PHRENO-PHYSIOLOGY.

HUMAN NATURE:

THE EVOLUTION OF MIND AND ITS INSTRUMENTS.

BY

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PHRENO-PHYSIOLOGY.

SECTION I.

INTRODUCTION.

THE world is in great need of a reliable science of human nature. This want is especially felt by the clergy, the educators, the lawyers, and the physicians. The so-called sciences of psychology, phrenology, and physiology, as hitherto understood, are merely so many fragments of a science of mind. It requires but little sagacity to discover that some essential parts are wanting. This essay is designed to supply the missing links that are needed to form a complete chain. It must, however, be regarded by the reader as merely an outline and abstract of subjects the full discussion and illustration of which would require a very large volume.

One of the main principles insisted on in this essay is that all mental operations are dependent upon material organs, and that to understand the mind and its manifestations we must become acquainted with the machinery by which its functions are performed.

The almost universal belief that the mind is an immaterial spirit is neither sanctioned by science nor by the Bible. It originated before science was born, among

half-civilized people, and when all natural phenomena not understood were ascribed to invisible and capricious gods or spirits.

Three hundred years before Christ, Aristotle wrote the first treatise on the mind. As he knew nothing of the uses of the nerves or the brain, he was forced to draw all his knowledge of the mind from his own internal consciousness, which he assumed to be a spirit. His system and method, with unessential modifications, has been taught, under the names of psychology and mental philosophy, more than a thousand years, in all our higher institutions of learning. It is a science of the mind with the organs of the mind left out.

We might with as much propriety pretend to have a science of the functions of the body founded upon our sensations alone, and the bodily organs left out. Indeed, that is all that the world had until very lately. It is only within the last two hundred years that physicians have had a science of physiology that was of any practical use. Even now they are utterly destitute of a physiology of mind. One hundred years ago no one but Dr. Gall suspected that insanity was a disease, or that idiocy was caused by defects of the brain. A maniac was regarded as a person who was "possessed" by an evil or malicious spirit that had ousted the lawful mind. Instead of a physician, a priest was summoned to sprinkle the patient with holy water, and to command the demon, in the name of the Trinity, to depart. Hysteria and other diseases, which we now know to be of the nature of mesmerism and hypnotism, were attributed to witch-

craft. Tens of thousands of innocent Christian people were burned to death for bewitching their neighbors.

In New England, Cotton Mather, a graduate of Harvard, and a really pious divine, sanctioned the execution of several citizens for witchcraft. Lord Chief Justice Hale, one of the ablest and purest judges of England, condemned several old women to be burned to death for the same offence. It was only with the greatest difficulty that Kepler, the celebrated astronomer, prevented his mother from being executed as a witch. Modern spiritism, which has run like wild-fire through all Christendom, was the same delusion in a different form. It had its beginning at my lectures in Poughkeepsie, N. Y., in 1843. Among the persons who attended and became mesmerized was Andrew Jackson Davis. He and his friends asserted that he was influenced and inspired by spirits. It was in vain that I protested against their folly. They went to New York City, where in 1848 they were joined by the Fox girls. The only thing wonderful in the whole matter was the boundless credulity of the thousands who believed that they communicated with spirits.

Among the converts were some men of distinguished ability and learning,—judges, philosophers, and clergymen,—including Professor Hare, Robert Owen, Robert Dale Owen, Rev. John Pierpont, Judge Edmonds, and Professors Wallace and Crooks, of England.

I became greatly interested in the phenomena of mesmerism and spiritism, for the reason that they demonstrated the utter ignorance of philosophers concerning

the mechanism of mind. They assumed that mental forces are entirely distinct from all the physical forces. This unphilosophical idea is assumed, if not asserted, to be true in all the systems of mental philosophy used in our universities. Even when psychologists introduce some of the facts lately discovered by physiologists, they represent them as of secondary importance, and as subservient to the immaterial spirit. In England, Drs. Carpenter, Kirk, and Paget, though learned and eminent physiologists, have insisted that the higher powers of the mind are independent of all bodily organs.

It is possible that they made these concessions from deference to the overwhelming theological authorities by which they were surrounded. But it is an interesting fact that neither the Old nor the New Testament sanctions this opinion. The Bible in no instance represents the mind of the individual as separate from his body. In the resurrection of Lazarus, of Christ, and of the saints during the crucifixion, the bodies were raised along with the minds.

The early Christians borrowed and adopted the theory of immaterial spirits from the heathen Greeks and the Orientals; they did not derive it from their own sacred Scriptures. It is now an established scientific fact that no force exists separate from matter. No force in any form can pass through an empty space, however narrow. Mental force is no exception to this law. It can exist only in material bodies, and can pass from one place or thing to another only through or by means of some intervening body.

In 1786, Dr. F. J. Gall, an Austrian physician, announced, in Vienna, that he had discovered a large number of mental organs in the brain. He thus became the father of mental physiology. No one had previously taught that the faculties of the mind have material organs, or that the brain is the instrument of the mind. The Austrian clergy complained to the emperor, and procured a decree that prevented Dr. Gall from lecturing or otherwise publishing his discoveries.

In 1807 he settled in Paris, and although, under Napoleon, he was allowed to publish and advocate his doctrines, the influences of the government, the academy, and the church were all against him. He made converts of some of the physicians, but he died in 1828 without his merits being acknowledged by any learned institution.

Spurzheim, who was the pupil and for a time the partner of Gall, improved his nomenclature, and added several newly-discovered organs, the most important of which were Hope and Justice or Conscientiousness, but he did not otherwise essentially advance the new science. Gall and Spurzheim discovered the locations and functions of nearly all the organs now recognized, but they did no more. They left the science in a crude and imperfect condition. It was like astronomy before the discovery of the law of gravitation.

I commenced the study of the subject in 1832, when Spurzheim closed his earthly career in Boston, Massachusetts.

During the sixty years that have passed since then I

have succeeded, by continual investigation, in making the following additions:

1. My first advance was the discovery that the mental organs in the brains of animals and of man are evolved in three series from the body, and that they are arranged in each series in the order of their creation, —the intellectual series in the forehead, the ipseal or selfish series on the side of the head, and the social series on the back and crown of the head.

To appreciate this classification it should be compared with the classifications of Spurzheim, Combe, and the other phrenologists, from which it differs in being nature's own division and arrangement.

2. The second advance was the discovery that the mental organs at the base of the brain are arranged from the anterior to the posterior, in the same order and relative positions as are the organs of the body which they represent.

3. The third advance was the suggestion that the mental organs of many of the lower animals are enclosed in the nerves of sensation, and that when the higher animals were created the mental organs were transferred to the skull to form the brain.

4. The fourth advance was that there is a single central organ of consciousness and will located in the oblongata, at the base of the brain, and that all the mental organs and nerves of sensation converge to this centre to produce consciousness, will, and voluntary motion.

5. The fifth advance was the discovery that each propensity, whether an ipseal or a social, is either an im-

pulsive force or a restrictive force, and that the will is in all cases composed of three forces,—an impulsive, a restrictive, and a directive. These three must combine to produce a voluntary act.

6. The sixth was that when any propensity is excited it acts on the heart and arteries and varies the circulation. An impulsive, when excited, increases the circulation, and a restrictive, when excited, moderates it. The intellect does not vary the circulation.

7. The seventh was that ordinary sleep is an economical provision, instituted in the interest of the digestive system, to prevent the unnecessary expenditure of nourishment.

8. The eighth was that mesmerism or hypnotism is a half sleeping and dreaming state of mind, caused by the conforming restrictive propensities when they are so much excited as to unbalance the brain and moderate its circulation.

9. The ninth was that alcohol poisons and paralyzes the restrictive moral propensities and their nerves, and lets loose the impulsives to act without restraint.

10. The tenth was that mind-cures are produced by impressions on the conforming organs of persons who are suffering from imaginary diseases, or whose minds exaggerate their ails.

The critical reader will discover that the most important discoveries which I have made in mental science are:

1. That there are three series of mental organs, evolved from the body and related to it in function: they are the ipseal, the social, and the intellectual.

2. That the same organs represent three classes of moral forces,—the impulsive, the restrictive, and the directive.

3. That there is a central organ of consciousness and will, to which all the mental organs and all the nerves of sensation converge.

4. That the impulsives increase the action of the heart and arteries, and that the restrictives diminish the action.

All my other discoveries relating to mesmerism, hypnotism, spiritism, and alcoholism were the natural offspring of the first four. When the normal functions were known it was easy to discover the effects of their derangements.

The reader will naturally inquire how it happened that I made these advances in mental science, while others, who appear to have had equal advantages, have made none. Perhaps it will seem less remarkable when it is known that I have devoted sixty years to the subject, without the slightest regard to pecuniary considerations. It may also be stated that my first discovery pointed the way and led me to the others, just as the discovery of part of the skeleton of an unknown animal suggests the existence of the other parts. In 1832, when Spurzheim died in my native city of Boston, after having been in the country only three months, the agitation of the subject led me to investigate his system of phrenology.

It was not long before I satisfied myself, by examining a large number of crania, that nearly all the mental organs announced by Gall and Spurzheim actually existed. I also found, after a careful analysis, that as a scientific system phrenology was defective.

The division of the organs by Spurzheim into animal propensities and moral sentiments was arbitrary and artificial, and the functions of some of the organs were improperly defined. After a thorough study, I discovered that the organs are evolved from the base of the brain in three series, which I named the ipseals, socials, and intellectuals. In 1838 I published a "New System of Phrenology." After a violent controversy among the phrenological authors and lecturers, the subject was referred to the Phrenological Society of Albany, N. Y. The Hon. Rufus W. Peckham, now one of the judges of the Supreme Court, was the attorney-general of New York. He was chairman of the meeting of members that was called to consider the matter. By his casting vote he decided that a committee of seven should be appointed to examine the new system and report to the society. Professor E. N. Horsford (now of Cambridge, Mass.) then resided in Albany and was made chairman of the committee. After keeping the matter before them for six weeks, the committee reported unanimously in favor of the new system. Mr. O. S. Fowler, who was ambitious to occupy the highest place as the successor of Spurzheim, was the editor and proprietor of a *Phrenological Journal.* He had a long article published in his journal against the new system. But when the society adopted Horsford's report and ordered it to be printed, he refused to allow it to be published in the journal. This was in 1840, and during all these years I have had nothing to do with the journal nor with the various practical phrenologists

who have travelled from New York through the country. Although they have not advanced the science, nor done anything to make it more acceptable to the higher classes of scholars, they have done a great deal to convince the people generally that phrenology has a basis in truth, and in this manner they have opened the way for the introduction of a more perfect system.

The study of the three series of mental organs naturally suggested the theory that the lowest organs of each series were created first, and the highest last.

In 1850 I published in Boston a volume entitled "Phreno-Geology," in which I endeavored to prove that mental organs were evolved and added one after another as the continents rose higher, and thus, by presenting new scenery and producing new conditions, rendered new faculties necessary. In that book I advocated the same principles that Mr. Charles Darwin published eight years afterwards. It was the first essay ever published on theistic evolution. It was received in New England with the greatest disfavor by all parties. The sceptics objected to it for the reason that it recognized the existence of a personal creator, and the Puritans because I denied that the creation was accomplished in six literal days. Thirty years afterwards I had a new edition printed from the same stereotype plates in Chicago, under the title of "The Problems of Creation," nearly all of which was destroyed by a fire. But the stereotype plates were saved, and are now in the vault of the Lakeside Printing Company of R. R. Donnelly & Sons, Chicago.

While examining and comparing the brains and nervous systems of animals, to learn the manner in which mental organs were evolved, I discovered that in all animals that have nerves there is a central organ of consciousness and will.

In animals that have brains this central organ is in the oblongata, the part that connects the brain with the spinal cord.

In 1838, after I had published the "New System of Phrenology," I witnessed for the first time some experiments in mesmerism, and I at once suspected that mesmerism was in some way connected with phrenology. I reasoned thus: phrenology is certainly true, and should therefore furnish explanations of all the phenomena of mind. But here is a wonderful manifestation that all the sciences fail to reach. Phrenology is therefore still imperfect, or it would explain mesmerism. After several years of further study and experimenting I ascertained that all the propensities are either impulsives or restrictives, and that three of the conforming propensities are restrictives. When those three were excited by the mesmeric process they checked the circulation of the blood to such a degree as to produce a kind of emotional sleep or hypnotism. They also produced coldness of the hands, tremulousness of the body, and frequency of the pulse. The reader will now perceive that my first discovery (of the tri-serial evolution of the mental organs) led me on step by step, until I succeeded in solving all the mysteries of mesmerism, hypnotism, alcoholism, and mind-cures.

SECTION II.

EVOLUTION OF THE MIND AND ITS INSTRUMENTS.

In another essay entitled "Kosmonomia" I have suggested the theory that assimilation was the first function performed by nature in the creation of worlds. It is certainly the first performed by all organized beings. The crystal, which is beautifully organized, asssimilates materials until it grows to a certain size, and any surplus material goes to form other crystals. We may assume that the lowest and simplest organisms were created first. Plants differ from crystals in receiving their nourishing materials internally, and assimilating them there. The surplus materials are also assimilated internally, and are then excluded in the form of new-born plants. This internal process in plants and animals causes the offspring to inherit all the peculiarities of the parent. The law of heredity was thus enacted at the very beginning of organic creation. It is a question how far organic progress would have been possible without this hereditary principle.

The simplest and first created plants and animals do not seem to differ in sex. The evolution of sex did not occur until a second stage of organic creation. The higher plants are male and female. The difference of

sex doubtless existed in a latent condition in the first created plants and animals, but the visible forms that distinguish the sexes were not yet evolved. It appears to be a universal law, that if a single mass or organ is forced to perform two different functions it tends to divide into two parts, one of the parts performing one function and the other part a different function. This is the key to many of the facts in evolution, especially the evolution of the human brain.

Plants needed air, light, water, and sexual mates, and if what they wanted did not come in contact with them they perished. In what we will term the third stage of organic progress, mind was evolved. Some plants became conscious of their wants, and also of the existence and location externally of the things wanted. At the same time they could move some of their parts to gain what they perceived that they wanted. These additional endowments changed some plants to animals that had the very same wants as plants, and no others. They were merely conscious moving plants; though by their movements they proved that they possessed some degree of mind, they had no visible mental organs. The amœba, or jelly-fish, is an example of this kind of organless animals, that move in such a manner as to prove that they are conscious.

In what we will term the fourth stage of organic progress a mental and motor apparatus was evolved, the simplicity of which is admirable and instructive. Let us describe it.

1. There is a small central mass of nerve-matter that serves as an organ of consciousness and will.

2. There are nerve-cords that extend like telegraph-wires from the bodily organs that are in want to the central phrene, or organ of consciousness and will, to make the wants known there, and to impel to a movement to obtain what is wanted.

3. There are nerve-cords that extend from the external senses to the conscious centre, to give information of the external existence of the things wanted.

4. There are nerve-cords that extend from the central organ of consciousness and will to the limbs and muscles, to transmit the force that produces the voluntary motions required to gain what is wanted, or to avoid that which appears to be injurious.

This is all the mental mechanism that the lowest animals possess. There are no brains or other visible mental organs. More than ninety-nine in a hundred of the animals in the world are brainless. They have no backbones, and are therefore termed invertebrates.

SECTION III.

ORIGIN OF BRAINS.

THE animals that have brains, the vertebrates, are included in four classes,—fishes, reptiles, birds, and mammals.

There is a general opinion that animals with brains are mentally superior to those that are brainless. But there are many animals without brains—bees, ants, spiders—that manifest more mentality than oxen, sheep, or whales, that have them large. The theory that seems most reasonable, in view of all the facts, is that the nerves of sensation, which are all really mental organs, though of the lowest rank, contain, inclosed and concealed, a number of special mental organs that perform for the brainless animals the same functions that brains do for the animals that possess them.* It thus appears that mental organs were not first made in brains, but in nerves of sensation in the invertebrates, and that in the higher animals, created afterwards, they were transferred from the nerves and the body to the skull, and collected there to form the brain. This theory is confirmed by

* There are good reasons for believing that the intellect was evolved from the external senses; the ipseals from the pneumogastric nerve; the socials from the spinal cord.

the fact that the lowest vertebrated animals, fishes and reptiles, have very large ganglia, or swellings on their nerves of sensation, but none on the nerves of motion. In higher animals these ganglia become smaller and smaller as brains become larger, until in man they are insignificant. This fact indicates that the transfer of the mental organs from the body to the brain was gradual, and was not completed until the human brain was developed. It may be added that the lowest vertebrates, especially reptiles, manifest something very much like the lingering remains of mentality when their heads have been cut off; but the higher animals and man, when the brain is destroyed, exhibit no such symptoms. This theory is further confirmed by the fact that some other functions and organs are transferred in a similar manner. For example: insects respire by means of pores in the skin, but in higher animals the respiratory organs are collected in the chest and form the lungs.

CORRESPONDENCE OF POSITIONS.

There is a remarkable correspondence of the relative positions of the mental organs at the base of the brain with the organs of the body. The mental organs at the base of the anterior lobe of the brain correspond in function with the external senses that are located in the head, the anterior part of the body. The mental organs at the base of the middle lobes of the brain correspond in function with the digestive organs that are located in the middle of the body. The mental organs at the base of the posterior lobe of the brain

correspond in function with the organs of the body in the posterior (in man the lowest) part of the body, that are related to offspring. This remarkable correspondence harmonizes with the theory that the mental organs were created first in the body in the lowest animals, and were afterwards transferred to the brain, retaining the same relative positions in all their stages,—in the oblongata, in the striatum, in the thalamus, in the cerebellum, and in the cerebral lobes.

This correspondence aids, in doubtful cases, in learning the functions of the parts at the base of the brain. I regard the bodily organs, the oblongata, the ganglia at the base of the brain, and the cerebral lobes as so many different stages of development of the same functions and organs. The mental organs may be compared to three trees that have their roots in the bodily organs, and their highest branches in the upper parts of the brain.*

INVOLUTION AND SEEDS.

The word evolution, when applied to organisms, implies expansion and extension, or putting forth. Involu-

* Two German physiologists, Freitz and Nitzig, have succeeded in exciting different parts of the brains of animals by means of electricity. These experiments have been repeated by Dr. Ferrier of London, and by Dr. Flint of New York. They have shed no light on mental science, but they have demonstrated the fact first announced by Gall, that different parts of the brain perform different functions. I am confident that means will yet be found to excite all the organs of the human brain and demonstrate their functions. When this can be done, insanity will be deprived of more than half its terrors, and mental physiology be perfected.

tion, on the contrary, implies condensation, contraction, and coiling inward. There is truth in the saying that the acorn contains the whole oak. It is said that all organisms come from seeds or eggs. But the very lowest and first-created organisms do not produce seeds. They reproduce by merely repeating themselves. One grows and another grows out of it without the intervention of any seed. When a plant that produces seeds becomes mature, its extreme parts, instead of extending farther, become contracted more and more, and coil in on themselves so as to occupy the least possible space. A seed contains all the essential parts or elements of the parent, so that, when placed where the conditions are favorable, it can evolve organs by means of stimulus and nutrition. This law holds good in animals and men. Each individual grows to maturity, and then the surplus material concentrates and recoils and forms seeds.

It seems that every part of the parent sends representatives of itself to form each seed. This is proved by the fact that each part of the offspring resembles the corresponding part in the parent and in both parents. The mulatto resembles both the black and the white parent.

The organs of plants expand and evolve in the spring and summer, and their extremities coil up in autumn. Possibly the changes of the seasons were the primitive causes of the formation and concentration of seeds. The habit, being acquired and continued through thousands of generations, is now permanent. All of what we term nature is merely representative of the past. It is

therefore only by means of natural history that we can really understand anything concerning the mind. It has grown by successive stages during an unknwn number of generations.

We have another illustration of our theory in the fact that a disease of one part in the parent is transmitted to the same part in the offspring. This is true even in cases in which the disease was acquired by the parent after maturity. In cases of "marked" children the mental shock of the mother, on seeing a wounded or lame person or animal, is transmitted immediately to the offspring. This indicates that the mind of the mother causes a change in the same part of her own person, and that the change is transmitted from the mother to the corresponding part in the offspring. All these facts prove that the offspring are composed of the representative parts of both parents.

SECTION IV.

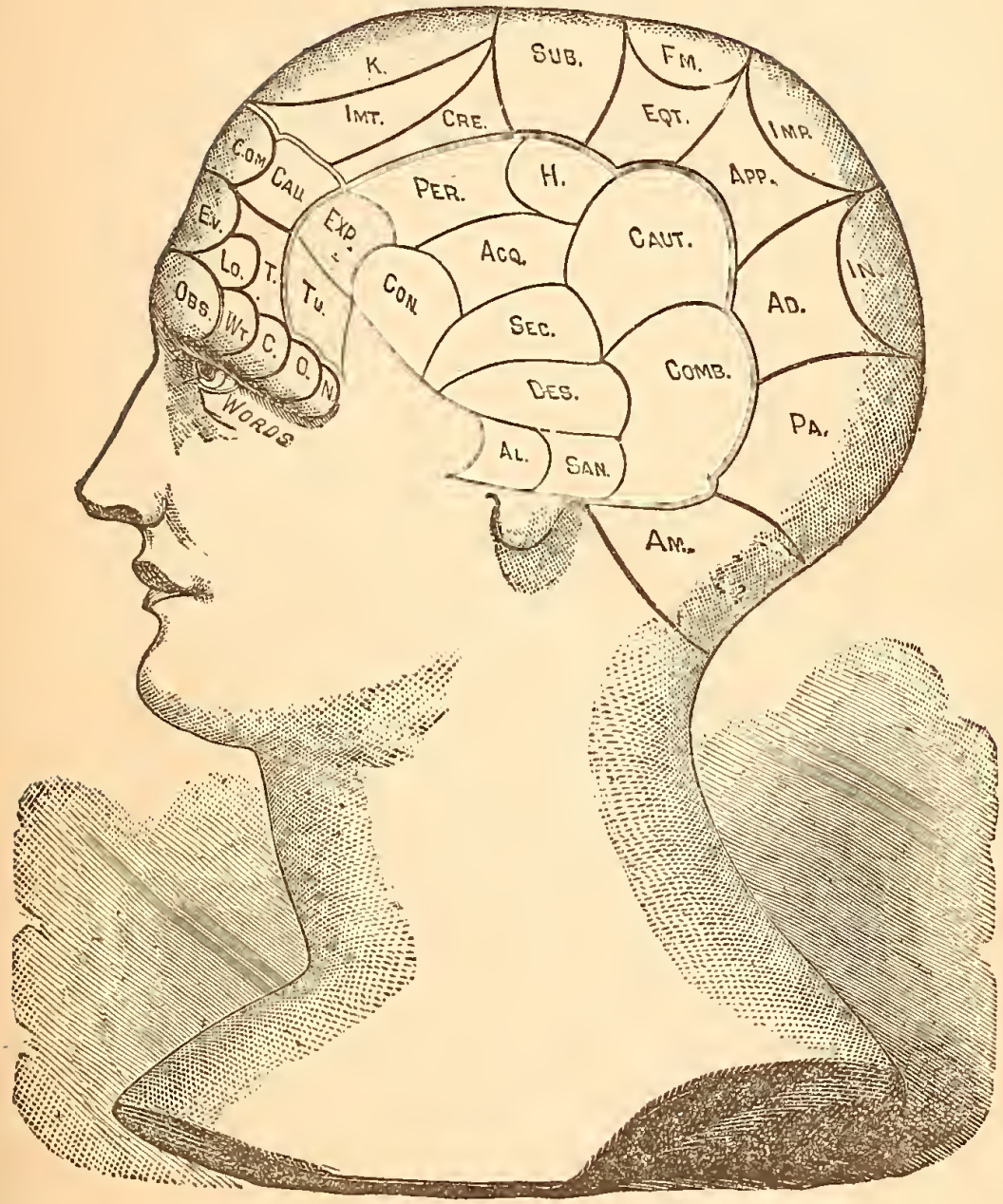
THE TRI-SERIAL EVOLUTION OF THE MENTAL ORGANS.

The body performs three kinds of functions, an ipseal, a social, and an intellectual, each of which has a local department of its own. The nutritive or ipseal department is in the middle of the body. The social department is in the lower (in animals the posterior) part of the body, and the intellectual department (the external senses) is in the anterior part of the body. In the brain, also, the ipseals are in the middle, the socials in the posterior, and the intellectuals in the anterior.

The lowest and first-created organs of each series are located at the base of the brain, and each higher succeeding organ is higher in rank and in the order of creation.

The propensities, whether ipseal or social, are all of them either impulsives or restrictives. In the following catalogues the impulsives are printed in small capitals and the restrictives in italics.

In studying the nature of any organ of the brain the question is whether it is an intellectual, an ipseal, or a social; then whether it is an impulsive or a restrictive; and, finally, what is its rank in its series.



The ipseal propensities are in the side of the head, enclosed in double lines. The social propensities are in the back and crown of the head. The intellectual organs are in the forehead.

The organs of Locality, Time, Tune, Form, and Size are left out of the following catalogue, for the reason that they are not fully proved.

INTELLECTUALS, *in the forehead.*

Obs.—Observation.
Wt.—Weight.
C.—Color.
O.—Order.
N.—Number.
Words.—Language.
Ev.—Eventuality.
Com.—Comparison.
Cau.—Causality.

IPSEALS, *in the side of the head.*

Al.—ALIMENTIVENESS.
San.—*Sanativeness.*
Des.—DESTRUCTIVENESS.
Comb.—COMBATIVENESS.
Sec.—*Secretiveness.*
Caut.—*Cautiousness.*
Con.—CONSTRUCTIVENESS.
Acq.—ACQUISITIVENESS.
Exp.—*Experimentiveness.*
Per.—*Perfectiveness.*
H.—HOPEFULNESS.

SOCIALS, *in the back and crown of the head.*

Am.—AMATIVENESS.
Pa.—PARENTIVENESS.
In.—*Inhabitiveness.*
Ad.—*Adhesiveness.*
Imp.—IMPERATIVENESS.
App.—APPROBATIVENESS.
Fm.—FIRMNESS.
Eqt.—*Equity.*
Sub.—*Submissiveness.*
K.—KINDNESS.
Imt.—*Imitativeness.*
Cre.—*Credenciveness.*

THE IPSEAL OR SELFISH SERIES.

THE CORPOREAL RANGE.

1. ALIMENTIVENESS.—The propensity to obtain and appropriate food. Its activity is so much dependent on the condition of the body that it is only in extreme cases that any opinion can be given concerning it. I frequently find it large on caterers and restaurant-keepers.

2. *Sanativeness.*—To avoid personal injury and disease, and to be alarmed by slight symptoms and ails.

BELLIGERENT RANGE.

3. DESTRUCTIVENESS.—The tiger propensity. It produces quick temper and a tendency to injure another by words or acts immediately.

4. COMBATIVENESS.—The propensity to contend, dispute, controvert.

PRUDENTIAL RANGE.

5. *Secretiveness.*—To conceal intentions until a good opportunity presents.

6. *Cautiousness.*—To endeavor to foresee difficulties, to hesitate, and avoid danger.

INDUSTRIAL RANGE.

7. CONSTRUCTIVENESS.—To work with the hands in labor or mechanical business. It gives a love of the study of material things rather than things metaphysical.

8. ACQUISITIVENESS.—To accumulate property for future use. It gives a love of mercantile business.

IMPROVING RANGE.

9. *Inventiveness* or *Experimentiveness.*—Sometimes erroneously called Mirthfulness. Tendency to try experiments or to do work in a new manner to save labor or to avoid difficulty.

10. *Ornateness,* or *Perfectiveness,* or *Ideality.*—The tendency to ornament or beautify work or speech or literary composition.

11. HOPEFULNESS.—Tendency to act confidently with

reference to the future. To risk, to venture, or take chances. To be cheerful under depressing circumstances.

It will be seen that these ipseal propensities do nothing directly for others, unless forced to do so by the dominating influence of one or more of the social propensities.

THE SOCIAL SERIES.

DOMESTIC GROUP.

I. AMATIVENESS.—Sexual love.

II. PARENTIVENESS.—Parental love.

III. *Inhabitiveness.*—Love of home. Incidentally it produces a disposition to continue to think and talk on a particular theme instead of rambling.

IV. *Adhesiveness.*—Attachment and adhesion and dependence upon parents and friends, especially when young or weak and helpless.

GOVERNING GROUP.

V. IMPERATIVENESS.—To command, to govern, to assume superiority; sometimes called Self-esteem.

VI. APPROBATIVENESS.—Propensity to gain preference, applause, popularity.

VII. FIRMNESS.—Propensity to resist change and maintain a position once assumed in spite of persuasion or even self-interest.

VIII. *Justice, Equity.*—Erroneously termed Conscientiousness. Propensity to speak and act impartially and justly.

CONFORMING GROUP.

IX. *Submissiveness, Reverence, Veneration.*—Propensity to submit, obey, respect, and conform to others, and admit their superiority.

X. KINDNESS.—To be philanthropic and kind to all persons, and especially to strangers who have no claim on us. To extend acquaintance, and to be liberal and tolerant.

XI. *Imitativeness, Sympathy.*—To conform to the manners of others and consider their feelings, and to sympathize with them. It gives a tendency to study the characters, feelings, and dispositions of others, and to study human nature in general.

XII. *Credenciveness*, or *Wonder*, or *Marvellousness.*—To believe and to adopt the assertions of others, and assume that they are true. It gives a disposition to listen and learn from others, to read and to believe what is said or written. This valuable propensity is liable to very great abuses by producing a love of the wonderful and marvellous, and a tendency to superstition and mental slavery. Its proper function is to believe the truth and to learn from the experiences of others what we cannot learn otherwise.

INTELLECTUAL ORGANS.

Individuality.—Faculty of noticing things superficially and remembering them.

Form (?).—Memory of forms.

Size (?).—Perception and memory of distances and dimensions.

Weight.—Perception and memory of weight, resistance, force.

Color.—Perception and memory of colors.

Order.—Perception and memory of relative positions and arrangements.

Number.—Perception and memory of numbers and combinations of numbers.

Words.—Perception and memory of sounds that constitute words.

Locality (?).—Perception and memory of directions.

Eventuality.—Perception and memory of actions, events, stories.

Tune (?).—Perception and memory of tunes.

Time (?).—Perception and memory of time.

Comparison.—Perception and memory of resemblances and of differences. It gives discrimination and quick practical judgment to those who have had experience in any particular matter.

Causality.—Perception and memory of connections and relations, and is an important element in philosophical reasoning.

Order, Number, and Causality, when large, give the talent for reasoning and acting methodically and mathematically. Comparison, Eventuality, and Words give literary talent.

PECULIARITIES OF THE INTELLECT.

The intellectual organs differ from the ipseal and social propensities in several important particulars.

1. They are the mere instruments and servants of the propensities.

2. They originate no actions, and restrain none.

3. They do not vary the circulation in the slightest degree.

4. The external senses are really intellectual organs, though of the lowest rank.

5. The intellectual organs of the brain are the only ones that produce memory. They produce it by repeating in the conscious organ the impressions that had for-

merly been received by them. They thus are able to guide the propensities by the light of past experience.

6. The intellectual organs in the brain are evolved from the external senses. Many of the lower animals have no intellectual organs except the external senses and the faculties that are inclosed in them.

One very important fact relating to the intellectual organs is that, though they are numerous, they really constitute but one apparatus. They may be compared to a harp with many strings, that can only play one tune at once. The intellect is made to perceive things in the external world. The world is made up of many separate things. The intellect is so constituted that it can perceive only one thing and its properties at a time; it can then notice another thing and its properties.

The first and lowest organ of the intellect is Individuality, which is located externally where the nose joins the forehead. This faculty appears to notice merely that a thing exists. Dr. Gall named it the "Spirit of observation." Spurzheim named it Individuality. All that we really know is that when it is very small the person seems to be deficient in the faculty of noticing things, or remembering them. There are several organs that Gall and Spurzheim have located near Individuality (Form, Size, and Locality) that I have not been able to verify by my examinations. Practically I combine Individuality, Form, Size, and Locality together, and call them "Observation." I do not deny the separate existence of these organs, but I leave it to future examiners to verify or reject them. I would make the

same remark concerning Tune and Time. I cannot, when making examinations, venture to express any opinion concerning either of them. The organ of Color is seldom large enough to be spoken of with confidence. When I make an examination there are but eight intellectual organs that I regard as reliable. They are Observation, Weight, Words, Order, Number, Eventuality, Comparison, and Causality. I make these remarks in justice to beginners and amateurs. By heeding them they will be saved from a great deal of embarrassment. The imperfections of phrenology tend to prevent its acceptance by hypercritical sceptics.

As a whole I regard the intellect as a single complex instrument that the propensities act upon and use, just as they use the hands, the muscles of the voice, and the limbs. In the books on mental philosophy, the intellect is regarded as the principal part of the mind; whereas in truth, notwithstanding its great importance, it is secondary and subservient to the propensities; just as a pilot is subservient and secondary to the commander of a steamship.

SECTION V.

THE CENTRAL ORGAN OF CONSCIOUSNESS AND WILL.

THAT the mental centre is in the oblongata, the part that connects the spinal cord with the brain, is proved by the following facts.

1. Animals that have no brains, but only nerves of sensation and motion, have a mental centre, which is evidently an organ of consciousness and will.

2. There is only one vertebrate animal—a fish, the amphioxus—that has no brain. This creature has a medulla oblongata corresponding to that of man, to which nerves of sensation and of motion are attached, as in man.

3. All other fishes have a similar oblongata, and in addition they have a very small brain, a mere germ or bud of a brain, developed from the oblongata and located in the base of the skull.

4. In all animals that have brains the nerves of sensation are attached to the oblongata, where they can produce consciousness by the impressions that they transmit. All the nerves of voluntary motion are connected with the oblongata.

5. All the mental organs have fibres that converge to the oblongata, where they can produce their own pe-

culiar states of consciousness, and from which they can impel to action or restrain or direct voluntary motions.

6. All the nerves (vaso-motor) that transmit, from the brain to the heart and arteries, the influences of the emotions, are attached to the oblongata.

7. By means of this mechanism we can understand why it is that, notwithstanding the great number of nerves of sensation and of mental organs, we have unity of mind, of consciousness, and of will,—*E pluribus unum.*

8. It seems that we can recognize only one sensation, one thought, one emotion at one and the same instant.

9. We can make only one effort of the will at once; we can utter only one syllable at once.

10. The mental centre is like a post-office window, where only one can be recognized and served at once, and where the various applicants must take their turns, though the most powerful or urgent may enforce a preference.

11. The unity of consciousness and will is absolutely necessary to produce singleness, individuality, and personality, such as we express by the words *me* and *you* and *I.*

12. This addition to mental science brings the psychology so long taught in our colleges into harmony with phreno-physiology.

13. The mechanism of the brain enables us to understand the nature of the will. It is the condition of the mind produced by the dominance of one propensity in the mental centre for the time being, but it is liable at any

instant to be overcome and supplanted, and the will changed by some other propensity.

We cannot account for the origin of consciousness by the theory of evolution. We know of nothing previously existing from which it could have been derived or evolved. It cannot be accounted for on physiological, chemical, or mechanical principles. All we know is that it was wanted and it came. If it does not indicate the existence of God, surely nothing in nature does. We can form no conception of the origin of matter nor of potence or energy. We therefore assume that they always existed. But this is not true of mind or consciousness. There was a time when it did not exist in this world, and a time when it began to exist. The cause of a thing is in all cases something that existed previously. What existed previous to consciousness that could have produced it?

The organ of consciousness, as far as we know, is entirely passive. Like a musical instrument, it must be acted upon before it can manifest itself. The nerves of sensation and the mental organs in the brain act upon the central organ and produce consciousness, and then send a force through the motor nerves to produce voluntary motion.

The consciousness or its material organ can *do* nothing. It can only be conscious of impressions. All the *force* of mind is generated from the blood, just as is the force of the body. Every function of the body and every function of the mind uses up blood and can do nothing without it.

SECTION VI.

MORAL PHYSIOLOGY AND THE TRI-POTENT WILL.

THERE are two entirely distinct and different classifications of the same mental organs, which must not be confounded together. One is the tri-serial, and the other the tri-potent. The one relates to the order in which the organs were created; the other to the manner in which they act and combine to produce the will and voluntary actions. There are three different species of mental forces,—the impulsive, the restrictive, and the directive. If we refer to the catalogue of the mental organs, we perceive that some of the ipseals are impulsives and others of them are restrictives. The same is true of the social class.

An *impulsive* propensity represents one of our wants, and when excited produces a tendency to act with vigor to gain what is wanted. But it has no self-restraining power. It is blind and reckless when acting separately.

A *restrictive* propensity has a tendency to restrain and limit the action of an excited impulsive. But it has no self-restraining nor self-guiding power. In these respects it is like the impulsives.

The *intellect* is the directive force.

When an impulsive propensity becomes excited it

sends an impression to the conscious centre, and from that centre it notifies all the mental organs of its *desire* to act impulsively for a certain purpose. This rouses the intellect, and causes it to recollect and think and reason to find the best way to gain what the dominant impulsive requires. The restrictives that are most interested and opposed to the action are excited at the same time, and they also require the intellect to recollect and think and reason concerning the objections, difficulties, and dangers of the proposed movement.

Any other propensities, impulsive or restrictive, that are interested in the matter send their impressions to the conscious centre to modify the action. The result of the conflict is the will.

Every voluntary act calls into operation at least one impulsive, at least one restrictive, and the intellect, —one to impel, one to restrain and limit, and one to guide. The impulsives and restrictives balance and restrain each other, and generally prevent excesses, except in cases of extraordinary excitement or temptation.

The impulsives are the main-springs of the mind. They are the causes of our noblest and of our worst deeds. When not properly guided by the knowledge acquired by the intellect, they act erroneously. When not properly restrained by enlightened restrictives they act excessively, and even viciously and criminally.

When the restrictives are too large they tend to produce a conservative and inefficient character.

If any one propensity predominates in the conscious centre, it becomes the master of the will, and does not

allow any other propensity to interfere with its actions or purposes. If any other propensity acts, it must be in subordination and as an auxiliary to the master-passion, even against its own natural tendency. Thus a wicked a man may be a hypocrite and "suit his face to all occasions." So also a naturally just and benevolent judge may be severe and even cruel. It often happens that a good man, under the influence of a powerful passion, forces his higher faculties to aid in deceiving his acquaintances while he is doing wrong.

Although the intellect does not directly produce or restrain actions, it does both indirectly by furnishing the ideas and impressions that stimulate the propensities. In this sense, "Knowledge is power."

Memory is an important element of the mind. It is a repetition in the conscious centre of impressions formerly received.

The impressions produced in consciousness by the intellect are termed thoughts, ideas, images, imaginations. Those produced by the propensities are termed feelings, emotions, and passions. When a propensity is excited it causes the intellect to have ideas to suit that propensity.

Without consciousness there would be no memory, and without memory consciousness would be useless. Memory enables animals and men to avail themselves of past experience and to acquire knowledge to be used in future.

SECTION VII.

THE RELATIONS OF THE PROPENSITIES AND THE HEART TO EACH OTHER.

When Dr. Gall, in Paris, in 1807, asserted that the brain was the seat of all the mental faculties, including the passions and emotions as well as the intellect, he was opposed by the most eminent physiologists of Europe. The heart was universally supposed to be the seat of the passions. The most distinguished physiologist then living was Bichat. He taught that the passions and emotions were located in the sympathetic nerve near the heart. No one but Gall located them in the brain. But Gall himself was only half right. It is true that the propensities are all located in the head, but they depend upon the heart for their efficiency.

After I had discovered that all the propensities are either impulsive or restrictive, I ascertained that all the impulsives, when excited, telegraph to the heart and arteries to *increase* the circulation and thus give additional strength, and enable the impulsives to do effective work. But when a restrictive propensity is excited it telegraphs to the heart and arteries to *diminish* the circulation, and thus prevent the impulsives from acting excessively. The brain and the heart continually in-

fluence each other, and combine their forces to produce and modify voluntary motion and expression.*

I was led to the discovery of the relations of the propensities to the heart by observing the effects of mesmerism and alcoholism. I found that when a person was mesmerized even in a slight degree by the excitement of the conforming restrictives, his circulation *decreased;* but when the restrictives were paralyzed by alcohol the circulation *increased.* It seems that the heart and the brain are only parts of a single apparatus, which usually act in harmony, but which are liable to become deranged and unbalanced by various causes.

It is an interesting fact that the impulsives, when

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* When teaching a class in elocution in 1838 I discovered that the accent of speech is related to pulsation, and the pauses to respiration. When the mind is perfectly free from all emotion, the number of pulsations in a given time is the same as the number of accents. Both accent and pulsation are involuntary. The number of pauses in a given time is the same as the number of respirations, provided the emotions do not produce variation. When we read fast we do not accent any *oftener* than when we read slow, but we crowd more syllables in between two accents. Many words of one syllable are accented as if there were two syllables, thus: mower and more, bower and bore. The distinction between the impulsive and the restrictive propensities is well illustrated by elocution. When we utter any impulsive sentiment, the heart, the lungs, and the vocal organs feel the influence of the dominant mental organ, and change to suit the sentiment. When a restrictive propensity—fēar, grief, friendship, sympathy—is excited, the tone, the lungs, and the circulation vary instantly. These changes could not occur unless there were a perfect mechanism of nerves connecting the brain, the heart, the lungs, and the vocal organs.

excited, produce only pleasurable emotions, but the restrictives produce depressing and unpleasant emotions. The digestive organs sympathize with the restrictives, and when diseased they often produce extreme depression and anxiety. But diseases of the lungs frequently produce abnormal hopefulness.

Some of the propensities produce such gentle effects upon the heart that we hesitate to decide whether they are impulsives or restrictives. Those propensities that produce the most sudden and vigorous actions produce the most decided changes in the heart. I have included Inventiveness, Ornateness, and Inhabitiveness among the restrictives for the reason that they produce moderation, hesitation, delay, and reflection.

SECTION VIII.

ORDINARY SLEEP.

Dr. Good, a celebrated medical author, who wrote about a hundred years ago, stated that he had never been able to find any physiological explanation of sleep. The universal opinion has been that sleep is necessary for recuperation. If I recollect aright, it was Liebig who asserted that we gain during eight hours' sleep the force that we expend during sixteen working hours. It is assumed that the organs while awake and active are incapable of receiving nourishment, and therefore sleep is necessary. If this theory were true, it would follow that those persons or animals that sleep the most would exert the most force while awake. But the contrary is the fact: those that sleep the most are the most indolent and inefficient when awake. Besides, it is not true that nutrition and recuperation cannot proceed when we are awake. A farmer will rise before the sun, eat a hearty breakfast, swing his scythe six hours, eat a hearty dinner, mow six hours more, eat a hearty supper, then spend three hours more in doing chores, and go to bed with an empty stomach. His blood during all that time has been circulating through every organ of his body and his brain. It is unreasonable to suppose that any part

of his constitution has failed to receive nourishment during all that time.

The theory that I would propose to physiologists is that sleep is nature's method of economizing food. By sleeping one-third of the time we save nearly one-third of the food that we should require if we remained awake and active during twenty-four hours of every day. It is true that we are recuperated during sleep, for the reason that assimilation and nutrition proceed while voluntary action is suspended, so that no blood is used up by the brain or the limbs.

The hibernating animals sustain this new theory. A bear goes to sleep in the autumn in a good condition, and comes forth in the spring lean and hungry; he certainly has not been recuperated. We learn from these facts the fundamental nature and the dominating power of the digestive system. It is the first part of the constitution of plants, animals, and man that is created, and everything superadded is subordinate to it. It is the main-spring upon which all else depends. By means of sleep it suspends the action of the mind and limbs one-third of the time. We are thus informed, in language plainer than words, that we do not need more than sixteen hours out of twenty-four to do all the work required of us.

It is now known that sleep of all kinds is immediately produced by diminution of blood in the brain. Any organ, when deprived of blood, suspends its operations. The brain and mind are no exceptions to this law. It is known to physiologists that there are inhibitory

nerves, the office of which is to moderate the circulation in any organ when necessary. Those nerves that produce sleep are doubtless branches of the great sympathetic. Their centre is probably near the digestive organs. It is certain that a derangement of those organs, especially in children, often has a powerful effect upon the brain. It sometimes produces idiocy, after causing a succession of convulsive fits that seem to be a kind of insane sleep. This important part of physiology needs further investigation.

SECTION IX.

THE MACHINERY OF MAN.

EVERY machine is impelled by some power separate from itself. The brain of man is no exception to this law. The power of man, both of body and mind, is derived from the oxygen that he inhales. The oxygen comes in contact with the carbon of his food and is condensed, and its expansive force set free; this force or potence is converted into muscular force or mental force. The lungs furnish the oxygen, and the digestive system furnishes the carbon that unites with it and condenses it. Animals and men that inhale the most oxygen exert the most force.

The mind or brain is just as much dependent upon the oxygen of the blood for its power as are the muscles. The force itself of the muscles or of the mind is in no respect different from that which moves a steam-engine, a planet, or a windmill. Force or potence is continually leaving one thing and entering one or more other things. The things it leaves condense or contract, and the things it enters expand. All the force used by the body or the mind comes from the oxygen that is condensed; the oxygen of the blood that enters the brain

becomes condensed there, and the force or potence that is set free produces voluntary motion.

There are many nervous apparatuses in man, each of which has a centre. But only one nerve-centre has consciousness when impressed; that one is located in the oblongata. The nerves that have no conscious centres are called involuntary. They differ from the voluntary nerves in the fact that they are not guided by perception or thought, and they are limited and restricted to one particular mode of action. They cannot vary their action to suit circumstances any more than a planet can.

The conscious centre or phrene has three classes of mental organs that converge to it and impress it. The most important is the impulsive class. It represents our wants; when one of them is excited it tends to act directly to obtain what is wanted. It has no discretion, and no self-directing or self-restraining power, any more than the involuntary nerves have. It produces a consciousness of want and a desire to obtain what is wanted, and it acts on the intellect and forces it to think and perceive the way to succeed. But neither consciousness nor intellect restrains it, however wrong may be its aims and actions. The third force, the restrictive, is excited at the same time, and produces a consciousness of the objections, difficulties, and dangers of the proposed impulsive act. It also excites the intellect to learn the circumstances and objections. The restrictives have the power to restrain, to moderate, or to modify the action. An insane person has one or more propensities, either an impulsive or a restrictive, that cannot

be restrained, and therefore acts madly. The common idea that the will is a single ruling power in the mind is absurd. It is single in its result, but that result is the conclusion of the action of the whole mental congress.

The constitution of man may be likened to a steamship that has but one pilot (the intellect) and one set of wheels (the limbs and tongue), but twenty-five engineers and engines (impulsive and restrictive propensities). Only one of the twenty-five can command the ship and the pilot at one and the same time, and determine the course to be pursued during the time that he commands. If the pilot is stupid, or ignorant, or is misled by false information, there is continual danger of error and misfortune. If the engineer is a giant and a tyrant, he may disregard the remonstrances of the other engineers (propensities) and the advice of the pilot, and proceed reckless of the consequences.

The history of man demonstrates that from the earliest times he has been taught falsehood, superstition, and vice. The most amiable traits of his natural character have been made the means of his degradation. Children are naturally conforming, imitative, credulous, and anxious to learn from those around them. They are hungry for knowledge and eager for action; but until nearly twenty they are the slaves of their accidental surroundings. Their language, manners, morals, religion, occupations, and habits are all imposed upon them without their choice and without their knowledge. When they reach the age of discretion their habits are fixed; they are stupidly in love with their slavery, and con-

tented with their ignorance. They find themselves surrounded by institutions, governments, customs, and superstitions that originated in past ages, and which have been long sustained by tradition and authority.

All history, sacred and profane, proves that during the ages that preceded the discovery of America, mankind were almost utterly ignorant of the natural sciences. Even now the learned philosophers in our universities are ignorant of the mechanism of their own minds. They profess to learn and teach the nature of the human mind by the same primitive method that savages use, and that is by the experiences of their own consciousness. There was a deep knowledge of human nature indicated by the lessons of the greatest of moral teachers. When referring to little children, he said, "Of such is the kingdom of heaven." It was only after some of them had been depraved by falsehood and vicious training, that he denounced them as "Scribes and Pharisees, hypocrites, that devour widows' houses." Ignorance, false teaching, and false training beget bad habits and bad customs, and these in turn beget bad institutions that continue to grow in power and corruption, until nothing less than a miracle or moral earthquake, like the French Revolution, can overthrow them. When we consider how ignorant man has been and is now of himself and his surroundings, it is not strange that he has acted as if totally depraved. Man is naturally a savage animal, but he is capable, when instructed and trained in accordance with scientific and Christian principles, of rising to the highest stage of intellectual and moral excellence.

SECTION X.

PLAYFULNESS.

THE mental organs, when not exercised for useful purposes, tend to act spontaneously in play. Young animals and children, when not old enough to act usefully, have all the propensities of adults, and they must exercise them in play or not at all. There are many manifestations of the mind that are commonly regarded as serious performances, which really spring from playfulness. The pleasure derived from reading fictions, and even from the writing of them, is of this nature. The same is true of music. It plays the emotions and gives pleasure to many who know nothing of the rules of melody and harmony. Much of what artists term work is really a playful exercise. Play is opposed to useful labor. It demands variety, so that many faculties can obtain the pleasure of exercise.

Literary men, artists, musicians, and even preachers dislike common profitable labor of all kinds, excepting that which exercises their minds pleasantly. Imagination, which is by some regarded as a mental faculty, is in many cases merely the play of the propensities upon the intellect, causing it to present a series of images or ideas pleasing to the dominant propensity. In this sense

dreaming is a species of imagination or image-making. The creative imagination is the state of mind produced by the propensity of Experimentiveness or Inventiveness. Each propensity forces the intellect to play and produce images or ideas to suit its desires.

Play springs mostly from the impulsive propensities, which tend to produce energetic actions, and are liable to become excessive and irreverent, and to violate the rules of propriety. Nearly all religion is restrictive, and nearly all play is impulsive. The two are therefore antagonistic. There is probably no mental organ specially related to play, to mirth or to wit. The organ of Experimentiveness or Inventiveness, when acting playfully upon the intellect, produces wit. It invents amusing expressions, just as it invents anything else, and when aided by a good literary intellect succeeds in exciting admiration. Mirthfulness depends principally upon hopefulness and health, and the absence of care and anxiety. There is no separate organ or faculty of mirthfulness or playfulness.

IMAGINATION.

There is no separate organ or faculty of imagination. When any propensity is excited it forces the intellect to act and create images in the conscious centre which are pleasing to that propensity. A hungry man imagines and dreams of a feast of good things; a lover imagines that his sweetheart smiles upon him like a lovely angel; an inventor imagines a combination of instruments that never yet existed in reality.

The play of any propensity upon the intellect may produce a succession of mental images which can be used by the philosopher, the novelist, the sensualist, or the madman. In a well-balanced mind the imagination can be used just as the memory or the reasoning power can. In unbalanced minds the imagination is the product of a propensity that is uncontrolled.

SECTION XI.

UNBALANCED BRAINS.

In the preceding sections I have confined the discussion to the normal functions of the mental organs. A lack of knowledge concerning the healthful and proper operations of the mind has prevented physiologists from understanding mesmerism, spiritism, mind-cures, and alcoholism.

As soon as Dr. Gall discovered that each mental faculty has a special mental organ, it was at once perceived by physicians that monomania was caused by the disease of one mental organ, while all the others were in a healthful condition. It was also perceived that the conduct of very peculiar and eccentric characters resulted from some of the organs being very large or very small. But mesmerism and hallucination were still unexplained.

DREAMING.

Dreams result from the unbalancing of the brain. It is impossible to explain dreams without recognizing:

1. The fact that there are many separate mental organs, some of which may be awake while others are asleep.

2. That there are three species of mental forces,—the impulsive, the restrictive, and the intellectual.

3. That the intellect is the slave and instrument of the dominant propensity, which plays upon it while other propensities are asleep, and forces it to dream on matters interesting to that propensity.

The whole intellect may be perfectly awake while all but one or two of the propensities are asleep. The intellect can then perceive and remember and reason on any subject with quite as much accuracy as when the whole mind is awake, but it can only perceive and reason to please that one tyrant propensity.

It should be remarked that the impulsives and restrictives produce very different kinds of dreams. Nearly all our dreams seem to be produced by the restrictives. They naturally suggest difficulties, and they also naturally tend to favor sleep by diminishing the circulation, while the impulsives favor wakefulness by increasing the circulation.

We seldom dream of good fortune, or of doing anything successfully that requires impulsive energy. Our dreams are in most cases concerning difficulties, obstacles, failures, troubles, and misfortunes. The restrictives do not impel to action, but to inaction. For this reason we keep the body still, though the intellect is busy in dreaming under the influence of the restrictives. Somnambulists are probably under the influence of one or more of the impulsives. They dream of *doing* something in earnest. They rise and walk and work and talk. They go without hesitation or fear into the most dangerous places. The impulsive propensities know no fear or restraint.

If the somnambulist is suddenly wakened when in a dangerous place, his restrictives become dominant, and he is alarmed and falls helpless.

The dreams that come true are, in most cases, of some difficulty or misfortune, for the reason that we seldom dream of anything else.

SECTION XII.

MESMERISM AND HYPNOTISM.

In order to understand all the phenomena of mesmerism and hypnotism it is necessary to become acquainted with the two classifications of the mental organs as explained in the preceding pages. According to the triserial classification the mental organs are divided into three grand divisions,—the ipseal, the social, and the intellectual. The social series is divided into three groups,—the domestic, the governing, and the conforming. The phenomena of mesmerism and hypnotism are produced by the extreme and abnormal excitement of the conforming group, especially by the three of them which are restrictives,—Submissiveness, Imitativeness, and Credenciveness. The conforming group are the antagonists of the governing group, especially of Imperativeness and Firmness. The tendency of the governors is to command and act independently; the tendency of the conformers is to submit, obey, imitate, believe, and, in a word, conform. If I examine two persons, and on one I find the governors small and the conformers large, I do not hesitate to say at once that the one with the larger conformers and the smaller governors is more easily influenced by superiors and in-

duced to conform to their requirements, and even their suggestions. All else equal, he will be the one more easily converted by persuasion.

In 1839, with these ideas in my mind, and after I had discovered and published the triserial classification of the organs, I performed hundreds of experiments in mesmerism. The theory of Mesmer, and of all the experimenters, was that the operator exerted his will and projected into the brain of the subject a kind of magnetic or electric fluid, which put him to sleep and subdued his will. I am ashamed to say that I experimented several years with a full knowledge of the triserial classification before I discovered that the mesmerized person was mesmerized and controlled by his own conforming propensities, and that magnetism, electricity, and my will had no effect whatever. Even after this discovery I could not understand why and how the conforming propensities produced sleep. After several more years of experimenting, I discovered that all the propensities are either impulsive or restrictive, and that the impulsives increase the circulation to add to the strength, while the restrictives decrease the circulation to reduce the strength.

Any cause that decreases the circulation in the brain tends to produce sleep (or "hypnotism," which is from the Greek, and signifies sleep). When the blood has left the brain of the subject sufficiently to produce some degree of sleep, he can be made to dream on any subject suggested to him. He is ready to conform to the operator to a degree that is wonderful. His whole mind and body

are under the control of his conforming propensities. There is nothing so ridiculous or so humiliating that he will not do it. He is a conform-maniac. His mania does not essentially differ from other kinds of monomania, excepting in the fact that it is conforming. The operator can control his consciousness as well as his conduct. If told that the extraction of a tooth will not produce pain, it will not, for the reason that his consciousness is controlled by his conformers, and they are excited and controlled by the language of his operator.

Why cannot every one be mesmerized? The susceptibility to mesmerism is like a predisposition to a particular disease,—consumption, for example. A person may have the conforming organs large, yet be incapable of being mesmerized. Those who are most easily affected not only have the conformers excitable, but they have a weakness and excitability of the heart, so that the circulation is easily checked. Some persons can put themselves into the trance by their own imaginations. The spiritists have often done so.

In some cases the trance assumes the form of a disease. It is then termed catalepsy. Hallucination is a kind of semi-trance to which some people are subject. They dream while awake that they see things that do not really exist. Shakespeare represents Macbeth and Hamlet as being affected in this manner. Probably Swedenborg dreamed when he believed that he conversed with spirits. Many of the modern spirit-mediums were sincere Christians, and really believed that they conversed with their deceased friends. I convinced hundreds of

them of their error by mesmerizing people in their presence, and thus making writing and tipping and vision-seeing mediums.

If any one desires to ascertain whether he can be mesmerized, it is only necessary for him to conform to the requirements of the operator, by placing himself in a proper position and being willing, conformable, and serious. Some persons cannot do this without exciting their conforming propensities to such a degree that if the operator asserts, "You cannot open your eyes," they cannot. Why? Because the conforming propensities overcome all opposition and rule the will. In other words, the will of the subject is to conform to the expressed wishes of the operator.

One of the latest and most interesting discoveries made by physiologists is the fact that there are two sets of nerves that accompany the arteries to modify the circulation. One set, when stimulated by electricity, increase the circulation, and the other set when stimulated moderate the circulation. A reasonable theory is that there is one set of inhibitory nerves that have for their special office to inhibit or moderate the circulation to produce ordinary sleep. These are branches of the great sympathetic. They are independent of the brain, and antagonistic to its functions. But besides these there are two sets of nerves that vary the circulation to bring it into harmony with the condition of the mind. One set conducts the influences of the impulsives to the heart and arteries to increase the circulation, and the other set conducts the influences of the restrictives to

moderate it. When a large restrictive—Cautiousness or Reverence—is greatly excited, the circulation is instantly checked, and the subject becomes somewhat cold and pale. When an impulsive is excited—Combativeness or Hopefulness—the circulation is instantly increased. These opposite influences of the propensities upon the heart and arteries can only be transmitted through two different sets of nerves. But they cannot be the same nerves that produce ordinary sleep, and suspend the action of both the impulsives and the restrictives. The mesmeric sleep, or hypnotism, is produced by the restrictive organs of the brain itself moderating the circulation in the brain. This is proved by the fact that the mesmerized subject is never so much asleep that he will not do just what the operator requires of him.

The mesmeric sleep, or hypnotism, has been confounded with ordinary or genuine sleep. But it is a very different condition, and produced by a different mechanism. It may be termed an emotional and abnormal sleep. When a lady faints through fear, or a religious devotee falls and becomes unconscious in a revival meeting, we do not regard the condition of the subject as sleep or hypnotism.* Mesmeric sleep is of the same abnormal character. It is emotional sleep.

* I have treated this subject at length in my larger work, entitled "The Mysteries of the Head and Heart."

SECTION XIII.

ALCOHOLISM.

ALCOHOL poisons and paralyzes the restrictive and moral propensities, and lets loose the impulsive passions to act without restraint. It also poisons and paralyzes the inhibitory or restrictive nerves that moderate the circulation of the blood. When a person is half intoxicated, his face becomes red, and his whole body warmer than usual. He becomes less secretive and less cautious, less modest and respectful, and less scrupulous. He is more contentious, more boastful, more self-confident and venturesome, and more hilarious. If he drinks more, his nerves of voluntary motion become paralyzed; next, his nerves of sensation; and, finally, his brain is paralyzed. He is stupid and insensible.

When he recovers his condition is the reverse of that which the alcohol first produced. The impulsives are exhausted and subside, and the restrictives take control and depress all the powers of body and mind. His face is pallid; his limbs are cold and tremulous; his mind is gloomy, fearful, and suspicious. In extreme cases he sees horrid visions of monsters or assassins.

In mesmerism only the mild conforming propensities are excited, but alcohol excites at first all the impulsives

and then all the restrictives, especially Cautiousness and Secretiveness, which fill the mind with terror and suspicion.

These two contrasted states of mind furnish a perfect illustration of the difference between the impulsive and restrictive propensities.

There are two facts which have been revealed within a few years by science that have a very important bearing upon the subject of alcoholism. One is that alcohol is not an extract from the grain or the fruit, but is produced by a minute organic being that eats the sugar in them. When this is understood we perceive why alcohol is a poison, though the fruit and grain are nutritious and wholesome. Another fact is that alcohol does not really stimulate at all, though it seems to do so. It paralyzes the inhibitory nerves that restrain and limit the circulation, and thus causes the circulation to increase. The inebriate is therefore stimulated by his own blood, and not by the alcohol. That alcoholism is a disease there can be no doubt, but the precise nature of the disease is not generally understood. It is not an insane love of alcohol, but an insane desire to get rid of the mental distress which succeeds the use of the alcohol. Its first effects on the mind are pleasurable and exalting, for the reason that it excites the impulsives. This feeling is succeeded by an unhappy and gloomy state of mind, caused not merely by depression of the impulsives, but by an insane and aggressive state of the excited restrictives, which produces positive misery. Sick people and those who have been bled almost to death may be

depressed in body and passive in mind, but they do not suffer any mental pain. The inebriate is not only depressed, but he is annoyed and distressed by unhappy thoughts and painful feelings. In extreme cases he thinks of suicide as a relief. He is jealous and suspicious of his friends. His imagination is full of unpleasant images. He is insanely anxious without any apparent or reasonable cause. Alcohol will relieve him temporarily from these horrid thoughts. If he could take some medicine that would relieve his mind, he could easily overcome the desire for alcohol. The taste or smell of the liquor gives him no pleasure. But alcohol paralyzes the restrictives and excites the impulsives, and thus relieves him.

I recollect that about fifty years ago there was a Dr. Chambers who went through the country curing alcoholism by lecturing and giving his own experience. He had been a drunkard, and his wife put tartrate of antimony into his brandy-bottle, which not only made him sick, but made the very smell of alcohol disgusting to him for a long time. Being a good and resolute man, he availed himself of this method of curing himself of his drunken habits, and recommended the same method to others.

The method lately introduced by Dr. Keeley seems to be an improvement upon the Chambers cure. It is found that after rendering the alcohol disgusting, the mental distress is prevented by injecting into the blood-vessels a stimulating medicine several times a day, and thus keeping up the impulsive forces, and preventing

the dominance of the restrictives. When this is done for a sufficient time, the normal condition of the constitution is restored.

Dr. Keeley deserves great credit and the gratitude of all the world for his sagacity and enterprise. But surely the time will come when no young man of common sense will conduct himself in such a manner as to need the services of Dr. Keeley or any of his pupils.

SECTION XIV.

MIND-CURES AND CHRISTIAN SCIENCE.

In all ages and nations diseases have been apparently cured by impressions made upon the mind. The probability is that in a very large majority of these cases there was no real bodily disease. But there was what may properly be termed an insane idea in the mind of the patient that he was the subject of a disease. This idea being removed by the mind-doctor exciting his conforming propensities, the cure follows so immediately that it seems miraculous. Physicians who have extensive practice are familiar with these cases. They often cure their patients with what they term "expectant medicine,"—that is, something that produces the desirable impression on the mind of the sufferer. It often happens that the regular physician fails to manage one of these cases shrewdly and skilfully; then a mind-doctor comes in and does something, or uses some pretended medicine, and astonishes the whole neighborhood by suddenly curing the patient. Sometimes the cure is effected by prayer, sometimes by quack medicine, and sometimes by a charm or by a relic of a saint. The public generally have no conception of the number of supposed diseases that are merely imaginary. A mes-

merized person can be impressed with the belief that he is lame, or rheumatic, and not be able to rid himself of the "disease" for a week or more. Great numbers of people mesmerize themselves unintentionally, and believe for months that they have a disease, which really does not exist out of their own minds.

No form of mind-cure has ever been practised which is more shameless and unscrupulous than that lately introduced under the name of "Christian Science." It is neither sanctioned by Christianity nor science. Its advocates pretend to cure by the silent influence of the mind-doctor over the patient. The real truth is that one mind never influences another without words or gestures, as these impostors pretend. They occasionally appear to cure, but it is done by making impressions, by words or manner, upon the conforming minds of the credulous patients, and thus causing the patients to cure themselves by the working of their own minds.

PHRENO-PHYSIOLOGY.

HUMAN NATURE:

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BY

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