of hands," and makes no question but that had it not been for the voluntary assistance of his magnetic friend he would have been a cripple for life.

If any person cavils at these incidents, as here related, the truth of them can be readily proven. The operator was not doing these things for money. In every instance during those years of experiment, he was prompted solely by sympathy for those who were in trouble, or by a desire to investigate the possibilities of magnetism. Hence, having no selfish motive to serve, the experiments and their results were subjects of his most candid and serious deliberation. He listened with eager interest to the accounts given by other searchers into these mysteries, and read whatever came within his reach bearing upon the subject.

He soon learned that all magnetizers had not equal healing power; that some had power over certain diseases more than over others, while a second class might cure what the first could not. That a certain kind of adaptation between healer and patient was absolutely essential; as, for instance, a refined and sensitive patient was benefited far more by the magnetism of a refined and cleanly person than by one of an opposite character, and that often where this adaptation did not exist, the patient was injured rather than benefited. He also came to the conclusion that if unseen material passed from healer to patient, the healer should have no humors or filthy diseases within his own person, the virus of which might thus be communicated to another, and that cleanliness of body and purity of blood were conditions upon which every patient should insist when employing a magnetizer.

During his earlier experiments in putting others to sleep, one circumstance occurred which to him was very significant. He seated himself one day to magnetize a cousin who had determined beforehand that he would, if possible, be the stronger power and put the operator himself to sleep. For nearly an hour they held the balance between them, uncertain which would succumb. At last the operator felt a peculiar sensation in his hands and arms; they seemed to be filled and weighted with an unseen fluid, which for some moments was blocked up or held there as water is held back by barriers placed in its way. But suddenly he felt that fluid, or whatever it might be called, trickle off from his fingers, as though it had been water, and that instant the cousin became rigid as stone. Their hands had been joined all the while.

This man was himself subject to attacks of nervous pain, from which for many years he suffered intensely. The attending physicians considered his case incurable, the difficulty having been caused by an injury to the spine received when he was about nineteen years of age. To give present relief was all they attempted to do. In another article I will give some of the results of magnetism as applied to his own case, and the lessons which he learned therefrom.

MRS. HELEN M. SLOCUM.

## THE EVIDENCE OF AN AUTOPSY.

WE have received from a friend in Ohio, several clippings from newspapers, concerning the career and character of Perry Bowsher, who was executed in June last, for the murder of Mr. and Mrs. MacVey, of Ross County in that State. Bowsher was a young man of less than thirty, and is described as an illegitimate son of a man whose reputation is by no means honorable. As a boy, this young man bore a bad character; was concerned in several criminal acts; had served two or three terms of imprisonment; and had been even committed to asylums for insanity, which was found to be simulated. We do not care to recite the revolting details of the fiendish crime which brought him to the scaffold. Our object is mainly to give a sketch of the opinions ventured by certain reporters who were permitted to see the culprit, and also to set before the reader

what appears to be a statement from professional sources. An examination was made of Bowsher's brain shortly after his body had been removed from the scaffold, and the physicians who conducted the examination found some remarkable appearances, which confirm, it is said, Phrenological theories. One of the clippings runs thus: "Bowsher's head, according to Phrenology, was strictly in accordance with his character. The one distinguishing trait was Hope. From the time of his arrest, until the time when the rope was around his neck, he seemingly never entertained a doubt that he would escape punishment. The last words he uttered were, 'Perry, nothing's going to happen.'"

A long slip, with no memorandum to show from what source it was taken, has this condensed sketch of the autopsy of the brain. The writer says: "On removing the skull-cap, which operation consists in dissecting away the integument covering the part and sawing through the external table of the skull, all the way around, on a line a little above the top of the ear, the internal table is broken away and the covering of the brain, or dura-mater, is exposed. Having thoroughly examined the external aspect of the skull, we thought it just to confer a like attention on the internal table. The surface sawed through was found to be quite thin, a little thinner, perhaps, than the average skull, but the difference was not sufficiently apparent to account for any morbid brain manifestations."

It will be observed that the line of section passed "a little above the top of the ear," the region of Acquisitiveness, Destructiveness, Secretiveness, Combativeness, and of the perceptive organs being traversed in its course around the head. The reporter says "that the bone was quite thin," from which it would appear that the organs at the base of the brain predominated in activity. Two rather crudely-engraved portraits were inclosed with the clippings, which corroborate this view. The superorbiter ridges are prominently shown, and the head appears narrow and conical in the upper region, particularly in the anterior coronal space. The reporter finds "no unusual projections, elevations, or protuberances on the outside." We infer from this that he alludes to the upper part of the head, which was evidently lacking in development, and owing to disuse of the moral organs, save in the respect to which reference is made hereafter, the bone of the skull there had thickened. This is clear from the following: "But turning the skull-cap upside down, standing it on its head, as it were, and gazing into its interior, as one would look into a basin, we discover the most peculiar formation it has ever been our lot to look upon. On either side of the sagittal suture, about an inch posterior to its junction with the coronal suture, was a cavity or depression, a little larger than a silver ten-cent piece, thin as writing paper (the bone) and perfectly transparent."

The reporter has described the location of the organ of Hope with much accuracy, and alludes to changes in the brain structure, which might have brought about such a result, thus: "Whether this peculiar and striking condition was the result of congenital malformation, peculiar to the individual himself, or whether in after years he had received an injury resulting in inflammation, which caused absorption and thinning of these particular parts, we are unable with any degree of accuracy to say; but this much *is certain*, opposite the former and best marked depressions there were corresponding elevations of brain that presented the queerest appearance we have ever witnessed inside of any skull. The brain projected at this point, as horns project from the head of a cow, only not so far apart of course (unless you have a diminutive cow), and fitted into the cavities exactly. Upon first inspection we thought that the projections bore a very striking resemblance to tumors, and to increase our impression that such was the case, we found that the covering of the brain at these points closely and firmly adhered to the skull, while over the entire surface elsewhere it was free from adhesion. In cutting through the covering of the brain, however, we found the protuberance to be composed of healthy brain tissue, white and gray substance, just as it appeared in all other parts of the brain." The reporter is evidently

not aware of the fact that the activity of an organ is productive of growth in the tissue composing it, and excessive activity is found to produce in the course of time, especially if the person be young, a considerable enlargement of the brain matter. There may be no corresponding protuberance on the external surface of the skull, as in Bowsher's case, because the growing organ finds room in the brain on each side of it, taking up space which would be occupied by adjoining organs were they actively exercised; and further, nature accommodates its outward projection by removing or absorbing bone matter from the skull itself.

Bowsher's active Hope, on which special comment is made, had much to do with his persistence in criminality. He had escaped punishment in some cases. He had accomplished so much by his simulations of insanity, and other trickery, that he was encouraged to think that he bore a charmed life. His Hope buoyed him up, while his large propensities and active perceptives urged him on to fresh deeds of violence and wrong. The reporter alludes to the thinness of the skull in the cavity, which struck him and others as being so remarkable. We have known similar cases, in fact have seen heads on which the bone over certain organs could be fairly pressed in by the fingers. If one will take a skull that has been prepared for convenient manipulation and introduce through the great foramen a lighted candle, translucent spots or places will be seen here and there, indicating that the bone is thinner there than where it is opaque, and the organs which once lay contiguously to those thin spaces were the more active elements in the man's brain economy. One instance comes to mind of a woman who was sent to an asylum on account of religious mania. The organ of Veneration during long years of excitement had increased so much in size that there was left but the merest film of bone over it, which would fairly rise and fall in correspondence with pulsation.

# NOTES IN SCIENCE AND AGRICULTURE.

**The Recent Solar Eclipse.** — Availing ourselves of the report in the *Popular Science Monthly*, we make the following extracts: The atmospheric conditions were eminently favorable along the line of totality on the 29th of July, indeed in the whole region west of the Mississippi, while throughout the East clouds generally concealed the phenomenon from view. Dr. Henry Draper, stationed at Rawlins, Wyoming Territory, took four photographs of the corona, two of them with his large spectroscope. These latter are declared to be "very sharp and full of detail." This is a very fortunate circumstance, for it will enable scientific men to ascertain the precise truth touching a very important difference between the observations of Dr. Draper and those of the other astronomers. Mr. Lockyer, in a dispatch, says that "Newcomb's party and Barker made careful search for dark lines in the corona, but none were observed. Young," he adds, "telegraphed that there were no lines observed in the ultra-violet at Denver." Again, most of the spectroscopic observers report the presence of bright lines in the coronal spectrum, Prof. Young seeing several bright bands, and in particular the Kirchhoff line 1447. This observation, too, is negatived by that of Dr. Draper, whose photographs of the corona exhibit none of these bright lines.

Prof. Langley, stationed at Pike's Peak, Colorado, reports that he "saw the corona elongated;" that it "resembled the zodiacal light." Further, that he "followed it a distance of *twelve diameters* of the sun on one side and three on the other." This observation, if confirmed, would go to prove an extension of the corona into space about five times greater than the highest estimate hitherto made. Search was made during the eclipse for an intramercurial planet. One of the observers, Prof. Watson, claims to have been successful; he reports having discovered an intramercurial planet, of magnitude four and a half, in right ascension eight hours twenty-six minutes; declination north 18°. The solar protuberances were much less prominent than in most recent eclipses.

Prof. Colbert, of Chicago, stationed at Denver, Colorado, reports that his observations tend to show that the moon's path in the heavens lay a little farther to the southward than is indicated by the lunar tables, or else that the estimate of the moon's diameter is too large. Of Edison's "tasimeter," Mr. Lockyer said that it indicated the existence of a good degree of heat in the corona.

**Influence of Gaslight on the Eye.** —The German Minister of Instruction has recently issued a report on the influence of gaslight on the eye. The conclusion arrived at in this report is that no evil results follow

a moderate use of gas, if the direct action of the yellow flame on the eye is prevented. For this purpose screens or shades are employed. Very grave objections, however, exist to the use of zinc or lead shades, most evils affecting the eye being traceable to them. Their use, it is said, inevitably tends to blindness or inflammation, and other harmful effects. The milky-white glass shade is the best, as it distributes the light and has a grateful effect on the eye. The burner should not be too close to the head, as congestions of the forehead and headaches result from the radiated heat. The glass plate below the gas, employed in some places, is especially useful for the purpose, as it causes an equal distribution of the light—necessary where a number are working at one burner—prevents the radiation of heat, and tends to a steady illumination by shielding the flames from currents of air. In cases of highly-inflamed eyes, dark-blue globes can be very beneficially employed. With precautions of this kind, no evil effects from the burning of gas need be feared.

**Fruit Cuttings.**—Cuttings of the currant, gooseberry, and grape are better if cut immediately on the fall of the leaf, plunged into moist sand two-thirds of their length, and placed in the cellar. Usually the cuttings will be found in the spring with the granulations completed at the lower end, and the roots just ready to push; and on being planted out they grow immediately, forming during the season well-established plants.—*Exchange.*

**New Galvanic Battery.**—A new battery is described by Ponci, an Italian electrician, which is said to be novel and of great simplicity. It consists of a glass jar and a porous vessel, the latter filled with a solution of ferrous chloride, and having an iron plate as a pole. The other solution is of ferric chloride, with a carbon plate as a pole. Both solutions should be made up to a strength of thirty-five degrees Baumé. The electro-motive force is said to be nine-tenths of a Daniell cell.

**A Simple Electric Lamp.**—According to *Seward's Journal*, M. Reyner's new electric lamp seems to be almost as easily managed as an ordinary oil lamp. A rod of carbon, from 20 to 30 centimetres long and from one to two millimetres thick, is held at one end by a metal rod which tends to descend by its own weight, and at the other by a carbon wheel in a vertical position. The carbon is pressed strongly against the wheel, which is made to revolve slowly. A current of electricity from a battery of from four to six of Bunsen elements raises the carbon to a white heat at the point of contact of the rod with the wheel. A splendid light is produced. If a high degree of luminosity is required, the heated portion of the carbon may be increased at pleasure. Break the current and the lamp is extinguished. Restore the connection by turning a knob and the light flashes forth. The battery may be stowed away anywhere, and any one can use this illuminating contrivance in a house or workshop, without being annoyed with the difficulty and expense of maintaining any magnetic electric machine or steam-engine.

**No Horse-Shoes.**—Considerable discussion is now going on concerning this matter. An English writer gives some strong testimony against the use of horse-shoes. He says he has constantly dispensed with them since 1852, adding: "I have owned over 200 animals at one time, dedicated to all manner of purposes, draught, saddle, and pack, and not one of them shod. Some will say that they worked over grass or sand. They did not, but over the roughest roads imaginable, in places excessively hard, and in others as disagreeably soft and heavy." He gives his experience in Brazil, where pack-horses, without being shod, travel journeys of over 800 miles. Unshod horses are also used in Brazilian cities without slipping on the pavement. "Of course," says the writer, "if an owner were to pull off his horse's shoes, and at once ride him a long distance, he would find his horse go tender on all his feet; but were he to use him gently for a fortnight, and gradually let him feel his feet, keeping the edges of his hoof slightly rounded off with a rasp to prevent the raveling up of the edges of a hoof, for the first time since colthood brought naked to the ground, he would be agreeably surprised. Occasional paring will always be needed, but the frog should never be cut." The writer thus anticipates an objection which will occur to many readers: "Some one will be likely to say that draught horses have to dig their toes into the ground to start a load." Of course they have when they are shod. But the unshod horse starts with the flat of his foot, which affords him a much larger and more holding surface, more holding because it is rougher than a bright shoe.

**Anatomy of a Piano-forte.**—A writer has taken the trouble to give the actual material used in constructing a piano-forte. In every instrument there are fifteen kinds of wood, viz.: pine, maple, spruce, cherry, walnut, whitewood, apple, basswood, and birch, all of which are indigenous; and mahogany, ebony, holly, cedar, beech, and rosewood, from Honduras, Ceylon, England, South America, and Germany. In this combination, elasticity, strength, pliability, toughness, resonance, lightness, durability, and beauty are individual qualities, and the general result is voice. There are also used of the metals, iron, steel, brass, white metal, gun metal, and lead. There are in the same instrument of seven and one-half octaves, when completed, 214 strings, making a total length of 787 feet of steel wire, and 500 feet of white covering wire. Such a piano will weigh from 900 to 1,000 pounds, and will last, with constant use, not abuse, fifteen or twenty years.

**Cheap Bread.** — Careful estimates place the surplus of wheat available for export this year between 175,000,000 and 200,000,000 bushels—nearly double what it was last year. The bulk of this will probably find customers at some price or other, but there is every indication that bread will be cheap for a long time to come. The farmers may find a little fault with this state of things, but plenty and prosperity have been synonymous terms in all the world's history. If the products of agriculture are exceptionally low, it is also true that most other commodities of general necessity are purchasable at low prices, and that the cost of living and the scale of expenditure throughout the country are such as to provide every man who is industrious or frugal the means of a comfortable subsistence.

**Painless Operations.**—The new antiseptic method of surgery, which has but recently been introduced into this country, has been twice successfully tried at the Alexian Brothers' Hospital, Chicago, during the past two weeks. In each case a leg was amputated, and the patient rapidly recovered, experiencing no pain whatever from the use of the surgical instruments The method of operation is as follows: The surface of the limb to be amputated is first sponged with a solution of one part carbolic acid to twenty parts water. The instruments are placed in a solution of one part carbolic acid to forty of water. While the operation is going on, a spray atomizer throws a stream of a solution of carbolic acid, one part to forty of water, into the wound. This makes the operation perfectly painless, and does away with the necessity for using chloroform or ether. The wound is then dressed with oiled silk saturated with sulphate of lead, which indicates the presence of sulphate of hydrogen by turning black, and shows whether the wound is suppurating. Six layers of medicated gauze are then placed over the wound, and the whole is covered with Mackintosh cloth.

**Small Farms.**—Small farms make near neighbors; they make good roads; they make plenty of good schools and churches; there is more money made in proportion to the labor; less labor is wanted; everything is kept neat; less wages have to be paid for help; less time is wasted; more is raised to the acre, because it is tilled better; there is no watching of hired men; the mind is not kept in a worry, a stew, a fret all the time. There is not so much fear of a drought, of wet weather, of a frost, of small prices. There is not so much money to be paid out for agricultural implements. Our wives and children have time to read, to improve their minds. A small horse is soon curried—and the work on a small farm is always pushed forward in season. Give us small farms for comfort.

**Water-proof Application for Walls.**—According to Reissig the best substance with which to render the walls of cellars, basements, and apartments generally water-proof, so as to permit their being treated with boiling water for the removal of mold and soils of any kind, is composed of an alcoholic solution of stearate of soda, in the proportion of one part by weight of the soda to two hundred parts of sixty per cent. alcohol. This penetrates into the plaster, and leaves behind a firm coating which admits of rubbing or washing. For stables, a common quality of soap may be employed instead of the soda; the stronger the spirit, however, the better.

**A Rat-proof Corn-crib.**—"If seven years are a fair test," a writer in the *Inter-Ocean* says, "I have a rat-proof corn-crib—one of my own contrivance, built with my own hands, on the following plan and size: Sixteen feet long, five feet wide, eight feet from the floor to the plate above, three bents, sills framed into the posts eighteen inches from the ground, short way. A 2 x 7 joist, sixteen feet long, set in outside of posts to correspond with sills. Plates spiked on top of posts; four-inch scantling for nail-ties half-way between; four scantlings, 2 x 4, set in lengthwise to sustain the floor. The floor is of inch plank, doubled, laid crosswise and sawed off even with the outside sleeper, to which the lower ends of siding are nailed. The door is set in eighteen inches above the floor or three feet from the ground. The crib was built in the spring of 1871; has been used ever since. None of the family have ever seen a rat in it."

**Possible Yield of Corn.**—If corn be planted in drills three and one half feet apart, and four kernels in a hill, every twenty-eight inches of drill (the method in practice at Waushakum Farm), there are 5 333 hills or 21,332 stalks to the acre A nine-inch ear of Waushakum corn, thoroughly dried, yielded 2,170 grains' weight, or thirty-one one-hundredths of a pound of shelled grain. If each stalk should average but one such ear, the harvest would be 7,613 pounds, or one hundred and thirty-six bushels per acre. It would require but an average of about one-half a pound of grain per stalk to furnish a two-hundred-bushel crop. Experimentally, in the garden we have secured over forty ounces, or two and one-half pounds from a single kernel planted, so there is no end to the possibilities of the crop. In practice, however, we have never realized over one hundred and twenty-three bushels per acre; while an average crop on large areas has not exceeded seventy or eighty bushels. The first effort to improve corn now, starting with satisfactory kernels and ears, is to eliminate the barrenness of stalks, so that each and every stalk shall perform its duty. There is no trouble in securing a large percentage of fruitful stalks, or even a smaller percentage of twin or triple-eared stalks; but when we hope to secure all such, then we find the difficulty. Seed-corn must be bred, and skillfully bred, toward fruitfulness, before we can anticipate very striking results.


MRS. C. FOWLER WELLS, *Proprietor.*
H. S. DRAYTON, A.M., *Editor.* N. SIZER, *Associate.*

NEW YORK,
NOVEMBER, 1878.

## GLIMPSES OF THE CHARACTER OF GEORGE COMBE.

AMONG the recent publications of English booksellers, Mr. Charles Gibbon's biography of George Combe has, for us and all who are interested in the science of mind, a commanding interest. Like all true biographers, Mr. Gibbon was penetrated with an earnest respect for the man whose career he undertook to trace, but did not permit that respect to override the fidelity of the historian.

As Mr. Combe became a convert to the doctrines of Gall and Spurzheim soon after his entrance upon the practical work of life, and for upward of forty years advocated them with unremitting diligence, the major part of the two octavo volumes is occupied by the recital of events relating to Phrenology. Mr. Gibbon well says in his Introduction, that George Combe "is still a prophet to many men, and the spirit of his teaching has its place amongst unseen influences on modern thought," for few men among the learned and philanthropic of modern times have so earnestly and thoroughly exhibited their views and convictions to the consideration of the world, and fewer cherished a mission so replete with interest to man, affecting as it does our nature in its most vital and interior relations, our physical, intellectual, and moral constitution. "Prudent in the highest sense, he was fearful of doing wrong; but having clearly realized a principle, he was fearless."

The thoroughness with which Mr. Combe was imbued by the, to him, new philosophy, is strongly stated by Mr. Gibbon in these terms: "His devotion to it was intense; he viewed life entirely through its medium; he attributed to his knowledge of it all the good he tried to do and was able to accomplish, and he was too much inclined to think that all the failures of mankind were due to ignorance of its principles. He regarded it as a mixture of science and philosophy—science in its relation to the structure, and philosophy in its relation to the functions of the brain."

How Mr. Combe became a disciple of Gall and Spurzheim is very interestingly told in a quotation from a volume of his American lectures. He had been a sturdy opponent of Phrenology until he saw Dr. Spurzheim dissect a brain; then his skepticism began to weaken, and he attended Spurzheim's lectures with much regularity. Being determined to investigate the subject for himself, he procured a large collection of casts, and with them and the heads of his friends for material, entered upon its careful study; and at the end of three years was thoroughly convinced of the truth of Phrenology. Here Mr. Combe is an example for the skeptic of the present day. He unexpectedly and almost unwillingly found himself an advocate or defender of the new philosophy when barely thirty, at a time when his chosen profession and the wants of his family demanded most of his energies.

So fierce became the conflict between the friends of the old philosophy and of the old

system of cerebral anatomy and the disciples of Gall, that taunts and ridicule were mercilessly hurled at the latter, and bitter reflections were uttered respecting their moral and religious integrity. Mr. Combe was, of course, a prominent target, and called atheistical, reprobate, etc. His biographer has much to say concerning his deep religious feeling and the honest uprightness of his conduct; for instance: "Religion obtained a large share of his thoughts, and from childhood to the close of his life his religious sentiments were deep and earnest. . . . . Forms and creeds raised doubts in his mind, but religion which should help and guide mankind was always beautiful and divine in his eyes. He never failed to express his gratitude to God for the many blessings vouchsafed to him; and he accepted misfortune with resignation, attributing it to some failure of duty or reason on his own part."

He was early actuated by a desire for fame, but looked to no other instrumentalities than persevering drudgery for his own advancement. Until he was twenty-five or more he was of weak physical constitution, not having sufficient vitality to sustain his brain in that activity which his almost constant study and thought demanded. While a student at law, he usually occupied the whole day, from seven in the morning till nine at night, in his various studies, and that "without doing a great deal either," according to a remark in his diary. This severe tax upon his strength was enough to produce occasional seasons of depression. After his admission to practice law he became more considerate of his physical necessities, and improved in health.

His own experience as a school-boy and student under different masters led him to observe the methods of teaching in general use, and he early entertained the idea of writing a treatise on education. One of the first entries in his diary, near the close of 1811, runs: "I have taken the imagination that I have powers of mind sufficient to write some useful book on human nature, and especially on the education and intellectual state of the middle ranks of society," etc.

He cultivated the habit of self-observation. His temperament conduced to the exhibition of excitability and impatience with others; but recognizing the advantage of self-control, he set about the correction of what was faulty in his disposition, and "to obtain command of his thoughts and actions, and he succeeded as well as it is possible for a man to succeed in such an object." He was generous in his hospitality, "had a horror of anything approaching to meanness," but in his personal habits was very simple.

These few and hurried glimpses of the character and life of George Combe, obtained during a brief examination of Mr. Gibbon's admirable work, add to our esteem for the noble, self-sacrificing man who gave to the world the "System of Phrenology" and the "Constitution of Man," and we can not but think that Mr. Gibbon, by the publication of this biography, has performed an excellent service in behalf of phrenological science.

## WINE AS A "HELP" TO LABOR.

A TENNESSEE correspondent, who is compelled by his business to be confined within doors the greater part of the winter, and to be abroad during the heat of summer, incloses a clipping from the Memphis *Avalanche*, which, under the title of "Grape Culture," advocates the drinking of wine in the case of those who are compelled to labor in the open field during the summer. The reasoning by which this position

is supported is very specious. This is a specimen of it:

"All varieties of grapes are suitable for making wine. The rich and heavy wines, usually being mixtures, if you please, which bear the name of wine, I have no reference to, but any grape known among us will make a wine suitable to be on the table, or to go into the field for use simply as a food for the laboring man. You would be surprised what a change a provision of this kind would bring about. Men under the burning sun, toiling, sweating, weary, and worn out, dull and drooping in spirit, and so on down, till he fancies he has not a ray of hope—I contend that a stimulant of this kind is a necessity as much as food is, and without it our country life is weary, cheerless, and not very inviting to the outdoor working class."

We can not but think that a man who will indulge in such language is personally very fond of alcoholic drinks, or is endeavoring to make up a case for the liquor traffic. He can not be conversant with the best medical and statistical authorities on the subject of alcoholism. He should read Dr. Parkes' account of the different effects of spirits, oatmeal, beef, etc., upon an army corps when on service in Africa. He should read also the testimony of such physicians as Richardson, Edmunds, and Parkes—testimony derived from long medical practice. Dr. Edmunds said lately in Exeter Hall, London: "Settling in practice in London, and getting into hard work, I went on with the conviction that these things (spirits and beer) were necessary in sickness, and I had no very strong feeling in regard to the moral responsibility which is involved in the matter. My attention was called to the question by being asked to take the chair at a temperance meeting. The result of that was that the subject was fastened upon my mind in another way, and I never afterward shook it off. It settled itself down in my mind, and there it worked itself out into very clear conviction that we were mistaken in the way in which we prescribe these drinks, and from that time I became, if anything, personally a more frequent abstainer than before. I went on testing it, and perhaps for four or six months together I would take nothing at all in the way of alcohol, and then for three or four months together I would take a glass of beer two or three times a day, or a glass of sherry. I found that I liked the beer or the glass of sherry when I was accustomed to take it, and when I first left it off I missed it. But when I came to take stock carefully of my power for work, of my accuracy in memory, of my readiness in every way in my profession, and of my general condition, I found that I was better when I took none of these things than when I took them."

In closing his address, he said: "My general conclusions are these, that if you want to maintain your health you should abstain from alcoholic liquor. That every particle of alcoholic liquor you take into your system is so much poison as is a particle of arsenic, and that those who abstain will not only be exempt from a great deal of disease, but will increase their longevity in a very remarkable degree."

We think that it is only necessary to oppose the random statement of the *Avalanche* writer by the precise declaration of the scientific medicist for the conviction of the candid inquirer.

Perhaps a little personal knowledge, in connection with this subject, if recited, will not prove uninteresting.

A friend of ours went to California in the early days of the discovery of gold and went overland to mine. At the time of leaving home he was in delicate health, and deemed an invalid, having suffered for years from a rheumatic affection, and his

friends sought to dissuade him from going, being apprehensive that he would not be able to endure the fatigues incident to mining life. He had determined in the outset not to touch alcoholic liquor, and he carried out the resolution. In the gulches he was thrown among men much given to drink, men who believed that they could not bear the fatigue and exposure of mining without whisky, brandy, or gin. Our friend had been unaccustomed to rough labor, and his first efforts in the gold fields taxed his nerves sorely, but he persevered. As time went on his health improved, and there were many days when he worked from morn till night in those gold-mountain streams, the water often as high as the knee, and yet there was not a day when he was not able to work, while one or more of his liquor-drinking companions might be laid on the shelf every day from sickness or other disabling causes.

We think that the experience of the past summer in St. Louis and other Western cities should enlighten our correspondent with regard to the effect of stimulating beverages. The returns of the health officers show that the great majority of the men who were prostrated by the heat were users of alcoholic liquors.

## "EMPLOYMENT WANTED."—IN RESPONSE.

THERE has doubtless been some revival of activity in our commercial centers, but it is at present confined mainly to certain branches of trade which relate to articles of necessity. Many houses dealing in dry-goods, clothing, furnishing goods, etc., and those especially which have a foreign trade in breadstuffs, report a larger volume of business than they have known at this season for several years. But in branches which can not strictly be considered to relate to the necessaries, although of a staple character, like hardware and iron goods generally, books, stationery, etc., there is still much depression. In time an influence for activity will be imparted by the other departments of business to these, at least we think it probable; but in the meanwhile, as heretofore, the large masses of men and women who depend for subsistence upon the wheels of the furnace, mill, and factory, must pinch and carve and turn to make ends meet. So many wheels are silent and so many earnest-minded people are without remunerative employment, that we are pained by the thought that it does not lie in our power to give by a single stroke an impetus to affairs which would quicken every branch of industry. As it is, we are aiming to do what we can toward mending the condition of the masses through the dissemination of a class of literature which is helpful to them, practically helpful, by instructing them with respect to the principles governing human life and character, and indicating the normal way to adapt one's self to his condition. There is now more time to read and to study, and certainly if one employs a good part of his enforced leisure in the study of books which are profitable to mind and body, he will gain something which may eventually be a source of great and unlooked-for success.

They who are disposed to take up the business of canvassing for the sale of books which appear on the list of the publishers of the PHRENOLOGICAL JOURNAL, have the encouragement of pecuniary reward in the liberal commission which is allowed; and then there is the PHRENOLOGICAL JOURNAL itself, which has the good opinion of society as a periodical whose direct usefulness to old and young is not exceeded by that of any serial publication in existence.

In its appropriate place the reader will find an announcement of the plan or proposition for 1879. The subscriber will receive a desirable book besides the twelve numbers of the PHRENOLOGICAL. The agent or canvasser will receive a liberal commission in cash or books or other articles, according to his choice. Persons who are without employment need money and prefer to work at that which procures a money reward. We are ready and desirous to aid all such, and offer them the opportunity to canvass for subscribers. We are sure that energy and earnestness on the part of a canvasser will secure a large list and be profitable. One can be energetic and earnest in working for the PHRENOLOGICAL JOURNAL AND SCIENCE OF HEALTH, because the reading matter it provides is educational in the best sense, and if he fully understand its scope and purpose, he will be furnished with ample material in the way of reasons for urging it upon the attention of people.

## PHYSICAL DETERIORATION IN ADULT YEARS.

AN item which has been going the round of the press lately, and has once or twice come under our observation while examining our exchanges, reads thus: "It is said that Nilsson has grown fat, and, like Swedes generally after the spring of life has passed, coarse in features and gross looking."

We presume reference is made in this to the vocalist who a few years ago charmed American ears by her wonderful voice, and if the statement be true, it is but in confirmation of the old precept, that "the body grows by what it feeds upon." It is to be regretted that not only in Sweden, but in all civilized countries, those elements which constitute physical beauty in both man and woman are found lacking in the great multitude who have passed the boundary of youth. They who earn their livelihood by hard and unremitting toil have some excuse for the coarse, strong lines and angular contours which rob the person of symmetry and grace, and we do not wonder that among the workers in the factory and shop there are so few men and women of forty who have preserved the comeliness and freshness of twenty-five. But when we consider the physical characteristics of those to ease and comfort born, we naturally expect to find a different and agreeable condition, but are disappointed in finding that degeneration marks the face and form of fully three-fourths of them. There is little of haggardness; the frame is not gaunt or bent; the joints are not large and conspicuous, and the action may not be ungraceful, but the roundness and smoothness of twenty-five has changed to a coarse and even corrugated fullness, the eyelids have become infiltrated, and the cheeks and chin show a tendency to flabbiness. This phase of deterioration is commonly seen in women, but is frequently enough seen in the men of society who are just entering middle life.

Why is it thus? the reader asks. In answer, we would say, briefly: If they who can choose the kinds of food they would eat from day to day should exercise an intelligent hygienic discretion, and thus avoid surfeits and improper indulgences, their bodies would be healthfully nourished. The fat meats, heavy biscuit, and puffy bread, the condiments, the spices, the courses with their accompaniments of rich, oily, or greasy dressings which are prominent features of the meals of most well-to-do people, are enough to impair the integrity of the blood, and force a depraved growth of adipose tissue. With the continuance of a diet excessive in quantity and unsuitable in kind,

there creeps upon the person an indisposition to vigorous motion or muscular effort, and the life-current, no longer stimulated by free, bodily exercise, is unable to throw off the excessive carbon and other pernicious matters, but carries them to nerve, muscle, and skin, and loads gland and emunctory with congestion.

But besides the intemperance exhibited by such people at the table, there is the intemperance in social life, of which they are guilty; the gay parties, balls, and entertainments which rob them of normal sleep; and there is the intemperance feeling, emotion, and passion which keep up an unbalanced state of the nervous system.

We are told by the statisticians that the average health of society is better than it was fifty years ago, and that the children now growing up will exihibit a further improvement. We know that within twenty-five years there have been unprecedented efforts, particularly on the part of hygienists, to enlighten the people in matters pertaining to diet and every-day life, and we know that articles of food are now generally eaten of a purer and more nutritive character than were to be had by the people at large twenty-five years ago. The sanitary improvement, as above declared, is due evidently to such efforts and the better forms of diet; and with its continuance we shall expect to note an improved tone in the complexion and features of men and women, and a much increased number of those who are growing old gracefully and beautifully. All should strive toward this, and all can—by living in accordance with hygienic law and Christian morality, the two principles, in fact, are complemental—carry a good degree of the freshness, vigor, and beauty of youth into middle life and old age.

# Our Mentorial Bureau.

"He that questioneth much shall learn much"—*Bacon.*

## 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.*

WE CANNOT 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.*

HOWARD ASSOCIATION.—I.—This association, which has lately shown what great good in extreme emergencies may be done through organized benevolence, is a society permanently established to provide medical treatment, nurses, and provisions for sufferers from yellow fever. It was organized about twenty-five years ago at New Orleans, during the prevalence of this much-dreaded plague in that city. It took its name from John Howard, the famous English philanthropist, and branches of the association have been formed in all places peculiarly liable to the terrible visitations of the fever. Its members are true-hearted, whole-souled men, unknown as individuals, it may be, but pledged as an organization to unite their efforts to relieve those who are smitten down with disease, and often deserted in their hour of need by a panic-stricken community. During the ravages of yellow fever the present season, as in times past, the Howard Association has ministered to thousands of stricken ones who without its aid would doubtless have perished in misery and desolation.

MESMERISM.—W. J. S.—Twenty-five or more years ago, when this subject was much discussed in scientific and social circles, many ex-

periments were made for the purpose of verifying, through the passes of the magnetizer, the principles of Phrenology. These experiments, with their results, were published to some extent in the columns of the PHRENOLOGICAL JOURNAL. Then mesmerism was deemed a powerful ally to Phrenology, in that it strongly confirmed the views of phrenologists. Of late years there has been nothing of this kind done, except in private or reserved circles. Scientific men, or those who are nowadays recognized as leaders of scientific opinion, have shown so little sympathy for mesmerism that phrenologists have not deemed it worth while to urge upon their notice the effects and results of mesmeric investigations. It seems probable, however, that ere long public attention will be awakened to the importance of the mesmeric or magnetic philosophy, especially in its relation to the healing of disease. S. R. WELLS & Co. have two treatises on the subject now in press.

IDIOTIC TALENT.—School-boy may be informed that there are many thousands of idiots in the United States, and several schools for their instruction. Persons born idiotic have been taught trades, to read and to write, and so to be of service; whereas if left in their original condition, they would have been utterly helpless and useless. There are very many partial idiots, some of whom have exhibited remarkable constructive, mechanical, or artistic talent. You remember or know that Blind Tom, the wonderful musician, is a partial idiot.

INFLUENCE OF COMBATIVENESS.—*Question:* Can a man with all the organs in the head large except Combativeness, that being but moderate, be, for the moment, outwitted by one who has an inferior head, but large Combativeness?

*Answer:* A man having all the organs large should be ashamed to let himself be outwitted by one who has only Combativeness to boast of, although that may render him a bold and impetuous assailant. We can conceive a man with small Combativeness, but with a fine organization in other respects, being a trifle intimidated by a man greatly his inferior. But it seems to us quite unlikely that the latter would obtain a positive advantage over the former in any desirable respect.

MENTAL DEPRESSION.—C.—Your "very sedentary occupation" has much to do with your disposition. If you could be more out of doors in the free air and genial sunshine, your blood would be stimulated into a healthful activity and nourish the organs of the brain and conduce to balance or harmony in their exercise. Get an abundance of sleep, so that your nervous system shall be refreshed. Moodiness in many cases is due to an enfeebled nervous system. Of course, there are certain organs which are specially influential in bringing about or causing mental depression. In their undue activity they take the major supply of the nutritive element from the blood and leave an insufficient *quantum* for the use of the other organs, whose activity, if sustained, would tend to balance or restrain the unhealthful effects of the former.

CAUTION—CARELESSNESS.—T. A. W.—A person having small Cautiousness, together with a good deal of force of character, will frequently get into embarrassing or dangerous situations; at work, will be liable to injure himself from a lack of care and prudence; while one with the same force of character, but large Cautiousness, would not be liable to accidents to the person. One may have a good intellect, appreciate the practical side of conduct, the need of care and circumspection, but when hard at work will neglect those precautions which save from damage. A carpenter may be skillful and thoroughgoing as a workman, but with small Cautiousness will frequently cut or damage his hands, while another much less skillful in the use of tools, and having large Cautiousness, will rarely wound a finger.

PHONOGRAPHY.—R. B. B.—The three or four systems of short-hand, called phonography, now in use, are based upon the same original system, namely, Isaac Pitman's. These systems differ less from each other than people who are unacquainted with them think, so we have little hesitation in saying that all are good. The follower of Isaac Pitman thinks that his is the best. So the man who learns phonography from the manual published by Lenn Pitman, or from the text-book of Munson, or from the elaborate treatise of Graham, thinks that his is the best. All of these systems use light and heavy lines or strokes for the representation of sounds of different qualities. The systems of stenography, which incorporate the vowels in the word outlines, have their strenuous advocates. We have employed short-hand writers who write according to Pitman, Munson, Graham, and Scovil, and have found each of these systems available and sufficient for our purposes.

CHANGES IN FORM.—E. F. C.—If a man have not exercised his intellectual faculties much until he has reached middle life, it is altogether likely that the bone in the frontal region of his cranium has become rather thick. If he then begin to stir up the intellectual organs—exercise them—they will increase in size, and nature will do her part toward affording space for the increase. In this number of the PHRENOLOGICAL a striking illustration of the economy of nature in this respect is given, which you can take as further explanation of your question.

ONIONS IN DIET.—We would not commend the liberal use of onions. If you can not obtain other vegetables and fruits, then use onions, but not excessively. The peculiar oily property of the onion is not by any means as healthful as some think.

Warm water, a little salty, and a soft cloth will efface the specks on your phrenological bust.

SULPHUR WATER.—W. B. J.—If the water be strongly impregnated with sulphur, you should be sparing in its use as a beverage. Sulphur is diaphoretic in its nature, and therefore is used in some departments of medicine to cure skin disorders, or "as a purifier of the blood." One thing, however, is worthy of comment, that the provisions of nature in the way of what are called mineral, acidulated, or alkaline waters are very different in their nature and effects from the compounds of the chemists. We may be informed that a certain spring contains certain alkalies in certain proportions, but while we might be quite ready to drink from that spring, we should hesitate to drink a preparation offered to us by a chemist the contents of which he might claim to be precisely the same quantitatively as that of the spring; and we are sure that the effect produced by the artificial compound would be very different from that obtained from the natural. In most cases the artificial, if freely used, would be positively injurious.

FLAT-HEAD INDIANS.—T. J. N.—The effect of flattening the skull in childhood is simply that of displacing the cerebral organs, the general outcome in the way of character and disposition being very slightly altered. One accustomed to examining skulls and heads can readily determine whether the contour of the living specimen is the result of natural growth or artificial interference.

*Several* ANSWERS *must be deferred to the 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.*

SOCIETY IN HONDURAS, C. A.—The following communication has been received from a gentleman prominently connected with the educational system of Honduras, Central America, and a reader of the PHRENOLOGICAL:

ZYNCIGALPA, HONDURAS.

*Editor of the* PHRENOLOGICAL JOURNAL:—There are here three very distinct classes of people. 1st, the aborigines; 2d, the half-breeds; and 3d, the Caucasians. Among the aborigines, who were formerly known as the Aztec race, some of whom were possibly the mound-builders, the most characteristic feature is that of the "Araucanian;" the next most common is the "Warau." The women of this race are very pretty in form and feature, and were it not for their copper color, and a disease to be mentioned presently, would quite put our American women in the shade as regards symmetry. I do not mean to disparage the beauty of our women, but would simply give you an idea of the great beauty of these women here. The perfection of their anatomical contour is of easy investigation, from the fact that their dress is of the very rudest kind. In the lines of shoulder and chest there is not a single unevenness to be seen, and their limbs are beautifully moulded. They are also strong and elastic, doing more work than the men, who idle away most of their time. They are the "water-carriers" here, and will balance a water-pot containing from six to ten gallons of water upon their head with perfect ease. Everything here is carried upon the head. A disease, or deformity, very common indeed among the women, is goitre, or Derbyshire neck. About fifty per cent. of the women of the Indian race have this deformity, in some it being very large. I have seen a case where the tumor reached to the waist, the whole mass having the feel of a sack filled with thick jelly. They have no treatment for it, and ascribe the growth to their habit of carrying weights upon the head. I believe that our medical fraternity ascribe it to alkaline drinks. In a future article I shall send you photographs of some of these persons, together with some reports of an investigation into the cause of the goitre.

The heads of these people are remarkable for their appearance of intelligence. One feels surprised to see a beautifully-shaped head, bright, intelligent eye, well-defined mouth, belonging to one acting the part of a guide or among the barefooted and half-clad servants. Their power of endurance and their submission are surprising indeed. They will walk from sixty to one hundred miles in the best of humor and never utter a word of complaint, living in the meantime on what we would throw to the dogs. If aroused, however, to anger, they are a very dangerous people and would not hesitate a moment to run their dirk—which they always carry in a belt—through one. They are polite to a great degree, and an act of incivility will anger them more quickly than abuse for neglect or apparent neglect of duty. On our way here I was told that one of a party narrowly escaped with his life, simply because after receiving a cup of water he did not return the cup *with thanks*. This was a great insult which they do not easily forget.

Among the half-breeds we have the scourge of the country. All the vice, indolence, dishonesty, in short, all that is little and mean, belong to them. They will not work, and if driven to it are very insolent. Among them may be seen features of the negro, Celtic, Chinese, the Turk, etc.; indeed, one can see resemblances of persons seen before. I saw a woman the other day whose father I declared I must know. In man's clothes, I should have declared her an acquaintance. They live by working a day now and then. There is not enough stability in them to continue with one employer very long. The general pay is from fifteen to twenty cents for a day's work. In and about the courts at daybreak they may be seen lying on the pavements or benches and tables. They never wash their persons nor clothes. When a piece of garment is too much worn for further service, they replace it by a new one, and then they are clean only for a few days, for their habits will not allow a garment to remain clean very long.

The third class—the industrious, as well as the wealthy portion of this people—may be seen at home or in Europe, in such districts where men seeking their fortunes resort. They are of all nationalities, but speaking the Spanish language. Their desire is to live and make money, while the desire of the first class is to live only, caring little for money or wealth. There are many families, however, here who are very highly esteemed, but the most of these come from Gustemala. Most of the men are here to make money, and have no families.

General Lopez, whose fame as a warrior is almost universal, has his family here, and his liberal hospitality makes the stranger almost forget the rudeness of the country. The General's son is the Postmaster-General of Honduras, and he speaks English very fluently. There are other very excellent families, and among them a Mr. Lardizabal, where was given a grand reception when our party arrived here. But one should not forget the genial President, Marco L. Soto. A more liberal, int lligent, and agreeable person, it seems to me, could not be found anywhere. You call on him, and if he is not engaged, he will admit you without ceremony and will take you by the hand, sitting down with you upon a settee or divan, and will chat with you about your business like an old and amiable acquaintance. One can endure the crudeness of the country, knowing that such a noble, scholarly man is at the head of it. RADIX.

PSYCOMETRICAL POWER.—Of all the strange and inexplicable phenomena in nature, none, I think, so completely baffle the mental philosopher as this force, which seems closely related to clairvoyant power. About one year ago I became acquainted with a lady in St. Clair County, Michigan, who was not only a clairvoyant, but also possessed this power. As I was then lecturing on Geology as well as Phrenology, dividing my time between the two sciences, I experimented with this new force, if new it may be called. I had an aerolite in my possession, and this lady took the little specimen, and placing it in her left hand and against her forehead, she described herself as experiencing sensations of the grandest description. She said that she seemed to be lifted above the solar space, and to be looking down upon the planets as they went circling around the sun, while at the same time she appeared to be whirling with frightful velocity through space, with streams of fire shooting forth like a long trail of light in the wake of a meteor. Since becoming acquainted with this lady, I have sent her a piece of rock from off Prophet Rock, on the old Tippecanoe battle-ground in Indiana, where it is said the brother of Tecumseh sat and watched the progress of the battle that he had waged in his brother's absence, and which resulted so disastrously to the Indian forces, and with the loss of his own life. This lady was entirely ignorant of the source of this bit of rock; yet after six months' experimenting, she writes me that it at last takes her to a battle-ground and a burying-ground, and the hospital and the scenes of old Tippecanoe are enacted over, the fierce charge of the savages, and the brave resistance of Gen. Harrison's noble band, who finally win the day.

W. H. TALCOTT.

NEEDS OF SOCIETY—A SUBSCRIBER'S OPINION.—One of our earnest phrenological friends is very desirous that books should be written and published on the phrenological organs severally. He thinks that the time has come when society needs enlightenment in a liberal way, with regard to the nature and operation of the faculties of the mind severally. He wants a book on "Reason;" thinks the world needs some practical information on this subject more than upon almost any other which could be named. He thinks that the world also needs much a volume on Secretiveness; says that "secret societies have been the greatest curse of the world;" "have made the whole world bleed;" that phrenologists are the very persons who should discuss this topic and instruct the public. We might reply to the correspondent, that society appears to be absorbed in reading light sensational stories and sketches and balderdash in general; that a book with a substantial motive and earnest purpose to instruct, rarely finds its way to the public eye, except with the aid of the author's own money; and it is rare for men who seek to do the world real benefit to have means available for publishing their own writings. The books which take belong to the class called *funny*. The masses of the people turn to literature for amusement, not for mental profit. The people who read scientific treatises and the carefully-prepared moral books, are well instructed, orderly, high-toned, and, comparatively speaking, need little self-improvement in the direction of their reading.

## PERSONAL.

REV. LUCIUS HOLMES.—The Easton *Daily Express*, of September 14th last, has this paragraph:

"Owing to lack of means in the parish to fully meet expenses, Rev. Lucius Holmes, pastor of the Universalist church, has tendered his resignation, to take effect October 1st. Mr. Holmes during his short stay in Easton has proved a faithful pastor and hard worker, and the many friends he has made, and especially those intimately connected with him in church matters, who have received the benefit of his eloquent preaching, will regret his determination to leave the parish."

We trust that Mr. Holmes will readily find a new settlement, where he will receive the support he richly merits.

THE DEATH OF DR. GEORGE W. KIBBEE, on the 24th of September, in New Orleans, is a matter of deep regret to us. He went South full of the enthusiasm of the philanthropist and missionary, and immediately on his arrival in the fever-smitten city, addressed himself to the treatment of the sick. He had scarcely himself more than recovered from an attack of typho-malarial fever, which almost terminated his life some months ago; but his sanguine nature hesitated not at probabilities in his own case; he only asked to be permitted to help where help was needed, and his very successful experience in treating yellow fever when that disease visited Memphis and Shreveport, a few years ago, warranted him in believing that duty called him to New Orleans. Dr. Kibbee was educated medically in the allopathic school, but for twenty-five years had given much attention to the treatment of fevers by water. The "Fever Cot" was an outcome of his experimenting with a view to finding a bed convenient for the application of water.

PROFESSOR VIRCHOW'S request for Hoedel's skull for scientific purposes has been refused by the Berlin judges. Are the German authorities afraid of craniology and Phrenology?

LECTURE ANNOUNCEMENT.—It gives us pleasure to announce to our friends, and to those interested in the subjects we teach, that during the coming season Mr. E. W. Austin is expected to take the field as lecturer on Phrenology. This gentleman has been connected directly or indirectly with the subject for about twenty years, first in association with Prof. O. S. Fowler—whose youngest daughter he married—and for years past, and at present, in connection with this office, and the American Institute of Phrenology.

Mr. Austin is a man of ability and culture; has had varied and extended experience in Phrenological work; is familiar with the subject, both theoretically and practically, and will treat it and kindred topics from new and elevated points of view. He will be provided with a most interesting outfit, comprising skulls of men and animals, casts of eminent and notorious persons, a very fine stereopticon adapted to the exhibition of a great variety of portraits and illustrations of all classes and grades of humanity, as well as drawings representing cranial and cerebral structure and development, and we doubt not that the large number of friends he made while traveling with Mr. Fowler throughout this country and Canada will be pleased to see his face again, and listen to his exposition of mental philosophy.

Having resolved to make Phrenology and its dissemination his life-work, he will take an active part toward sustaining the work which the Messrs. Fowlers & Wells long ago commenced and established. The old names which have long been associated with the practical work of the profession must, in the course of years, disappear, giving place to others well qualified to assume the responsibilities and enter into the labors of the retiring pioneers. Neither of the Fowlers nor Mr. Wells having sons, it is peculiarly fitting that one so intimately connected with the family should take up and carry on the work which for so many years has been zealously prosecuted by them. We ask the readers of THE PHRENOLOGICAL JOURNAL, established nearly half a century ago, to accord a cordial reception to Mr. Austin, and to manifest their co-operation in his efforts to extend the practical knowledge of the great principles of Phrenology. He will carry with him a full supply of our publications, a large number of copies of the JOURNAL for distribution, and we hope to witness among the results of his effort a more widely extended interest in our subject, and a largely increased circle of readers of THE PHRENOLOGICAL JOURNAL.

Applications for courses of lectures to be delivered in any part of our country will be entertained and responded to.

## WISDOM.

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

MAN respires, aspires, conspires, and expires.

WHO is the greatest liar? He who speaks most of himself.—*Chinese Maxim.*

EACH separate death is an undisclosed secret between the Creator and the creature.—*Faber's Spiritual Conferences*, 82.

THE best security against revolutions is the constant correction of abuses, and introduction of needed improvements. It is the neglect of *timely repair*, that makes *rebuilding* necessary.—WHATELY.

THERE are a million natural laws of which we know nothing. We are gradually learning them as we find out where beans are in the dark—by feeling, by discovering that there is something in the way.

FORENOON and afternoon and night!—Forenoon
And afternoon and night!—Forenoon and—what!
The empty song repeats itself. No more?
Yea, that is life: make this forenoon sublime,
This afternoon a psalm, this night a prayer,
And Time is conquered and thy crown is won.
—EDWARD ROWLAND SILL.

## MIRTH.

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

MISS-CONSTRUCTION—whalebone and paint, powder and wadding.

WHAT is that which brings a cold, cures a cold, and pays the doctor's bill? A draft.

A WESTERN editor publishes a poem which "was written by an esteemed friend, who has lain in the grave many years merely for his own amusement."

A MAN advertises for a competent person to undertake the sale of a new medicine—and adds that "it will prove highly lucrative to the undertaker!"

A MAN will sit on a picket fence all the afternoon to see a ball match, but put him in a church pew for three-quarters of an hour and he will wabble all over the seat.

AN Irishman found a Government blanket recently, and rolling it up put it under his arm and walked off, saying: "Yis, that's moin—U. for Patrick and S. for McCarthy; be me sowl, but this learnin's a fine thing, as me fayther would say; for if I hadn't any edication I wouldn't have been afther findin' me blanket."

A DETROIT young woman tried to be aristocratic, and did not look at the money that she gave to the horse-car conductor, but he meekly gave her back the lozenge on which was written, "I'll never cease to love thee," and said that he was an orphan with five little brothers to support and must be excused.

A MAN lately went into a provision store to purchase a corned tongue. The dealer handed him one, remarking that it was very nice, and, furthermore, that it never told a lie. "It is very evident, then," remarked the purchaser, "that it was never engaged in the provision business."

A CHICAGO pork-packer whose pew-rent was raised to twenty-five dollars, exclaimed, "Great Cæsar! here's a nice state of affairs—the Gospel going up and pork going down. What's to become of us?"

## 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 DESTINY OF RUSSIA, as Foretold by God's Prophets: together with an Outline of the Future Movements and Destiny of England, Germany, Persia, Africa, and the Jews. By Theta. 12mo, pp. 118. Price 75 cents in cloth. Chicago: Thomas Wilson, Publisher.

The late stirring events in Europe, in which Russia and Turkey have been the prominent figures, have led to the production of many treatises of the historical and political type relating to those nationalities. Some authors, like Dr. Freeman and Mr. Milner, have brought a ripe culture and extensive literary experience to their work, and given to the world books whose attractiveness is little short of fascination. They have traced the racial origins of the Russian and of the Turk back to the periods even antedating Chaldea and Greece, and depicted the differences which render them almost, if not altogether, irreconcilably hostile.

The book under consideration discusses Russia from a point of view scarcely entertained by other historiographers. While they review the great Slavic people in accordance with tradition and recorded facts, it brings to bear the statements of prophets as recorded in the Bible, and applies them to the resolution of the late military movements. The author, in presenting his work to the public, says: "Seeing that the whole world was being stirred by reason of the war between Russia and Turkey, and hearing so many opinions expressed as to the final outcome, we felt impelled to present in a brief way God's testimony upon the subject." He shows an earnest belief in this testimony, and deeming it the key of the late European events, points to certain near changes by which Russian power will be increased greatly, and Judaism elevated; but assures us that Russian aggrandizement, having a constant opponent in England, will in the end suffer defeat.

A GENERAL AND ANALYTICAL INDEX TO THE AMERICAN CYCLOPEDIA. By the Rev. T. J. Conant, D.D., assisted by his daughter, Blandina Conant. 8vo, pp. 805. New York: D. Appleton and Company.

The utility of a comprehensive index to an extensive work like the American Cyclopedia needs

no emphatic indication by us; it is too obvious to the intelligent reader. But the scope of an index's utility depends upon the manner of its preparation. Probably every one with any pretension to literary taste and culture deems himself capable of tabulating the subject matter of a book, yet there are comparatively few who have the tact or capacity for making a really good index. This we know from a long experience in the consultation of books on nearly all subjects. We have met with many a valuable work whose index was so faulty as to be a reproach to the otherwise admirable authorship. In such a case we have inferred that the author regarded the index as a simple matter of course, of no great moment, and to be simply patched together in as brief a space as possible. We hold that if a book is worthy of an index, care should be expended in making it thorough, so that any topic which one may wish to refer to may be readily found. The Messrs. Appleton in this case availed themselves of the services of a gentleman whose literary employments have been somewhat related in their nature to the line of study or reflection embraced by an elaborate work like this Index, and it is therefore in itself a fine study of analytical skill and cyclopedic learning. We find, for instance, that important allusions to matters of history, science, religion, philosophy, politics, etc., having no special caption of their own, but scattered through and making up parts of the subject matter of the regularly entitled articles, are carefully entered under appropriate headings in this Index. A few instances will illustrate our meaning:

"The memorable reign of Charles I. of Germany (Charlemagne) is fully described under his name, in vol. IV., p. 289, of the Cyclopedia. But the account is incomplete without further details incidentally given in other articles, to which the Index is the only guide.

"Of Aristotle and his philosophy a full account is given in the leading article that bears his name, vol. I., p. 705. But his speculations and attainments in the natural sciences, and his influence on philosophic thought from his own age to ours, are incidentally spoken of in articles scattered through twelve other volumes, and to these the reader is directed by the Index.

"One may read or hear of a peculiar malady called aphasia. He gets no light from his dictionary, and it is not mentioned in the Cyclopedia among its leading articles. A glance at the Index refers him to vol. III., p. 203, where it is described as a morbid condition of the brain, manifesting itself in the loss of speech, and to vol. XVI., p. 399, where it is distinguished from aphonia, or aphony, loss of the voice."

All who are able to possess a copy of the Cyclopedia will doubtless be desirous to secure the Index, as its use will save much time and annoyance, especially to those who have frequent occasion to refer to it.

OUTLINES FOR THE STUDY OF ENGLISH CLASSICS. A Practical Guide for Students of English Literature. By Alfred F. Blaisdell. 12mo, cloth, pp. 197. Boston, Mass.: New England Publishing Company.

Editors are frequently asked to suggest a course of reading, and nearly every one finds it difficult to respond as definitely as he would. Mr. Blaisdell in this small book has been at much pains to arrange what might be termed a series of suggestions with reference to topics and authors adapted to the needs of the young and experienced teachers and students of English literature. There is also a great deal of valuable matter supplied in the way of reviews and criticisms of the style and character of the authors mentioned. Mr. Blaisdell appreciates the differences in men for teaching by virtue of organization. He says: "Oftentimes the successful teacher of botany or geometry will completely fail in the attempt to teach with any degree of satisfaction the text of Longfellow's 'Evangeline,' or Whittier's 'Snow Bound.'" The book is intended to meet the needs of such teachers. There is really more incapacity shown in the attempts to instruct the young in the grammar of language than in any other department of pedagogy, and a treatise which will afford practical information on the subject is of great value. This volume is a thoroughly practical one, as far as it goes, and is evidently the result of years of experience in the particular department of education which it represents.

HOW TO MAGNETIZE; or, Magnetism and Clairvoyance. A Practical Treatise on the Choice, Management, and Capabilities of Subjects, with Instructions on the Method of Procedure. By James Victor Wilson. Price, 25 cents, in paper. S. R. Wells & Co., N. Y.

This little manual supplies a demand—which, strange to say, has not been met for many years—for a concise series of instructions with reference to the methods by which magnetic treatment may be applied. The work does not pretend to comprehend the whole subject—a library could not—but to furnish clear information on the nature and proper uses of magnetism, and to guide those who would employ its wonderful power, particularly in alleviating pain and disease.

## PUBLICATIONS RECEIVED.

THE TWO CHAINS; or, The Twenty-nine Articles of Temperance. By Rev. W. F. Crafts, author of "The Coming Man," "Through the Eye to the Heart," etc. Price, paper, 25 cts. New York: Nat. Temperance Society and Publication House. The first chain relates to what drink produces. It is composed of fifteen links—the first distrust, the last murder. The second chain

presents in a series of fourteen links different methods and agencies employed for protection and redemption from the bondage of rum. Written in a brief, incisive style, well adapted to general circulation, it is by no means extravagant in language or incident.

THE NEW YORK MEDICAL JOURNAL. James B. Hunter, M.D., editor. D. Appleton & Co., Publishers. $4.00 a year. Current numbers received. Always containing reports and discussions of the latest matters of interest and value to the medical world.

BRAINARD'S MUSICAL WORLD, monthly publication, containing views and discussions of interest to musicians, and generally half a dozen compositions.

REPORT OF THE NEW JERSEY STATE COMMISSION, appointed to devise a Plan for the Encouragement of Manufacturers of Ornamental and Textile Fabrics. 1878. Our neighbors of New Jersey are justly desirous of employing their capital facilities for commerce with foreign countries. Her industries are extensive, but her trade is of a rather subordinate character; the great commercial centers, like New York and Philadelphia, being vested substantially with its control. A deal of interesting material is embraced in this extensive report. The committee evidently looked into the matter with earnestness, and it will be well for the little State if some of their suggestions are carried into effect.

THE PALMETTO LITERARY COMPENDIUM, for August. A small venture, but we trust it will enlarge in time.

THE CHURCH CHANT BOOK: A Series of Chants adapted to the Daily Psalter from the Book of Common Prayer. Edited by Dr. Davies. Montreal: Published by C. C. De Zouche, of Montreal. A very convenient compilation. The type is large, the music well arranged.

THE BUILDER: A Journal for the Architect, Engineer, Operative, and Artist. London, England. Replete with practical hints.

THE SPELLING REFORMER, published in the interest of a simplified orthography for the English language. Current numbers. The publishers state that no new letters, but each letter and diagram of the common alphabet is employed to denote its most usual sound. Spelling reform has made its beginning. It has our cordial sympathy. Our common orthography is much too long and involved to comport with the progress of the age which is so marked in other respects. Mrs. E. Burns, of New York, is conspicuous for her zeal in this movement, and may be addressed for documents relating to it.

THE NORTH AMERICAN REVIEW, for September and October, contains several articles of interest, specially those entitled "Kin beyond the Sea," by Mr. Gladstone; "Is the Reformer any longer needed?" "Civil Service Reform;" and the symposium, "What is Inspiration?" in which half a dozen of our most prominent clergymen and authors take parts.

AYER & SON'S Manual for Advertisers. Fifth edition. A strong business exponent.

MASON AND HAMLIN Cabinet Organ Instructor. By J. Elliot Trowbridge. Specimen pages.

THE NEW YORK MEDICO-CHIRURGICAL SOCIETY, Act of Incorporation, Constitution, and By-Laws.

MEDICAL SCIENCE against Exclusive Homeopathy. A reply to Dr. Edward Bayard's Plea for Pure Homeopathy against Eclectic Homeopathy. By Edward P. Fowler, M.D. The day of exclusiveness in science and art is past, and it would be well for the community and for the professions, especially the medical, if the fact were realized. Dr. Fowler reasons on the liberal side, and consistently.

HOMEOPATHY AND ITS RELATIONS TO MEDICAL SCIENCE: the Future of Homeopathy. By Edward P. Fowler, M.D. We approve the spirit of the writer as indicated in the statement, "That we, however, consider it as only one of our professional assets that we intend to utilize as seems to each individual his duty all the varied resources in medical science." Again: "Liberal homeopathists regard medical science as a unit, and are profoundly convinced that oneness of science universal will be the key-note of the future."

SCRIBNER'S MONTHLY: an Illustrated Magazine for the People. Current numbers received. The high class of this well known periodical is well maintained. Latterly there appears to have been some advance upon the surpassing excellence which has ever been characteristic of its illustrations. Mr. Drake should be congratulated for his industry and success in securing such an array of artistic talent.

POPULAR SCIENCE MONTHLY, published by D. Appleton & Co., New York, is regularly at hand. We note an admirable article on the Geological History of New York Island and Harbor, by Professor Newberry. There are also articles by writers like Bain, Huxley, Spencer, and others. This magazine is an exponent of the most advanced thought in science and philosophy.

FACTS AND FIGURES FOR MATHEMATICIANS, or the Geometric Problem which Benson's Geometry alone can solve. By L. A. Benson, New York. This is a discussion of the true relations of the circle and the polygon.

LACKS AND NEEDS OF THE SOUTH, EDUCATIONALLY. An Address prepared for the National Educational Association Meeting in Baltimore. Delivered also before the Centennial Bureau of Education, Philadelphia, September 1, 1876. By Alexander Hogg, M.A., Principal of Schools, Montgomery, Ala.

THE PHRENOLOGICAL JOURNAL AND LIFE ILLUSTRATED.

VOL. 67. 1878.

NUMBER 6.] *December, 1878.* [WHOLE No. 480.

## LEON GAMBETTA,

### THE REPUBLICAN LEADER OF FRANCE.

THE common observer would recognize in the portrait of this great leader of liberal political thought in France a man of mighty power. He has a broad, heavy

chest, in perfect harmony with that massive, though not fat, face, which gives ample support to the brain, and supplies all the vital power which is necessary to the wonderful electrical influences which his oratory produces. Those strong and determined features indicate courage, directness, self-reliance, and force. He has a large brain, and having such support as his large and vigorous body gives, he is able to make all his thoughts impressive, and to lead the hearer to believe that he is thoroughly in earnest; that he understands his subject, and is not only competent to carry it out, but well adapted to lead. Hence, he has a strong following; men are inclined to accept his dictum and follow his lead who do not intellectually agree with his opinions. The length of the head from the opening of the ears to the center of the eyebrows is great, which shows very strong practical intellect, ability to gather knowledge of things and history, and to wield that knowledge in such a way as to arouse sympathetical action. He inclines to talk facts, gives day, date, and circumstance, and if he would devote himself to literature or science, he would take a high rank in that field of effort.

He is not wanting in logical power, but the predominance of his perceptives gives him the disposition to work mainly through them. Mere theories and philosophy without a strong basis, in fact, do not interest him. From the eye upward the head is pretty high. He evidently has large Benevolence, but that is located under that tuft of hair which occupies the front part of the top-head.

Benevolence is one of the most important factors in the exercise of political influence. The public want to feel that their leader is generous, kindly, liberal, sympathetical; and in order to lead, he must awaken the sympathies of the masses. The "ring" leader, Tweed, obtained his power over men through his friendly kindliness. People were bound to like him personally, and his words and acts were full of generosity to his followers, and that took hold of the best element of his subordinates. Those who have Benevolence strongly marked easily impress the popular mind with the idea of goodness; and if a man evidently aims to serve the public, his measures may lack ethical correctness, but the popular masses do not see that feature of them or do not care. No man ever became a great popular leader—unless he was a king to start with—that did not have strong Benevolence.

The fullness of the side-head in this case shows force of character and courage, and the amplitude of the back-head gives evidence of strong social dispositions; hence, he is a cordial friend, inclined to be a benefactor. His republicanism is quite as much a sentiment with him as a principle. Garibaldi, the great Italian Liberal, is distinguished for very strong Benevolence; but he has not so much selfish power, has not so much desire for gain, is not so strongly marked in the animal side of life as Gambetta. While Garibaldi is superlatively unselfish—willing to live in poverty that his cause may prosper—Gambetta would take care of his own personal interests, would look out for his financial prosperity, and would use power with less disinterestedness than Garibaldi. In other words, his head is enormously large when a line is drawn around the brows and just above the top of the ear. His love of gain, ambition, and egotism, his power of severity, his fondness for grappling with opposition, and his strong social qualities would make him a power anywhere in the world.

That is a head for a scholar, for a histo-

rian, for an orator, for a mechanist, and for an artist.

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To the masses of the French people this man is a demi-god. His dashing, indomitable patriotism in the days when France was a prey to German invaders—his trumpet-like appeals to his fellow-countrymen to rise in their might and rescue their loved Paris from the grasp of the enemy—fired the French heart; and had there been a military leader at that hour whose capability was equal to Gambetta's fiery spirit and energy, it is not unlikely that the issue of the Franco-German war had been different.

Leon Gambetta was born in the south of France about the year 1837. As the name Gambetta indicates, his family is of Italian derivation. Educated for the law, he entered politics early, and at the age of thirty had become a conspicuous figure in the ranks of Liberalism. He was open in his hostility to the imperialism of the Bonapartes, and in the outset of the war so unwisely undertaken by Napoleon III. against Germany, he was loud in his condemnation of it, hesitating not from the tribune of the Corps Legislatif to assail the policy of the Government in terms of bitterest sarcasm.

When Paris was hemmed in by the German army and there was no hope for that beautiful city's escape, Gambetta found his way out of it in a balloon and went to Tours, where a Provisional Government had been organized. His arrival was the signal of new and extraordinary measures. The provinces in the south of France had as yet experienced comparatively little distress from the war, and the Provisional Government had determined upon raising a new and powerful army for the relief of Paris and other places invested by the German forces. A man of Gambetta's reckless energy was needed to inspire enthusiasm and "push" matters, but his colleagues at Tours distrusted him. However, without hesitation he took the control of affairs, became practically Dictator, and as Minister of War, set about organizing the new army out of the raw material which was offered in great abundance. In six weeks he had created the Army of the Loire, a well-equiped force of one hundred and eighty thousand men, with a strong body of cavalry. Besides this he developed the resources of France in other important respects, so that we to-day wonder that a country able to maintain a protracted war, even upon her own territory, as France was, should have succumbed so easily. But Gambetta underrated the German armies, just as Napoleon III. had, and lacking the education of the soldier, placed his reliance in mere numbers. Expecting his subordinates to maneuver their commands in accordance with his wishes, he interfered with and interrupted their operations, so that dissonance and confusion prevailed, and the grand array of men and material rapidly melted away without accomplishing anything but complete and ruinous defeat of the purposes for which it was organized.

The close of the war and the election of M. Thiers to the Presidency of the new Republic left Gambetta without an occupation adequate to his ambition. He had been hitherto unfriendly to Thiers because of that really great statesman's conservative attitude among the Liberalists; now, however, he was found on the side of the President, and was recognized ere long as an element of conciliation in the controversies between the Moderates and Ultra-Radicals which agitated the early days of the Republic.

It may be that the misfortunes and mistakes of his military career had taught him the folly of precipitation and excessive zeal, for Gambetta now displayed a new character—had become thoughtful and judicious. This conduct had its effect in restoring public confidence in him, and ere long he was the recognized leader of the Republican forces; and in those recent contests with the Ministry of MacMahon, who at times has exhibited a spirit which can scarcely be interpreted otherwise than Imperialistic in its tendency, Gambetta has borne a most conspicuous part in defeating the ministerial tactics.

Gambetta owes, perhaps, the greater part of his political success to his oratorical powers. Brilliant, impassioned, copious in invective, exhaustless in sarcasm, he

never speaks without producing excitement and enthusiasm. To-day he is the most marked man in France, and as a successor to MacMahon in the Presidency of the French Republic, would have probably the suffrage of the nation.

## PHRENOLOGY AND "CONVERSION."

A LETTER TO A CLERGYMAN.

REV. A. J. H.—*Dear Sir:* In your letter, lately received, you remark: "Phrenology may and doubtless does read character with wonderful fidelity, and yet many times it has had to come to a full stop; because even a thief on the cross may be converted and made a fit temple for the indwelling of the Holy Spirit, and yet his head does not assume a different shape, although his heart may have been completely changed."

This is not the first time this mode of argument has been urged in the discussion of the religious aspects of Phrenology. Permit us to ask a question: In the process of conversion, has the man been increased in any bodily quality, in intellectual capacity, in courage, or in general mental power? You say "his heart may have been completely changed." By that, of course, you mean his tendencies of character—not his powers of mind or his natural dispositions. You will doubtless accept the statement that Divine grace, which converts and saves the sinner, is thoroughly and purposely adapted to the human soul, to lead, to guide, and influence it; but that it is not intended to destroy man's identity or individual character, but simply to give him the best use of his powers, whatever they may be. If converting grace were intended to produce perfection or harmonious completeness in men, as it respects their talents, dispositions, and capabilities, then would PAUL, the logical, PETER, the impulsive and courageous, JOHN, the patient and gentle, being converted by one Spirit into Christ, act and think alike. But, in fact, the natural peculiarities of their dispositions remained; and though Paul was a man of talent and power, and exhibited a fervent zeal when he "breathed out threatenings and slaughter against the disciples," yet after the new light came to him and he cried out, "What wilt thou have me to do?" he retained the same clear discernment of intellect, the same strong, logical judgment, the same brave executiveness, and the same fiery zeal that he possessed before his conversion. But now his mind had acquired a new law of action, or at least a new direction. He says, in respect to his former purpose and work, "I verily thought I ought to do many things contrary to the name of Jesus; many of the saints I shut up in prison, having received authority from the chief priests, and when they were put to death, I gave my voice against them." He was really acting up to his conscientious convictions when, in the name of the religion of his fathers, he thus persecuted the Christians; and in giving an account of his conversion, and speaking of his acts of persecution before conversion, and also with reference to his new life, he says: "I have lived in all good conscience before God until this day." By his conversion his phrenological faculties or his natural instincts and talents were not constitutionally changed. The mental dispositions retained their original stamp and peculiarity, but his vigorous faculties were working under a new law, not with new qualities or with new forces.

We are frequently confronted with the objection to Phrenology, that since converting grace seems to give a man a new character, therefore Phrenology must be false, unless the head undergoes a corresponding change. When it is understood that religious influence is a divine work on a human being, producing a higher law of action than that which pertains to the secular and animal; when it is understood that the worship of God and the pursuit of virtue are what man was ordained for and to do, and that sin is a wandering away from man's normal life, and that religious restoration is the coming back of the man to his true self in obedience to the law of God and the law

of his own highest being, it will no longer be urged that the head ought to change in size and shape in a day. If religion be a duty, and men are capable of fulfilling duty, if co-operating with the Divine mind in the work of recovering grace be our duty and privilege, then that grace must be adapted to man's constitutional being, and must act through and in accordance with his own normal faculties, giving them a higher and better law or rule of action.

The changes which mark the life and actions of men, after religious and spiritual influences are brought to bear upon them, when properly understood and explained, are found to be in harmony with the doctrines of Phrenology. The theory is this: Any special excitement of the organs of Veneration, Hope, Spirituality, Benevolence, and Conscientiousness will arouse those faculties to vigorous action. More blood will be invited to them and they will work in a new direction with a special energy. The Divine Spirit may be supposed to act through those faculties particularly, promoting thereby the new life. There is no necessity of an instant increase in the size of the organs. Such special activity of the faculties is in harmony with the changed manifestation. The religious organs thus being called into extra activity, thereby elevating the character, tend to modify and reduce the vigor of the propensities. After years of such activity of the religious faculties, when the character has become consolidated, an increase of one class, and a decrease of another set, of the organs may be expected. This view of the subject, if candidly taken, seems to settle the question.

Let us illustrate: Suppose a man organized in harmony and vigor to have attained to his maturity. He has moved in society freely, but has never experienced such special awakening of his social life as to lead him to love any particular woman. He meets a stranger. He is instantly captivated by her grace and beauty; his whole social nature is aroused. He marvels at the change in his feelings; the whole world seems new to him, and from that hour the tenor and spirit of his life seem to be changed, at least in direction. He thinks and talks of house and home, of furniture and family relationship. To him the object of affection becomes the absorbing topic of his life. He was adapted in his constitution to appreciate, love, and associate with woman. He is no more so to-day than he was before he saw his life companion. This new object of affection has added nothing to him in essential vigor or quality. It has only awakened his affection and centralized it. Let us modify the illustration. Suppose, instead of meeting this embodiment of beauty and *virtue*, he had met an embodiment of beauty and *depravity*. Is it not possible that the Syren, acting upon his faculties, might have led to a perverted tendency in them? The virtuous character imbued his faculties with a sacred enthusiasm. His social power was invited to act in harmony with the moral and esthetical faculties. In the other case his social powers were aroused, to be sure, but led to act through the basilar side of his character, leaving the moral powers dormant.

Another illustration. A rustic youth, accustomed to the rudest music, is suddenly awakened from his sleep by a quartette serenade, and for the first time hears real music; is captivated by it, seeks instruction, and becomes himself a masterly performer. The rustic had all the faculties the day before he heard this music, but he had never before heard music in its best sense, and from that day, music has been his pursuit.

The difference, then, between religious influence and that which is of a lower order, is, that the former acts on the character *through the moral and religious faculties*, thus sanctifying the life and motives; and the latter may act directly through the *lower faculties*, leaving moral and religious considerations out of the question. Or secular matters may be pursued in conjunction with the *moral nature*, and then whatever we do, "whether we eat or drink," study or labor, "we do all to the glory of God." When all the motives, objects, and purposes are filtered through the moral and religious faculties, every work of life receives a divine stamp. Take, for instance, secular music which is related to the lower faculties, or lascivious and Bacchanalian songs. Music

is thus dragged downward to minister to the appetites and passions. When the music is of a religious cast, the musical feeling works upward through the moral nature, and how vast the difference! as different, indeed, as virtuous and illicit love are different.

The thief on the cross, to whom you refer, was not necessarily a sinner above all men. He was accused of breaking but one of the commandments, and in the extremity of his case his moral feelings became aroused, and he cried out, "Remember me when Thou comest into Thy kingdom!" The conversion of the thief on the cross was no more wonderful, and required no more Divine or human effort than the restoration of David when he had broken another of the commandments. Both had moral yearning enough left to return to God and seek forgiveness.

Phrenology recognizes all the religious faculties more completely than any other system of mental philosophy, and also recognizes the fact that, in the present life, mind is manifested through the brain as its organ. Even theologians find no difficulty in supposing that the *intellect* has a relation to the brain, but they seem to hesitate when the *moral affections* are considered. All the faculties are sacred and God-given; and that man does not employ his highest and best powers who ignores the proper activity of the moral and religious faculties. It is the office of civilization to elevate and develop the intellectual and moral powers. The savage has a fierceness of spirit; his animal nature is enormously strong, while his moral nature is uncultured and weak; yet despite his weakness and ignorance, he has a fervent belief in the Great Spirit, and a crude, though determinate, expectation of a future state.

There is no reason why Phrenology and Theology should not go hand in hand. Not a few eminent preachers are well versed in Phrenology, and find no clashing between the God-ordained human life and the proper action of the human soul in the direction of religious duty. The more the preacher can understand of human nature, as developed by Phrenology and Physiology, the better will he be able to apply the truth to human nature as he finds it. When men talk directly to the human faculties in such a way that the force of the truth may be clearly comprehended, nature and grace appear to be co-ordinated—the forces of human life acting under a higher and better law, are brought into a condition to "glorify God in their bodies and spirits." Some of the best and most thorough phrenologists are sincere believers in evangelical Christianity, and hundreds of able ministers in America are thorough converts to the doctrines of Phrenology, while at the same time they are as sincere in all their technical theology as others, seeing no antagonism between this science and religion. It is through misapprehension of the teachings of Phrenology that some ministers of the Gospel have deemed it their duty to oppose it. Let it be remembered that the God of grace and salvation is the creator of the human faculties; and that the laws by which human life is sustained and mental manifestation is carried forward must be in harmony with the divine will; that truth must square with truth on every side; and when properly understood, no truth can be at war with any other truth. Mr. Combe, the eminent writer on Phrenology, in discussing the subject of the moral and religious nature of man, justly says: "It is a groundless terror to apprehend that religion will ever be extinguished, or even endangered, by the arguments or ridicule of the profane, because nature has implanted the organs of Veneration and Spirituality in the brain, and the corresponding sentiments in the mind. Forms of worship may change, and particular religious tenets may now be fashionable and subsequently fall into decay. While the human heart continues to beat, awe and veneration for the Divine Being will ever animate the soul. The worshiper will cease to kneel, and the hymn of adoration to rise, only when the race of man becomes extinct."

NELSON SIZER.

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ROWLAND HILL said of some of the speakers of his day, that they had a river of words with only a spoonful of thought.

## BRAIN AND MIND.

### CHAPTER IX.—*Continued.*

### MARVELOUSNESS, OR SPIRITUALITY.

THE situation of this organ is in the superior lateral region of the brain directly forward from Hope, and below Veneration. (Fig. 17–17). Its function is to inspire trust or belief in the strange and the marvelous. It is the basis of the longing after novelty, and thus stimulates intellectual progress.

In its relation to the spiritual elements of human character it prompts to belief in the supernatural and religious. Dr. Gall was led to the discovery of this organ by observing that some individuals imagine themselves to be visited by apparitions of persons dead or absent, and the question occurred to him, How does it happen that men of considerable intellect often believe in the reality of ghosts and visions? Are they fools, or impostors? Or is there a particular organization which imposes, in this form, upon the human understanding? and how are such illusions to be explained? He studied the history of those remarkable for this quality of mind, and in comparing their busts and pictures, his attention was drawn to a fullness existing in the region of the head now allotted to this faculty. Following up the matter, he examined the heads of people known for uncommon credulity wherever they fell in his way, and finally concluded upon the location and function of this organ.

Socrates, as every classical scholar knows, believed that he was attended by a demon or spirit which served him as guide. Joan of Arc believed that she had communication with God through St. Michael, who appeared to her and made known His will in regard to France. Tasso often held conversations with familiar spirits as with companions of flesh and blood. Swedenborg says of himself: "In 1743 it pleased the Lord to manifest Himself to me, and appear personally before me to give me a knowledge of the spiritual world, and to place me in communication with angels and spirits, and this power has been continued with me till the present day." Swedenborg,

FIG. 81.—SPIRITUALITY LARGE.

according to his biographer, was a man of unquestionable sincerity, but one of the most extravagant enthusiasts that ever lived. The development of Marvelousness is very marked in this distinguished man. Napoleon believed in his star, or destiny, and set much store by "lucky" days.

It is unreasonable to suppose that in these cases, and in very many others which might be mentioned, these visions and supernatural appearances are mere vagaries of the imagination. They are as real to such individuals as hues and tints and the harmony of sounds are to the great majority of mankind, although, to be sure, there are some blind, who can form no idea of color,

and some deaf, to whom music can have no charm. The explanation which Phrenology gives of these cases of preternatural impressions is, that man is endowed with a mental organ which, in its normal activity, produces a love of the new and the wonderful, and disposes to a belief in the supersensuous, but which in its more exalted manifestation leads to belief in the actual presence of supernatural beings.

In the ancient Greek skull this organ is large, and we see its influence strongly marked in their works and literature. It is extremely large in the skulls of the Peruvians, and they were exceedingly credulous, taking the Spaniards for supernatural beings. In the New Hollanders it is very small, and Captain Cook says of them, that when his ship went near the shore some natives were walking along, and though a ship under full sail must have been as strange a sight to them as a conveyance from the moon would be to us, they hardly stopped an instant, but just glanced toward it and trudged on. In Fig. 57 the organ is small, and also in Fig. 85, where the entire head is low.

In the London Bedlam Mr. Combe examined the head of a patient in whom this organ was largely developed, and whose insanity consisted in seeing phantoms, and being led to act as if they were realities. When asked if he experienced any sensation in the head when afflicted with visions, the lunatic pointed to the situation of the organ of Marvelousness, and said that he felt an uneasy sensation there. In the Richmond Lunatic Asylum, at Dublin, he saw several patients in whom this organ predominated, and whose insanity consisted in believing themselves to be supernatural beings or inspired.

In the cabinet of the PHRENOLOGICAL JOURNAL is a cast of the head of Mr. M., a jeweler of New Jersey, which exhibits an extraordinary development of Marvelousness. Mr. M. is by no means deficient in practical business acumen, yet he believes that he is visited by spirits and has friendly intercourse with them.

Persons who have exhibited extraordinary zeal in the propagation of some religious sect or doctrine, like De Sales, Loyola, Whitefield, or Jacob Boehem, or Ann Lee, show in their portraits a large endowment of Marvelousness or Spirituality, as it is often otherwise called. In the casts or portraits of Thomas Paine, Voltaire, Cardinal de Retz, the organ is very deficient, and the quality of incredulousness was very conspicuous in their mental character.

### VENERATION.

This organ occupies a considerable portion of the upper frontal convolution, and is situated on the great longitudinal fissure near the middle of the coronal region, and directly in front of Firmness. This organ is covered in part by the superior portion of the frontal bone, and in part by the antero-superior angles of the parietal bones. On the lower side of it lie the organs of Hope and Marvelousness.

The function or office discharged by this organ is to produce the sentiment of reverence in general, and the disposition to worship a Supreme Being. It is blind or instinctive in its activity, giving a mere impulse to worship without distinguishing what objects are worthy of veneration, a matter that devolves upon the intellect. In all ages of the world, and among almost every tribe of people yet discovered, the disposition to worship something has been manifested. Men have bowed down to beasts and reptiles, and images of

wood and stone. They have worshiped the sun, the moon, the genius or spirit in the storm; the air, the sea, and other deities innumerable; and from this universal tendency to worship, it would seem but a natural inference that

Fig. 82.—Veneration Large.

the disposition to reverence a Superior Power is innate in the mental constitution. Yet Phrenology was the first system of mental philosophy to treat of veneration as an original power of mind. Other systems teach that we acquire our impulses to worship through the perceptions of the understanding. We see all about us in the works of creation evidences of supernatural intelligence, power, and benevolence, and our intellects naturally infer that there must be a Being in whom these qualities reside, and who, as the Author of our existence, and our Benefactor, is worthy of our homage. But while concurring in the view, that from the intellect a powerful incentive to worship may be derived, it is clear that the disposition to worship in no manner depends upon the understanding; for the most ignorant and degraded peoples have manifested this sentiment most powerfully, although deficient in the intelligence necessary to direct it toward an object worthy of their devotion.

Veneration, however, is not confined to religion. It has a wide yet related sphere of activity in the affairs of human life, inducing respect for authority, deference toward superiors, and reverence for whatever is ancient, great, or good. Combined with large Love of Approbation, and moderate Conscientiousness and intellect, it leads the individual to pay court to persons of rank, title, and wealth. Where the intellect is not sufficiently enlightened, it may produce a bigoted respect for old customs and absurd institutions. It often presents an almost insurmountable obstacle to the reception of new truths by the great reverence which it inspires for the creeds, opinions, and theories in religion and science which bear the authority of great names and have endured for ages. "It seems to maintain the unenlightened devotee," says Mr. Combe, "in a state of bigoted subjection to his priests; an emotion of profound and sanctified respect springs up in the mind on contemplating the doctrines which they have instilled into

Fig. 83.—Veneration Small.

him in his youth; and every suggestion of the understanding, in opposition to this feeling, is expelled as profane. In short, Veneration, when vigorous and unenlightened, produces complete pros-

tration of the mind before the object to which it is directed."

In another place, Mr. Combe says, very beautifully: "As Nature has implanted the organs of Veneration and Marvelousness in the brain, and the corresponding sentiments in the mind, it is a groundless terror to apprehend that religion can ever be extinguished, or even endangered, by the arguments or ridicule of the profane. Forms of worship may change, and particular religious tenets may now be fashionable, and subsequently fall into decay; but while the human heart continues to beat, awe and veneration for the Divine Being will ever animate the soul; and the worshiper will cease to kneel, and the hymn of adoration to rise, only when the race of man becomes extinct."

"Nothing is more common in the hospitals for the insane," says Pinel, "than cases of alienation produced by devotional feelings excessively exalted, by conscientious scruples carried to prejudicial excesses, or by religious terror." Drs. Gall and Spurzheim saw in the hospital of Amsterdam a patient in whom the organ of Veneration was very largely developed, and who was tormented with the idea that he was compelled to sin, and that he could not possibly be saved.

An interesting case, illustrating the instinctive and independent activity of the mental faculties, is related by Mr. Nelson Sizer in a Number of the PHRENOLOGICAL JOURNAL for 1877. He was invited to a jail in Massachusetts by a young lawyer to examine the head of a client of his whom he was to defend on a charge of stealing. The writer described the man as naturally religious, and at the same time naturally prone to theft. In reply to this description of his character, the prisoner said he was zealous in his attendance at prayer-meetings, and would take the opportunity of praying two or three times during the evening; and sometimes on the way home, the devotional feeling would come over him so powerfully that he would kneel down in a corner of the fence and have a season of prayer. Yet before he reached home, if he saw a hoe lying near the road, or an old ax, or a beetle and wedge, or the pin of a cart neap, he would steal it, although knowing that he dare not carry it home, or sell it, or make any use of it whatever. He was sincere in his devotional feelings, and conscious of exalted enjoyment during his seasons of prayer, yet no sooner were these seasons over, and an opportunity presented itself of taking the property of another, than he seemed impelled by an irresistible impulse to gratify his thievish propensity.

### BENEVOLENCE.

The situation of this organ is in the anterior part of the top-head on the mesial line, directly in front of Veneration. When it is large the forehead rises high and with an arched appearance above the organ of Comparison, or center of the forehead; when small, the upper part of the forehead appears to incline or retreat.

It is this organ which inspires man with sympathy for those who are in circumstances of pain, sorrow, or distress, and imparts the disposition to relieve them. It goes out with pure and disinterested motives to the stranger, the forsaken, the poor, and the miserable, and forms the basis of that pleasure which men experience in efforts to alleviate suffering and to promote happiness.

It has the welfare of mankind in general as its object. Other faculties are the source of the love of family, friends,

and objects in which our own personal interests center; but this faculty is universal in its application, embracing all men and all creatures capable of experiencing pleasure and pain. Its manifestation was beautifully expressed by Fénélon when he said: "I am a true

Fig. 84.—Benevolence Large. Father Mathew.

Frenchman, and love my country; but I love mankind better than my country." Poverty and distress of any kind are the natural stimulants of this organ. It induces liberality of sentiment toward all mankind, and a disposition to look charitably upon their shortcomings. It is self-sacrificing in its activity, leading the individual to set aside his own convenience when it would interfere with the comfort and happiness of others; to suppress peculiarities of temper and character, when these would give unnecessary pain; to be mild and merciful in commands and censures; and to act toward all with a kindness and delicacy which is the distinguishing mark of an amiable, charitable, and polite disposition.

When powerfully active and unrestrained by the other faculties, Benevolence may lead to a generosity which impoverishes self and causes the individual to sacrifice his own interest unduly for the benefit of others. Goldsmith's writings abound with sentiments expressive of sympathy and good-will for others, and in Goldsmith's head the organ was very large. Father Mathew, the distinguished temperance advocate, possessed a very strong development of it. So, too, our own poet Whittier has Benevolence very prominently indicated, and it is in entire correspondence with this mental development that his verse is pervaded with kindness and charity.

An Englishman by the name of Gosse was so largely endowed with this faculty that he could not resist any solicitation for alms, though in other respects he was a man of good sense and of some force of character. He gave away two fortunes for charitable objects, and, on inheriting a third, had a guardian placed over it that he might not give it away also.

Where this organ is deficient, a powerful restraining element is lacking in the mental organism, and as a result, the selfish propensities, if strong,

Fig. 85.—Benevolence Small. A Forger.

may lead the individual into acts of cruelty and crime. In nearly all murderers, and in tribes of men remarkable for cruelty, this organ is small. In the representations which have been

transmitted to us of the characters of history who are regarded as monsters of crime and wickedness it is very deficient.

A case of disease of this organ is mentioned by Dr. Gall in a patient who had manifested great benevolence of disposition previously to becoming insane, and then gave away all his clothes, leaving himself absolutely naked. He never ceased repeating that he wished to make every one happy, and he introduced into all his schemes of benevolence the Holy Trinity. The organs of Benevolence and Veneration in his head were extremely developed. Dr. Rush also mentions an idiot who, though manifesting no one mark of reason, possessed this faculty in so high a degree that he spent his whole life in acts of benevolence.

*(To be continued.)*

TELL to the wind
Thy private woes, but not to human ear,
Save in the shape of comfort to thy kind,
But never hush thy song, dare not to cease
While life is thine. Haply 'mid those who hear
Thy music to one soul shall murmur peace,
Though for thyself it hath no power to cheer.

## YUNG WING AND THE CHINESE EDUCATIONAL MISSION.

IN the organization of the Chinaman the Vital temperament is marked, and consequently the motive, which is the second physical element in order of prominence, lacks much of that boldness, ruggedness, and angularity of outline which we are wont to associate with its expression. But we find the motive characteristics in the coarse, strong hair, broad and prominent cheek-bones, stocky and muscular limbs, and in the deliberate and steady cast of mind.

Our portrait exhibits a modified type of the Chinaman—a man educated under a *régime* entirely different from that of his native land. Upon his Oriental stock has been grafted the better elements of modern civilization, and the result is (as would have been expected) an improved or higher form of the Asiatic organism; a mingling of Eastern and Western elements in the physiognomy which is but the reflection of the predominant mental characteristics. A photograph of mandarin Yung Wing on our table furnishes a better idea of the man than the engraving, and shows the perceptive faculties to be more prominent and the whole anterior region to be large and well elevated.

There is much of delicacy and softness in the contour of the face, and a general expression of mental activity and refinement. The eye is full and indicative at once of reflective deliberation and unusual facility in language. The development of the orbitar ridges, especially toward the outer angles of the eyes, shows a nice appreciation of system, order, and precision; while the general cast of the intellect declares the man whose aims are particular—who gives attention to one thing at a time, and would be known for doing that thoroughly and well, rather than for spreading his knowledge and abilities over many interests at once. He is steadfast in opinion and earnest and thorough in feeling; very zealous, yet there is Caution enough to prevent rashness. He is also a frank and sincere man, holding firmly to his moral convictions and willing to furnish his reasons for them.

The reader may be aware of the existence of an institution in Hartford, Connecticut, which owes its existence entirely to the interest of the Chinese Government in American affairs, particularly our system of education. This institution is called the Chinese Educational Mission. Briefly stated, the object of the Mission (now of six years' standing) is the education in this country, through a term of fifteen years, of a corps of young men for the Chinese Government service; that Government paying the whole cost—an annual expense of about $100,000. The

number of the officers is five, viz., the two Imperial Commissioners in charge, a translator and interpreter, and two teachers. The function of the teachers is to direct the Chinese education of the pupils, which proceeds with their English education. The number of pupils is about one hundred and twelve. A large house recently erected in the western part of the city at a cost of $50,000 is the headquarters of the Mission. There are the offices of the officials, and there is lodged the class that is present for examination and instruction in Chinese studies. For this purpose the pupils are divided into classes of about twenty —one coming as another goes—each staying at the Mission house two weeks at a time. A small part only of the whole number are permanently located in Hartford. Most of them are in other places, though not far away, generally two together, attending school or receiving private instruction in families.

The originator of this Mission, and, in fact, the chief agent in giving the impulse which has led China to take a great stride over her old boundary of exclusiveness and fossilism, is a Chinaman, Yung Wing by name, who was born in 1828, of a worthy, but humble family living near the city of Macao. When about eleven years of age he became a pupil in the school of Mrs.

Gutzlaff, wife of an English missionary, for the purpose of learning the English language. He made rapid advancement in his new studies and was promoted to the "Morrison School," a charitable enterprise sustained by English merchants, but at that time under the superintendence of Mr. S. R. Brown, an American missionary.

In 1847 Mr. Brown returned to the United States and brought with him three Chinese youths, of whom Yung Wing was one, and placed them in the academy at Monson, Massachusetts. After two years and a half of preparation, Yung Wing was admitted to the Freshman class of Yale College; and after a somewhat remarkable career as a student, during which the idea of the Chinese Educational Mission suggested itself to his thoughts and became largely formulated, he was graduated in 1854. Soon after this event he sailed for China, arriving there in the spring of 1855. He found that he had almost forgotten his native tongue, and a good part of two years was occupied in recovering it. He had returned to China for the express purpose of bringing his project of the Educational Mission to the knowledge of the Imperial Government, but he found it no easy task to obtain the hearing he sought. He was compelled to obtain employment for his personal maintenance, and there were difficulties attending that, and he found obstacles and embarrassments in quarters where they were not expected.

Years passed and little had been done—when, in 1862, he unexpectedly discovered an assistant in a Chinese astronomer of Shanghai, with whom he had become acquainted, and to whom his college studies in astronomy appeared of great value, as they much exceeded in practical utility the old Chinese notions of sidereal economy. This astronomer was an officer of the great Tsang Koh Fan, Viceroy of Kiang Su and Kiang Nan provinces, Generalissimo of the Imperial forces, and one of the most prominent and leading men in the Empire. Through representations made to him by the astronomer, he soon sent a message to Yung Wing desiring to see him, and hinting a desire to take him into his service. The result of the first interview was more favorable than Yung Wing had hoped. He entered the service of the Viceroy and was made a mandarin of the fifth rank.

From that time until 1870 our new mandarin was variously employed—his intelligence, talent, and energy winning high approval and one promotion after another. Many things—among them important political disturbances in different parts of the Empire—contributed, however, to delay the hearing he asked before the Imperial Council. In June, 1870, occurred the tragedy at Tientsin (called the Tientsin massacre), in which a number of French Roman Catholic missionaries, male and female, were murdered by a Chinese mob. A Commission appointed by the foreign powers, diplomatically represented in China, met that same year at Tientsin to investigate the outrage and determine the satisfaction that was to be required for it, and a like Commission appointed by the Chinese Government was authorized to bring the affair to a settlement. The Chinese Commission consisted of five persons, three of whom (the Viceroys Tsang Koh Fan and Li Hung Chang and the Governor, Ting Yi Tcheang) were acquaintances of Yung Wing. The Governor, Ting Yi Tcheang, was the official superior of Wing at that time, and had ordered him to join the Commission at Tientsin, but he was unable to reach the place before the Commission had finished its business, to the marked disadvantage of the Chinese representation. Yung Wing was informed of the results, and perceiving an occasion for making a bold stroke in behalf of his educational scheme, he introduced it and enforced his arguments by appealing to events which had occurred in the council just adjourned. The three Commissioners were won. They set their names to a memorial recommending the education of a corps of young men abroad for the Government service and at the Government expense; this memorial they forwarded to Peking. They supported it there by all means in their power; and so successfully, that in the month of August, 1871, the measure recommended was adopted by the Imperial Government, and a sum

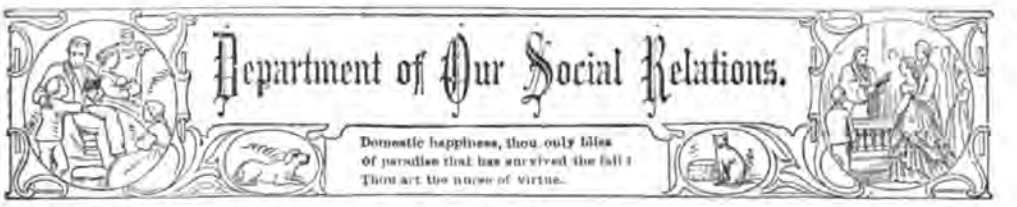
equal to $1,500,000 appropriated for its execution.

Yung Wing was appointed Chief Commissioner of the enterprise, and promoted to the Third or Blue Button grade. A school of candidates was at once opened at Shanghai, from which the pupils were to be selected by competitive examination, and the first detachment of thirty arrived in the United States in 1872. The location of the Mission was also for him to determine, and he selected Hartford, Connecticut, from a grateful sense, we may suppose, of his obligation to American benevolence and culture.

Out of this Mission has come the international sentiment which prompted the Chinese Government to send an ambassador this year, who should permanently represent China at the seat of our central Government, as the nations of the West are represented by their ministers.

This ambassador, Chin Lan Pin, a venerable scholar and high dignitary, was at first associated as Commissioner with Yung Wing in the development of the Hartford institution, and now that he has entered upon the practical work of an important diplomatic agent for his Government, Yung Wing occupies the close relation to him of associate minister. In December, 1876, the latter was again promoted in rank—that is, to be a mandarin of the Second or Red Button grade, and i vested with the title of Taou Tae (or Intendant) of the Province of Kiang Su.

Yung Wing is a devout Christian and an earnest patriot. He loves the Chinese nation, and believes that there is before it a grand career worthy of its noble soil and of its great antiquity.




## LIFE'S TRAVELERS.

Oh, Life's swift travelers, how they hurry on—
How they hurry on!
Some with joy and merriment mingling songs and jests,
Some with aching hearts throbbing on in tired breasts,
Some with muttered curses, some with blank despair,
Some with resignation, murmuring a prayer—
Life's swift travelers, how they hurry on!

Ever they toil with never any rest—
Never any rest!
Through the fresh early morn and the noon's sultry heart,
Through the dead waste of night on sleep's winged feet,
Through Youth's tropic summer and Age's polar snow,
O'er the hilltops of joy, through the valleys of woe—
Ever they toil, with never any rest!

What do they seek? Whither lies the goal?—
Whither lies the goal?
How will it be when their journey's end is won?
Will they rest evermore? Will their sorrows be done?
In the bliss of reward do they think to forget
All the pain of the race, all its toil and its fret?
What do they seek? Whither lies the goal?

The end of all is at a low, dark Gate—
A dark, low, narrow Gate!
Through its mysterious portal, with faces strange and white,
The winners of the race vanish from mortal sight;
Pleadings go after them, no answer cometh back,
On rush the jostling travelers o'er the beaten track—
In haste to pierce the mystery of the Gate.

Beyond (says Faith) there lies the Heavenly Rest—
The blissful, Heavenly Rest!
There the weary souls of pilgrims are eased of their pain,
There sufferers by worldly loss count their eternal gain,
There they, who with true courage the race of life have run,
Hear the Lord's angels chorusing, "Well done! well done!
Enter, oh Faithful, into the Heavenly Rest!"

ANNIE L. MUZZEY.

## MY HOME KINDERGARTEN.—No. V.

### CONCLUSION.

THE summer days passed with little change. Ralph—now a fine, manly boy of seventeen—was thoroughly prepared to enter college; and we chose to send him to an institution where the natural sciences held a prominent place in the curriculum. His training had been similar to that of Dora, only he had been two years studying Latin and Greek with our rector, while she had studied Latin with me, taking the grammar and reader only. This was deemed sufficient to aid her in gaining a thorough knowledge of English, and as I have no particular faith in the theory that the study of the ancient languages is better discipline of mind than the exhaustive study of one's native tongue, and as she must devote more time than Ralph to drawing, music, French, and embroidery (Ralph had been taught to sew quite neatly as a useful accomplishment), I deemed it best that Dora should not pursue the ancient tongues to any extent. Hence she learned but the rudiments of Latin and the names and sounds of the Greek alphabet.

Every person's power, mental and physical, has its limit, and he is wise who presses not himself or others beyond these natural bounds. Thoroughness, exactness, promptitude, readiness of thought, mental agility, and mental freshness are far better aids and results, too, of culture than great hoards of varied knowledge. It is not so much what one knows as what one is capable of doing that gives power, force, and usefulness in life.

Ralph had studied music and drawing only so far as I could lead him. This knowledge was ample to enable him to appreciate excellence, and that was deemed sufficient. He had gained by them the power of receiving pleasure and acquiring culture from beautiful scenery, statuary, paintings, and orchestry. Development of mind and heart were of the first importance in my opinion; the amount of knowledge acquired was always held secondary. Ralph had the same moral training as Dora received. He was taught modesty, kept out of the streets and at home evenings, away from people vulgar and bad. Boys usually have too much freedom of the streets. Most boys in villages and cities spend their evenings away from home influences—hanging about the groceries and stores, the doors of the theater, the saloon, or dance-house, hearing and repeating the vile talk of the vile men who come out in the night from the haunts of vice to lure others in. None but the lowest would allow their daughters like freedom. Why should boys thus become familiar with sin in their early youth? May we not attribute to this the greater profligacy, wickedness, and crime of the male sex? Why should the moral purity of one part of the race be strictly guarded and that of the other be neglected? Half the future sin and wickedness of the world might be prevented if boys were kept at home evenings as carefully as girls are. They would grow up better, purer men, and the moral influence resulting would be sensibly felt even in one generation. In two generations there would be a greater change for good than all the pulpits in the land could produce without this reform.

If either sex must be hedged about and fortified against evil, it should be the male; they are supposed to meet greater temptations in life and to be more susceptible to certain influences that lead to sin. It required the subtle talent of Satan to seduce Eve; Adam required only the soft words of his wife to make him do wrong. Boys will usually be content at home, if amusement is afforded them, and they know they must remain there. Evening seems a natural time for relaxation from care and for the pursuit of pleasure. Then music may charm the hour, reading aloud something in which all are interested, story-telling, playing chess, and social visiting will afford endless amusement. Where a disposition to provide entertainment exists, variety will be suggested to the mind in many ways.

Dora did not relinquish study upon her entrance into society. My plan had been to so imbue her mental being with love of knowledge, that she would of choice be a student through life—that she would take every opportunity of improving and developing her mental powers. To make her observant of nature and mankind had been the first object in my teaching. While living in this world one needs, first, thorough knowledge of his natural capacities—physical, mental, moral; next, a correct idea of all his surroundings; then as complete and harmonious development of his three-fold nature as can be given or gained. People generally are educated in a hap-hazard way without system, or are run through an iron-bound curriculum, without any reference to their individual wants or powers. It is scarcely possible to determine which is the worse plan.

It is more than folly this torturing a child having no musical talent to sit an hour or two daily in agony of body and soul at a piano. It is equally as foolish to force a boy, with little talent and great distaste for mathematics, through analytical geometry, calculus, etc., or to force one without memory for words, peculiarities of expression, and shades of meaning, through Latin, Greek, and Hebrew. Minds are not more, but less alike than bodies are. The more complex a creation is, the more parts and peculiarities it has; the greater care and ability is required to understand and regulate it. While nearly all know the different parts of the body and the offices they perform, scarcely any, even of the learned, can enumerate the leading constituents or elements of the mind. Some few will tell you of the perceptive and reflective faculties and the affectional or moral natures; beyond that their knowledge of mental powers and action is simply chaos—or if they grope further, it is only to stop at memory, judgment, and will, as the last and final analysis of mind. They can not comprehend why one remembers some things well and can not others equally as important; why one's judgment is excellent upon some subjects, worthless upon others; why a man's will may be steel in regard to certain things, and wax in regard to certain other things. The true mental science that refers mental action to separate mental organs—which may be present or wanting, developed or latent—and that teaches the correlation and inter-action of these organs, is almost unknown to the masses of the people; and until thoroughly understood, education can never be given to the individual intelligently and with the best possible results. The greater part of our common-school teachers have no just conception of mental phenomena. The memory is the only mental faculty of whose operation they have any conception; and if called upon to define mind, they would say, "It is that invisible *we* which remembers;" not knowing that memory is a faculty that supplements all others, and that however good the memory may be in some particulars, it can not receive or retain anything which may belong to a department of the mind that is notably deficient. One's memory for facts may be excellent, wonderful, while it can not keep in mind the face of an acquaintance for six months; or the memory for musical airs may be so perfect, that hundreds may be retained perfectly for years, while no amount of study would fix in the same mind the prominent dates in history. A child will be very bright in some respects, while hopelessly dull in others. The ordinary teacher ascribes this to inattention or idleness, not perceiving the true reason that some of the child's intellectual faculties are better developed than others.

Trying always to keep moral and intellectual culture hand-in-hand from the earliest hour that a knowledge of the beauty and value of truth could be taught the children, they were trained to love and cling to it at any hazard, and to avoid and hate deceit and falsehood. Quiet, serious conversation on the baseness and wickedness of a lie, the nobleness and uprightness of truth and its value in all the relations of life, will more impress a child than any storming, raging, and threatening for having spoken an untruth. As much of the sin and misery of the world results from falsehood in its various forms as from any other deviation from strict morality. It is rare to find a person

perfectly truthful in word and act; one who at all times, in all places, and at all risks will tell or mean only the exact truth. Ladies who would be indignant if you hinted that they were deceitful, will press unwelcome visitors more than courtesy demands to lengthen their stay, to come again soon; then when the door has closed behind them, give a sigh of relief, or express in words their thankfulness at the departure. Too many praise what they do not like or admire, because it seems to be expected; express interest in that which wearies them; treat with deference and attention those they secretly despise; take no trouble to repeat or represent things just as they occurred, and in manifold ways pervert and distort because they do not reverence and love the truth. From untruthfulness spring the shams that fill the earth—false jewelry, imitation stone-work, sham laces, affectation in manners, speech, and dress. And worse than all the rest, this habit of falsehood so degrades and stupefies the moral nature, that it drags down the intellectual and spiritual; thus defiling and deadening all the noble faculties of manhood.

Now I do not assert that my method of education would or did make anything uncommonly brilliant of the children given me; but it certainly did unfold such powers as they had in fair measure, and develop such as existed in a minor degree with a rapidity and exactness that surprised and delighted us. Neither Ralph nor Dora were prodigies or possessed any remarkable genius; but so far as their natural or acquired talents could be cultivated, they were rendering them self-reliant, yet careful; ready, yet thorough. They had no sham knowledge; they commenced at the foundation of every science of which they undertook to know something, and just as far as they advanced they learned solidly, so that they could have re-written the elements themselves, and indeed did so, as written exercises in every study was almost daily required of them after they became moderately skilled in the use of language and the pen.

It is idle to suppose that study can create mind. It can only furnish facts and theories whereon mind may exercise its powers—comparing, investigating, sifting, reflecting, and thus strengthening and unfolding whatever faculties God has given. The mind of each is limited; has its bounds. Like the body, it can grow throughout a term of years; gains its full strength; becomes mature; and as the body begins to decline, the mind also seems to lose its strength and elasticity. But as a general rule, the cultivated mind retains its activity far better than does the uncultivated; and the mind that is unfolded naturally, gradually, by judicious exercise without forcing or straining, fed by that which is congenial, kept from the rust of ignorant disuse, and the dark stains of superstition and melancholy, enshrined in a body free from sensuality and disease, sustained by trust in an ever-present and loving Creator, will retain its vigor and strength usually till it lays down the armor of life here and goes forth to seek the life hereafter.

To recapitulate, briefly, the main points of my educational method—they are: correct use of the native tongue from infancy; knowledge of the shape, size, material, and use of every object brought to the child's notice in the home; then of objects, trees, and animals in the yard and world around. Very much of this can be done in the first seven years. Next—knowledge of flowers, plants, and trees (botanically); study of rocks, mountains, clouds, storms, sky, and any natural phenomena that come in the way. The alphabet and simple spelling having been previously learned by means of blocks, writing, printing, and drawing lines upon the slate—words formed by blocks and curve-line drawing follow, and the use of the piano may be commenced. Great pains should be taken to insure correct enunciation by practice upon vocal elements, dwelling particularly upon consonants and difficult combinations. Reading, spelling, printing, with the elements of drawing, writing, and music, and oral lessons upon surrounding objects, with counting beads or stones, mental addition and subtraction, are all that should be attempted before nine years of age; then composition and the rudiments of written arithmetic

and the elements of grammar in oral lessons. These studies, with geography and elements of Latin, may be continued until the pupil is twelve or thirteen years of age, when he or she should be quite correct and expert in all of them. Every lesson should be thoroughly learned and comprehended—that is the secret of constant and rapid progress. Readings in the poets, English literature, geology, Latin, drawing, and music, with algebra, botany, and analysis of English, are a sufficiently wide range of topics to occupy the next three years; it being remembered that the rudiments of botany and geology are best inculcated orally by aid of specimens during early years.

At sixteen years pupils of average intelligence should understand the branches of study mentioned (accompanying them with continual reviews and written exercises) so thoroughly, they could pass a written examination upon them with entire credit and satisfaction. Yet in order to make these foundation-studies perfectly firm and accurate, they should be reviewed thoroughly, re-written, and commented upon until they are firmly fixed in the memory; and with physical geography, zoology, and chemistry or natural philosophy they will occupy the time until the pupil has reached the nineteenth year of age. Then—as many girls take upon themselves the responsibilities of other relations, and are engaged (or ought to be, if married) in learning the art of home-building—regular study for them will be interrupted; yet they should never relinquish the pursuit of music, or reading daily something from some truly good book. The unfolding of soul is a gradual process, and all these our studies are in a great measure lost if not directed in the main to that purpose. The hoarding of knowledge is of little more value to the individual than is the hoarding of money. The mind should rather be as the fruitful orchard bringing forth fruit year after year, than as the simple storehouse wherein it is piled up, decaying because of its mass and lack of consumers.

It is needless to tell anything further of Dora and Ralph; they love knowledge for its own sake, and they continue to seek it. Dora studies in music (now the compositions of Bach and Beethoven); every year she adds a new landscape to her store of pictures; she reads the best works of French or German as well as English authors; she sings Italian songs and Scotch ballads with sweetness and taste; and through fine conversational powers and simplicity of manners, is charming always. Ralph has passed his university course with honor; a theological course with credit; and now preaches a simple, plain Gospel lesson — brightened by illustrations from God's works in the flowers, clouds, and mountains — from a pulpit in his native town. Loving, tender, true, sympathetic, and of quick intelligence—these, my pupils, fulfill my ideal of rounded, thorough culture in heart, mind, and soul. Their two younger sisters give promise of ripening into good women, and my cup of content is full to overflowing with the blessedness of my life which comes from human and divine love.

AMELIE V. PETIT.

## HOW TWO MEN GOT RID OF CARE.

SIMON STACY had married a pretty little fragile thing, a girl of not particularly strong mind, not quick at any kind of work, not by any means a woman of "faculty." Only a sensitive, loving creature, craving nothing in the wide world but love, and quite unfitted to become the wife of Simon Stacy, who loved only himself and whatever ministered to his selfish gratification.

He was a poor man — poor in pocket, poor in mental attainments, and absolutely bankrupt in his moral nature. But he had a pair of bright black eyes, an insinuating manner, a smooth tongue; and with this he had made the susceptible Annie Wright believe he loved her better than anybody else e er could, and she, poor little girl, believing it, married him, only to find, as the years went by, how wofully she had been mistaken.

Instead of her society, he chose that of bar-room loungers and gamblers, and instead of providing for her a comfortable home, most of his earnings went for rum, tobacco, and "Black Crook" entertainments.

Blaming her, instead of these habits (contracted long before he knew her), for his poverty and debts, saying to himself: "It's no use, Annie don't know enough to get a decent meal; wastes more in a day than I can earn in one; she'll never be anything but a baby that wants petting all the time;" he failed to see that she had some good traits. Ah! and if only Simon had tried that remedy of petting for her incapacity (for, poor little woman, she did belie her name, for, try hard as she could, it did seem as though she never got anything *right*), who knows but in time she might have become a tolerable helpmeet?

At any rate he had only himself to blame, for her friends had told him before their marriage that she was no wife for a poor man, and he, with the perversity of a willful nature, had insisted on marrying her, and did, as the sequel proved, more from willfulness than love.

On this Monday morning of which I write, he arose desponding and reckless. He had slept off over the Sabbath his Saturday night's debauch, and had to resume work—a thing always distasteful to him. The coals were out; rent due; and his butcher clamorous. He had a solitary dollar in his pocket—all that was left of a month's pay, the most of which had gone to minister to his vile habits.

"I'll endure this no longer," he said to himself, as he hastily dressed and started for the door.

"Are you going without breakfast, Simon?" said the pale little wife, who for a week had been nearly sleepless from anxiety.

"Yes," he muttered as he banged to the door. Slouching his hat over his eyes, dodging around the corner to escape his landlord, he darted into a miserable rum-hole just in time to escape his butcher, and calling for a glass of brandy, he gulped it down, tossed its price on the counter, and escaped by a side entrance as the butcher came through the front door after him.

Rapidly taking the way to a wood on the outskirts of the city, he was soon in its densest part. Flinging himself on the ground, he pondered a few minutes the purpose that brought him there. He shrank from death with all his wicked, cowardly nature. Equally he shrank from life and his duty; shrank from giving up the habits he loved and becoming an honest man; he took out a pistol with which for weeks he had terrified his poor wife into obedience to his exactions, by threatening to take his life with it, dallied with it a moment, and placing it against his heart, fired. The report was heard by a farmer at work in his field the other side of the wood. A search was instituted, and the dead body of the miserable man found, recognized, and buried at the expense of friends, as there was not an unmortgaged article in the house whereby money could be raised for funeral expenses. The shock was too much for the already broken spirit of the miserable wife, and she was carried a maniac to linger a few months in a public hospital, when death released her from life's burden.

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JAMES GRANGER rose that same Monday morning on which the suicide took place, with an equally heavy heart, and almost as hopeless as Stacy. He had an invalid wife and two young children. House rent due and the month's bills to meet, and very little to do it with. He had but his hands to provide for his family; and until sickness overtook them, had managed to keep out of debt with the strictest economy. No money of his went for rum or tobacco or questionable amusements.

But two months ago they had moved to lower their rent, unfortunately, into a damp locality, where his wife had contracted a rheumatic complaint that rendered her almost helpless. Then there must be help hired, doctors' bills met, and, at last, poor Granger found himself deeply in debt, and though his wife had improved so as to be able, with the assistance of a young sister, to crawl about the house and just do the in-

dispensable duties of it, yet there was much so oppressively discouraging in the prospect this morning, and poor James was so worn out with the hard and constant struggle of his lot, as to feel utterly unable to bear it longer alone, and, like a drowning man, cast about for even a straw to catch at to save himself from sinking. Poor fellow! With his wife disabled from a fresh attack of her complaint, experiencing torture if she moved a finger; the young sister tired and cross from overwork and care; the children clamoring for breakfast; James would have fain dropped his head upon his pillow and wept. Should he give up, grow desperate, take to bad courses, and shipwreck all?

No; he rose, dressed quickly, kept a calm countenance, even spoke cheerfully to the children, dressing them the while; then he took a cup of warm drink to his poor wife, and telling her he would send the doctor right away, hurried about preparing fuel and doing all those little household duties a man *can* do, without any sacrifice of manliness either, and departed to begin again the labor of another week—labor that seemed quite hopeless.

But all this while there had been going up from James Granger's heart a silent prayer for help to Him he had never sought before. He had been a church-going man, a reverent hearer of the word, but had hitherto in his strength of manhood felt himself equal to his burdens. This morning he had found himself too weak to bear up longer; and on the way to his shop a cry from his tried heart kept going up to the Infinite for help—for some *instant, present* help.

"And it shall come to pass that while they call I will answer."

As he left his house a neighbor, the wife of his principal creditor, ran over to see Mrs. Granger, and finding her so helpless physically, and so hopelessly lying, with great tears rolling slowly down over the curly head of little Willie, who had crept up to her and nestled on her breast, that, touched to the heart, she tried to comfort her by every means in her power.

"Oh, Mrs. Mason," the poor invalid had sobbed out, "I'm not crying for the pain, acute as it is, I'm only thinking of my poor discouraged husband, what heavy burdens he has to bear."

Mrs. Mason ran home and back in five minutes, with a tempting dish of food which she kindly forced on the sick neighbor; and as she returned home, stopping her husband, who was going out of the house, said, earnestly: "George, I do wish you and those other creditors of Mr. Granger would send him his bills, receipted, this very day." Mr. Mason looked at his bright little wife, and though he never had admired her more than at that moment, to test her, asked, "And why, pray?"

"Oh, how can you ask; don't you know how sick his wife is? and they are dreadfully poor, and"—here the woful face of her neighbor came before her so plainly that she dropped her face into her hands and burst into tears.

This was too much for Mr. Mason. Men can often act quite stoically when a wife weeps for herself. It is something more serious when she can weep for others.

"There then, Jane, don't. I'll go over to Burt's and Wilson's and if they are willing, which is doubtful, why, I suppose I must do it to please you, you little nervous body," he added, as a pair of arms went round his neck.

"You good old George, I'll do without a new dress this winter, and give up that journey to father's, if you do," was sobbed out.

The result was that at night the postman put into James Granger's hand a letter delicately worded (a proud man was James), asking him to accept, as a token of their appreciation of his former promptness in his payments, and of their sympathy in his misfortunes, their receipted bills, which he found inclosed.

The brave heart that had borne up against sorrow was not proof against this kindness. With overflowing eyes he sought the bedside of the invalid, and as she realized what a load was lifted from the burdened husband, their thanksgiving went up together. But after all it was doubtful which was happiest that night—debtor, creditor, or tender-hearted, self-sacrificing, little Jane Mason.

Posting a letter of heart-warm thanks to

his generous creditors, James went to his work the next morning with more of hope dancing in his heart than he had ever thought to feel again in this world. Not alone that the gift of his creditors had reached him, but from the hour he had sought help of Heaven, there had seemed to flow into his world-worn spirit a new accession of strength to bear his burdens—burdens that were by no means removed that day, nor for many a long year.

His wife lingered helpless for two years—years when his children most needed her care. But to him who had married her for her sterling good sense and unselfish heart, he found it not hard to bear with the broken spirit of the invalid, and learned valuable lessons by that couch of pain to sustain him long after it was vacated by death.

Nobly did he give himself to the care of his children. Often weary with his day's work, yet how he would brighten up as they met him at the door, and, with their arms about his neck, how the weariness seemed to take flight as he—to give the housekeeper who cared for them a rest—would quietly get the tea, insisting she should go out for a walk. Yes, get the tea, oh, fastidious reader! and though I do admit, as a general thing, it is distressing to see a man with his clumsy hands setting out the cups and saucers, washing dishes, etc., yet under James Granger's circumstances, I declare it looked "splendid." Self-abnegation is always beautiful, whether it is shown in a poor, tired working man or a Howard, before the eyes of the world.

Well, James, if he did not "get rid of care," yet found so much to lighten it that the years flew by until his children grew up and were able to minister to him, and in a thousand ways are carrying out their father's example in unselfish devotion for others.

Many said when poor Stacy's body was found: "He was a plucky fellow, any way; 'taint every man is *brave* enough to shoot himself through the heart."

Which was the bravest, the man who bore up bravely under the load for others' sake, or he who selfishly dropped it for his own?

As it has been truly said: "It often requires more courage to live than to die." Who that has attained to middle life, at least, has not proved the truth of this? And who that, under heavy cares and sorrows, has looked for help to the Rock that is higher than they, has failed to find strength equal to their day?

COUSIN CONSTANCE.

## BANGED HAIR AND CLOSE DRESSES.

A CORRESPONDENT of the *Woman's Journal* thus writes concerning the above fashionable mannerisms of the day. She, for it must be a woman, evidently would have her sisters see themselves as others see them, for her language is plain and applicable to the case:

"Every day I meet in the streets of Boston young ladies, who would otherwise look intelligent, reduced to the appearance of idiocy by a peculiar method of combing the hair down over the forehead. The hideous deformity is evidently copied from the patients of lunatic asylums and schools for the feeble-minded. The effect is shocking. Although not fastidious, I shrink from these ladies as children shrink from a hideous mask. It is a protest against being considered strong-minded that the young women thus assume the garb of idiocy. I am told that a young lady thus degraded is said to have her hair 'banged.' But it seems to me that her sanity must be badly banged to thus deform herself.

"The present hot weather is made more intolerable by the spectacle of women with dresses which cling to their forms with a closeness positively indelicate — dresses drawn back by some strange attachment behind which fetters every movement. If the 'banged' young woman has made my blood run cold, the pulled-back lady throws me into a profuse perspiration out of sympathy with her self-inflicted martyrdom. Will the ladies of the New England woman's club kindly inform me why women thus make guys of themselves?"

"EVERY needle should have an eye in it," was the reason given by a boy for spelling it n-e-i-d-l-e.

## NEW STUDIES IN LAVATER.

THE German people are proverbially fond of viewing life from its humorous and funny sides, and their periodicals abound in witticisms and ludicrous sketches. No subject has furnished a more fertile field for the display of humorous treatment than that of physiognomy, and from that the Teutonic writers and artists are constantly drawing. In a recent number of *Das Buch für Alle* we find a series of comicalities in which the shape of the head is the topic of comment; both writer and artist, however, seeking to give a practical suggestiveness to their fun; and, in fact, they have indicated so much of scientific discernment in the matter that we pardon their extravagances for the sake of the funny side, and make use of engraver and printer to present the series of pictures in our columns, with a somewhat free translation of the verses. The composition is entitled as above, and is designed for the advice of unmarried ladies.

This round, jolly face and open mouth
Show the man who is sound in his health,
And always friendly, always jolly,
Unless you cook his dinner badly.
Of money he wants a plentiful store,
And where there's good eating is much of a bore.
As might be expected, barley juice he loves dear,
And thinks he sleeps better for drinking much beer.
As a husband, thou couldst tweak him oft by the ear.

That very high crown and chin moderately long
Show the man who *will* have things where they belong.
Contradiction, indeed, is quite out of his line;
Guard well, then, your speech or there may be a time.
He's inclined to attend to your muff and your mantle.
Inspection's his hobby — he'll pry here and there—
So keep your heart closed; his attentions forbear.

A forehead so short and face so broad,
Avoid if you'd be happy.
You will quiz in vain this bearded lord
For sense of mind and poetry.

This peaked nose and forehead narrow
Betray the scanty brain and shallow,
Joined to an anxious, selfish marrow.
I think he'll never prove a charmer;
And if he ask, be sure you answer,
"It's deeply I regret"

Such a strong neck and rounded head
You should approach with almost dread;
For in them Wisdom little sees
Besides the brawn of Hercules.
If treatment rough you can endure,
And Cunning make your pathway sure,
You may perhaps say "Yes."

This back-head marks a temper strong,
A mind given to passions wrong.
She who would keep from daily strife
Should not become this fellow's wife.

See in this forehead much excess,
Yet little mind for love's caress.
Of talent, surely there s enough;
But that not always is the stuff
To make home happy, furnish food,
And well perform its share of good.
For studies deep he wholly cares;
Not for his wife and what she bears—
Perhaps, howe'er, you'd *live* on fame;
If so, then you may take his name.

In that low pate, big lips and nose,
A brutish mind its vileness shows.
He may be rich; let not that draw
You, foolishly, to take his paw—
A baboon or a wretched quack;
Should he propose, just turn your back.

Ah, here's your man! with forehead fine;
Here's neatness, justice, kindness, too,
And features all in proper line—
The character you'd like to woo.
He's of the best, though but our last;
Should he propose, just hold him fast. D.

## THE SENSE OF BEAUTY.

THERE is nothing which more distinctively marks true progress in education than the increasing breadth of view which is taken of the whole subject. Gradually we are discovering that man needs not merely the knowledge contained in text-books, and laid down in the various courses of study, but much that must be gleaned from other sources; that he has not only one set of faculties to be developed, but many; and that true culture includes the careful nurture of every part.

Among the hitherto neglected powers of our nature is the sense or perception of beauty. We all have this in its germ, but few of us ever think it worth our while to cherish and improve it. Yet there is scarcely one of our faculties that is so amply provided for in the external world as this. Beauty pervades the entire universe. Mountains and valleys, forests and meadows, skies and oceans are full of it. The more we explore Nature, the more do we discover of her loveliness. Science is every day revealing new beauty by her discoveries, and every accession of knowledge opens up charms of which we had never dreamed. Only a small portion of creation can minister to the necessities of the body, and that portion can only be made available by toilsome labor; but the sense of beauty has but to awaken to its own need to find the whole universe waiting to pour upon it the richest supplies. In most cases our desires far outrun their possible fulfillment, but in this it is just the reverse. Here it is the inner sense that needs developing to respond to the wealth of beauty that awaits its recognition. It is as if, in an exquisite palace, filled with choicest pictures and statuary, and adorned with everything that taste could suggest to make it attractive, the inhabitants were partially blind, and could barely distinguish one article from another,

much less comprehend the loveliness by which they were surrounded. The world is full of beauty that we barely see, or seeing, yet fail to understand or to enjoy.

It may, however, be questioned whether, after all, it is so important that this sense should be quickened and sharpened into keen appreciation. It does not help a man to earn his living, or to grow rich; it does not give him standing in society, or political power; it does not add to his stock of knowledge, or enable him to fight the battles of life with any more success. It is true that it does not directly promote these results, though through its culture some of them may be indirectly aided. Yet these are not the only things in life worth pursuing, though in our materialistic age we are apt to think so. The joy that beauty confers is of itself no mean or trifling thing. Pure and innocent pleasures are the best safeguards against unwholesome excitements. He who early learns and retains the habit of enjoying external beauty, and letting its influence sink deeply into his nature, will not be greatly exposed to temptations of a gross or sensual nature. Beauty is eminently refining, purifying, ennobling. As the eye which perceives it is the most delicate and sensitive of all the bodily organs, so the inner sense which responds to it is the most tender and refined of all the faculties. To cultivate and develop this sense is, then, to exalt the pleasures, to purify the desires, to refine the feelings, to ennoble the aims. No one can expand and intensify his sense of beauty without being a better man, and breathing out a sweeter influence than before. It may be, as Socrates declares, that outward beauty is but the emblem of expression of what is lovely, grand, or noble in the unseen or spiritual world. Certain it is that they are closely akin, and they act and react upon each other with the most perfect harmony.

Whoever is imbued with the sense of beauty will involuntarily create it around him. It will give a grace to his demeanor, a fitness to his words, a harmonious proportion to his conduct. Good taste and consistency will shine in his domestic arrangements and in his business affairs. Unconsciously, by his intercourse, he will develop the same power in others. Partaking of his pleasure and enthusiasm, they also will respond to the beauty around them with fresh joy and fervor. Let us, then, no longer neglect the culture of this important part of our nature. Let us open our eyes and our hearts to receive all the beauty that they are capable of taking in; let us welcome its pure delights, and hasten to shed them on others; let us give it a place in our daily life and thoughts, and let its presence ever dwell in our homes, to bless and purify them.—*Philadelphia Ledger.*

## DR. GEORGE W. KIBBEE.

IN some way the epidemic which has prevailed so long in the Mississippi region of Louisiana and Tennessee has brought sorrow and regret to every heart in the North as well as in the South. Certainly no sympathetic and generous-souled person anywhere could regard the scene in the fever-stricken localities, as pictured by newspaper correspondents and visitors, without feeling a thrill of horror and pity. A large proportion among the thousands who have died of the plague had friends and relatives in the North and West, and there have not been wanting many bold and self-sacrificing ones who left their pleasant homes to devote themselves to the care of the sick and suffering, and who fell an all too easy prey to the relentless destroyer. For these and other considerations the epidemic of yellow fever is looked upon as a national calamity, and our whole people have made it a common cause to contribute toward the mitigation of its severity.

In the last number of the PHRENOLOGICAL mention was made of the death of Dr. George W. Kibbee, whose name had become familiar to the subscriber through his papers in the Health department on the treatment of fevers. His earnestness in advocating a process eminently hygienic, and

which in most respects was the outcome of his own experience as a physician, was in itself sufficient to win our friendly regard; but aside from his professional character there were personal merits which had for years possessed our esteem.

Dr. Kibbee had a predominance of the vital temperament, and was stocky in build, plump in figure and limb, had brown hair that was not dark, and a blue eye, with a

tendency to a florid complexion. In this temperament and build of body lay the basis of his vigorous constitution, and that tendency to look upon the bright and prosperous phases of life. He had a great deal of constitutional endurance, and though he might not have been called, perhaps, a tough man, he was able to do a great deal of work and carry himself with health and vigor through it. Always temperate in his habits and moral in his conduct, he was free from the embarrassment which dissipation and demoralized conduct induce, and being early a student of physiology and medicine, he learned to avoid such means of dissipations as are presented at almost every table. He learned hygienic living, a judicious method of diet, and with no immoral tendencies and no dissipated habits to contend with, his system was elastic, healthy, hearty, enduring; and being endowed also in conjunction with this temperament with an uncommonly strong development of Firmness, Approbativeness, and Hope, he looked on the cheerful side of everything, was inclined to expect the highest order of success, and to work for it amid discouragements and repeated failures with a hearty earnestness which was rarely equaled. We remember him as a boy, when he was commencing to

obtain his education. He then had ten years of life mapped out, year by year; plans laid for study and attainment; and he felt as certain that everything would be realized as that the earth would find its annual course around the sun or its daily revolution upon its axis. He was, therefore, organized for a reformer, and capable of sustaining present defeat without dismay, and still hoping for ultimate triumph, no matter how many difficulties might intervene.

He had a scholarly mental organization, was a quick observer, and had an excellent memory. He had large Constructiveness, as may be seen by the fullness of the head at the temples, and was therefore always an inventor, studying to find out some new method of accomplishing old results, and was ready to appreciate and adopt any reform that promised more than the old way had yielded to the world. He was heartily a philanthropist. His large Benevolence made him willing to sacrifice and suffer for others; and while he was ambitious to acquire name and standing, he chose for his path of progress to success one which was calculated in all its phases to render ten times as much benefit to the public as he expected to get from it himself.

He had large Conscientiousness, which led him to desire always to do that which was honest and true, and was willing to promise squarely, openly, and fully to perform all that justice, courtesy, or the sentiment of fairness could possibly claim of him. In his dealings with the world there was nothing like smallness; no tendency to creep out of just responsibility. In fact, he would offer to do all that anybody could justly claim, and his offer would be hearty and square.

He had a great deal of energy when his mind was aroused to the accomplishment of some special purpose. He thought he could do all that ought to be done, and was willing to try where others doubted success. We have sometimes seen him, within our thirty-five years' acquaintance, when we expected he or any other man would resent the words or influences brought to bear upon him, but we never saw him once out of temper. This was not because he lacked courage, strength, or force of character; but he seemed to choose the gentler and smoother side of men, and aimed to convince rather than coerce, to persuade rather than drive. He had an accommodating spirit, which, in his career as a reform physician, often led him to work day and night to vindicate his principles and save a patient, when he had no idea of receiving any pecuniary reward. To say he was thoroughly unselfish, might not be true; but we can say heartily that he was in a thousand ways self-sacrificing. And though he always had some project in his thought which he fancied would bring him all the wealth he needed, and he seemed to live in hope of attaining to that end, he was ready to sacrifice present convenience and interest to meet the wants of others. While many make professions of willingness to shed the last drop of blood, to do great things when everybody has started the cause and got it into successful operation, he was willing as it were to shed the first drop of blood, to take the first step, which is said to be the one that costs, and to deprive himself of present convenience and means to meet the present emergencies arising from the needs of others. To say that he was a good-hearted man, always willing to speak a kind word or do a favor for others, is not saying all that his memory deserves. Though we have often listened for hours to his recital of ideas which to him seemed bright for great success and wealth, we never heard him make a proposition which was expected to yield benefit to himself that did not have in it ten times more value for the comfort, the health, and the happiness of mankind. He seemed to be willing that the public should have the grist; all he asked as his share for working out the success was what the miller would call the toll.

He was born in Connecticut about 1826; he studied Phrenology in 1843, and lectured on that subject with some success. He was graduated in medicine about 1849, in Cincinnati, Ohio, and from that day to the day of his death he had been a worker, wherever opportunity afforded, in ministering to the wants of the sick; and when a case was desperate, or given up by other physicians,

and he could get the chance to undertake the case, he would take off his coat and nurse the sick man or sick child night and day for weeks, being at once physician, nurse, and helper.

His invention of the Fever Cot was the sequence of his labor among the yellow fever patients in Memphis in 1873. He left Illinois for that fever-smitten locality, and though he went unheralded and was not at that time received by the physicians with the cordiality which he deserved, he treated many patients successfully, applying water as a cooling process to lower the temperature and thus master the fever. And here it occurred to him that something in the shape of a bed or cot which could be used in the treatment of all fevers, and on which water might be applied without damage to bed or carpet, would be a great improvement. We know his zeal in that regard, and when in September last he went to New Orleans to aid in caring for the sick, and in demonstrating to the profession and to the world that yellow fever could be successfully treated according to his method, he carried with him for the work he had before him an ardent energy, cordial sympathy, and a great stock of earnest common sense.

We mourn his fall as a personal friend, and sincerely regret it on account of the service he had hoped to render to mankind. The worry and anxiety which he had for the year previous, in getting his cot before the public, a journey which he made from New York to Oregon in July, 1877, in the accomplishment of which on ship-board, where there were many emigrants, he acquired, in his worried, wearied state, a kind of ship-fever, or typhoid fever, from which, after months of struggle, and the careful nursing by his wife at their home in Salem, Oregon, he succeeded in rising. This sickness left his system in a very susceptible state, and when he returned early in the spring of 1878 to New York, he was scarcely able to get about. His health improving, he moved his family to Highlands, an elevated plateau in the south-west corner of North Carolina, where he spent the summer in building a house for his family and attending a few sick persons. When the fever broke out in New Orleans he came North the last of August, and for a week or more was more than full of business trying to get his affairs adjusted in New York, so that he could go South on a mission of mercy in the yellow fever district. The day he started we told him he ought to stop within a hundred or two hundred miles of his destination, and sleep and rest for two or three days before entering New Orleans, because he would be likely to get there wearied and worn from the lack of sleep and from anxiety, and be more liable to take the disease, or, taking it, to have it go hard with him. But trusting zealously to his naturally good constitution, warmed by the thought that he was doing the world service, and feeling certain that his method of treating yellow fever would, as it had done before for others, save him from death in case he had it, he went forward to be a sacrifice to his zeal and philanthropy. On reaching New Orleans he went into the family of a physician with his cot, treated members of the doctor's family successfully, and expected to go into a wider field of practice, when, exhausted by labor, he was stricken with the disease, which in a few days proved fatal. It is believed that he did not receive the proper application of his own method of treatment.

## CRITICAL REMARKS ON PHRENOLOGY.

IT may be confidently asserted that the leading principles of the science which Gall, Spurzheim, and Combe exerted themselves so earnestly and successfully to establish are in the main true. That the mind has a physical basis, and that at least its principal faculties have special seats in the brain, are truths not alone to the professed phrenologist, but to every scientific psychologist. Nor can any one reasonably hold that it is impossible from a study of the head to form an approximately correct idea as to the capacity of the mind and its various faculties. The following statements,

which I have elsewhere made, may be taken as fairly expressive of the view which the majority of scientific men who have studied the subject take of Phrenology: "The size and shape of the skull are held by many to be correct indexes of the size of the brain and the development of particular parts of it. This is perhaps true; but in any given case the appearance may mislead us, for the thickness of the scalp and skull is subject to great variations in different persons. It is also held that different parts of the brain are the seats of particular faculties, and that the size of the brain, as a whole and of its parts, give us an idea of the capacity of the mind and of its various faculties. All this we grant as in the main correct; the most respectable psychologists as well as phrenologists do so." Variableness in the thickness of the meninges as well as in the amount of fluid contained by them, may be other sources of uncertainty in estimating the proportions of the brain from an examination of the exterior of the head. I believe that any one who claims that Phrenology either as a science or an art is exact, is seriously in error. And why should the phrenologist be loth to admit the inexactness of his science? Outside of mathematics, not one of the whole circle of the sciences is an exact science. Physiology is only approximately correct, and the same may be said of geology, meteorology, and all the rest. But Phrenology may be reasonably exact as a science, and yet be very far from exact as an art; which, doubtless, is the case. It is beyond the power of any phrenologist to collect in any case absolutely exact and complete data on which to base his opinion. I hold, however, that if the art of the phrenologist is only moderately exact, it is well worthy of popular favor. If seventy-five or even fifty per cent. of the opinions of the phrenologist are correct, it is unscientific and wrong to reject and denounce his art.

I will now lay before the readers of the JOURNAL a few remarks bearing on the oft-repeated declaration that the brain is the organ of the mind, which I conceive to be worthy the attention of students of phrenological science. I hold that it is only in a measure true that the brain is the organ of the mind. Of course, by the word *brain*, I mean the nervous mass which lies within the cranium; and by the word *mind*, the feeling, thinking, and willing powers or the various outgrowths of consciousness. Now, does any one presume to say that the brain is exclusively the seat of conscious nervous activities? The entire *medulla oblongata* and all other parts of the brain, save its cortical portions, do not essentially differ functionally from the spinal cord. The whole twelve pairs of nerves which issue from the cranium may and generally do perform their functions without mental recognition, and they are functionally at the most only to a limited extent under the control of the mind—little if any more so than the nerves which come from the spinal cord. Certainly it would be just as reasonable to speak of the spinal cord as the seat of the mind, as of a not inconsiderable proportion of the nervous mass within the cranium.

The brain is not exclusively the seat of the mind; a portion of it is as purely commissural and sensori-motor in its uses as is the spinal cord. Indeed, it is impossible to regard the brain in any other light than as largely a laboratory for the production of force—the force which calls into play the various muscles and secretory and excretory organs of the body. Now, without regard to their naturally different relative proportions to the rest of the brain in different persons, there is no reason to doubt that the dimensions of the reflex centers of the nervous system are in a measure determined by the demands made upon them. Thus, if the lungs and other parts supplied by the pneumogastric nerves are called upon to act very freely for a length of time, it is reasonable to hold that the centers in which they originate increase in activity, power, and size. Evidently, in thinking of the brain, the phrenologist must think of more than the degree of development of the seats of the various faculties of the mind. How it is possible in any case to determine the proportion of the brain that is occupied with other than mental functions, I am unable to imagine. If this can not be definitely done, I can not see how a close estimate of the faculties of the mind can be made from an examination of the head. What have professed phrenologists to say about the ideas embodied in this brief, but, I trust, clear statement? I seek light.

T. S. SOZINSKEY, M.D., PH.D.


## PURIFICATION OF THE BLOOD.

That impurity of blood is the cause of most of our ill-health is well understood by nearly every one; and as evidence of this, we are confronted at almost every step with ...ified "medicinal preparations" for cleansing the purple tide of life, and thus restoring the waning powers of the system. So common is the idea that the thousand and one proprietary compounds possess the mysterious power of removing impurities from the circulation, that vast fortunes are amassed in the manufacture and sale of them. From the standpoint of the hygienist this wide-spread belief in the efficacy of these remedies has no foundation in fact, and the money so freely expended for them is worse than wasted. For the purpose, therefore, of correcting, in a measure, the prevalent opinion upon these matters, let us in a popular way seek to learn what impure blood is, how it becomes such, and what are the proper methods of its purification.

The physiologist tells us that the blood is a means of transportation, by which substances produced in particular organs are dispersed throughout the body, or by which substances produced in the tissues generally are conveyed to particular organs in order to be eliminated. In a state of health it contains in solution the materials needed for building up and repairing the various tissues, and is a source from which the organs of secretion derive the elements necessary for the performance of their functions. The blood also contains in varying proportions the waste and effete products of vital action, which are poured into it by the lymphatic system or are absorbed directly through the walls of the capillaries, and is a necessary factor in the production of animal heat—carrying oxygen to every part of the body to burn up the worn-out particles of matter and thus maintain the temperature necessary for healthy vital action.

All these different materials—some for assimilation, some for secretion, and some for excretion—are to be found in the blood, and in proportions that vary within certain limits, according to the season, time of day, habits of life, and character of the food. So long as these limits are not exceeded, the blood is normal; and if nothing has entered the life-stream from without, it is pure. If the normal amount of any of these ingredients is increased, it becomes an impurity; and if diminished, the blood is to that extent impoverished. Either of these conditions, if continued for any length of time, will cause derangement and perhaps serious disease. Impure blood is, therefore, blood containing any of its normal constituents in excess or materials foreign to itself which have entered the circulation.

That the causes which produce this abnormal condition may be determined, it is proper to consider the sources of blood-supply and trace the life-current in its wondrous circuit. When it leaves the heart and courses throughout the system in the rap-

idly-branching arteries, the blood is in the best possible condition for supplying the wants of the various tissues and organs. Following the out-going stream, we find that it enters the general capillary circulation, where a portion escapes through the thin walls of minute containing vessels, to be assimilated by the tissues and enter into cell formations; while at the same time, by the principle of osmosis, there is an absorption of unused and partially worn-out materials. It is here also that the color of the blood is changed from a bright scarlet to a darker hue, as the oxygen is consumed and carbonic acid is produced in increasing quantities.

Another portion of the arterial current goes to the digestive organs, viz., the stomach, the pancreas, and the intestines. Here there is both a loss and a gain. Material is taken from the blood to keep these important organs in repair, and also to furnish the gastric juice and other agencies of digestion which are prepared in this wonderful laboratory. By the same principle of osmosis some portions of the food which has been swallowed are taken directly into the circulation from the stomach, duodenum, and other parts of the digestive tract.

In the spleen, that organ so long a puzzle to physiologists, there is a destruction of worn-out, red globules, a development of white globules into red, and an increase in the number of white globules; so that the blood which entered this organ has been very materially changed when it returns again to the general circulation. But there are still other processes which the blood must undergo. The veins which bring the blood from stomach, spleen, and intestines, unite to form the portal vein through which the vital fluid enters the liver — the largest glandular organ in the system. Here in the liver-cells is secreted the bile which derives its coloring-matter from the red globules that were broken down in the spleen, and contains cholesterin—an excrementitious substance resulting from worn-out tissues. This organ has also another important function, known as the glycogenic function, by which the starch and sugar of the food is converted into a substance called glycogen or animal starch, which is stored up in the liver, to be again by a second transformation converted into glucose and decomposed in the circulation for the maintenance of vital action.

The kidneys receive another portion of the arterial blood, and remove from it the excess of urea which has been produced by the decomposition of nervous and muscular tissue, together with water and some other salts. So important is this function, that these organs are sometimes spoken of as filters, by which the poisonous products of vital action are speedily cast out; and any interference with their proper action is at once followed by most serious consequences.

In returning to the heart, then, the blood receives glucose or sugar from the liver; some portions of the nutrient constituents of the food from the organs of digestion; chyle and lymph from the absorbent vessels. Entering the right side of the heart the blood is sent to the lungs, there to exchange its carbonic acid gas for oxygen, and at times to lose other volatile substances.

If the blood contain impurities, they must have entered from without the system or have arisen within it. They may be taken with the food eaten or the air respired; be absorbed by the skin or mucous surfaces; or be received by innoculation. Some substances, as alcohol for example, are absorbed directly by the blood-vessels of the stomach and poison the system. The processes of digestion may be imperfectly performed; and although all communication between the organs of digestion and of circulation is through the thin walls of these organs, improper materials or partially-digested portions of the food may find their way into the circulation and corrupt the blood. Even when the digestive functions are in perfect order, some of the constituents of the food may be in excess, and thereby the blood be overcharged with normal materials, which clog the organs and throw upon them an unusual amount of labor.

The air taken into the lungs may contain many impurities in a gaseous form or in a state of such minute subdivision as to be

imperceptible to the senses. That very many deleterious effects follow from breathing air thus impure can not be questioned; but whether the evil results more from absorption of these impurities than from the interference with the proper oxygenation of the blood, may be doubted. The lungs are organs of excretion, primarily, and any obstruction to the perfect and rapid performance of their appropriate work is destructive to good health.

The skin is properly an organ of excretion—relieving the circulation of an excess of water and maintaining the temperature in equilibrium; but it is also a medium through which material may be taken into the system by absorption. Experiments have demonstrated that under certain conditions moisture is received through the pores of the skin from the atmosphere. Medicines are sometimes administered by injection, and the various liniments in common use, containing as they do some volatile material, are to some extent absorbed. The poison of many insects and reptiles, the venom of a rabid dog, and the virus of syphilis enter the circulation by innoculation, and their effects are quickly seen—death often resulting in a very short time.

Impurities may arise within the body through imperfect or abnormal vital action. Pus or decomposing tissue from an unhealthy wound may be absorbed, causing the conditions known as pyæmia and septicæmia; the poisonous matters setting up in the blood a morbid action most serious in its results. The organs of secretion and excretion may act too feebly; the kidneys may not remove the urea as rapidly as it is formed, and the liver may refuse to separate the biliary salts in a proper manner. A diseased condition of the gall-bladder or bile ducts may cause the bile to be retained and re-absorbed. There may be too great a formation of glycogen and a diabetic condition arise. The vital powers may become reduced, and the spleen and other blood-correcting organs fail to remove the worn-out globules or to replace them with new ones. Through close-fitting garments, stooping shoulders, and contracted chest, bad habits of breathing, or ill-ventilated apartments, the blood may be insufficiently aerated and carbonic acid be retained to clog and pollute the channels of life. There is also in all air that has passed through the organs of respiration an animal effluvia which is poisonous if retained or again respired.

To remove these poisons and impurities which may enter the system in so many ways, most people suppose that drug medication is necessary. The victim of scrofula or skin disease, resulting perhaps from his own ignorance or carelessness, is told to take *something* to cleanse his blood, and seeks in some nauseous compound a panacea for his annoying complaint. If these popular notions are correct, and if the many nostrums whose virtues are so loudly trumpeted throughout the land possess the powers ascribed to them, no one should for a single day remain under the effects of bad blood. But are these notions based on any reliable foundation? Is there any drug or compound that can thus correct the morbid condition of the blood and clarify its muddy stream?

The blood, we have seen, is the product of living forces. It is not simply a common carrier; but while it performs in a measure the functions both of a canal and a sewer, it is a living tissue, and can be produced only by the action of vital forces and organs. What folly, then, to suppose that some agent can be administered by the mouth or directly thrown into the circulation which will remove those abnormal materials that an insufficient or misdirected vital action has suffered to enter!

The blood-forming organs are of two classes—those of supply and those of excretion. If the processes of digestion are imperfect, and the blood is furnished with material but partially prepared for assimilation—or if an unhealthy appetite leads to the ingestion of improper quantities of food, the remedy is, clearly, to improve the action of the digestive system and correct the diet. To attempt to regulate the organs of digestion by drugs is to deplete the system and consume vitality. To enter upon a wise course of exercise, and by a thoughtful consideration to furnish the system with that

quantity and quality of food which best meet its necessities, is to preserve the vital forces, increase their power, and purify the springs of life.

Does the liver fail in its functions? Is it torpid, and are the biliary salts retained in the system? Because an improper diet has thrown upon this organ an undue share of the work of elimination, and weakness and debility have resulted, shall we dose with calomel, in reference to which Professor Loomis says, "It has no action to increase the secretions of the liver"? Or shall we, by a careful attention to diet, and by the employment of exercise, fomentations, and massage, stimulate this organ to a proper performance of its functions? Are the kidneys at fault, and is urea retained in the system? Shall we give digitalis and increase the action of the heart at the expense of vital force, or administer some stimulating diuretic that shall weaken still more the already debilitated and overworked organs? Is it not better to aid the kidneys in resuming their functions by hot baths, local fomentations, and other means which will equalize the circulation without lessening the powers of life?

It is now pretty generally conceded that deficient ventilation is one great cause of diseased lungs. The best remedy, therefore, for imperfectly oxygenated blood, and one that is at once suggested, is to throw open the windows or go out into the pure air; while at the same time, the lungs are relieved of all restraint from tight clothing and every air-cell is brought into use. In this way the flow of blood to the lungs is increased and the stock of vitality also.

Inasmuch as the skin is so important an organ of excretion and blood-cleansing, it becomes imperative that its millions of pores shall be kept free of obstruction and no close-fitting bands or garments interfere with a free cutaneous circulation. To this end frequent baths are necessary, followed by brisk rubbing and kneading of the surface, that the blood may find its way to every portion of the skin.

The only way that we can remedy the consequences of an imperfect and feeble action of the blood-making organs, is to add to the vitality of the system, and thus give to the weakened organs the power of proper functional work; while we promote the highest activity of the organs of excretion, that as speedily as possible they may remove the useless impurities. The only way to avert the effects of morbid and poisonous materials which shall find their way into the circulation, is to give the eliminative organs the best possible facilities for removing the harmful agencies; while we increase the vital power that shall withstand the attack of evil.

We must learn that we can not by any means at our disposal take from Nature's hands the work of blood-making; or with our crude devices, improve upon her handiwork. Proper food in proper quantities, pure air and correct habits of breathing, plenty of healthful and vigorous exercise, a clean skin and a clean conscience—these will do more to purify the blood than all the drugs of the pharmacy. We must build up, not tear down; increase the vital forces, not weaken or destroy them; supply good, wholesome, unstimulating food; not drugs or liquors and tobacco. In short, we must always work *through* Nature, not over or *against* her.

J. S. C.

## THE BREATH OF LIFE.

WE are told that "God made man upright, but he has found out many inventions." Though evidently intended in a moral sense, it is no less true in a physical one, and its truth is especially significant to the student of anatomy and physiology. For one "upright" man or woman, are to be found scores of round shoulders, protruding shoulder-blades, sunken chests, distorted ribs, bow legs, crooked spines, cramped toes and fingers. Man has found out many inventions of sitting, walking, dressing, working, sleeping, in the most unnatural positions of body, and owing to his strange and unaccountable tendency to the wrong when the right would better serve

his purpose, these are persisted in even when proved fatal to comfort and health. Down through generations are handed the bodily deformities which hamper and disfigure the race, but all speculation as to the cause of so much weakness, helplessness, and ugliness becomes needless when we reflect that these were not parts of the original plan, for "God made man upright," although he has since "found out many inventions." We are also told that "when God made man He breathed into his nostrils the breath of life." Alas, that the inventive faculty should tamper with this also, and that the very breath of life should become life-destroying.

It is fair to assume that all men and women of average intelligence are acquainted with the fact that the act of breathing is the process by which air is taken into the lungs and expelled from them, supplying the system with oxygen, which is necessary for the warmth of the body and the purification of the blood. They know also that the lungs are conical organs, one on each side of the chest, and composed of air cells which are expanded when the chest is enlarged, contracted when it is diminished. Perhaps their knowledge of respiration also includes the fact that the muscles of the back and ribs are in some way employed in the act of breathing; that a hearty meal interferes with the process; that it is easier to talk, sing, or read aloud "on an empty stomach" than a full one, and that a sense of relief is instantly experienced on leaving a close room for the freedom of the outdoor air.

It would not be safe to assert that these persons could intelligently explain the reasons for these facts. Still less probable is it that they could account for the pains and "stitches," the irritation or inflammation of the chest, the "sore spots" and "catches" of the breath with which the great majority are only too familiar. How tremendous is the atonishment of those who are told by phrenologist, physician, or teacher, "You do not breathe properly."

"Don't breathe properly! Why, I supposed breathing was a natural function and took care of itself." Certainly, it will take care of itself if allowed to do so; but interference with this natural function is one of the many inventions which men, and especially women, have found out to their ruin.

That consumption is one of the great physical scourges of the human race, is now received as an axiom. We have grown familiar with the advertisements of druggists and doctors—"Consumption can be cured." Is it not true, that to a great extent, "Consumption can be prevented?"

We are bound to admit that in all diseases an ounce of prevention is worth tons of cure. To one familiar with diseases of the respiratory organs, this truth has a more than ordinary significance, the approach of all lung and bronchial troubles being slow, insidious, deceptive, easily checked at the outset; but if too long neglected, defying all mortal care and skill.

There can be nothing new said against corsets and tight-lacing, but something more than this popular outcry is needed. All this should be said, but other things should not be left unsaid. Emerson says that "the progress of the intellect is to the clearer vision of causes, which neglects surface differences." These surface differences will satisfy neither physiologist nor philosopher. The medical and mental eye looks farther and judges more truly. Many women who are judicious in respect to dress, and many men who would as soon think of wearing streamers as stays, are among the first to succumb to lung troubles.

It is true that nothing can be worse for the lungs than the pressure brought to bear upon them by tight clothing. Draw a strap around a sponge and the air-cells are gradually and completely compressed. Just as surely does a pressure upon the chest and waist hamper the free use of the ribs and muscles, while the air-cells of the lungs struggle in vain for the necessary amount of their proper nourishm nt. The lower and stronger parts of the lungs being thus impeded in their work, the act of breathing —if carried on at all (and it is amazing how few foolish people realize the small amount which the world would lose if they should stop breathing entirely)—must be transferred to the upper and weaker part. This

cramping and starving process long continued—this overtasking of the weaker parts of the organs, results most naturally and logically in irritation which speedily grows into inflammation, producing soreness and pains in the chest, susceptibility to colds, and the innumerable symptoms of disease and decay which go steadily on in their work of destruction and certain, if lingering, death. Everything, therefore, which in any way restricts the free use of all the muscles of the waist and chest, interferes with the function of breathing, and throws this duty upon the weakest part of the lungs, obliging them finally to succumb to the unnatural and self-imposed strain.

The woman who prides herself on her good sense regarding corsets, will sit all day long over the sewing-machine embellishing with superfluous tucks and ruffles the clothes which require her to stand all day long over the ironing-board. She spends hours over fascinating fancy-work which requires a confined position of body, and, as change from that employment, takes up a novel, which allows an easier attitude and rest for the fingers. Content to breathe the dry furnace air of our modern houses, at no time does she willingly take active exercise out of doors. Formal calls, shopping expeditions, evening entertainments, full-dress drives on a fashionable avenue—these are the only occasions upon which she encounters the pure air, and at these times either the endless precautions of wraps and mufflers prevent it from being of any benefit, or carelessness of exposure makes it a positive injury.

The women who have no choice of duties or pleasures, whose time is spent in the hot air of the kitchen, the close atmosphere of the shop, the mill, the dressmaker and bonnet-maker's rooms—these are also the women with the little cough, the slight pain in the chest, all the small symptoms with which physicians are dreadfully familiar—the unmistakable initials of sickness and death.

The men whose business keeps them in cramped positions over the cobbler's last, the tailor's bench, the dentist's chair, at the easel, the desk—all these must suffer likewise, unless the outdoor air and exercise is sufficient to neutralize the injury. Most men have the desire, as well as the opportunity, for this free, active stir after the confinement of the day. It is no unusual thing for the horse-car to roll by unnoticed while they walk home from the office or the store, with the energetic stride and deep inspiration which does more than anything else to repair the waste of the day. Too true is it that while "man works till set of sun, woman's work is never done," giving her little opportunity, even if she had the desire to escape from her daily bondage, leaving physical toil and mental care behind her.

"Oh, that is a medicine which cures everything," we hear said in a contemptuous tone and with a shrug of the shoulders; "I have no faith in it for that reason." But many diseases spring from one source, assuming in different persons different forms, dependent upon peculiarities of constitution and temperament. What causes rheumatism in one, may in another develop into pleurisy or dyspepsia, bronchitis or fever. The delicate woman lying on the lounge with headache, and the portly man braced in his chair with gout, may seem to need utterly different medicines and styles of treatment, but the physician knows that they differ only as types of the same species. A bad state of the blood has a hundred ways of manifestation, and chooses with seeming capriciousness divers afflictions for its many victims. The lack of proper nourishment for the blood is one cause of its impurity, and impure blood is one of the most common causes of all disease. In no way can it be so effectually defrauded of its food as by wrong habits of breathing, which diminish its supply of oxygen, impair its circulation, and cripple every function of the body.

Nature revenges herself for our neglect of any physical or mental power by depriving us of its use. The positions of body which cramp or hinder the action of the muscles of the diaphragm, will in time weaken these muscles, and limit the power, even if there is inclination, to draw a full, deep breath. The muscles should not be allowed to grow weak from disuse; respira-

tion should not be confined to the upper part of the lungs; the chest should not be required to do the work of the diaphragm; the habit of breathing fully and deeply should be firmly established. The prevention of these things is plain, easy, requiring but little time, slight exertion, no medicine and no money.

All that is needed is an erect position of the body, expanded chest, and deep inspiration in the pure air. The elasticity and vigor of all the muscles can be greatly increased by percussion by patting. Such exercise should be oftenest taken by those whose employments are sedentary. Let the public-school teacher who finds her scholars growing noisy in proportion as she grows nervous, open all the windows, and for two minutes keep the children on their feet while they exercise the chest by moderate percussion, and the lungs by long, deep, energetic breathing. The rest and refreshment will be far out of proportion to the time and effort expended in this simple way. Such exercise will be beneficial to any one who will take it, and is the surest cure for the temporary depression of spirits, slight headaches, and fatigue which often follow too long confinement indoors, or application to any special work. Its simplicity makes many skeptical concerning its efficacy, and experience, like that of the old man who attributed his long life and health to having "plenty of God's pure air from an open east winder," is the only thing which can prove to unbelievers the great value of exercise as preventive and cure.

C. B. LE ROW.

## PULL UP THE BLIND.

PULL up the blind, Kitty; pull up the blind!
You say, "The sun will spoil the carpet."
Never mind, never mind.

Far better so than that your cheeks or mine
Should lose their worth or color, Kitty.
Let it shine, let it shine.

And you shall find new joy it will impart.
Pull up the blind, Kitty; pull it up!
The sun helps the heart.

—"*Pipes of Corn.*"

# NOTES IN SCIENCE AND AGRICULTURE.

**A New Elastic Gum.**—A substitute for gutta-percha has made its appearance. It is a new elastic gum, which has been named Balata. This is the milky sap of the bully-tree, that flourishes on the banks of the Orinoco and the Amazon in South America. The operation of winning the gum is similar in every respect to that employed with caoutchouc and gutta-percha. It resembles gutta-percha so closely in its general properties that much of it is shipped from Guiana and sold yearly for gutta-percha—although it has many points of superiority. It is tasteless, gives an agreeable odor on being warmed, may be cut like gutta-percha, is tough and leathery, is remarkably flexible, and far more elastic than gutta-percha. It becomes soft, and may be joined piece to piece, like gutta-percha, at about 120 degrees Fahrenheit, but requires 270 degrees Fahrenheit before melting (higher than gutta-percha). It is completely soluble in benzole and carbon bi-sulphide in the cold. Turpentine dissolves it with the application of heat, while it is only partially soluble in anhydrous alcohol and ether. It becomes strongly electrified by friction, and is a better insulator of heat and electricity than gutta-percha, on which account it may find considerable application for electrical and telegraphic uses. Caustic alkalies and concentrated hydrochloric acid do not attack it; but concentrated sulphuric and nitric acids attack it as they do gutta-percha, which it closely resembles in all other properties.

**Profit in Growing Mushrooms.**—At a trial in a sheriff's court in London, a nurseryman of Kensington began a suit against a railway company for damages done in taking possession of his mushroom ground, for which he claimed $3,580. It was stated in evidence that the profits on mushrooms raised there were from 100 to 150 per centum; one witness stated that if $250 were expended, in twelve months the sum realized would be $1,000. Mushroom culture in France is immense. At Montrouge, a favorite spot for raising them, the proprietor often sends 400 pounds per day to market. In that particular cave there are between six and seven miles of raising beds. Large quantities of preserved mushrooms are exported to England from France, one house sending 14,000 boxes in a single year. In 1867 M. Renando, a successful cultivator, had over twenty-one miles of mushroom beds, and in still another cave there were sixteen miles of beds. These cases were cited to give an idea of the vast consumption of this kind of food.—*Report New York Farmers' Club.*

**The British Government** has refused the grant of £2,000 which the authorities of the British Museum asked for, with which to carry on the excavations on the sites of Nineveh and Babylon. Yet could appropriate forty or fifty thousand pounds for the style and circumstance of a recently married son of the Queen.

**Apple Butter—How to Make It.**—To make it profitably requires two barrels of cider, not more than twenty-four hours from the press. Four bushels of peeled and quartered sweet apples; a forty-gallon kettle, scoured as bright inside as a new pin. Now, over a constant and brisk fire, the two barrels of cider must be reduced, by cooking, to one, frequently skimming off the impurity which rises in foam. Then commence filling in apples, and at the same time stirring, which must not be omitted a moment until done, or your sauce will burn. The stirrer should be long enough to rub the bottom of the kettle, and have a handle fitted into the top end.

When all the apples are boiled in, and reduced to a smooth jelly, remove the kettle from the fire, and dip out at once into one or two-gallon stone jars or crocks, that have been used for nothing else and your labor is done.

You now possess from twenty-two to twenty-five gallons of apple butter, worth in Ohio markets about sixty cents per gallon, and a delicious and healthful accompaniment for your daily meals.

**A Cancer Removed from the Eye.**—A delicate operation was performed recently at the Eclectic Medical College in New York. An encephaloid cancer of the eye, in the right temporal region, filling up the socket of the eye and extending back to the ear and down upon the cheek, and pushing out the eye-ball, was removed at a single operation by Dr. R. S. Newton, assisted by Drs. Mortimore and Boscowitz. The cancer covered an area of four inches long by three wide, and required a long and exceedingly delicate operation for its removal. The patient was put under the influence of chloroform. The first step was the excision of the eye (which had long since become blind), and the subsequent removal of the tumor from the socket. With the tumor was also taken away a considerable portion of the bony matter of the skull to which it was attached. An extensive softening and suppuration had already taken place. After the removal of the knife the parts were subjected to the application of sulphate of zinc—full strength. A piece of sponge was wet with a saturated solution of the chemical and placed in the empty socket, filling it up entirely. The wound was then dressed with cold-water dressing.

The object of this treatment, which has been pursued by Dr. Newton for upwards of thirty years with success, is the entire extinction by cauterization of the cancer cells, which, in ordinary operations, elude the knife, and are sure in the end to germinate anew. By means of the zinc a continuous suppuration is maintained until the system is entirely relieved of all cancerous condition. The operation requires the litigation of the external carotid artery and its branches.

**Always Use Good Seed.**—The following facts should be borne in mind: Every fully developed plant, whether of wheat, oats, or barley, etc., presents an ear superior in productive power to any part of the rest of that plant. 2. Every such plant contains one grain which, upon trial, proves more productive than any other. 3. The superior vigor of the best grain is transmissible in different degrees to its progeny. 4. By repeated careful selection the superiority is accumulated. 5. The improvement, which is at first rapid, gradually, after a long series of years, is diminished in amount, and eventually so far arrested that, practically speaking, a limit to improvement in the desired quality is reached. 6. By still continuing to select, the improvement is maintained, and *practically* a fixed type is the result.

In this connection we add a paragraph from Vick's admirable *Floral Guide*:

Most people have observed, no doubt, that self-sown seeds, that is, seeds that have dropped from the growing plants of the previous season, sometimes produce the strongest and most healthy plants that bloom the most freely. This is true of several kinds, and particularly of those that suffer under exposure to our midsummer suns. The reason is, that self-sown seeds get a very healthy growth in the spring, vegetating as soon as frost is gone, and are good-sized plants at the time we usually put seeds in the ground, even if they do not start in the fall. They thus mature and flower during the cool weather of spring. The clarkias and nemophilas and annual larkspurs are noted examples. There are also several varieties of hardy annuals that do well with spring sowing that will bear autumn sowing in the open ground, and reward us with early spring flowers. Sweet alyssum and white candytuft will give us abundance of white for early cutting, if sown in the autumn. In a sandy soil the portulaca may be sown in autumn with good success. Seeds of biennials and perennials, if sown early enough to produce strong little plants, will flower the next summer, and pansies, Chinese pinks, though they bloom the first summer, if sown in the spring, will make much stronger plants, and flower more freely and earlier if young plants are grown in the autumn.

**A New Source of Wealth.**—We have mentioned the vegetable *ramie* in these pages before. Now it is beginning to attract public attention. The *Herald* says: "Soon after the close of the late civil war the attention of certain planters in the South, especially Louisiana, was directed to a new fiber known as *ramie*, which it was alleged would, in its production to the acre, be more profitable than cotton, and in its use as a tex-

tile supply the place of jute, hemp, flax, and other similar materials. Experiments were made, and still continue in various portions of the South, and the results generally are described as favorable. Thus far, however, it appears that our inventors have not been successful in making machinery whereby the various productions of the fiber—as, for instance, in the construction of paper, coarse cloth, carpet and bagging—can be economically utilized. The concurrent testimony is to the effect that *ramie* is a hardy, easily grown plant, and under certain conditions easily manipulated; that its most important uses are in the germ, and are only awaiting the developments of experience, art, and science, to be made available among the larger industrial resources of the United States. If it be true that from twenty-eight to thirty millions of dollars are annually expended by us for foreign fibers, and that we have within our grasp an equivalent of these materials, surely the country that produced the cotton-gin will not be long in finding the way to add value to a new prod uct, and make for it a market."

**Casts of Living Human Beings.**—I was taken by a friend to see the wonderful plaster casts of living human beings which are among the curiosities of the Russian Department. How the thing is done it is impossible to imagine, but there the statues are, recumbent female figures, undoubtedly taken from living women. One lies slightly turned on her side, her lips parted in a smile, as though she was striving to suppress a laugh. The other, who has much the finest form of the two, lies face downward, her feet crossed, and her head resting on her raised arms, as though she had thrown herself down to sleep. The minutest details of the texture of the skin, nails, etc., are very perfectly reproduced, the "goose flesh," wherewith the skin is covered being amusingly noticeable, and showing that the preparation used for these casts, the composition whereof is a secret, must be applied cold. Then all the indentations in the soles of the feet and palms of the hands, and the curves of the nails and their rimming of skin and flesh are reproduced with even startling accuracy. The process by which these figures are produced is still a secret, but it is certainly a wonderful and curious discovery.—*Paris Letter.*

**Bran as a Fertilizer.**—Last spring I read in some paper that bran was a good fertilizer for potatoes. I planted twenty-four whole potatoes, with a handful of bran on each, and covered them with about four inches of soil; right alongside of them I planted twenty-four whole potatoes of the same kind without the bran. The twenty-four I put bran on produced three pecks, and the twenty-four without bran only two pecks. The vines had a dark green color, but the vines where I put no bran looked more yellow. Last spring I planted Early Ohio, Early Vermont, and Early Rose, on one-fourth of an acre. Several weeks ago I harvested fifty bushels of very nice potatoes. The Early Ohio came No. 1, Early Vermont No. 2. Next year I will plant Early Vermont and Early Ohio, and drop the Early Rose.—*Ohio Farmer.*

**Soot Tea for Roses.**—Get some soot from a chimney or stove where wood is used for fuel, put into an old pitcher, and pour hot water upon it. When cool use it to water your plants every few days. When it is all used, fill up the pitcher again with hot water. The effect upon plants, especially upon roses that have almost hopelessly deteriorated, is wonderful in producing a rapid growth of thrifty shoots, with large thick leaves and a great number of richly-tinted roses. Never despair of a decayed rosebush until this has been tried.—*Franklin County Times.*

**Suicide and Insanity.**—Dr. John P. Gray's article on this topic, which was published in the *American Journal of Insanity*, is an important contribution to the data of Insanity. The author contests the popular opinion that suicide is always an insane act. It is always an unnatural act; but in the large proportion of cases, if not in a majority, it is committed by sane persons. He does not undertake to deny that the mental state must be more or less abnormal, in the serious contemplation of suicide; but the difference between the mental condition of sane and insane suicides is too obvious to be avoided. Delusion is "the test and touchstone in the diagnosis of insanity." When this state is present, the insanity of the suicide is beyond question But the circumstances under which suicide is generally committed are not delusions, but facts. Overwhelming financial disaster, the commission of crime, the fear of impending disgrace, something of this nature generally drives to the desperate act; and that act proves not so much a state of mental derangement as a deficiency in the moral education. Dr. Gray dwells with much earnestness upon the influence of education, and concludes that it is controlling in all cases where the suicide is not insane. The moment the moral barrier is broken, the question of responsibility to a future for the act, the prudential reasons of family relations, of business with other men, character, etc., are quickly disposed of.

The discussion of this branch of the question leads Dr. Gray incidentally to a consideration of the influence of example in suicide. He sums up the result of his observation on this point by saying that "education and custom being powerful influences in overcoming the instincts of nature, and in inducing to suicide, the wide-spread publication of the names of suicides, the age, the sex, the mode, and the reasons, promote suicide by inducing imitation, and by lessening the horror of the act by familiarity with it."

**Clergymen Farmers.**—The *New England Farmer* makes some good points under this head that are worth reading. In the early history of Massachusetts a large propor-

tion of the ministers were farmers, and generally good ones too, for then, as now, the better the education, the better the farmer, as a rule. Nor did the healthy exercise required in working their productive acres prevent them from presenting strong and vigorous arguments from the pulpit on Sunday, nor were throat diseases, dyspepsia, and trips to Europe considered, at that time, among the necessary evils connected with the clerical profession. And there are some good farmers yet among New England preachers. Mr. C. C. Adams, Episcopal clergyman at Lanesboro, Mass., who occupies a parish farm, or "parsonage," has been spending some of his spare hours the past three years in setting an example to others of how man can beautify and improve the appearance of old Mother Earth. The "glebe" consists of twenty-eight acres, which, when he commenced his labors, presented a most forlorn and forbidding appearance, being covered with hardhack, alders, and other bushes, even to the hiding of the stone walls and fences, while the rocks and loose stones in the mowing lay round waiting to dull the mower's scythe or the knives of the machine. He went to work with determination, and is now prepared to compare accounts with Col. Waring and his Ogden farm management, believing that he has beaten him out and out. He has changed the whole face of the farm in the three years, keeping a horse, two cows, four sheep, and forty fowls, from which he has derived not only a good income, but a clear profit above all expenses, an accurate book account having been kept through the entire term of the experiment. This clerical farmer also endeavors to improve the temporal as well as the spiritual condition of his parishioners, and has established an annual harvest festival to which he invites neighbors and friends, and treats them with a lunch, a speech, and a good time generally.


MRS. C. FOWLER WELLS, *Proprietor.*
H. S. DRAYTON, A.M., *Editor.* N. SIZER, *Associate.*

NEW YORK,
DECEMBER, 1878.

## SUSTAIN THE USEFUL.

"I READ every number of your magazine, and like it very much. It gives me food for thought, real information. There is nothing shallow about it." Thus we were addressed a day or two since by a lady of very unusual intellectual culture, and weil known as a contributor to leading periodicals. On opinions like this the publishers of the PHRENOLOGICAL JOURNAL found their claim to public recognition and support, and now at the close of 1878 assure the subscriber that for his money they will give him in 1879 reading matter of solid value to his mind and body. The boy in the story was healthy, active, and gleeful while he lived on bread, milk, and apples; but when he changed to pie, cake, and coffee he soon became ill, languid, and peevish. Cake and pie were so "nice and sweet," and he could put all the sugar into the coffee he wanted, but oh! why did they make his head ache and render him so sick that he could not play? He had not learned how the bread and milk nourished his vital energies, and why the pie and cake were harmful.

They who conduct the PHRENOLOGICAL JOURNAL seek to make it serve as bread, as good food to the mind. There is too much of cake-and-pie literature circulating through the reading community, and it seems to us a duty to do what we can to offset the pernicious influence of such mental diet. It must be that every intelligent, good-loving man and woman is desirous that the literature which floods our land should be purified. There are some who are making a strong outcry against the trash given to our boys and girls, and we most heartily approve their course. But to bring about a radical improvement in the tone of general literature, the people who

complain should give their countenance and support to those publications only which are healthful in moral and intellectual tone. Should the great body of those who call themselves Christians be consistent in this matter, many an excellent publication now kept alive only by the sacrifices of its humanitarian owner, would at once take the position of influence and power it merits.

## CONSIDERATION OF "CRITICAL REMARKS ON PHRENOLOGY."

AN esteemed contributor occupies a part of our space in this number with some "Critical Remarks on Phrenology." We print his article chiefly for the reason that it exhibits well the opinion of most scientific men who have looked a little into the doctrines of the phrenological system, but have not gone far enough to acquire a thorough knowledge of them, especially in the sphere of their practical application. In the beginning Dr. Sozinskey acknowledges that the leading principles of the science "are in the main true," and particularizes the chief of these principles, viz., the physical relation of the mind, the distribution of the brain into centers or "seats of particular faculties," and the relation of size to mental capability. He also affirms that "the most respectable psychologists" accept these as in the main true.

Having granted so much—and surely no phrenologist of solid merit would ask more of a disciple—he indicates his difficulty in estimating the variations of brain development on account of the varying thickness of the skull, scalp, and membranes in different persons, and soon after concludes that Phrenology, "as a science or an art, is inexact," and furthermore, somewhat hastily asserts, interrogatively, that phrenologists "are loth to admit" this inexactness.

Dr. Sozinskey has probably read Combe's "System," a book now almost fifty years old, and if so, he saw it distinctly stated therein that "size, *cæteris paribus* (other things being equal), is the measure of power, a truth recognized by every trained phrenologist, and which in itself offsets the notion that we hold phrenological science to be positively exact.

The considerations embraced by the phrase *cæteris paribus*, include those varying physical conditions to which reference is made by our contributor, and involve much physiological research. They relate, for instance, to the study of temperamental conditions, an indispensable department of phrenological inquiry. He who should attempt to practice as a phrenologist without a knowledge of the influence of temperament upon the growth, structure, and quality of skull and brain, would be but a pretentious blunderer, and merit the hearty derision of the public.

The well-educated and experienced phrenologist can almost at a glance judge concerning the comparative thickness of the cranial shell and its integuments belonging to the subject under his hands. The hair, the general configuration, the voice, the skin, are indices to him of special physical constitution, and that he keeps constantly in view while discussing the influence of the different organs in the mental economy. He is not so indiscreet as to claim infallibility in his determinations; indeed, in this respect there is no difference between him and the true scientist in other fields of research. He knows, as few others out of his sphere know, that the human mind is amazingly complex and infinitely differentiated, and that to attempt to master the minute shades of difference in feeling, emotion, and susceptibility between men in such a way as to communicate to those not versed in the

laws and processes of mental action an intelligible explanation of them, would be impossible. For this reason he seeks to follow in that path of practical moderation which at once assures him of substantial accuracy and of performing a good work for his fellow-men. Such a phrenologist, in practicing the art, rarely errs in important respects; his conclusions of personal character, taken as a whole, will scarcely be found to misapply once in one hundred instances.

There is a great amount of speculation afoot, as the reader knows, with respect to the part borne by the spinal column in mental phenomena. Every physiologist of eminence, nearly, has some "views" on the subject, and as such "views" generally lack positive basis, they are as different as the mental constitutions of their authors. We have our views on the relation of the spinal process to the brain, and Dr. Sozinskey has his, and we deem him as much entitled to his opinion as we are to ours. But a careful reading of his paragraphs on the spinal cord inclines us to think that between him and ourselves there is little material difference of opinion. We hold that the function of the spinal cord is communicative and annunciative, the brain being the determinative center and source of nervous power. As the executive agent of the brain in controlling the action of the body, the spinal process would reasonably be expected to possess certain homologies of structure, and its intimate relation to brain would offer many difficulties to the precise determination by experiment of its distinctive offices. The very rapidity with which sensation is transmitted presents obstacles almost insuperable to mechanical investigations which have for their object the successful establishment of centers of innervation with narrowly-defined functions. This fact is seen in the different results obtained by neurologists like Goltz, Hitzig, Broca, Jackson, and others. The subject experimented upon, its physiological condition at the time of the experiment, the strength or nature of the galvanic current, bear directly upon the character of the results, rendering them dissimilar; even when the condition of the subject is known, the effects following electrical excitation may not be predicted with certainty. The tri-geminal nerve, for instance, is regarded generally as related to vision, but its severance has been followed by disturbances of other properties of sense and motion. So, too, the eighth pair is related to a great variety of nervous phenomena. The connection between the brain and the nervous processes of the trunk is so intimate that it is not strange that some men are inclined to believe that the *solar plexus* exercises the office of a brain, while the phenomena of automatism supply grounds to others for thinking that the ganglia in every part are storehouses of *mental* energy.

The phrenologist "in thinking of the brain" does "think of more than the degree of development of the seats of the various faculties of the mind." His consideration of the influence of temperament has for its object those very matters to which Dr. Sozinskey alludes in his remarks on "reflex centers." The phrenologist endeavors to distinguish with nicety the "mechanical" from the "psychical" parts of the brain, and his increasing experience as an examiner enables him to estimate with closer accuracy the extent of what might be called the brain's physical innervation. Comparative anatomy, or the observation of the cerebral organization of the lower animals, assists him greatly in this portion of his work; and the solid results of physiological investigation which bear upon brain structure and mental action are gladly ap-

plied by him in the hope that he shall be the better enabled to analyze the workings of man's strangely complicated nervous system.

## A COMMENT OR TWO ON THE LATE EPIDEMIC.

A PROMINENT New York newspaper lately published an editorial article on the Southern epidemic, in the course of which the discerning writer takes the American people to task for permitting such a calamity to occur; and hopes that the severe lessons it has taught will prompt to the carrying into effect those well-known sanitary measures which are preventive of contagious and disease-breeding organisms.

The occurrence of such a dreadful plague is a stain upon our high civilization. "It must never occur again," says the newspaper writer. It never should have occurred, say we. With our thousands of physicians, with our bureaus of sanitary inspection, with the manifold facilities for the prevention of the causes of disease, and with the dissemination of so much literature, instructing the people with reference to public and private hygiene, it seems marvelous that the people in any thickly-settled place, especially a Southern town, where the liability to epidemics is well understood, should permit those conditions to exist which invite malignant disease.

The intelligent class in every American city and town know that accumulations of filth, household refuse, garbage, vegetable and animal matter, etc., lying exposed to the sun's rays in warm weather, generate gases and living germs which poison the atmosphere and make it the carrier of sickness and death to them who breathe it. From this knowledge proceeds the obvious duty to prohibit such accumulations, and wherever found, to remove and destroy them or their noxious property. Negligence, carelessness, and ignorance with regard to the simple precautions necessary to avoid an infectious atmospheric condition should be publicly declared as criminal.

We heard the Episcopal bishop of Tennessee say that he had warned his congregation with respect to the consequences to be expected from the filthy state of certain quarters in Memphis. No measures were undertaken to disarm the messengers of the yellow destroyer; the reeking drains, gutters, and pools, the putrid heaps of filth continued to send up their vile exhalations, and in due time the dreadful malady had come. But the same causes, substantially, which produce yellow fever in the South, produce fevers of the malarial class in the North, and it is only the difference in climate which makes the difference in type and prevalence. The negligence of many well-to-do people is contributory to these causes. While for the poor, who are huddled together in tenements, there may be some excuse for not exhibiting much interest in the matter of disposing of household refuse, there certainly can be none for the family living in its separate house and controlling all its affairs. We have frequently visited suburban villages where broad streets, extensive lawns, and isolated houses constitute the general character of their settlement; yet while passing some gentleman's villa our nostrils have been assailed by sickening odors carried by the breeze from a festering drain or compost heap or from a reeking stable. We have known a great pile of most offensive compost to stand for six weeks within thirty or forty feet of the windows of an elegant mansion, awaiting the gardener's leisure to distribute it through the soil. A few cents' worth of sulphate of iron or chloride of lime would have deprived the compost of its poisonous nature, and prevented, we are sure,

two or three cases of severe illness which occurred in the immediate neighborhood.

Oh, the tremendous loss of life and material wealth which negligence occasions! Think, dear reader, of the waste of valuable life in the Valley of the Mississippi during the past three or four months! Aside from that, it has been estimated that the epidemic has affected business interests to the extent of at least $50,000,000. Nine-tenths of all this could have been saved by vigilance on the part of town and municipal authorities in enforcing thorough measures of disinfection and cleanliness in the spring and at proper intervals during the summer. Some medicists are of opinion that by doing this the scourge would have been entirely prevented.

## CHANGES OF TEMPERAMENT.

A READER inquires if we can change our Temperaments. We answer, Yes; and for the proper understanding of this answer by those who may not have given much attention to the subject of physiology, we shall attempt some explanation of the meaning of temperament, and briefly indicate a few of its more important phases in the human organization.

There are three great departments of the human body. First, the frame, or MOTIVE TEMPERAMENT, including bone and muscle; second, the Nutritive System, which includes the digestive system and circulatory and breathing apparatus, whose combined work results in vital support, hence called VITAL TEMPERAMENT; and, third, the Brain and Nervous System, which serves as a vehicle to mental activity, hence called the MENTAL TEMPERAMENT.

Let us suppose these to exist in a person, as it is desirable they should, in exactly harmonious proportions. Now if that person should adopt a laborious vocation, which requires but little thinking and not a great deal of activity, simply hard work, the bones and muscles will be called into action mainly, and the tendency will be toward their development and growth, and after a few years the man will look more bony and more muscular. In other words, the harmony we observed at the start will be impaired, and the Motive Temperament will be increased and be predominant over the other temperaments; or suppose that another man, organized originally in the same way, were to devote himself to study and intellectual effort, using the brain and nervous system, and not employing himself in a way to nourish and develop the bony and muscular structure, as a result the brain would increase in size and activity, the muscles would decrease, and there would be an increased exhibition of the Mental Temperament. We see examples of this every day.

Thirdly, suppose an individual, harmoniously organized like the others, were to engage in some pursuit which called into use the digestive apparatus; he devotes himself to cooking, or catering to other people in the way of food and drink, and his thought and life and labor are all centered in the direction of gustatory indulgence. We sometimes see men in saloons and hotels who get fat and plethoric; their brains do not grow much, but the tissues of the face, neck, and body, especially in the region of the stomach, become plethoric and overgrown. In twenty years such a man will have a great predominance of the Vital Temperament, and thus will have changed his temperament.

Let us take another view of it. Suppose a person is somewhat deficient in the Mental Temperament; he has grown up to manhood without being surrounded by influences that are calculated to develop the mental part of his nature. If he become a

clerk in a book-store or printing-office, or join a debating society with a library and begin to study books, think, and discuss literary questions, in seven years he not only would *look* more mental, but really *would* be. His brain and head would indicate growth and possess increased intensity and activity. Hence his Mental Temperament would be advanced toward an equalization, or perhaps to an excess.

Again, suppose a man who has been brought up delicately or leisurely, not having used his bones and muscles in any kind of effort, except to walk about and enjoy himself, were suddenly to lose his fortune or means of support, and was compelled to work as a carpenter or a farmer or a grocer, his muscles being called into special activity, in five years he would show a decided change in his physical characteristics. There would be a stronger-looking frame, with more masculine dignity and strength, and the Motive Temperament would thus be increased.

A good deal of interest in this subject of temperament has been shown by the public in late years, and very properly so, for it is second in importance only to the subject of mind, and is, in fact, so blended with the latter, that to consider one necessarily involves the consideration more or less of the other. Temperament affects directly the action of the mental faculties, and mind affects directly the temperament.

Doubtless this short response to an inquiry will suggest many others, and it is gratifying to us to be able to say that an excellent treatise specially devoted to the human temperaments has just been issued from the press of S. R. Wells & Company. This work, the only one of a comprehensive sort which has been published upon the subject in this country, will probably find an extensive circulation at once. It is at once popular and technical in style and method, adapted to interest the general reader and to meet the want of the physiological student.

# Our Mentorial Bureau.

"He that questioneth much shall learn much."—*Bacon.*

## 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.*

WE CANNOT 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.*

SELF-IMPROVEMENT.—*Question:* I noticed a very sensible article of advice in Vol. 56, page 71, entitled "Self-Improvement." I have read all of those books, or their equivalents. Please to extend the list as you there promised to do.

*Answer:* Although something like six years have elapsed since the paragraph alluded to was published, the correspondent has done well to have perused the list of books suggested. We were rather hasty, perhaps, in promising to extend the list; probably had the thought in mind at the time, that in his reading of the authors mentioned, the student would receive so many suggestions with reference to future reading, that it would be quite unnecessary for us to give him further directions. We can, however, suggest that if he wish to extend the list particularly, he can read Brown's Grammar of Grammars, or Marsh's lectures on the English Language, Bain's Logic, Mill's Blair's Rhetoric,

Trench on the Study of Words, White's Words and Their Uses; in Geography, Guyot's Physical, and the valuable series comprising the United States, North America, South America, Europe, Asia, Africa, Oceanica — the separate volumes of which cost from $3.50 to $9 each. In history, having read the authors who treat the subject generally, the student must be directed to those who make nations severally a topic. Goodrich has a series of popular works on the United States, England, Rome, Greece, France, etc., which are sold at $1.25 per volume. If you aim higher, there are Froude's History of England, Bancroft's History of the United States, Thiers' France, Menzies' Germany, Motley's Dutch Republic, and the New Netherlands, and Gibbon's Rome, Hallam's Middle Ages, Grote's Greece, Wallace's Russia, which we might mention in passing. In Biography you can obtain an account of nearly every great character who has appeared in modern times. We have in press a book of moderate size, entitled "How to Read," which will contain lists of books on all subjects, and also several critical essays on leading topics and authors. Many practical suggestions are given in the course of the work, which will be found very serviceable to those who wish to read for a purpose.

BIOGRAPHIES.—We deem the department of Biography one of the most useful in literature. If you have the time and opportunity to read extensively in this field, you will find that a large proportion of the names which stand conspicuously on the roll of fame, are men who were stimulated to the efforts which won them repute, by reading the published careers of eminent men and women.

Family genealogy is a matter chiefly of personal interest. Mr. Smith is interested about other Smiths; so are Mr. Brown and Mr. Jones interested in other families of like name. Perhaps there is a vein of self-praise in such literature, but if its tendency be to encourage young men and young women to make themselves distinguished, we have no objection.

WIND INSTRUMENTS.—Q. Q.—Quite recently we had an item in this department with reference to the effect of musical instruments upon the system. If one have fair health, with which we include good lungs, the moderate use of such musical instruments would be beneficial. If you will observe the members of a brass band, you will notice that most of them are distinguished for good chest development. In some cases, perhaps most, the moderate use of the horn, flute, cornet, flageolet, etc., proves beneficial to persons having weak lungs.

NEAPOLITAN LAZZARONI. — C. — This phrase is applied to the beggars who are so numerous in and about Naples, Italy. That beautiful city is much visited by tourists and travelers, and is the rendezvous for beggars of all sorts, who importune and annoy the visitors for money contributions. The term "lazzaroni" is somewhat technical in its way, just as the term "tramps" has become, with us, significant of those parasites of society who make begging their profession.

KINDERGARTEN. — This term is German and means child's garden, and is applied to that system of juvenile education which was introduced by Pestalozzi and Froebel. It is otherwise known as the "object" method.

CONCENTRATION. — R. W. H. — Whatever may be the employment on which you are engaged from time to time, endeavor to fix your attention upon it, scrutinizing its every particular, analyzing the details and processes; this may be difficult at first, but in time we think the habit will be formed of concentrating the attention, and your faculties in general will be strengthened and rendered more available for your work.

DINNER-HOUR.—H. B.—When one finds it necessary to make a considerable change in the time of eating, he will for a greater or a less space experience much inconvenience from the disposition to eat coming on at the old time. Perhaps it would be well if much inconvenience is experienced, as, for instance, a headache, to have a cracker at hand, or some small article of food which one can eat, and thus relieve the craving of the system. This craving will wear off in course of time with the adaptation of one's system to the change.

BROWNE'S PHRENOLOGY.—T. D. S — This work was published by a British surgeon of some eminence, and is in the main a philosophical consideration of the faculties of the mind from a phrenological point of view. Dr. Browne furnishes a good deal of evidence from his own practice and observation. Being a comparatively recent treatise on the subject, it incorporates some of the later developments in the science of mind.

HOW 'TIS DONE.'— The matter in this department is set up in type just as the other parts of the magazine are prepared. Go into the newspaper or job-printing office of your village. If there be no printing establishment where you live, you will find one certainly in the nearest town, and there in fifteen or twenty minutes you can learn more with regard to the method of the printer than could be explained to you in the course of an hour's conversation on paper.

*Several* ANSWERS *must be deferred to the 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.*

PHRENOLOGY IN THE GUIDANCE OF CHILDREN.—*Dear Editor:* I've been thinking of a little incident which I take pleasure in recalling, more because it may set some parent to thinking than for occupying your space. A little more than a year ago an old and valued friend of mine, with whom I was spending the night, told me of his great anxiety that his son, a little fellow of thirteen, should be a good mathematician, and of his deep disappointment at the indifference the boy manifested, and of his extremely slow progress in the common branches. We were both engineers and held good rank, hence the father's hopes seemed doomed. I heard him all through and dropped the subject in our conversation, but I thought upon it deeply afterward. I am a firm believer in the practical utility of Phrenology when expounded by experts. I called at the father's house a day or two later and asked for a half holiday for the boy, which the mother granted, and the little fellow went with me to your office at 737 Broadway. You gave me the main features of the case, which I took down in phonographic characters. That evening, after the boy had retired, I read my notes to the father and mother and we had quite a chat over it. The substance of the examiner's remarks was this: "The boy has a first-rate natural capacity for mathematics, and will become first-rate in them. *But he must* be taught by a teacher who can and does interest him and who can obtain his regard, or he will appear dull and will make slow progress."

"Well," said the father, "I will at least try it, and will find a teacher and change him in his school."

In another week I was called away to attend a professional engagement of months hundreds of miles away. When my engagement closed and I returned, I called on my old friend. After tea, and the children were in bed, we had just such a chat as intimate friends indulge in after months of separation. "The boy's head" finally came up. "Did I remember it?" "Yes; and what's the result of a year?"

"Well," said the father, "it has been the greatest disappointment of my life, and I ought to say the happiest one I ever experienced. Soon after you left I found another teacher and changed him from the old school. In a few weeks he became interested, then very much engaged, and now he comes to me, 'Papa, I'm only third or fourth in a class of twelve or fifteen, some of whom are three years older than me;' and he needs no urging now, and is making fast and solid progress, in mathematics especially; while in geography, which before he could not comprehend, he is perfectly voracious—picks it up as he runs."

"Then the hints given by my good friend the phrenologist were really of some value?"

"Yes, most emphatically so; for without them I should not have changed teachers, and so failed of this most gratifying improvement, which has taken a great load of apprehension off my own and his mamma's feelings."

Now, as the old saying is, if that isn't good, plain, square, common-sense reasoning, then please count me out. I've been a little over thirteen years an intimate and constant patron of the office of Fowler & Wells, and can tell the readers of the JOURNAL of other essentially kindred instances of personal observation in different directions. More anon. T. P., JR.

IDIOTIC BY AN ACCIDENT.—While making a tour in the northern part of this county (Aroostook) we stopped at Easton, a thinly-settled region remote from a village or hotel, and obtained our dinner at a private dwelling. The person who was sent to take charge of our horse immediately attracted my attention, both by his actions and the peculiar shape of his head. My knowledge of Phrenology enabled me to see instantly that he was hopelessly idiotic, and yet the shape of his head differed materially from that of most idiots, being quite evenly developed, to all appearance, except in the region of Benevolence, Agreeableness, Causality, Human Nature, Comparison, and Imitation. The manifestation of all these faculties was very feeble indeed. As careful an examination as our limited time would permit, revealed the fact that the skull had been broken at some time, and had been pressed so forcibly downward upon the brain as nearly to destroy the above-mentioned organs.

By inquiry we learned that when a small boy (we omitted to learn his age, but judge him to be now about twenty-seven) his skull was crushed by a blow from a cross buck. His parents not knowing what should have been done, allowed the skull to knit together in its present position.

Melancholy as is the above case, I think it is another proof of the truth of Phrenology; for we see here that where these organs of the brain are seriously injured, the mind manifests the functions ascribed to them in a very feeble degree.

Very truly yours, JAMES PERRIGO.
HODGDON, ME.

MAGIC WAND AGAIN.—A Mr. Couch writes us with regard to this matter, that he has examined and tested the so-called magic wand, and thinks that he has ascertained the secret of its operation; that it consists "in gripping," and that the harder the person grips the farther the point will bend down. He "can show anybody in five minutes how to use one so that he can twist the bark off a witch-hazel or an apple-tree twig of the right kind and size." Mr. C. evidently thinks that there is no magic or witchery in it.

## PERSONAL.

GENERAL GIDEON J. PILLOW, who took part in the Mexican war, and held a prominent command in the Confederate service during the civil war, died of congestion of the brain, at his residence in Arkansas, on the 9th of October.

PROF. U. J. HOFFMAN'S articles on the "Mental Faculties and their Cultivation," in *The Normal Teacher*, are excellent and practical, and just the matter all educational publications should give to their readers.

THE REV. ISAAC M. SEE has been dropped from the roll of the Presbytery of Newark, N. J., in accordance with his own request. It will be remembered that Mr. See was tried by the last General Assembly for allowing women to preach in his pulpit, and for teaching the doctrine of Christian perfection.

JOHN SARTAIN, the steel engraver, of Philadelphia, who acted as Chief of the Department of Fine Arts at our Centennial Exhibition, has received from King Humbert, of Italy, the cross of Officer of the Order of the Crown of Italy. The order was conferred in recognition of services rendered to the Italian Commissioners and exhibitors.

THE REV. JOSEPH COOK told an emphatic truth when he said that "a pulpit silence on temperance discredits itself as much as a pulpit silence on dishonesty."

MR. ISHMAEL LEWIS went to Des Moines to hear Senator Blaine speak, and he did it, although he broke his arm, and had to stand throughout the address holding the fractured member.

MISS BECKWITH, a lady of London, with the motive before her of encouraging ladies in general to learn a similar accomplishment, recently swam twenty miles in the Thames. She accomplished it in six hours and twenty-five minutes, and exhibited at the end of her voyage no symptoms of unusual fatigue.

## WISDOM.

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

ONE of the hardest tasks ever set a man is to forget the good deeds he has done, and to chide himself for the evil.

SELF-ESTEEM is a high-bred steed that bounds over the asperities of life. Vanity is a blind hack, which knocks its head against every impediment.

GOD made the soul to correspond with truth. Truth is its own evidence, as the lightning flash is, as the blessed sunshine is.—F. W. ROBERTSON.

MANY persons fancy themselves friendly, when they are only officious. They counsel not so much that we would become wise, as that they should be recognized as teachers of wisdom.

POVERTY and hunger are more endurable than overexertion caused by the cravings of an insatiable disposition; no wealth can surpass contentment, no intellect is equivalent to good demeanor, and no charms can be compared to an affable mind.—*From the Talmud.*

THERE are two kinds of things at which a man should never get angry—what he can not help and what he can. What is the use of patience if we can not find it when we want it?

## MIRTH.

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

MILKMAIDS are different. The milkmaid in the country is different from the milk made in the city.

"Do not marry a widower," said the old lady. "A ready-made family is like a plate of cold potatoes." "Oh, I'll soon warm them over," replied the damsel, and she did.

"JOHN," said a poverty-stricken man, "I've made my will to-day." "Ah!" replied John, "You were liberal to me, no doubt." "Yes, John, I've willed you the whole country to make a living in, with privilege of going elsewhere if you can do better."

A FEW days ago a lady of Bloomfield, Iowa, went to the post-office and asked for some stamps. The clerk handed her some green ones. She asked him if he didn't have any pink; her stationery was pink, and she wanted stamps to match.

SWARTZMEYER to his wife: "Now, see here, mine lof, better as you had Johnny let a leetle op von dat candy eaten, obber der first thing you don't know he haf some toothache in his teeth, und haf been skwallin' around all night mit der cholera morbus in his jaw—don't it?"—*Oil City Derrick.*

"WHY does lightning so rarely strike twice in the same place?" Professor Wortman asked the new boy in the class of natural philosophy. "Huh," said the new boy, "it never needs to." And it is a little singular that nobody had thought of that reason before.

"IF you can't keep awake," said a parson to one of his hearers, "when drowsy, why don't you take a pinch of snuff?" "I think," was the reply, "the snuff had better be put into the sermon."


*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.*

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DETERIORATION AND RACE EDUCATION, with Practical Application to the Condition of the People and Industry. By Samuel Royce. 12mo, cloth, pp. 585. Boston: Lee & Shepard, Publishers.

An open letter precedes the title of this volume. It is from the hand of Mrs. Elizabeth Thompson, a lady well known for her philanthropic heart and earnest efforts in behalf of habit and vice-enthralled humanity. She gives to the book her most cordial commendation, and implores society to read it "with prayerful consideration."

With such an indorsement in the outset, we expect to find in "Deterioration and Race Education" a truthful review of the state of society in this era of electricity and steam, with a reasonable presentation of the tendencies of the sentiment and customs which prevail, and some practicable counsel with respect to what should be done to improve matters. Our expectations are substantially met, especially with respect to the first and second clauses. If the third clause be not fully realized, it is probably due to the immense difficulty attendant upon the full resolution of the problems embraced in questions like, What shall be done to emancipate society from its errors old and new? and, What is the best method of education that shall meet the moral as well as the physical wants of man?

"Most children are not educated at all," says Mr. Royce. "They are simply taught the three R's." Would that they were properly taught the three "R's," say we. For with such an introduction to life's work, we feel confident, with Edward Everett, that the majority of men would be successful, whereas now they are crushed by failure. But the education which is looked to by Mr. Royce to counteract the pernicious influences at work among us is not so much that drawn from text-books or theories as it is a course of training for mind and body formulated by a sound wisdom from conclusions based upon the provings of statistics.

Part First, covering "Race Deterioration," is largely made up of gleanings from the tables of mortality, insanity, disease, pauperism, crime, etc., together with the opinions of eminent observers in ancient and modern times. Of crime, the author states that it "may have decreased numerically, but it has deepened in quality. . . . The crime of former times was rude force cropping out under other influences, as stern virtue, and needed but the restraint of force. The crime of to-day is disease and insanity." If we would bring about an ameliorated condition, the author very correctly maintains that we must apply our educational methods to the root of the trouble. "Man, and not scholarship, is the aim of education." We must train body and mind in the formative period of earliest infancy; must apply the rules of hygiene to the production of healthy, harmonious constitutions. If we neglect to adapt our education to the organization, we greatly err, and the product of a warped, ill-acting, erratic, vicious organization is reasonably to be expected. Thus Mr. Royce reasons, and he sees in the Kindergarten one cheering step in the right direction. Industrial schools, too, constitute an important adjunct. Habits of industry, associated with knowledge of the essentials of health, are antagonistic to pauperism and crime. The school system which has such training for its object, Mr. Royce claims, is the kind demanded by the times. We have not the space to enumerate other interesting features of this valuable book. It is worth the careful reading of the teacher, politician, statesman, economist, reformer, parent. No book of its character which has come under our notice in late years contains so extensive an array of facts and opinions, and so frank and forcible a discussion of their significance.

HOW TO READ, and Hints in Choosing the Best Books, with Classified Lists of Works on Biography, History, Criticism, Fine-arts, Fiction, Poetry, Religion, Science, Language, etc. By Amelie V. Petit. 12mo, cloth, pp. 220. Price $1. S. R. Wells & Co., Publishers, New York.

We have been called upon to notice several books lately whose titles indicated a purpose similar to Miss Petit's, and so were somewhat inclined, as we looked upon the neat cover, to think that here is a fresh addition to the long list of hasty compilations which were designed to meet an existing need of the reading public, but are in most cases mere tables of subjects arranged in accordance with the book lists of a few publishers. The author's brief and modest preface, however, does not indicate a commercial motive as predominant in her mind when it was prepared, and an examination satisfies us that it is a conscientious performance, based on no insignificant experience as a teacher and reader. In the course of seventeen chapters she gives us her own opinions and also criticisms from eminent writers concerning the style and character of leading authors in the different branches of literature, and advises with reference to the

economic use of one's leisure in its application to special reading. We have met with few writers who evince so profound a respect for books, good books, as Miss Petit. The warmth with which she mentions the more useful authors, indicates an uncommon appreciation of the importance of instructive reading, and in this day of light, promiscuous story literature, her emphatic advocacy of healthful-toned books must gratify every philanthropical observer.

The book is designed for people who have not read much, for parents who desire advice with reference to the selection of books for their children, for those who wish to extend their acquaintance with authors in general or special directions. The classified lists, which occupy upward of seventy-five pages, will afford important aid to book collectors, to those who wish to form a library, large or small. As the price of a book in every practicable instance is given, the lists have a pertinence which will be appreciated by the reading public.

CONTRIBUTIONS TO OPERATIVE SURGERY AND SURGICAL PATHOLOGY. By J. M. Carnochan, M.D., formerly Professor of Surgery in the New York Medical College, etc. With Illustrations drawn from Nature. Parts IV., V. Price $1. New York: Harper & Brothers.

In these fresh numbers of Dr. Carnochan's very valuable surgical treatise, he treats in continuance "On shock and collapse, and the primary treatment of injuries; including the consideration of the time of election for capital operations required after extensive lesions," and also introduces a new topic, viz., the "Physiological conditions which modify the effects of shock." The minuteness with which systemic phenomena in great debility and prostration are described, indicates careful and protracted observation, and much close reading of the best European authorities. Several of the cases in illustration are familiar, in so far as the notoriety of the persons injured is concerned. Among them are those of Poole, the prize-fighter, and James Fisk, both of whom died from pistol wounds. Dr. Carnochan considers the general pathological features of the cases he describes, and thus makes his work of much importance to the physician as well as to the surgeon.

THE ETHICS OF SPIRITUALISM. A System of Moral Philosophy, founded on Evolution, and the Continuity of Man's Existence beyond the Grave. By Hudson Tuttle, author of "Arcana of Nature," "Antiquity of Man," "Career of the God Idea in History," etc. 12mo, cloth, pp. 160. Price, 60 cts. Chicago: Religio-Philosophical Publishing House.

"We are immortal," the author says, in the opening of his book, "and can not blot out our immortality, whether in the heaven of happiness or in the hell of misery; we can not escape the fiat of endless living." A little further on, he says: "A correct system of morals must be founded, not on any supposed reverence, or ancient form of faith, but on the constitution of man. It must be the result of a careful study of his physical, mental, and moral nature. No theory, however long received, is infallible; no revelation, however sacred, has the least weight against the demonstrated conclusions of impartial thought."

These quotations will be sufficient to furnish the reader a clew to the character of Mr. Tuttle's book. He does not, it is evident from these few sentences, show an accord with the declarations of orthodoxy, except so far as the idea of immortality is concerned. His language is clear and incisive; his issue squarely made; and standing upon Evolution as his vantage ground, he affirms as an inevitable conclusion, that "Man, never having fallen, needs no redemption." His analysis of mental phenomena is a correct one in the main, and his discussions of the relations of faculties, the offices and functions, are in most cases sound. Man's susceptibility of improvement is declared to reside in his moral faculties; the physical faculties, appetites, and propensities are, or should be, subordinate to the moral. When they are predominant, the result is necessarily deterioration. His view of the will agrees with that of Phrenology, in that it is dependent upon the action of all the faculties, and, therefore, the outcome or final determination of their inter-action. He discusses the relations of capital and labor; the rights of women; the duties of parents to children; the obligations of societies to individuals. We think that Mr. Tuttle has studied Phrenology, and to some purpose. The chapter on Self-culture indicates familiarity with our system, and, in fact, his insistance, that "the improvement of man, physically and morally, rests in and depends upon himself," confirms that opinion. Spiritualism is his religious doctrine; to it he owes his convictions of man's immortality, and from it he asserts his derivation of the belief that man should reform the inner temple of his soul, in order to have a healthy spiritual growth, and that we are not "living for ourselves alone, but for the good of all."

HARRY THE PRODIGAL. By Mrs. E. J. Richmond, author of "The Jewelled Serpent," "Adopted," "Alice Grant," etc. Price in cloth, $1.25. New York: National Temperance Society and Publication House.

The story is descriptive of a phase of life by no means unusual in our American society. The principal figure in the group of characters is a youth whose vivacity and aspiration can not brook the repressive routine of an old-fashioned farm and the austere Christianity of his father, so goes into the world to battle for himself. An occurrence at the village inn is the immediate

prelude of his departure from the old home. Before he goes, a promise is made to his mother that he will not drink intoxicating liquor, and that he will read a chapter in the Bible every day, and recite a little prayer which she had taught him in childhood. Mrs. Richmond indicates a good degree of graphic capability in her description of the scenes which Harry's sailor life brings him among, and shows how potent an influence his religious practices have upon his habits among rough and dissolute associates. He proves an able teacher of righteousness, converting many from evil ways, and after years of wandering on the sea, returns to his old home to brighten and happify it. The outcome of the "Prodigal's" career is almost too happy, yet we can not censure Mrs. Richmond for thus strongly urging the precept: "Wisdom's ways are ways of pleasantness, and all her paths are peace."

THE BREWERY AT TAYLORVILLE. By Mary Dwinell Chellis, author of "The Brewer's Fortune," "All for Money," etc. 16mo, pp. 488. Cloth, price, $1.50. New York: National Temperance Society and Publication House.

Popularly written tales having a similar moral to enforce, are generally much alike, and writers who are given to a particular hobby, usually fall into a sort of routine, and exhibit what might be termed literary pharmacy in the compounding of their books and sketches. This is especially the case in the preparation of didactic stories of the moral and temperance sort. The authors of those stories so prevalent and known by the term "Dime-Novels," certainly pursue an almost cast-iron method in making them, but their ingredients have so wide a range in the domain of vice, and there is so much latitude permitted in the indulgence of lingual style, that to the average shop-girl and errand-boy, the "blood and thunder" in the pages of each wears a different aspect, and excites a different combination of emotions. When, then, we meet with a writer who makes the trite subject of temperance reform interesting in successive volumes, we must award to him or her special commendation. We think that Mrs. Chellis is a writer of such capability, as each story of hers which we have examined possesses its own features and individuality, while her object is the same. In the "Brewery at Taylorville" she makes her story the vehicle for a series of discussions, embracing many of the questions involved in the use of alcohol as a beverage. While her attack is mainly leveled at beer, which is generally considered a very light form of stimulant, she treats of the medical qualities of alcohol, and its influence by transmission on the physical and moral nature of children. She mingles rue and honey in the rapid succession of incidents, tracing the course of the intemperate and unwise to their miserable end, and portraying the life of duty and honor with a like adherence to reality. It is an excellent story for youth to read and think upon.

ON THE PLAINS AND AMONG THE PEAKS; or, How Mrs. Maxwell made her Natural History Collection. By Mary Dartt. 16mo, pp. 237. Price, paper, 50 cents. Philadelphia: Claxton, Remsen & Haffelfinger.

The reader remembers the very lively interest which was taken by visitors at the Centennial Exhibition in the collection of stuffed animals and birds, large and small, in the particular building devoted to special exhibits from Kansas and Colorado, and which collection was presided over by Mrs. Maxwell, who had obtained the specimens herself and prepared them with remarkable taxidermic skill.

This book is a description of her frontier life, having particular relation to her career as a hunter and naturalist. No doubt, all who visited the Kansas and Colorado building will be glad to have a copy of the book. Written in a sprightly manner, abounding in incident and anecdote, which seem to us far more attractive and wonderful than the invention of the ephemeral and garish novels of the day, besides furnishing no inconsiderable fund of solid information, the volume should be welcomed by the reading public. Appended to the narrative is a list of the animals, birds, etc., of the collection, which by itself fills several pages.

HOW TO HUNT AND TRAP. Containing full instructions for hunting the buffalo, elk, moose, deer, antelope, bear, fox, grouse, quail, geese, etc. Also localities where game abounds. In trapping: tells you all about steel traps; and how to trap the bear, wolf, wolverine, fox, lynx, badger, otter, beaver, fisher, marten, birds of prey; poisoning carnivorous animals: with full directions for preparing pelts for market, etc. By J. H. Beatty, Hunter and Taxidermist. 12mo. Price, $1.50. New York: Albert Cogswell, Publisher.

As appears from the very full title, this neatly-made manual of hunting is the preparation of a practical hunter with the rifle and trap; and the title itself is so full in its detail of the topics considered, that it is scarcely necessary to make any further mention of the scope and objects of the volume. The style is easy and free, as might be expected from one who has "lived and gloried in all the varied experiences of the hunter's and trapper's life." Illustrations abound, and are generally well executed, contributing their attraction to the otherwise pleasant volume. Aside from the suggestions given to those who would tread the forest and thread the stream, there is a good deal of information woven into the text with respect to the habits and peculiarities of wild animals and game in general.

THE FIFTH ANNUAL REPORT of the Secretary of the State Board of Health of the State of Michigan. Fiscal year ending September 30, 1877. Published by authority. W. S. George & Co., State Printers.

We are indebted to Mr. Henry C. Baker, Secretary of the Board, for this elaborate and exceedingly interesting recital of the sanitary reforms of Michigan. Not only have we the tabulated lists of mortality and disease, but also a series of treatises and discussions on important topics related to public and private sanation. Among articles of value incorporated with the report are, "Heredity in its Relation to Public Health and to Legislation," "Healthful Dwellings," "Baths and Bathing," "Diphtheria," "Scarlet Fever." This work and others of a similar nature, which we have received from Michigan, indicate the most laudable zeal of the State authorities for the physical improvement of the citizens of Michigan, and, on the whole, we are of the opinion that the older States on the Atlantic seaboard would do well to emulate Michigan's example.

## PUBLICATIONS RECEIVED.

AMERICAN EDUCATIONAL JOURNALISM AT PARIS.—Among the awards of the Department of Education at the Paris Exposition is a bronze medal to the *New England Journal of Education*. It is gratifying to note that the highest award given to the Educational Journalism of any country comes to our American publication.

READINGS AND RECITATIONS, No. 2. A New and Choice Collection of Articles in Prose and Verse, embracing argument and appeal, pathos and humor, by the foremost temperance advocates and writers. Suitable for use in schools, or temperance associations, reform clubs, lodges, etc., and also adapted particularly to public and private readings. Edited by Miss Penney, editor of the National Temperance Orator. Price, paper, 25 cents. New York: National Temperance Society and Publication House. This is a capital little compilation, having in its ninety-six pages, upwards of sixty selections. Let our young orators at school and in the home circle learn such pieces as these and take up in their quiet, yet by no means uninfluential sphere, the work of moral reform and truth. A boy or girl earnest in the assertion of temperance principles may accomplish much for humanity. How great would be the effect if every intelligent youth belonging to the class termed respectable, should raise his or her voice for the right. A revolution would be brought about in the common ways of society, and the good would rejoice at the no longer uncertain approach of that oft-mentioned period in the dim future, the Millennium."

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LES ON TEMPERANCE. By the Rev. Canon Farrar, D.D., F.R.S. 12mo, pp. 158. Cloth, 60 cents; paper, 25 cents. Sold by J. N. Stearns, Publishing Agent of the National Temperance Society, New York. This pamphlet contains ten talks or sermons by the eminent English clergyman, a strong man on the side of truth and humanity. Their titles are: "Between the Living and the Dead;" "Reasons for being an Abstainer;" "Total Abstinence for the Sake of Ourselves and Others;" "Vow of the Nazarite;" "Vow of the Rechabites;" "The Serpent and the Tiger;" "Our Duty as a Nation;" "Abstinence from Evil;" "Address to Teachers;" "Experiences of a Total Abstainer."

CATALOGUE OF THE UNIVERSITY OF CINCINNATI for the Academic Year 1878–79. Indicative of growth in numbers and educational efficiency.

THE KIROGRAPHER AND STENOGRAPHER QUARTERLY MAGAZINE, devoted to reform in Orthography, Kirography, Stenography, etc. Published by J B. and E. B. Smith, Amherst, Mass. This publication evidently finds a constituency and encouragement. It is very neatly arranged and illustrated.

UNITY: A Pamphlet Mission for Freedom, Fellowship, and Character in Religion. The number recently received contains an essay by Rev. Samuel Longfellow, entitled "Perfect Trust."

UNIVERSITY QUARTERLY, No. 2. Published by the Undergraduates of the New York University. A very creditable college serial. This number contains the admirable address delivered at the last alumni meeting, by Rev Dr. Zabriskie, of Boston, on "College Life." Besides there is a variety of items witty and gossipy, interesting to college students.

Messrs. Ditson & Co., of Boston and New York, send us Nos. 7 and 8 of their "Musical Monthly"—a collection of popular vocal and instrumental music. No. 7 contains six songs and instrumental compositions; No. 8 (the Christmas number), eight, by some of our most popular composers. Price of each No. 25 cents.

MONTHLY WEATHER REVIEW. Current issues from the office of the Chief Signal Officer at Washington, D. C.

FARMING NEAR HOME, or State Legislation against Hard Times: being suggestions for an "Act" to facilitate the settlement of land, the promotion of agriculture, civilization and co-operation, and for the relief of labor and capital within the boundaries of the older States. Published by R. J. Wright. Good and practical hints toward social and financial improvement in the Northern Atlantic States.