

BUCHANAN'S

JOURNAL OF MAN.

Vol. 1, No. 10.—FEBRUARY, 1850

ART. I.—SYMPATHETIC IMPRESSIBILITY. — (CONTINUED FROM
PAGE 425.)

It is probable that none are so destitute of impressibility as to feel no injurious effect whatever from long-continued contact with the sick, although it may be produced too slowly to be appreciated. I have frequently, in relieving patients, caught enough of their peculiar symptoms to give me additional knowledge of their condition, although the impressions which I caught were not so strong as to be painful.

Mesmeric operators upon the sick seldom fail to encroach upon their own health, and although they feel it after a time, they seldom pay sufficient regard to their sensations at first, to be distinctly aware of their own injury. The simplicity of our proceedings, which prevents fatigue and mental exhaustion, and the fact that we establish no general sympathy between the operator and subject, renders it much safer to relieve the sick by this method of exciting the organs. Gentlemen accustomed to mesmerize without any definite ideas of the physiological organs, are delighted to operate by our simpler method, and relieve the sick by exciting the healthy and checking the morbid faculties. Nevertheless, this method does not entirely insure us against injury, if we are impressible; for even the healthy class of organs in our patient may transmit some morbid influence. Intense disease is apt to affect the whole system so as to be somewhat communicable from any portion.

Those who are highly impressible, therefore, will find it necessary to avoid frequent contact with the sick. There are many of this temperament whose health is injured by contact with the sick (in nursing or by sleeping in the same bed), without their suspecting the cause. The popular impression that it is unhealthy to sleep

with the sick or for the young to sleep with very old persons is a well-grounded opinion.

When two who are mutually impressible are brought together, a reciprocal sympathy is easily established, and this sympathy may even continue when they are apart. When one attempts to operate upon the other, both will generally be excited, but sometimes the most impressible one will feel the effect alone, and none whatever will be produced upon the other. An experiment made in my class (Feb. 14, 1844) gave an admirable illustration of the laws of reciprocal influence between the impressible. Mr. —, to test his impressibility, was brought into contact with Miss M. He was rather thin—she a little inclined to corpulence. His fingers were placed upon the region of relaxation, to see which would be most affected by the contact. Both were at first affected. She, so much as to stagger a little (they were standing), while he became weak and tremulous. When the trembling became evident in him, the staggering ceased in her, and all the influence appeared to have left her as it concentrated in him. In this case, it would seem, that the increasing debility or impressibility of one deprived him of the power of operating upon the other. For this reason, I have sometimes found it difficult for the impressible to receive any satisfactory impression in attempting the sympathetic diagnosis, if their hands produced much effect upon the one examined. The character seems to recede before them like an airy phantom not sufficiently firm to be grasped or felt. Thus it is, that in the mental contact of society, men impress, or are impressed, according to their relative mental power; and those who are thus impressed, in some cases, exert so little reactive power as to leave their leader unconscious of public sentiment and of the amount of moral power that is slumbering around him. The satellites of the great man appear to him so much as he molds or wishes them, that he is unable to perceive their natural and peculiar character. Hence, influential or impressive men are often unacquainted with the true character of their adherents, and unable to feel the gentle currents of the moral atmosphere which are felt by men of more tact and less force of character, who lead a more gentle life by adapting themselves to the general tone of society, and by appreciating more accurately the characters of men about them.

There is another difficulty in the sympathetic diagnosis, arising from the passively impressible condition, which I first witnessed at Boston, in the winter of '42. At the close of my fourth lecture to a private class, a lady of great impressibility was subjected to the influence transmitted from the brain of another person, with a view to ascertain whether, when placed under two antagonistic influences, she would be able to estimate the amount of each influence, so as to make a correct psychological diagnosis.

Her finger was first placed upon the region of consciousness and observation in the head of Mr. D.; she looked around and every-

thing became brighter to her vision. The same finger being placed upon the same organ in my own head, she felt the same influence, brightening surrounding objects, and even tending to magnify the things at which she looked. The influence which she received from the head of Mr. D., she described as more powerful, and that which she received from myself as more sudden or sharp. (Mr. D. is a man of large frame, large head, large perceptive organs, and slow temperament.) Placing her finger upon the region of animal sleep in the head of Mr. D., and then in my own, I found that, in each case, she was soon made sleepy. Placing the fingers then upon each organ in the head of Mr. D., and requesting her to observe the influence of both, so as to determine the comparative energy, we observed, that instead of remaining in a natural, balanced condition under the two opposite influences, she manifested each influence distinctly upon the two sides of the body. The right side being connected with the organ of sleep, became sleepy, and the eye closed, while the other side retained perfect wakefulness, the left hand having been put in contact with the organ of consciousness. The right arm dropped, while the left was still held upon consciousness, and she seemed almost unable to raise the right arm from its pendent position, or to stand upon the right foot. This was a novel and surprising circumstance. In previous experiments, I had always found the two impressions of the right and left hands influential alike upon the whole brain—neither being confined to one side. The impressions transmitted by either hand, we might suppose (if transmitted by sensation), would affect primitively the hemisphere connected with that hand; but the union of the hemispheres is so intimate that each becomes affected, and this was the first instance in which they had failed to be affected alike. Now, it appeared that the hemispheres were in opposite conditions.—Either the influences transmitted by the right hand had reached that hemisphere of the brain which is connected with the right half of the body, and, through it, had affected the whole right half with drowsiness, or the *nervaura* had pervaded the right side through the right hand, and that which entered through the left hand pervaded the left side, thus keeping them in opposite conditions.

I next proposed that any gentleman present, remarkable for the predominance of either the drowsy or the wakeful tendencies, should submit his head to her hands in like manner, and observe what would be the effect. Mr. W. came forward, and I placed her fingers upon the organs of consciousness and animal sleep. Under these influences, her right side fell almost instantly into a state of drowsiness; her right arm dropped, and the effect appeared to be far more intense and prompt than in the cases of Mr. D. or myself. Mr. W. then stated that he was remarkable as to sleep, from the fact that he uniformly required about ten hours of sleep, and could not bear to be deprived of his full allowance. It was then proposed

to place the fingers upon Mirthfulness and Moroseness at once.— This was done, and the effect was visible in a singular and ludicrous distortion of her countenance (which was more especially marked upon the forehead)—a faint, half-suppressed tendency to laugh and an impatient movement of her body, as if she felt an unpleasant internal struggle, which induced me to relieve her as soon as possible from this unnatural state.

This singular destruction of her cerebral unity may be ascribed to the fact that she had been repeatedly mesmerized on former occasions and thus brought into a state of habitual passiveness, in which she merely received impressions, instead of remaining self-possessed and actively observing the impressions made upon her consciousness. When I first attempted to excite her organs the influence was diffused and merely a mesmeric somnolence produced, instead of the local excitement. It was only after I had dispersed the somnolent excitement from the temples, and stimulated the organs which give tone or firmness to the constitution, that any local excitement could be produced. Even then there was not sufficient firmness to control and unitize the impressions in the sympathetic diagnosis.

About a year after this incident, Dr. H., a member of my class, who appeared very impressible, was requested to place his hand upon the head of a gentleman of vigorous constitution, and in this instance the effects received through one hand were developed upon the opposite side of the body almost entirely. It appeared that the *nervaura* progressed along his arm, and produced no important effect until it reached the brain. It reached first the adjacent hemisphere, and in that hemisphere produced effects which were manifested upon the opposite side of the body with which that hemisphere was connected.

These cases are remarkable exceptions. As a general rule, persons of the impressible temperament, who have not acquired the mesmeric habitudes, will be able, when they feel any influence with either hand, or with both, to unitize the perception and influence in the brain, so as to estimate correctly either a single or a double impression.

As the influences received in this way may sometimes be injurious, they may generally be counteracted by a rapid movement on the hand (through which the impression has been received), as if brushing out a material substance, or by imparting through the same hand a counteracting influence. As, for example, the effects produced by touching the organ of sleep will be removed by touching the organ of consciousness.

The use of the hand in manipulating the impressible, demands but accuracy and gentleness. In touching any organ to excite it, the contact should be as light as possible, pressure being rather injurious. The idea that I excite organs by friction has been entertained by some without any grounds. A light dispersive move-

ment is used when an organ has been excited, for the purpose of removing the excitement; but this can scarcely be called friction, for the efficacy depends not upon the rubbing of the surface, but upon the motion of the hand and the peculiar influence which it carries with it.

That a movement of the hand may be efficient in concentrating or dispersing excitement, is obvious upon mechanical principles.— Let us suppose the finger brought near to any portion of the head or body, and that at this spot a ramification of capillary vessels exists, over which the finger, F, is passing rapidly, from left to right. Whatever may be the influence exerted at the spot F, it is evident, that if that influence be carried along from left to right, the circulation must go with it. If it be a stimulating influence producing contraction, this contraction passing along the tubes must evidently force the blood along before it. It is by just such a process that the intestines and the capillaries



force their contents to advance in the usual course of health. If it be a relaxing influence, and we conduct this enlargement of the tubes along from left to right, it must attract the blood in the same direction by a species of suction. Whatever the influence, it creates a motion in the tubes from left to right and carries their contents with it. If it be simply an influence over the nervous fibers, it must, in like manner, carry their excitement and energy along in the course of the movement. If these movements concentrate to a particular point, that point must become a focus of excitement; and, if they radiate from that point, it must be deprived of stimulus and subjected to a powerful sedative influence. We act upon the conception that excitement is carried or impelled by the hand, and that as the movements of the hand are concentrative or dispersive, the excitement is increased or diminished, and the organs predominate or lose their power. In making these movements, the hand should be kept entirely flexible, and should be used so as to insure the gentlest possible contact. If there should be efficient contact between the hand and the surface, it will produce the same effect mechanically upon the circulation of the integuments which we have already alluded to; but, as this friction is itself an irritation to the surface which would act as a general stimulant to the whole space touched, this effect would only thwart our purposes. The hand is, therefore, used in the gentlest manner.

In some instances, even a steady contact is not desirable—a gentle application and withdrawal of the finger being sufficient—these touches and withdrawals being continued for a few moments or until the effect is produced. The withdrawing movement is supposed to be efficient in consequence of the attractive power of the hand.

Those who have been accustomed to mesmeric experiments, find it difficult to realize that great effects can be produced without the use of effort, attention, or strong volition by the operator, and often suggest that it must be the *design* to produce a certain effect, which produces that effect. When they perceive that I pay no close attention to the experiment, but am more engaged with surrounding persons, they still suppose that the latent design or expectation of a certain result is an operative cause, although the subject is as perfectly conscious and independent as his operator, and has not been subjected or placed in any sympathetic relation. The only way to remove this impression entirely, is to make your experiments with an operator who has no knowledge of the organs to be excited upon a subject equally unacquainted. As I am continually coming into contact with persons who are unacquainted with the science, I make a great number of experiments in this manner which evolve the same results that are produced by my own manipulation.

The excitement of the organs does not even require the presence of an operator. A suitable stimulant applied upon the proper location is sufficient. Almost any stimulant will answer this purpose; capsicum, mustard, alcohol, camphor, the positive galvanic wire, or the north pole of a magnet. The sedative influence of cold water or a cool breeze may be sufficient to reduce the excitement. If it is desirable to reduce the activity of any organ in a patient, the frequent use of a moistened sponge, to be passed over the surface by himself or by an attendant, will be found sufficient.

In many instances, the impressible individual may operate upon himself even without being aware of the fact. Sometimes, by sleeping with the head lying upon the hands, the course of his dreams will be modified by the portion of his brain which is thus impressed; or the mere warmth of the clothing may be sufficient to produce some effects upon the brain.

(We are generally disposed to apply the hand to those portions of the head in which the organs are, for the time being, active. Thus we may often observe that our instinctive attitudes, when the hand is in contact with the reasoning or perceptive organs—with Ideality—Somnolence, Indolence, or Tranquillity, are true expressions of our mental condition at the time.)

Experiments upon a passively impressible person in his natural wakeful and independent state, were at first my principal reliance for the discovery and demonstration of neurological principles. The striking phenomena of such experiments—their general coincidence and the intellectual, conscientious character of the subjects rendered them, to my mind, entirely decisive. But to those who were familiar with the powers of imagination, and with the exalted sympathies of animal magnetism, the supposition would readily occur, that even if the subject was independent of general sympathy with the operator, he might still be partially or entirely the creature of his own imagination. To those who have but a slight know-

ledge of such experiments—who do not know the uniformity and consistency of their phenomena—this supposition would appear extremely plausible. Hence, in order to present a demonstration more decisive in itself, because less liable to such suppositions, I have preferred the active to the passive mode of experiment—employing the impressible subject rather as an instrument of research than as a subject of experimental investigation.

The sensitive and intuitive powers, by which an impressible person is enabled to recognize the properties of medicines by contact, and to feel the mental influence imparted by an autograph which he touches with his hand or applies to his forehead (see Psychometry), are applicable, not only to medicines and letters, but to living human beings. As this power may be subjected to a very rigid test of its accuracy in application to autographs, we may thus learn to repose implicit confidence in its revelations.

In this active mode of experimenting, the subject occupies a most independent and respectable position. He becomes our oracle and teacher. He is taught to be a diligent observer, an exact analyst, and a faithful reporter of mental phenomena. He touches each spot upon your head, and his finger receives the nervaura of each organ, which gradually gives him a consciousness of its peculiar powers. If he possesses the highest grade of impressibility, the impression is caught almost instantly. Otherwise, it may be slow in reaching the brain and becoming sufficiently distinct to be described.

This mode of investigating the organs is clearer in its results than the passive. In exciting a passive subject we may get a different result in some respects for each. It requires a high grade of impressibility to admit of an organ being excited into unrestrained predominance, and if we do not get an absolute, unmodified display of the organ, we get a result in which its function is so commingled with those of all the other organs that belong to him, as to make it difficult to eliminate the exact function. In each subject the function will undergo different kinds and degrees of modification, in proportion as it is more or less excited and is associated with various predominant organs. For instance, if we excite the lower occipital organs, we will sometimes merely observe a general stimulus, an invigoration, an effect decidedly pleasant. This is the result in low grades of impressibility, when those organs are small and need excitement. If the excitement can be carried farther, it develops more of the true character of the organs in proportion to the impressibility; but, even when they are powerfully excited, they may be very differently displayed, owing to the powers with which they are associated. In one of excitable passions, thick neck, and broad basis to the brain, every lower occipital organ will make a coarse and violent display. In one of very predominant moral sentiments, there will be a restrained gentleness and softness in the manner. In one of very predominant intellectual faculties, these passions will show themselves rather as sentiments and modes

of thought. In those who are under the mesmeric somnambule influence, they are apt to show themselves in an ideal, dramatic, or dreamy style.

In short, there is no end to the variety of manifestations which may be elicited by unphilosophical inquirers and recorded faithfully as the exact function of the organ. We are liable to a deluge of theories from such sources, based upon imperfect experiments, without any estimate of the various degrees of impressibility, the predominance of various organs, the influence of habit, and the circumstances of the experiment. A copious source of delusion will be found in the mesmeric procedures, in which the operator modifies all the results by his volition, or by the continual sympathy with his patient, and in which the organs of Imagination and Illusion are frequently so active in the subject as entirely to mislead his operator, notwithstanding the entire sincerity of both.

From all these sources of delusion, we escape by the active process. With one subject competent to this SYMPATHETIC DIAGNOSIS of the brain, we may explore every head, survey the action of every organ, and learn in each what is the essential function and what the accidental modification. Our impressible subject determines the vital power of every organ with which he is brought into contact as certainly as the thermometer determines the amount of free caloric in the substances to which it is applied.

Another source of mesmeric deception lies in the volitional power to produce various results without any local impressibility. The trained subject responds to every imagination of his operator or of himself, and any notion established in either of their minds may be confirmed by experiment. A mesmeric operator, little acquainted with phrenology, was requested by a gentleman familiar with that subject to excite the organs of Ideality and Destructiveness, the location of each being shown. In complying, he mistook the locations and produced a manifestation of Destructiveness when Ideality was touched, as well as of Ideality when he touched Destructiveness. This was a sufficient display of the volitional and imaginative power—it also showed that the true local impressibility was absent. There was no concentration of excitement into the organs touched. Many have operated in this manner to their own deception, or, at least, to the deception of others, who supposed that the function of certain organs was demonstrated by an experiment which really had nothing to do with local impressibility, and which could have been conducted as well by the operator's touching his snuff-box, as by touching the head of his patient, the touch having really nothing to do with it. Mesmerizers, who have thus pretended to illustrate the principles of Neurology upon their somnolent subjects, have misled the public: they have even deceived themselves into the opinion that there is no local impressibility, *i. e.*, no local effect produced but by the action of the will, because they have never experimented in any other manner, and are therefore

entirely ignorant of the phenomena of genuine, unmodified, local impressibility.

Those operators in the sympathetic, volitional, and imaginative style, who have dealt in wonders without much inquiry into causes, are sometimes very slow to recognize any tactile excitement of the organs. The decisive answer to their objections lies in the fact, that experiments made when both parties are ignorant of the organ excited, produce now just the same effects as were produced in the first instance, when the organ was discovered. In that instance, all parties were previously ignorant of the undiscovered function, and consequently the result was not predetermined, and in all subsequent cases, when the parties are placed in the same entire ignorance of the function, the results correspond to the numerous experiments already made.

Our active experiments are calculated to inspire confidence in both the skeptical and the imaginative, for the subject reveals the exact power of our organs with so much precision as to inspire entire confidence in the accuracy of his perceptions.

The best method of using this Sympathetic Diagnosis, either for the detection of disease or for the discovery of character, is to become familiar with the antagonism of the organs, and to investigate antagonistic functions at the same time. If your impressible subject possesses a prompt impressibility, the contact with one organ alone will destroy the balance of his faculties, and in some instances impair his capacity for judging. At any rate, it may produce an unbalanced, irregular excitement of his own brain, which will prove injurious.

But if he touches at the same moment the organs of antagonistic functions—as Consciousness and Sleep—he will feel your real condition, and be able to determine the preponderant organ. By taking the influence of each singly, for a few moments, and then balancing them in combination, he will ascertain both their relative and independent powers, so as to ascertain the actual character and the capabilities which might be evolved under peculiar circumstances. At the same time, he might feel in each organ the modifying influences to which it has been subjected, and tell with which organs it is accustomed to co-operate, or by what means it can be excited.—In the organ of Self-Esteem, for instance, he would perceive for what you are competent in your own estimation, and whether the organ is in a state of satisfaction, disappointment, annoyance, excitement, or inactivity. He would even be able to say whether it was increasing or diminishing, and what was its native power. In touching Philanthropy, he would perceive whether you felt any sincere interest in the fate of mankind, whether it was associated with hope of their progress, with annoyance at their present condition, or with regret arising from their slowness to appreciate efforts in their behalf. He would perceive whether any of your organs had a beneficial or an exhausting influence upon your health, and which

most especially needed cultivation to balance or elevate the character.

The results of this Diagnosis point to a very important principle in our Phrenology. There seems to be a power of evolving from each organ with which the subject comes into contact, all the strong impressions which have ever been made upon it. Thus, I have known Mr. —, upon coming into contact with Adhesiveness, not only to appreciate its action and condition, but, in one instance, to discover and describe the objects of attachment, not only as to appearance, but as to traits of character, showing that he had caught a full impression of the objects impressed upon Adhesiveness. The peculiar condition of that organ in any one bereaved of a wife, a child, or a relative, or, in a devoted lover or friend, he recognized with readiness. To appreciate the conditions of an organ, is not so wonderful, but to elicit from it the exact impressions which have been made through life, seems to prove, that each cerebral organ is a magazine of impressions, and that the great treasury of knowledge which is found in even the poorest human brain, is not alone in the intellectual organs, but is distributed through the whole brain—each organ being the receptacle and storehouse of the class of impressions which are appropriate to it. Nor is this an unreasonable doctrine.

The intellect is the door through which external influences enter to stamp the character; but, if there were no feelings or passions to receive these impressions, the character would be a total blank. As a light shining through a lifeless void, with no object to reflect it, would appear as darkness, so the external influences affecting man through the transparent medium of his intellect, without a character upon which to act, would be utterly void of effect or of any interest. The passing consciousness would exert no influence by which it could be recalled or reproduced. In short, an existence so abstract and ideal would be very nearly a nonentity. Such would be man, simply as an intellectual being void of emotion, and such he is in proportion as the organs of emotions and passions are absent. Without the organ of Self-Esteem, he is unable to conceive his own merits, or to retain any recollection of those things in which Self-Esteem is interested. We may remark, that whenever any organ is largely developed, there is a greater stock of ideas connected with it. The avaricious man can talk of money, the patriot of his country, the vain man of his exploits and honors, the humorist of ludicrous scenes, etc. Deprived of either organ, its associations are absent. Void of Mirthfulness, he has no humorous facts, no merrily ideas; void of Acquisitiveness, he has a childish simplicity as to modes of acquiring or retaining property; void of self-respect, he is utterly incompetent to attaining a respectable standing in society. Take away any organ, and the whole stock of ideas, impulses, and powers which belong to it disappear. It seems, therefore, highly probable, from these facts, that each organ may be con-

sidered as a magazine of peculiar impressions; and, certainly, we know that the greater the number of its appropriate impressions made upon each organ, the greater is the development and power which it attains. What limit, then, can there be to the growth and development of humanity? Every good deed that we witness or perform imparts additional strength to our moral faculties; every exploit of our intellect or courage, adds to the accumulating power of self-respect, that sustains us and prepares us for still greater exertions; every crime adds to the leaden weight of guilt that sinks us to a still lower region of infamy. Our organs are ever thus accumulating from without and building up an enduring life. If the record of this life is imperishable, and our deeds are to haunt us forever in an undying memory—it is well that we should in time provide good deeds as the guardian angels of our future life.

Be that as it may, we have reason to believe that each cerebral convulsion becomes the depository of its own class of impressions, which are called forth by the sympathetic diagnosis.

To the powers of this diagnosis, I am not prepared to set any limit. I am strongly persuaded that the intuitive intellect of the impressible constitution tends toward the full development of all truth, and that truth is its only absolute goal and limit.

I am strongly inclined to believe that there is little in the universe which man needs to know, that is not fairly within his reach whenever he does his duty to himself in the development of his intellectual and moral nature. But in the present condition of society, whatever development his intellect may receive, the moral nature is far too low to admit of his attaining the fullness of truth.

When we establish the accuracy of the results of the sympathetic diagnosis, it becomes applicable to purposes of great importance. It gives an information upon which we may rely in the daily business of life. Practical Phrenology—Cranioscopy—is rather barren of decisive results—it indicates, in a very rude and rather uncertain manner, the tendencies of character arising from the dimensions of the different parts of the brain; but these tendencies are not the actual character. The conformation of the brain, if it could be perfectly ascertained, gives us nothing positive as to the character, nothing but probabilities. It does not give even the relative power of the organs, with any certainty; while it may prove of some *assistance* in forming our estimate of character; it never can be alone a *sufficient basis* for an estimate. But the sympathetic diagnosis gives us the very information that we wish. It reveals the exact energy of the various organs, whether it be native or acquired, and determines what the individual is competent to do, or would do under certain circumstances. It gives that exact practical knowledge of character which is usually derived from the knowledge of a man's life; and, truer than experience itself, it reveals traits and capacities which may never have had an opportunity of being developed in action. It gives that full and exact

description of character, which even autobiography cannot supply, for it has no method of trying the character by a proper standard, or of analyzing and comparing the various faculties. The sympathetic diagnosis gives the nearest approach to exact justice which any individual can receive, for it fully develops that of which he is conscious in a clear and systematic manner with a proper standard of comparison and judgment.

It furnishes thus, a portraiture of character of inestimable importance in the study of self. The words "know thyself" express a moral duty. We must understand our own character thoroughly, before we can take the proper steps to amend our errors or develop our better faculties. Self-study is, therefore, one of our most necessary duties, and in the fulfillment of this duty the sympathetic diagnosis often becomes indispensable; for we often have occasion to observe, that just in proportion as the character becomes distorted—just in proportion as we yield to any vice or allow our principles to be perverted by any falsehood, we lose sight of the proper standard of character, and become less capable of perceiving and amending our own defects. The transparent purity of a perfect, moral nature recoils from everything that would tarnish it; but once tarnished, a second vice is contracted more easily than the first. It is often those who are most in need of moral improvement that are least capable of correcting themselves or of receiving any correction from their friends; and it is seldom that any friend can so sympathize with another's character, so justly and thoroughly appreciate him, as to satisfy his friend that his censures are just and his advice worthy of being followed. But the admonitions derived from the impartial principles of a science are received in a different spirit. Like a faithful mirror, the sympathetic diagnosis enables us to see our own image and dispassionately scan its defects.

With this assistance we may make extraordinary advances in self-knowledge, and in undertaking self-culture we will be enabled, by the same means, to watch the progress and changes of our character or constitution. If the cultivation of any organ has increased its power, activity, or development, we will know the amount of the change; and, if the relative proportions of any faculties have been modified, we will learn to what extent. Thus, the young man will be enabled to understand, cultivate, and develop himself with the same skill and certainty with which we operate upon visible machinery. When such results are attainable, we have no doubt that the practitioners of the sympathetic diagnosis must hereafter hold a high, moral, and intellectual rank in society, and that their services will be one of the most efficient means of effecting a moral regeneration of mankind.

Still more important is the sympathetic diagnosis in its application to the young. Incapable of regulating themselves, and too young to have given a full display of their faculties, our children need especially the assistance of this power to point out their ca-

pacities and their wants. It is often a matter of high importance that we should understand the exact state of health during the development of body and mind, and that our knowledge should be much more thorough than anything which we can learn by observation or by interrogating a child. If, by means of the sympathetic diagnosis, we obtain, in the first instance, a correct knowledge of the vital powers and health of all parts of the body, and if, while rearing our children, we use the same power to keep a vigilant eye upon their progress and health, we may be satisfied that we have done our duty. There is so much disease and death which might be prevented by this vigilance, and there are so many fine characters marred by defects which this scrutiny might have enabled us to avert, that I cannot but regard Impressibility, the source of the sympathetic diagnosis, as one of the richest blessings bestowed upon the human race.

In all the relations of life we often need such a power as this diagnosis gives us. If we select a servant to be employed in our family, or an agent for the transaction of business, we are often obliged to do so without that intimate and thorough knowledge which would render the engagement safe and judicious. Great is the amount of anxiety, disappointment, and loss which we undergo, for the want of proper means of knowing whom to engage and what estimate to place upon those whom we would employ. The immense losses every year sustained by the want of honesty in men who are intrusted with large sums of money and with employments of great responsibility, will prompt hereafter to an effectual use of the resources of science in preventing such disasters.

A still more important bearing upon human happiness will be displayed in regulating the domestic relations. Often the most important and decisive event of a man's life, is the choice of his wife. Selecting an incompatible and unamiable character, he may be driven by misery and rage to his utter ruin; but, choosing one who may cheer him with disinterested affection, assist him with impartial advice, and sustain him by her cheerful fortitude and energy, he may reach a higher destiny, and lead a happier life than he had reason to expect.

In the usual intercourse of the sexes, there is much deception, accidental or designed, and the usages of society, or the opportunities of lovers, are frequently unfavorable to that species of knowledge from which we may calculate the prospects of domestic happiness. For a gentleman or lady to gain a thorough knowledge of character in the beloved object, requires months of assiduous attendance and watching, as well as the most deliberate caution to avoid being deceived by a most imaginative, blind, and impetuous passion. Years may thus be spent in vain, seeking a congenial character, and after such a loss of time, how many either settle into confirmed celibacy, or, abandoning their cherished hopes of happiness, ally

themselves to some one conveniently within reach, and thus, at best, plod through an unsatisfying if not an unhappy life.

Might not all this be avoided, if the characters of the parties were carefully scrutinized and made known to each other by the methods of science? It is not necessary even that a meeting should be effected to secure this scientific and accurate acquaintance. The lady in her own privacy may ascertain the characters of all who are the objects of her interest; and the gentleman may ascertain the characters of hundreds whom he has never seen!

This refinement or extension of the sympathetic diagnosis, arises from the fact, that not only the head yields those impressions of the character which are sufficient for its description, but even an autograph imparts that mental influence, and may be sufficient for all purposes. A collection of notes or letters may, then, be sufficient to bring the characters of the writers under our scrutiny.—With such a power, how perfect may be the study, the adjustment, and adaptation of character!

There is another important sphere for the application of this power. In appointing men to office, or in popular elections, much is done at random. In every exciting election the most conflicting opinions are current, the most contradictory statements are made, and the character of each candidate is probably drawn in black by his opponents—in white by his friends. Both parties are generally wrong in proportion to the excitement of party spirit.

When men have learned the searching power with which an impartial science may develop the truth in reference to human character, the scepter of faction will be broken, and the power of slander will be harmless; each public man of our country, no matter how obscure may have been his previous career, will stand before the people as he is, and fraud and falsehood will be deprived of that apparent impunity which now encourages their growth. Thus, in many ways, scientific and practical, private and public, physiological and mental, will human impressibility lead us on toward universal harmony, universal truth, and universal justice.

But the principal end or result attainable by sympathetic impressibility and the sympathetic diagnosis, is the discovery and demonstration of the true physiology and philosophy of man.

ART. II.—BRIEF OUTLINES OF NEUROLOGY.—(CONTINUED.)

CHAPTER IV.—OCCIPITO-BASILAR REGION.—ORGANS OF ANIMAL IMPULSE.

IN this region, lying behind the ears and below the level of the middle of the brain, we find important physical and physiological influences; we find those organs which act upon the external world through the body, and which are very intimately connected with its growth and development. The nervous power that energizes the various muscular acts and the various secretions comes from the basilar region of the brain. It may therefore be regarded as the seat of animal life, so far as animal life depends upon the brain. It contains the animal passions, and its influence is adverse to the development of the higher nature of man. All the organs of this region tend, when acting unrestrained, to produce results detrimental to society. It may therefore be called the Criminal Region, or the region of Criminal Tendencies. Its functions are necessary to our animal existence, but are destructive to the moral nature whenever they predominate; there being a direct antagonism between the animal and moral nature, which is sometimes appropriately called the contest between the "Flesh and the Spirit."

Great breadth, fullness and depth behind the ears, indicate great strength of the animal passions, and of the physiological force of the constitution. If this breadth is balanced by a proportional development of the moral region, the character is strong, yet attractive. If the Basilar Region predominates, the character is generally strong, harsh, violent and repulsive. If both the Moral and Basilar Regions are small, but the latter predominates, the character may be evil and offensive without having any great degree of power. In determining the moral character, we should always carefully balance the opposite organs. It is impossible to determine whether a man is naturally inclined to benevolence or religion, merely by observing the organs of Benevolence and Religion. These organs may be very small, yet may absolutely govern the whole deportment, if their antagonistic organs be still smaller. Or the virtuous organs may be large, and the basilar organs may still be large enough to produce much misconduct.

Violence, selfishness and contention, are the general tendencies of the Basilar Region. The lower organs are more violent, the higher more grasping and contentious. The highest degree of violence, is indicated by a development at the lower part of the mastoid process, just behind the ear, extending from that region down

the neck (about as low as the angle of the jaw), upon the sternocleidomastoid muscle, and just behind it. The breadth of the lower part of the mastoid process indicates that species of violence which delights in taking life or committing murder; an element of character which phrenologists have hitherto called "Destructiveness." From this point, moving down upon the neck, we find a region of violent passions, not so desirous of taking life and inflicting mischief as is the region of Murder, but of more intense, violent and restless excitement. When the region below the mastoid process is more conspicuous than the mastoid process itself, we find persons liable to committing acts of violence in their rage, at which they are horrified when calm. When the Murderous Region is large, and the Passionate Region smaller, there is a willingness to destroy life, calmly and without excitement. Such individuals can "look on blood and carnage with composure." They have no great horror of violence, and experience rather a pleasure in war and destruction. The organ located behind and below the ear, upon the neck, corresponds to the combination of violence and destructiveness, which may be called **TURBULENCE**—a quality which is shown in the restless and destructive fury of mobs.

The range of organs on the base of the occiput, from the ear to the occipital knob, corresponds antagonistically to the range of organs across the top of the head, including Religion and Love. At the top of the mastoid process, we find the region antagonistic to the religious sentiment. The region of **PROFLIGACY**, which produces a general recklessness of character and love of new and violent forms of excitement, especially gambling and licentiousness. There is a positive propensity for **GAMBLING**, located near the upper edge of the mastoid process. Persons who are large in this region, although they may be restrained by various motives from what is commonly called gambling, are fond of accumulating wealth by bold, hazardous and reckless means. They engage eagerly in rash speculations, to accumulate large fortunes, and destroy the wealth of others by bankruptcy. It is not the influence of Hope, as has been very erroneously supposed, but the impulse of this Profligate Region that produces gambling.

Below and behind the organs of Profligacy, we find organs of a felonious and desperate tendency, the antagonists of Philanthropy and Hope. These organs which give breadth and depth to the head behind the ear, are the source, when unregulated, of all the violent crimes of society. Their developments and action are perfectly compatible with the predominant influence of the higher organs, as in this condition they operate merely to give physical energy and boldness of character. Crimes arise not so much from the excessive development of this region, as from the small development or impaired power of the moral region.

The Felonious Region, antagonistic to Philanthropy, occupies the lower part of the mastoid process, and extends backward. Fel-

ONY, DESPERATION and HATRED extend from the mastoid process, to the occipital knob, antagonizing Philanthropy, Hope and Love. They make a bold, violent and malignant character, and might perhaps be all included in the definition which Phrenologists have given of "Destructiveness." Those who have learned the old system, should correct their views by looking for manifestations of destructive violence below the position formerly assigned to Destructiveness. Genuine Destructiveness will not be found much above the cavity of the ears, although in that region we find an irritability which is calculated to bring on manifestations of violence. The most dangerous and malignant men, the most perfect desperadoes, are not those largely developed immediately over the cavity of the ears, but those in whom the mastoid process, and all behind it, have an extraordinary development,—a development most decidedly recognized by depth of the occiput. This I have long known from extensive observation of living heads, as well as demonstrated by experiment.

A large development of the region of **HATRED**, which connects with that of **Combativeness** produces a determined spirit of **Revenge**. Men of this development boast that they never forgive or forget an injury. It produces also a tendency to disgusts, antipathies, prejudices and aversions. Those in whom the region of **Hatred** is predominant, are apt to have many bitter enemies. They are malignant and delight in the misfortunes of those who have injured them. To examine this region of the head, we should first span the breadth from one mastoid process to the other, then estimate the fullness, roundness and depth of the region between them.

BASENESS.—Just anterior to the mastoid process, between its most prominent portion and the lower jaw, lies the antagonist of **Integrity**, the organ of **Baseness**. We cannot determine correctly the integrity of character, by referring to the organ of **Integrity** alone. Many in whom it is small are strictly honorable, because they are free from base impulses; and others, in whom the organ of **Integrity** is large, are still capable of many indirect acts of cunning or selfishness, from the influence of **Baseness**. The organ of **Baseness**, which is closely connected with **Sensuality, Profligacy, and Violence**, produces a disposition to act meanly or knavishly without the energy or boldness to commit an act of violence. It operates therefore in the way of theft, treachery, lying and assassination. When this organ predominates greatly, it gives a mean and despicable expression to the countenance; but when associated with high powers and good endowments, it makes the accomplished, plausible, smiling villain. The development of this organ is ascertained by observing the breadth of the head, from side to side, at the mastoid process, and the comparative prominence or depression between it and the lower jaw.

The Region of the Occiput above the level of the upper portion

of the ear, manifests a moderate degree of violence, and may be regarded as of a selfish and contentious tendency.

IRRITABILITY.—Those who have a prominence immediately over the cavity of the ear, are easily annoyed and capable of very intense irritation. They are apt to have bad tempers, and to annoy or irritate all around them by harsh or petulant remarks. But if deficient in the organs of violence, their temper has but little force, and rather reacts upon self than assails others.

ACQUISITIVENESS.—Breadth of the head just above the top of the ear, extending back into the occiput, indicates a money-loving and selfish spirit, arising from the organs of Acquisitiveness and Selfishness. If the development lie toward the front of the ear, it indicates rather the conservative than the grasping tendency. Such persons are economical, and take good care of everything which they possess. They waste nothing, but they may not be selfish or grasping, or very eager in the pursuit of wealth. The development at the posterior part of the ear, indicates a truly acquisitive spirit, fond of traffic as an efficient means of acquiring wealth. A little farther back, the love of property degenerates into avarice, and just behind this we find universal **SELFISHNESS** of character, indicated by the breadth of the head above and behind the top of the mastoid process.

ACQUISITIVENESS AND SELFISHNESS, which are the antagonists of Liberality and Benevolence, are not the organs of theft: a propensity to theft exists only when Baseness is large, and in that case theft is preferred to all other methods of gaining property, whether Acquisitiveness be large or not. There are many rogues who are not very acquisitive, and who readily part with what they have stolen; and there are many avaricious men who are sternly honest.

SELFISHNESS is manifested principally in connection with the adjacent organ of Acquisitiveness, but it also energizes the whole range of animal and selfish organs, from Ambition to Alimentiveness. Those who are deficient in Selfishness may be acquisitive or ambitious, but the ends which they have in view will not be selfish.

SECRETIVENESS.—Just behind Selfishness, and between Profligacy, Selfishness, and Combaticiveness, lies the organ of Secretiveness, antagonizing the frank and truthful region adjacent to Benevolence. This organ produces a secretive, insincere, reserved and jealous disposition. The lower portion of the organ, connecting with Profligacy and Gambling, produces insincerity of character, habitual misrepresentation, distrust of human virtue, and a disposition to regard everything as resulting from selfishness.

COMBATICIVENESS.—The lateral portion of the lower occiput, extending nearly to the occipital spine, manifests functions antagonistic to those of the Social organs (adjacent to Benevolence), and produces a number of inharmonious and contentious qualities, which may, in the aggregate, be designated Combaticiveness. The character produced by predominant Combaticiveness, is stubborn, morose,

rude, censorious, quarrelsome and hostile. These qualities antagonize Mirthfulness, Pliability, Admiration, Friendship and Imitation, of the Social Group. The lower portion of Combativeness tends to quarreling and fighting. The upper portion tends to form a morose, gloomy, stubborn and repulsive character. Combativeness contributes much to our energy and spirit, enables us to resent and resist, to overcome difficulties and to take a pleasure in meeting opposition; but unless it is duly regulated by the Social Group, it produces a very unamiable character, seeking physical contention if the organs of violence are large, or venting itself in useless contests of the tongue, when the talkative propensities are conspicuous. Large Combativeness, with large Irritability, renders the individual exceedingly quarrelsome, disagreeable, ever suspicious of offense, and calculated to produce broils in whatever situation he may be placed.

We may say, whenever we find a head broad and round on each side of the occipital protuberance, that an overbearing, resentful, jealous and dogmatic spirit exists, and that it is difficult for the individual to live in harmony with others, unless we find the Social Group on each side of Benevolence, well developed.

DISBELIEF—INFIDELITY OR SKEPTICISM.—At the upper and posterior edge of Combativeness, we find the organ of Skepticism, Disbelief or Infidelity. This organ antagonizes the region of Marvelousness and Spirituality, producing a narrow and illiberal mind averse to scientific and social progress, and to everything that is beautiful or profound in religion and philosophy, and disposed to blame severely, whatever it cannot appreciate. Disbelief is so closely connected with Combativeness or Hostility, that, as history shows, the opponents of any doctrine have almost invariably disliked or persecuted its advocates, especially when the latter were farther advanced in truth than the former.

ARROGANCE.—The region between Combativeness and the median line, may be described by the general term Arrogance. Where this region predominates, the deportment is insolent and domineering, disrespectful to our superiors and indifferent generally to the rights and privileges of those around us. This antagonizes the upper portion of Reverence, on the temples, which produces a more modest and respectful deportment.

The elongation of the occiput therefore, produces, or tends to produce a rebellious and unmanageable character. Children in whom the occiput is prominent and the temples narrow, are headstrong and difficult to control.

The **LOVE OF LIBERTY**, which has been regarded by some as an important distinct element of the character, is different from Arrogance. It occupies a higher location, in the region of Ambition.

THE DEVELOPMENTS OF THE NECK.—In estimating the force of the animal passions, we should examine the development of the

neck, as this corresponds to Basilar Organs, which have an important influence. The breadth of the neck from side to side, just behind the jaw, and extending down from the basis of the occiput toward the body, indicates a violent, restless character, the restless animal disposition being located especially on the lowest and most posterior portion of the neck. The neck generally corresponds with the development of the lower limbs, and tends to diminish the power and activity of the brain. On the back part of the neck we locate the organ of ANIMALITY, which tends to degrade man to the level of the brute. The development of RECKLESSNESS, located on the anterior portion of the neck, indicates a negligent, careless and rash character, thus antagonizing the organ of Cautiousness, located on the parietal bone, above the ear.

The Region of RESTLESSNESS antagonizes that of Tranquillity, upon the Temporal Arch, near Cautiousness. The region of TURBULENCE antagonizes that of Patriotism or Love of Country, and the region of ANIMALITY antagonizes that of Sublimity. Hence, the developments indicated on the neck are antagonistic to those near the center of the parietal bone.

CHAPTER V. — ANTERO-LATERAL REGION. — ORGANS OF DEBILITY AND DISEASE.

THE horizontal breadth of the temples and face indicates an increased development of those organs which diminish the force of character. The highest portion of the temples, connecting with the Coronal Region, manifests sentiments nearly akin to the moral — to wit; MODESTY and REVERENCE. The lower portions produce effects debilitating both to body and mind, unaccompanied by any moral benefit.

MODESTY.—Fullness of the temples just behind the organ of Ideality indicates a modest, susceptible, sensitive, retiring disposition, apt to blush, refined, and sensitive to the deportment of others. Extreme sensitiveness to the language and deportment of others is found in the lower portion of Modesty, connected with Sensibility. PURITY and Refinement are found in the anterior portion of the organ, connected with Ideality. The more amiable and deferential qualities of Modesty are found in the superior portion, connected with the affections. This region tends to produce effeminacy. Fullness of the temples is generally accompanied by a tendency to flushing of the face, manifested not only in blushing but in assuming a florid complexion from stimulating drinks or other causes.

REVERENCE.—Breadth behind the organ of Modesty, between Sensibility and Love, indicates the development of Reverence, the

organ of respect for persons and things. The sentiment of reverence is essentially distinct from that of religion, with which it has been confounded by Phrenologists. One may be religious to a fanatical extent, yet with a great lack of reverence for man and for the institutions of society, and with a bold, rude and disrespectful bearing; or, on the other hand, one may be respectful and even servile to men of rank, talents or wealth, without entertaining any religious feeling. We should therefore make a marked distinction between the organ of Reverence, located on the temples, and the organ of Religion, on the top of the head. Reverence is a sentiment intermediate between Fear and Love, more intense than Modesty, yet not so exalted and exciting as Sublimity. The organ of Reverence accordingly stands between the organs of these four emotions. Large Reverence is manifested by the respect shown to others in language and manner. It gives us a sense of their importance; and it makes us feel that they are superior to ourselves and entitled to our marked attention. The lower portion of the organ, connected with Fear, tends to produce a timid and servile manner, a sycophantic disposition which bows in an abject manner to those who have wealth or power. The superior portion originates a more manly sentiment, more akin to affection, and interested in talent, in intellectual or moral worth, rather than in rank or power.

The action of Reverence and Modesty antagonizes that of the Ambitious Region, and predominates more decidedly as the latter is more deficient. When Reverence and Modesty are defective, leaving the occipital region to govern, there is a nonchalant abruptness in the address, a bold, forward and ostentatious manner, and a disregard of the authority and claims of others. Children of this conformation are less submissive to their teachers or parents, while those in whom the Temporal Region predominates over the Occipital, are often so bashful and timid as to require encouragement to bring out their powers, and to be incapable of enduring a harsh, dictatorial manner.

The sensitiveness produced by the organs of the temples, is strikingly manifested in the expression of the eyes, which are easily affected by a glance, and apt to recoil from an earnest gaze, when the Occipital Region is defective.

SENSITIVENESS.—The region of Physical Sensibility has been mentioned under the head of external senses. We may now remark, that the junction of Sensibility with Modesty and Reverence, is the region of what is called Sensitiveness,—an extreme sensibility to the influence of others, their deportment, thoughts or language.

FEAR.—The region below Reverence and Sublimity, just before the top of the ear, may be designated by the general term Fear. In this region we find the traits of timid, excitable characters, those who are alarmed by slight causes, whose heart palpitates easily, and who

are liable to paroxysms of terror. Fear is a distinct faculty from Cautiousness, which is quite compatible with courage, while fear is its direct antagonist. Cautiousness is calm, fear, wild and impulsive. Cautiousness prevents us from going into danger; fear, which does not always prevent our encountering danger, often renders our efforts at escape fruitless, by its headlong precipitancy. Fear, however, may co-exist with Firmness and Combativeness, in which case it is manifested, not by cowardice, but by intense apprehension, excitement and alarm. Fear tends to produce gloomy conceptions of the future, and renders us too apt to believe in the existence of any danger that may be suggested. The upper portion of Fear, connected with Cautiousness, assumes the character of anxiety. The lower portion, nearer Alimentiveness, manifests a gloomy, desponding, or melancholy character, inclining to hypochondria. The whole region produces irresolution or feebleness of purpose, and is antagonistic to Firmness.

The developments which give breadth to the face, manifest chiefly physiological functions, and will be spoken of under the head of Physiology.

ALIMENTIVENESS.—The appetites of Hunger and Thirst, belong to the region before the cavity of the ear, just below the cheek bone. A large development of this region indicates a glutton or epicure. If the organs of the external senses are well developed, epicurism is more probable, but if they are small and the Occipito-Basilar Region large, gluttony is a more probable consequence.

THE LOVE OF STIMULUS.—This is connected with the more posterior part of the Alimentary Region, adjacent to the cavity of the ear. Fullness at this point indicates with considerable certainty, a fondness for some sort of stimulus, such as ardent spirits, liquors of various kinds, tobacco, opium, and other drugs. If this organ be large, we are enabled to take greater quantities of stimulus, and to resist the influence of it. If it predominates over the organ of Temperance, there is great danger of contracting habits of intoxication; the drunkard's thirst is easily created by indulgence in drinking. If it is small, we are naturally averse to all strong stimulus, and the constitution is more speedily destroyed by any indulgence of that kind.

INDOLENCE.—Below and in front of Alimentiveness, we find the region of Relaxation and Indolence, which produces an indisposition to exert ourselves—relaxing both the mind and the muscular system. If this region be large as well as Energy and Industry, we may exert ourselves for a time, but will soon feel the necessity for relaxation. If it is deficient in the same connection, we feel incompetent to enjoy ourselves, except in active pursuits; relaxation is disagreeable.

MELANCHOLY AND SUICIDE.—The region below and before the inferior lobe of the ear indicates a melancholy, languid, unhappy disposition. The more posterior portion of this region, coming

into contact with the region of destructive and violent passions, produces a propensity to **SUICIDE**—(located at the inferior extremity of the mastoid process). Inferiorly it connects with mental derangement. The region of Melancholy is the antagonist of that of Playfulness; and we must of course look to their comparative development in estimating the character. If the former preponderate, there will necessarily be a great amount of gloom and frequent thoughts of suicide.

MENTAL DERANGEMENT.—The constitution of man presents an inherent capacity for the insane condition. This capacity depends upon that portion of the brain in which violent and relaxing influences are combined in the proper manner to derange its functional integrity.

This region is indicated externally, beneath the lower jaw. Depth of the jaw, with fullness or breadth of the neighboring portion of the neck, indicates that development of the subjacent portion of the brain, which renders the individual liable to disordered or enfeebled mental action. Under the influence of this organ the brain has not the requisite tone or firmness, and is not capable of undergoing great mental labor or unpleasant excitement, without becoming functionally impaired. A sound and vigorous condition of the brain depends upon the organ of Sanity, which co-operates with Firmness and Health. Sanity is located upon the Temporal Arch, just above the organ of Cautiousness. Its development is to be ascertained by spanning across the head over Firmness.

A predominant development of Sanity gives that sound and steady action, that self-control and calmness which tend to prevent the violent excitements that injure the brain. Individuals of this development are much less liable to excessive manifestations of passion, to delirium, confusion of mind or mental prostration under disease, anxiety or other annoying and depressing influences. They retain a remarkable degree of clearness and vigor of mind, under all circumstances.

But when the organ of Mental Derangement preponderates over that of Sanity, either by large development or in consequence of the deficiency of Sanity, the individual is incapacitated for severe mental labor under embarrassing circumstances. Under the influence of fever he is sure to be troubled with delirium; and diseases of an enfeebling or exhausting character, render him childish or fatuous.

The tendency to delirium and the wilder forms of insanity, may be distinguished in the development from the tendency to Fatuity or Childishness. The posterior portion of the region of Mental Derangement, connecting with the violent passions, and lying near the carotid artery, indicates the tendency to wild and furious forms of derangement. The anterior portion of the region of Mental Derangement indicates the tendency to Idiocy, and the most anterior portion to what may be called Childishness.

RECKLESSNESS—CARELESSNESS, RASHNESS, ETC.—The anterior portion of the neck, just below Mental Derangement, indicates a careless, rash and reckless disposition. Rashness is indicated on the posterior part, connected with the violent passions; while Carelessness lies more anteriorly, connecting with the region of Idiocy. The whole region below Mental Derangement may be considered the antagonist of Cautiousness, which gives breadth to the head just above the ears. The two developments should therefore be estimated in conjunction.

It appears from what has been stated that much energy and boldness will be found connected with lateral breadth of the neck, but the fullness of the neck anterior to the sterno-cleido-mastoid muscle, is indicative rather of weakness than strength of character; the tendency to wastefulness and negligence is altogether unfavorable to success in life.

Fullness of the lower part of the neck is unfavorable to elevation of character, and indicative generally of the predominance of the animal nature, and of reckless, indolent habits, which tend to degrade the individual to the lowest classes of society. The organs located upon the neck, occupy a much smaller space in the brain than their area upon the neck. Their positions are somewhat indefinite and liable to variation, as they depend upon the relation between the brain and the neck, and would consequently be varied in location by a change of the position of the head. Organs which are usually marked upon the back of the neck, might, if the head be thrown back, be marked through the front of the neck; and those on the forepart of the neck might, when the head is held down, be marked more readily through the back of the neck. These remarks apply especially to the organs on the median line, which are all near together, in their cerebral locations.

The reader will bear in mind, that in speaking of organs located upon the neck or face, I refer not to the external locality but to the surface of the brain. Over the surface of the cranium we denote locations upon the bone externally, and these are understood to refer to subjacent organs. In descending to the regions which have been explored by the neurological system, we find the neck and face concealing the inferior portions of the cranium. Hence, those organs which would have been marked upon the cranium, were it exposed to view, are necessarily marked upon the parts which cover and conceal the cranium. The locations thus given are those through which the organs may be excited. The thickness of the face or neck does not obstruct our experiments upon the brain.

CHAPTER VII.—COMPARISON OF THE NEUROLOGICAL WITH THE GALLIAN SYSTEM OF PHRENOLOGY.

THE new system of Phrenology, based upon experiment, differs from the Gallian system in the following particulars:

1. It has a different system of organology, recognizing an immense number of organs, instead of a very small and definite number.

Experiments upon the brain, as well as deductions from Anatomy, Physiology and Pathology, compel us to believe not only that the brain exercises different functions in every different convolution, but that each distinct fiber of the convolutions exercises a different function from other fibers, and thus that there are not thirty-five or six different organs, but many millions of organs for different functions. Thus we have an appropriate system of organology for the immensely numerous and complex phenomena of the human mind. We are thus enabled to discard a limited organology, and to recognize every essentially different mode of mental action as belonging to a different cerebral organ, instead of selecting arbitrarily a few modes, and giving them organs, while others are overlooked.

2. It establishes a natural instead of an artificial nomenclature.

The immense variety of functions of the brain, cannot be adequately expressed by the old limited system of phrenological nomenclature. Names should be adopted, which simply express the true functional character of an organ, but inasmuch as all striking and frequent manifestations of the human mind have been familiarly observed from the most ancient times, words have been devised which forcibly and distinctly denote these manifestations, either of intellectual power or of the emotions and passions. In other words, the common terms which are already familiarly understood, should be adopted and connected with the regions of the brain to which they refer. The cerebral organs or fibers may be grouped together to facilitate their study, in larger or smaller groups, thus making the number of our recognized organs greater or less according to our convenience, it being understood that the division and grouping of our organology is entirely arbitrary. If we use names of a comprehensive character they must be applied to large regions of the brain—for example, such terms as *INTELLECT* or *VIRTUE* are applicable to large regions, but if we use terms of limited significance, as *CALCULATION* or *PATIENCE*, they must be applied to more circumscribed regions. The farther we carry our subdivisions of the convolutions, the more exact and perfect does the science be-

come. The less minute our subdivisions the more simple and convenient the arrangement for study. A medium course should be pursued, which may coincide best, not only with the structure of language, but with the positions of the cerebral convolutions. Such a course I have aimed to pursue.

3. It establishes definite relations among the organs—relations of antagonism and co-operation.

The Gallian system had no such relations; there was no definite relation or balancing of organs. Although it is manifest that the mind can have no impulse in any one direction, without having a corresponding impulse in the opposite direction (for man is competent to every imaginable course of action), the Gallian system overlooked this fact, and gave man but a one-sided or partial development—giving many strong impulses and faculties, without any recognition of their opposites, and only attaining an accidental and clumsy system of balances, because the rudest system of Phrenology, could not by any possibility entirely avoid or conceal the great fundamental fact of the antagonism of the organs.

By recognizing this antagonism, we greatly simplify our system of organology, as a knowledge of one-half of the organs, becomes a clue to the functions of the other half, which are precisely the reverse.

The functions of organs which are in proximity to each other are remarkably similar. Difference of functions increases as organs are more remote—antagonistic functions being found in opposite localities. Hence, every organ has not only its antagonists but its co-operatives.

The system of antagonism and co-operation, explains much of our mental philosophy, and of the principles of education.

The co-operation of organs arises not only from their proximity but from certain relations and connections between the hemispheres, by means of which certain organs in one hemisphere, connect and co-operate with organs of a similar character in the opposite hemisphere.

4. It discards the idea of the total independence of the different organs, and by recognizing their true co-operative relations, gives to each its just sphere of action.

No one organ is competent to manifest itself by itself. Each acts as a portion of the brain to modify the general result of cerebral action. One organ alone would be but a fragment of a human being, incapable of the numerous ideas and impulses which precede and regulate every voluntary act, and therefore incompetent to manifest itself at all. Thus, although I recognize the Gallian doctrine that the brain is a multiplex organ, to a vastly greater extent than my predecessors, I also demonstrate the essential unity of the brain, in which all organs act but as portions of the unitary whole. There was truth both in the Phrenological doctrine of the multi-

plicity of organs in the brain, and the anti-Phrenological doctrine of cerebral unity.

Beside many other organs undiscovered by Gall, the Neurological system recognizes an organ of MEMORY, which has been demonstrated by experiment. This organ was entirely rejected by the old phrenological system, but Memory, as a mode of mental action, was better entitled than Comparison to a distinct location. The fact that memory depends much upon the various knowing organs, which originate the ideas recollected, constitutes no better objection to its distinct location than would a similar argument in reference to Invention (Constructiveness), Reason or Imagination.

5. It establishes certain general laws of the cerebral functions, which enable us to determine *a priori* the general tendency of any organ or group of organs.

The Neurological system exhibits great simplicity and harmony in its details. It does not present us (like the Gallian system), with organs of the most contradictory character, for our fiercest and our gentlest emotions, in immediate contiguity—on the contrary, such is the general harmony of proximate organs, and so regular the gradation of functions, that if we know a few important organs in different regions, they furnish us data from which to calculate very nearly the functions of the remaining organs which are intermediate.

The positions of organs are not accidental, but are governed by fixed principles, and these principles are connected with the general laws of nature from which they spring. A few obvious general principles will enable us to determine very nearly the position in the brain which any function or trait of character should occupy, and a brief lecture is generally quite sufficient to enable its auditors to locate the mental organs at their proper sites.

As a general rule, organs are of a higher moral character in proportion as they occupy a higher locality in the brain, and their line of development is more vertical. They are more intellectual in proportion as they approximate the center of the front lobe, and less as they recede therefrom.

In transferring the amiable affections from the Occipital to the Coronal Region, the Neurological system harmonizes with the results of craniological investigation. It is not true, according to my measurements, that female heads, as a general rule, have either a longer or broader development of the Occiput than the male. The so-called organ of *Philoprogenitiveness* is about equal in the two sexes. The real difference between the male and female head, is mainly this—that the female head is narrower, and somewhat shallower in the Basilar Region, and thus has less of the animal passions to antagonize the moral nature and affections.

6. It gives a mathematical basis to all mental science, and thus subjects it to the formulæ of an exact and rigorous philosophy.

The Neurological system develops certain fixed relations between the mind, the brain, the body and the external world. These

relations between the brain and muscular system are of a geometrical nature, and enable us to apply certain geometrical principles to the phenomena of mind.

7. It removes the difficulties arising from the complex physiological and mental laws of the human constitution.

The organs of the brain act both mentally and physiologically. In the constitution of man, mental action and mental conditions are so connected with the physiological, and so modified by them, that any system, viewing the brain merely as a mental organ, is necessarily imperfect in its phrenological views. Hence the defectiveness of the Gallian system, which gives no idea of temperaments nor of the causes that modify cerebral action, and the numerous influences partly psychological and partly physiological which exist in the cerebral organs.

8. It corrects many errors of detail as to the location of organs, and develops the functions of a region in the basis of the brain, (concealed by the face and neck), which had not been reached by craniology.

9. It proffers not only a more accurate system of craniology, but a system of sympathetic investigation or Psychometry, far more accurate and minute in its portraiture of character.

By means of the Psychometric art we acquire the power of investigating not only those whose crania are subject to our inspection, but any human being, present or absent, living or dead, may be subjected to this scrutiny, and thus the range of the power of phrenological science, vastly augmented, and applied to the most searching investigation of living characters, and even to the exploration of history.

10. It offers a system of *PHYSIOGNOMY*, based upon cerebral development, and muscular action, which enables us to judge of the activity of the various organs of the brain, by the indications in the face.

11. It explains the morbid and feeble as well as the healthy and vigorous mental manifestations. It gives the philosophy of *INSANITY*, presenting an entirely new view of that subject, as well as the philosophy of all the various states and stages of mental excitement.

12. It develops the philosophy of the highest class of mental phenomena—(overlooked by the Gallian system), not only of those concerned in Mesmeric phenomena, but of those powers by which man maintains his relation to the spiritual and divine.

13. Not only does Neurology present the above novel features as a *Phrenological* system, but, in addition, it develops *a new and distinct Physiological science*—the physiology of the brain, or, in other words, the influence of the brain upon the body.

ART. III.—LECTURE ON ELECTRO-BIOLOGY;

OR, THE VOLTAIC MECHANISM OF MAN.

Delivered at the London Institution, by Alfred Smee, F. R. S., Surgeon to the Royal General Dispensary, to the Bank of England, etc.

GENTLEMEN:—I appear before you this evening as one of the members, or rather, as we are technically called, one of the proprietors, of this institution, because I conceive that the interest of all corporations founded for the advancement of literature and science is best attained by the exertions of each individual member. It has been suggested to me, that in venturing to lecture to so numerous an audience as that which I have the honor to address this evening, upon a subject which comprises the consideration of a department of knowledge upon which a great diversity of opinion may be expected, I have done a bold, nay, even a foolish thing, because such a course is calculated to expose myself to vituperative and ill-natured criticism. I will at once, however, emphatically state, that I entertain no such fear, but that, in the words of the immortal Harvey, my dependence is in the love of truth and candor always existing in educated minds. The subject of my present lecture is *Electro-Biology*, which literally means neither more nor less than the relation of electricity to the vital functions. Now, systematic writers divide the vital functions into two great classes, into those of animal life, and into those of organic life.

The functions of animal life will particularly occupy our attention this evening, and for their consideration we shall have to study the apparatus by which the animal receives impressions from the external world, transmits them to the brain, registers them, combines them, and acts, not only upon the immediate impressions, but also upon those which it has received at former periods.

For the manifestation of the functions of animal life, we require a central parenchyma or brain, a peripheral or body, the two being connected together by a peculiar tissue called "nerve fiber;" and at both situations a proper supply of bright arterial blood is requisite, for the production of the phenomena of life. If we look to purely physical contrivances, we find that similar conditions are fulfilled by a double voltaic circuit.



If we abstract the proper exciting fluid from either end, or substitute any other fluid, or destroy the structure at one end or the other, or divide the connecting portions or wires, the effects proper

to the apparatus will not be manifested, and the battery will be destroyed. The analogy between the mechanism of a double voltaic circuit and that of animal life is quite complete, for if we pith an animal, an operation which separates the brain from the body, or remove the blood from the brain, or from the peripheral part, or destroy the structure of either the brain or periphery, action is stopped, and animal life ceases.

You will at once say, doubtless, that man has no metallic wires, no plates, and therefore, you may naturally ask, how far does that fact destroy the analogy which I have given to you. It is not necessary however that the connecting portion should consist of metal, and though all present are doubtless accustomed to see the electric telegraphic wires along the course of the railways, yet I have here upon the table an example of fluid telegraphic conductors, which answer as efficiently for the conduction of the voltaic force, as wires or metals. Those among you who reside at Upper Clapton, may remember some time since to have seen mysterious wires placed at an elevated situation round the Horseshoe Point on the River Lea. At the time these wires were in that situation, I was experimenting upon the conducting power of liquids, and they were found to possess that property in an extraordinary degree. If the nerves, however, carry the voltaic force, they might perhaps be expected to have within themselves some means of insulation, and from my own microscopical examination of nerve fiber perfectly fresh, I believe that a layer of fat exists in the interior of each primitive fibril, which would as efficiently insulate it as the gutta-percha of my tubes does these artificial nerves which are placed on the table.

In this double voltaic apparatus before you, in which the communicating portion consists of gutta-percha tubing, filled with acid and water, a powerful voltaic current is passing, but one which will yield no indications of its presence to ordinary voltaic tests. It is no easy matter, gentlemen, to prove the presence of a voltaic current in a fluid, and for a long period I did not know how to proceed to render its existence certain. However, at last I observed if any metal capable of being oxydized was interposed in the path of a voltaic circuit, that one portion becomes positive, the other negative; and that this result is no fanciful chimera, I now show you an electro-metallurgic precipitating trough, in which a piece of copper is inserted between the positive and negative plates, and you will at once perceive that the portion near the negative pole has become acted upon or positive, the part nearest the positive pole has become negative, and has metallic copper deposited upon it. From this experiment I saw that a mode was afforded to me of ascertaining the presence of a voltaic circuit in any fluid. To give you a practical illustration of the value of the electro-voltaic test, I have introduced two copper wires into one of the gutta-percha tubes constituting my artificial nerves, and you will perceive that the moment I connect them with a galvanometer, deflection

ensues. Animal bodies consist solely of membranes and fluids, and therefore, in the order of my investigations, I had to study batteries solely composed of similar materials. This form of voltaic circuit is extremely difficult to investigate, though one is placed upon the table for your inspection.

After I had thoroughly studied the electro-voltaic test, the time arrived to ascertain whether a voltaic current was actually passing during nervous action. But although the analogies which I have detailed were, to my mind, complete, yet analogy would be useless without the corroboration of direct experiment. My first experiment was to introduce two steel needles into a rabbit; the first into the masseter, or muscle which enables the creature to masticate; the second, into the subcutaneous cellular tissue. After two or three minutes, the creature, which was very tame, attempted to bite my finger; the power of volition was sent to the muscle; this acted upon my electro-voltaic test, and you may judge of my inexpressible delight, when the deflection of the needle showed to my mind the mechanism of volition. These needles being between the skin and muscle, the course of the voltaic circuit is clearly demonstrated to exist between these two points, and therefore each required a most minute consideration.

Sensations are received by various organs which are destined to be acted upon by certain physical forces, as the eye by light, the ear by sound, the nose by odors, the tongue by savors, or the skin by heat or force.

It is quite certain that if a voltaic circuit is generated in the eye, there must be such contrivances as photo-voltaic circuits, that is, voltaic circuits in which light causes the evolution of electricity. In trying the experiment, I found that there were not only an extensive series of combinations in which the sun's rays determine the generation of electricity, but that in one division light caused a positive voltaic circuit; in the second, a negative voltaic circuit. The table of these circuits will illustrate the manner in which these circuits are formed, by using solutions so arranged that one portion may be screened from the light, and the second may be acted upon powerfully by the sun's rays.

NEGATIVE PHOTO-VOLTAIC CIRCUITS.

- Mixed solutions of proto-sulphate of iron and nitrate of silver.
- | | | |
|---|---|--|
| “ | “ | gallic acid and nitrate of silver. |
| “ | “ | oxalic acid and chloride of gold. |
| “ | “ | ferrocyanate of potash and ammonio per citrate of iron. |
| “ | “ | ferrocyanate of potash and ammonio per tartrate of iron. |
| “ | “ | ferrocyanate of potash and potassio tartrate of iron. |

POSITIVE PHOTO-VOLTAIC CIRCUITS.

Mixed solutions of per nitrate of iron and red ferrocyanate of potash.
 “ “ bromine water, phosphorus water, and per nitrate of iron.

These experiments I cannot show you this evening, because I cannot command the sun's rays to shine upon one side of my apparatus; but from what I have stated you will perceive that it is quite within the range of ordinary physical effects to have voltaic circuits set in action by light.

Having developed photo-voltaic circuits, the eye itself next demands our attention, and we find nerve and blood to be abundantly supplied by that organ. The electro-voltaic test is best applied by the insertion of one needle into the choroid, the second into the muscles of the eyeball, and I found a slight deflection of the galvanometer when a strong light was thrown into the eye, proving that vision was a voltaic phenomenon.

The essential part of the organ of hearing is encased in textures of such extreme hardness, that it will probably be forever prevented from being the subject of direct experiment. In the cochlea, I believe we may reasonably assume that the pitch of the note is determined; and in the semicircular canals which are placed in the three orthogonal planes of a cube, physiologists are pretty generally agreed that animals learn the direction of sound. Blood and nerve—essentials to voltaic action—are here distributed, and no physical difficulty is presented to the probability of a voltaic circuit being determined by sounds.

The nasal organ is, like the ear and eye, liberally supplied with blood and nerve fiber. The voltaic circuit is easily demonstrated by the electro-voltaic test; but the animal has an extraordinary repugnance to the operation, and you must be extremely careful not to be deceived by other secretions which are competent to set up the voltaic action. I can very readily show you that it is not at all difficult to form voltaic circuits, in which odors should excite the electric action. The tube which I hold in my hand contains two iron plates, which are separated by a membrane, and on each side pieces of sponge, dipped in a very dilute muriatic acid, are arranged. Now, if ammoniacal vapor, which produces the most powerful action on the natural nose, be brought under one side of the diaphragm, you perceive that a very strong action of the needle is immediately produced. The experiment which I have selected is one which shows the result easily, rapidly, and in a very marked manner; but I should not think it a bold assertion to declare, that with a little trouble and patience I could exhibit voltaic effect, although perhaps to a less marked extent, with every other odoriferous body.

When an animal tastes, the matter which contains the savor comes in immediate contact with the tongue, and is there probably absorbed. I need hardly state, that the essentials for sensation,

blood and nerve, are abundantly supplied to that organ. With respect to physical contrivances analogical with the tongue, it is very easy to show voltaic force excited by savors; and I have here a V shaped tube, containing a solution of pernitrate of iron, and two platinum poles which exhibit by themselves no signs of electric action. As soon, however, as I drop a little infusion of meat into one side of the tube, you will instantly perceive that the galvanometer shows signs of action. There is no mystery about the meat, as sugar, or, in fact, any other savor, would have had a similar property in a greater or less degree. The direct examination of the tongue in the living animal affords unsatisfactory results, inasmuch as secretions in the mouth are very apt to give wrong results—a circumstance which should be very carefully guarded against.

The last organ of sensation to which I have to beg your attention is the skin. Now, by the ordinary sensor nerves, we derive two sets of impressions, of somewhat different characters—for instance, we are enabled to judge of impressions upon the body by either heat or force, or what may be termed cœnaisthenics. We are also enabled to judge of the changes taking place within our own body, which estimation may be more properly called somai-sthenics. By somaisthenics we are enabled to estimate the slightest muscular motion, and in fact I cannot move my finger or my arm to even the slightest extent without having a perfectly distinct idea of the amount of motion produced.

The skin is acted upon by variations of temperature and force; hence we have to inquire how far heat and force can be employed to set in motion the voltaic force. In experimenting upon the variations of temperature, I found a large series of thermo-voltaic circuits, which, curiously enough, are analogical to photo-voltaic circuits, inasmuch as heat, at various times, determines both negative and positive circuits in the same manner as light. I have here a negative thermo-voltaic circuit. The apparatus, as you perceive, consists of a V-tube, containing sulphate of copper, (fig. 2). Into each side of the tube a copper wire is placed, and you perceive, that the moment I apply the heat of a spirit-lamp to one side, the galvanometer is very strongly deflected, the heated side becoming the negative pole.

When force acts upon the skin, I presume the blood corpuscle is prevented from coming in contact with the termination of the nerve fiber; and I will beg you to bear this supposition in mind, as in a later part of this lecture I shall demonstrate to you, that if this supposition be correct, a voltaic circuit

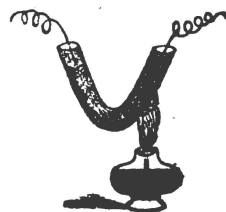
2 F

FIG. 1.



Apparatus showing the generation of a voltaic circuit by savors.

FIG. 2:



Thermo-voltaic circuit in which the voltaic force is produced by heat.

must be generated. My observations upon heat and force simply indicate that a thermo or dynamo voltaic circuit is an ordinary voltaic or physical phenomenon, but that by no means proves that in the living body the mechanism of feeling is voltaic. This, however, is an experiment easily shown, for we have but to introduce our electro-voltaic test into the cutaneous textures, when a powerful deflection of the galvanometer occurs whenever we pinch or otherwise irritate the skin. We thus find that the mechanism of all the sensations is voltaic, and according to the laws of the voltaic test, the needle nearest the negative pole becomes positive; that nearest the positive pole, negative. From direct experiment, I should therefore infer that the organs of sensation all constitute the positive pole of the peripheral battery. These inferences, however, must always be taken with a proper allowance for the complex character of the voltaic circuits in the body, or rather, I would say, for the complex materials of which the circuit is composed.

Sensations are received by a certain definite number of sensor nerves, which constitute the only means we possess of obtaining a knowledge of the external world. The sensor nerves pass to the brain, and then come in contact with a highly vascular tissue, called the gray matter of the brain; and I invite your attention to the very exquisite injections which I have made of that tissue, by means of the solution of carmine, and which will be exhibited under the microscope in the library after the lecture.

Inasmuch as the sensor nerves come in contact with blood-vessels, it follows from voltaic laws, that a voltaic battery exists in the brain, which is opposed to that in the body, and by which the electro-biological circuit is completed. At this point we leave the regions of direct experiment, and we must deduce the mechanism of the central battery according to voltaic laws on the one hand, and the properties of the mind on the other.

I infer that the sensations are simply repeated in the brain, nerve for nerve, action for action, and this first battery I term the sensation or aisthenic battery; the second pole of this battery is probably connected with the corresponding fiber of the opposite side, by what anatomists call a commissure, and which I have illustrated on the table by a voltaic arrangement.

We have represented to our minds, not only simple sensations, but also combined impressions; thus, while I am looking at all the parts of this theater, one impression—namely, that of a theater, is brought before my mind. There is no difficulty in obtaining this result by voltaic means, and the mechanism by which I believe it is to be accomplished I have termed the syndramic or combination battery. Thus, if we have three primitive nervous fibrils, *A*, *B*, *C*, they may be thus combined, *AB*, *AC*, *BC*, *ABC*. The diagram behind me illustrates this mode of combination, and here, upon the table, I have the voltaic arrangement itself, and you cannot fail to observe that these wires, even on this very limited

scale, begin to look like the interlacing which we observe in the brain.

If we divide any space into a certain number of squares, and give to each square a certain name or figure, it will be apparent, that by simply giving the names of the squares filled up with black, the word, or name, or symbol, would at once be accurately described. I have divided this piece of card into certain squares, and if I read you a certain combination of numbers, it would appear, at first, to give no definite idea, but if you examine carefully, you will find that this combination of numbers brings out the word LIFE. This word I find has been very unfortunately chosen, but in reality I only selected the word in illustration of the principle, of combination, because it only consisted of four letters, and because each letter was so formed that it very perfectly filled up square spaces.

Ladies constantly in practice take advantage of this principle in their patterns of worsted work, and it would be possible so to describe a picture up to the very limit of our powers of sensation, that it might, from the description alone, be repeated in any country and yet be a perfect fac-simile.

I dwell thus long upon the syndramic, or combination battery, because, in all probability, it constitutes a very large part of the brain. When we consider the large number of ultimate fibers in each organ of sensation, I do not think that we have reason to suppose every possible combination ensues; and even with regard to ordinary sentient nerves, I think that such a universal combination would be embarrassing to the mind, and that the combination probably would only extend to the nerves of each separate region of the body. It is quite certain that we always know the specific sense by which impressions are learnt—that is to say, that we know whether an idea has been derived from the eye, nose, mouth, or other organ of sensation. This resolves itself into one idea for a vast number of sensations, and is a state which can very easily be imitated by voltaic contrivances. I have upon the table a voltaic arrangement of this character, in which but one action is produced from one or all the combinations which exist in the syndramic battery. In some cases, ideas do not arise alone from actions on one sense, but on two or more senses at one time—a combination which I infer to occur in the syndramic-nœmic battery; and lastly, it is necessary to assume, that all these last combinations of each specific sense are connected together into one total in the pneuma nœmic battery, from the opposed pole of which the dynamic or motor nerves spring.

The situation of this important battery is somewhere in the center of the brain, and I believe that in applying the electro-voltaic test in this situation, I have obtained deflection of the galvanometer. Let me, however, speak with the utmost caution upon this point, for although I have tried the experiment over and over again, the animal is almost invariably destroyed, and in fact by the

electro-biological maps* which are suspended upon the wall, you will at once perceive that an action here influences every nerve in the body, and thus very readily destroys vitality.

Now, what are the qualities of this last battery, which has but one impression for all the sensations of the body? We find that it represents totality, and cannot be limited. It has therefore the properties of infinity, and gives to man his most exalted ideas. The ideas of soul, God, eternity, immortality, are obtainable from this battery, acting in conjunction with the lower batteries which I have already described. I regret exceedingly that the hour allotted for this lecture has now been so far spent, that I am unable fully to consider the properties of the mind deducible from the theoretical structure which I have developed upon voltaic laws; but under the circumstances, I feel bound to pass on to matters which can be elucidated by direct experiment.

When the voltaic force is carried by the sensor nerves to the brain, it there causes some change of matter, by which polarity is ever after determined. This phenomenon is a physical result of the most ordinary kind; for I have here a solution of argentocyanide of potassium, with two copper poles, and before lecture, I have passed a voltaic circuit from one pole to the second, by which I have effected a change of matter, and silver has been precipitated on one side. You will now see that immediately I connect the two poles with the galvanometer, a strong deflection will ensue, and to use a metaphorical phrase, the solution has remembered what I did to it. This experiment, which is but a sample of a class, must only be regarded as analogical, and is only valuable to show that voltaic electricity may produce effects which will ever after be apparent.

In the arrangement of the nerves of the body, every sensor nerve is opposed to every motor nerve, and may excite it to action under certain circumstances. Now before I consider this subject in detail, I may state that the voltaic circuit, when it has the choice of two or more roads, invariably takes the easiest route, to the exclusion of all the rest. Here is an arrangement, in which one of my platinized silver batteries is connected with two precipitating troughs, having the same distance to travel in both cases, but one is charged with sulphate of copper, the other with sulphate of zinc; and yet with this trifling difference the entire current has passed through the sulphate of copper, to the exclusion of the sulphate of zinc, because copper was more easily reducible than zinc, and therefore offered a somewhat more easy passage to the voltaic force.

Upon examining the arrangement, I find that the experiment has been tried under most trying circumstances, as I observe that the positive pole, in the sulphate of copper, is almost entirely dissolved. Notwithstanding, however, this, the law which I have developed and described in my *Electro-Metallurgy*, still holds good,

* Copies of the maps in Mr. Smee's "Elements of Electro-Biology."

though I must confess that I should not have risked the demonstration of this extreme application of the law, which fortunately, by accident, has brought the matter more strikingly under your notice.

From this law, you learn that the voltaic circuit would be completed, through the nearest motor nerve, when any sensation was excited, unless obstacles were presented to its passage in that direction, or any circumstances favorable to its passage through any other motor nerve were afforded in some more distant part of the circuit, when even the farthest motor nerve might be excited to action.

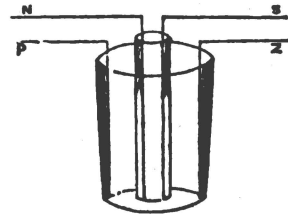
The action of every animal is determined, then, not only by the impression received at the moment, but by every other event which it has registered or remembered from the first moment of its life.

† The motor nerves, by which the circuit is completed in the body, are distributed, in man, to the muscles; in other creatures, to the electric organs; in others, to light-generating structures. The electric battery of fishes, as it is technically called, is composed of an enormous number of minute cells, supplied with bloodvessels. The nervous force, which I have already shown to be voltaic, acts at right angles to the direction of the cells, and there produces some change of matter which instantly causes a powerful voltaic current.

I have here a glass vessel, containing a solution of ferrocyanate of potash, into the interior of which is placed a porous cell, containing a similar solution; a platinum pole is inserted into both vessels, for the purpose of connection with the galvanometer. Now if I pass a voltaic current from the outside to the inside (Z S), no change of matter takes place in one part, the prussiate of potash remains the same; in the other it is converted into the red prussiate. From this change one side becomes strongly positive to the other, and you perceive that so powerful a current has been generated, that the needle completely swings round the instant connection is made with the galvanometer. I have only shown this experiment upon one cell; but it must be manifest to you, that as every cell adds a certain amount of force, it simply requires a number to make a battery as powerful as that of an electric eel. The artificial electric eel, I have myself constructed, in a vast variety of ways, which I have not now time to consider.

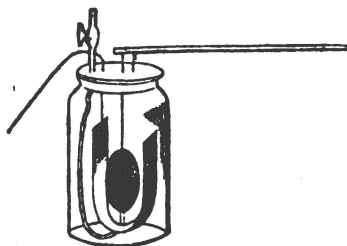
The muscular substance is ultimately divisible into primitive fibrils, which consist of a sheath, called the sarcolemma, containing, in the interior, a peculiar matter, which, during the act of contraction, becomes wider and shorter; and this contraction is caused by a change of matter, produced by the voltaic force, carried through the motor nerves.

FIG. 3.



Artificial electric eel: Z, S, connections to be attached to the battery; N, P, wires exhibiting the phenomena.

FIG. 4



Artificial muscular substance.

I have here a strong piece of gut to imitate the sarcolemma, and into the interior of this I have placed fluid and pieces of platinized silver. Upon the outer side of this gut is placed a strong piece of amalgamated zinc, so that the moment connection is made between the zinc and silver, gas is evolved, which renders the bladder wider and shorter, and thus moves this bar of wood over a space of three or four feet.

The conditions of the natural muscle and artificial muscle are perfectly analogical. Both possess a power only limited by the strength of the materials. In both cases, the power acts over the short end of the lever, and therefore at a mechanical disadvantage. In both cases, it is a great power moving over a small space. I, however, can move my natural muscles much quicker than I can my artificial muscle; but you must please to remember that my organs are not competent to construct a machine having such fine tubes as we find in the ultimate muscular fibrils, and for want of this delicacy of construction we sacrifice the speed and rapidity of action observable in the perfection of Nature's operations.

Anxious to lay before you the leading experiments and deductions of this most truly delightful subject, I have delivered this lecture with the utmost possible rapidity, and yet I see around me multitudes of experiments which I fear that I shall have no time to explain, as the hour has already passed. By your applause I understand that you wish me to proceed, but as some of my audience live at considerable distances, I will only detain you by calling your attention very briefly to a few other points. In the first place, we find that man consists of a double voltaic circuit, and therefore we ought to consider the nature of the changes taking place in that voltaic circuit. Now there are strong reasons to suppose that hydrogen and carbon act as the positive pole, and become changed in that capacity into water and carbonic acid. It would only require one-thirty-second the quantity of these materials to produce any result as it would of zinc, and I can assure you, that many a time have I sought diligently and carefully for a voltaic circuit which should be efficiently excited by carbon or coke as a positive element; and I can promise to the fortunate discoverer of such a combination the delight of being able to supersede the steam-engine, and the pleasure of successfully generating the voltaic light. Then, and not until then, will voltaic batteries be employed to the exclusion of every other means of generating force.*

* Although up to the present time I have not been able to use coke or carbon for a positive pole, I have succeeded in making a variety of circuits, in which substances

The voltaic circuit in animals is exactly balanced, and does not act without some impression to set in motion the electric current.

The arterial or oxygenized corpuscles are admirably adapted for this purpose, and I have here an experiment which will illustrate their functions in a very beautiful manner. The glass vessel which I hold in my hands contains a solution of common salt, and two iron poles are inserted into it. Now in this state everything is balanced, and no voltaic force is exhibited. If I take an artificial corpuscle made of animal membrane, containing a little pernitrate of iron, and bring it in contact with one of the iron poles, a very powerful deflection of the galvanometer ensues, indicating the presence of a current. When, however, one corpuscle is placed against each plate of iron, the effect is again balanced, and no voltaic circuit arises. These experiments well indicate the functions of the blood corpuscle in the living body, for when one is in contact with each end of the nerve fiber, no current can take place, but the moment one is removed, or acted upon by heat, light, or other forces, a strong voltaic battery is formed.

FIG. 5.



Artificial blood corpuscle.

I would gladly have occupied your attention with a few remarks upon the relations of electricity to organic or cell life. By a modification of the aggregation of cells, a plant produces leaves, stalks, flowers or roots, which every gardener knows is, to a certain extent, as much under human control as digging, raking, or hoeing. During the prevalence of the potato malady, I subjected the plant to every form of electricity, and in every possible manner, over long periods, without obtaining any result.

There is, however, one remarkable circumstance to be noticed with regard to the relation of electricity to cell life, for I have found that electric currents stop the circulation of the blood as suddenly as a stop does a watch when put down, and this entire stoppage of the circulation extends not only to the blood corpuscle, but also to the lymph corpuscle which creeps so slowly along the side of the vessel.

If we take a review of the functions of animal life, we find that all sensations, the registration of impressions, thought, action, and other phenomena of animal life, are voltaic effects, and solely obedient to physical laws; and to the idea of the performance of these functions we assign the idea of vitality. Life, therefore, is one word used to signify a number of changes. It is no independent reality apart from the matter which exhibits these phenomena. Neither is it an imponderable attached to matter; nor is it an all-pervading ether, or *anima mundi*, as some philosophers would

composed of carbon and hydrogen form powerful voltaic circuits; for instance, sugar and nitric acid, oxalic acid and chloride of gold, ferrocyanate of potash and nitric acid, constitute examples of this class of batteries.

have us suppose. Life, mind, memory, reason, thought, come from organization, are purely physical phenomena, and cease at death.

Man, however, is immortal. Man, at all times, and in all regions, has believed in his immortality. Now that which is mortal can have no relation with that which gives to man his immortality. That which is infinite must not be limited; time must not be confounded with eternity, matter with space, the body with the soul, nor material actions with God.

Electro-biology, then, leads us no less to infer, than religion commands us to believe, that "the dead shall be raised incorruptible, and we shall be changed."

HUMAN ELECTRO-MAGNETISM. — M. Ducros presented to the Academy of Sciences, of Paris, July 9, 1849, a paper with the following title: "The impressions of medicines and animal sensibility are transmitted to the cerebro-spinal axis by the influence of electro-magnetic currents, which are made evident by the deviation of the needle on the galvanometer, one of the extremities of the wires being placed on the forehead, the other on the nape of the neck." The paper closes with these conclusions: 1. Pricking, friction, or pinching the arms or legs, will cause the needle of the galvanometer to deviate almost instantly, when the extremities of the wires are placed on the forehead and nape. 2. This effect does not take place with individuals affected with melancholia, or with what has been called analgia, or absence of pain, inability to feel pain. 3. The impression produced by medicines is very often made apparent, by the almost instantaneous deviation of the needle when very strong or very sapid substances are used. 4. Camphor, asafetida, valerian, cerussa, snuff and ammonia, produce very quickly greater or less deviations of the needle by their smell only. 5. The essence of peppermint and of the cherry laurel have the same effect, and act even more suddenly on the needle. 6. Brucine, strychnine, sulphuric ether, and disulphate of quinine, placed on the tongue, cause the needle to deviate immediately. 7. Enervating oils, such as those of valerian, etc., or empyreumatic oils, cause the needle to fall back, and return to zero. 8. The enervating effect produced by the aspiration of the latter oils is such, that when once inhaled, frictions and pinching can not bring on reaction in the needle.

The experiment of M. Du Bois Reymond, on the development of electricity by the voluntary contraction of the muscles, has been much discussed on the continent. M M. Despretz, Becquerel, and Matteucci have not been successful in producing the effects which were stated to have been obtained by M. R. and attested by M. de Humboldt. M. de Humboldt has addressed a second letter to M. Arago, stating that, at a new *seance* in the cabinet of R., the effects produced by M. Mitscherlich were most unequivocal, and fully established the truth of this new fact.—[*Lancet and Med. Times.*

ART. IV.—SPIRITUALITY.—RECENT OCCURRENCES.

~~~~~

IN the year 1841, I found that by exciting the marvelous organs, lying near the temporal ridge, the subject might be made sufficiently marvelous and imaginative not only to believe in ghosts, but to see them. Making this experiment upon an intellectual young lady at a social party, she became quite agitated as she beheld her deceased mother. In '42 an exact survey of this region demonstrated that there was a special organ of SPIRITUALITY at the junction of Ideality, Marvelousness and Imagination, by means of which we obtained rather definite ideas of spiritual beings and also an organ of more extravagant functions, properly styled the organ of SPECTRAL ILLUSION, lying a little higher in the imaginative region, near the affections.

Under the excitement of Spirituality the mind is elevated to a more spiritual state. Its attention turns away from gross matter, and it acquires an extraordinary power of recognizing mind, until at length even disembodied mind is distinctly perceived. Thus the subject will enter into communication with the dead and with various spiritual beings, of whom he will speak, and with whom he appears to hold an interesting intercourse. Sometimes he will report that he is too gross and incapable of this exalted communion—that spiritual beings are beyond his reach, and will not commune with him. Mr. ———, a man of fine talent, but of little religious faith, was astonished and overwhelmed when he first underwent this experiment, and perceived as holding an independent existence, what he had before regarded as mere creatures of his own mind. He at length communed with his deceased father, but reported that his father now withdrew from him with a stern countenance, as if he was unfit for such association. Mrs. ———, a firm disbeliever of christianity and of all spiritualism, was overwhelmed with wonder and delight when I excited her Spirituality, and soon entered into familiar communication with various spiritual beings. In some cases her spiritual vision was sufficient to enable her to describe correctly the appearance of deceased persons whom she had never seen or heard described. Many others, under these experiments, have reported communications held with the deceased, and sometimes messages of advice, etc., have been sent to their surviving friends. Some of my friends have prosecuted these spiritual investigations to a great length, believing that they might thus place the world in a more intimate relation to spiritual life, and exert a holy influence upon men. In my own limited experiments, however, I

have not seen those copious and satisfactory results of which others speak. The communications have generally been of a vague character, and such as might easily have originated in the imagination or reason of the subject, aided by their impressibility to the mental influences of the living.

I do not wish to discredit or check such investigations, which I have been compelled to postpone to a late period as regards myself, but I would mention the dangers of delusion. Spirituality is so closely connected with Imagination in the brain, that there is an extremely strong probability that its revelations will be either partly or entirely the product of imagination. The close proximity of the organ of Spectral Illusion, the indications of which we know to be false creations, renders it still more probable that the spectres arrayed before the mind, are but its own irregular shadows—fanciful embodiments of some principle or influence at work upon it. Hence there is a strong probability that those who investigate these matters, may be lost in a wilderness of romantic spiritual fictions.

The existence of the organ of Spirituality is illustrated by the belief in all ages, of the existence of spiritual beings, and of their communion with the living. Thousands have entertained the sincere belief, arising from their own consciousness, that they held communion with the spirits of departed friends and relatives. Occasionally this communion has led to practical benefit, by means of advice and warnings received from spiritual sources when awake or when dreaming, which would indicate either that a kind, spiritual being had communicated the intelligence, or that it was attained by an unusual exertion of the intuitive foreseeing faculty.

A lady of great intelligence, moral worth and practical energy, told me confidentially that she had for a great portion of her life been subject to spiritual visions which she dared not mention to any one, lest her sanity should be doubted. These celestial visitants came to her in the daytime when her mind was perfectly calm, clear and free from excitement, the communion was pleasant and elevating. They appeared to be angelic beings of an exalted nature, with whom she was conscious that she would in a future life become more intimate. Their visits occurred more frequently when her moral faculties were in their highest condition, and became very rare when she became too much engrossed in worldly affairs to the neglect of her duties. Dr. H., an intelligent practitioner of medicine in one of our Atlantic cities, believes himself to be in daily intercourse, of the most intimate character, with the spirit of a departed friend. There are many who entertain the persuasion that they commune with the departed, who are unwilling to speak of a matter which they regard as sacred, and which they would not deprecate by exposure to idle comment.

The belief in guardian spirits, which is expressed by poets and orators, with a half real, half metaphorical meaning, and which is to some a matter of religious sentiment, is sanctioned by the results

of many experiments upon subjects in whom the spiritual faculties have been excited. They have often spoken of guardian spirits, who preside over particular persons, and sometimes specified certain influences exerted by them for their benefit. The guardian spirit is most generally a deceased friend, and his influence is exerted through the minds upon which the spiritual influence operates.

A high excitement of Spirituality is not necessary to the spiritual vision. The sleep-waking state is generally quite spiritual and by a slight elevation becomes sufficient for spiritual communion. There is no impossibility in maintaining the organ habitually in sufficient activity for spiritual communion. On the contrary, if the organ be large and the circumstances of the individual's life favorable to its action, we may expect a spontaneous activity. Neurology renders it perfectly credible that an individual of active mind, may, during the greater part of his life, be in that state which is called spiritual communion or spiritual vision, but it does not sanction the idea that this mental power is limited to one, or to a very small number of persons. Whatever belongs to one individual, belongs to all of the race in varying degrees.

In all impressible persons the faculty of Spirituality may be excited. Even those who are decided materialists, may be convinced without argument, of spiritual existence, by thus making them perceive it. In experimenting upon letters, the spiritual power is often displayed. (See Psychomet' . . .) If the writer of the letter is dead, the subject, or investigator, will sometimes trace his character and career through life, recognize his death, and subsequent spiritual existence. In other cases, death will be his first perception, and he will forthwith describe him as a spiritual being.

The organ of Spirituality co-operates with the intuitive faculties, but is not a strictly intellectual organ itself. To arrive at truth in the investigation of spiritual subjects, we must rely upon the intuitive organs—they perceive the truth. Spirituality gives an ethereal and fanciful temperament, which may render the perceptions more vivid but may also give a definite embodiment to that which is only an abstraction, and mingle imaginative pictures with actual perceptions.

It requires no little care and patient investigation to arrive at a correct conclusion in reference to the vast mass of phenomena which have, during the past and present centuries, passed current as truly spiritual appearances. It may be safely assumed in advance, that so great an amount of evidence, of dispassionate statements, of popular belief, and of earnest excitement, could not have existed without an adequate cause, and therefore that there must be realities and laws which it is the duty of scientific men to ascertain. On the other hand, it may be assumed with equal certainty that all the real phenomena are intermingled with delusions and falsehoods, for there has been no greater source of delusion and imposture in all the history of man, than his relations to the spiritual world, in

reference to which the world is filled with the grossest falsehoods, by means of which the mass of mankind have been made the dupes and victims of the cunning despots, priests, jugglers and necromancers who profit by the fictions and superstitions which they uphold. From Nicholas of Russia to his sable majesty of Loango, in Africa, from the pow-wow-ing medicine-man of North America, to the high priest of Juggernaut, from Mahomet to Joseph Smith, one vast scene of imposture upon the many for the benefit of the few, assails our vision.

In view of these facts, we need not wonder that a determined spirit of skepticism now possesses the world, and prevails especially among the more influential and educated classes. If all that the most sanguine spiritualists claim were true, and the evidence easily accessible for all, it would be a groundless hope to suppose that such evidence as might be decisive upon any other scientific question would be satisfactory upon this. Such questions are predetermined in the popular mind, against the spiritualist, and the whole subject is buried beneath the conviction that all the facts upon which he relies as evidence, are the result of base imposture, credulity, ignorance, imagination or insanity. Evidence must be piled upon evidence, and one investigation after another must result in the overthrow of the most determined skepticism before any impression can be made upon the more intelligent portion of the community.

We should bear in mind that philosophy sanctions neither skepticism nor credulity; it requires simply a careful collection of evidence, extensive in proportion to the importance of the phenomena, and a patient suspension of our decision, until the accumulated facts present a harmonious consistency and indicate to the inductive reasoner the new laws of nature which they embody.

With the hope of throwing some additional light upon these subjects, I prefer to quote the testimony of others, rather than to refer to my own spiritual researches, which are yet incomplete, and which have not yet presented the wonderful phenomena stated to have occurred in New York during the years 1848 and '49. These phenomena are embodied in a pamphlet of 82 pages, recently issued by Messrs. Capron & Barron, at Auburn, New York, January, 1850. The respectable character of the writer of this pamphlet, his determined skepticism, previous to investigation, and the great amount of testimony by which his statements are supported, entitle the whole affair to our respectful attention.

Some of these statements are by no means new to those who are acquainted with Neurological science, and to many of the cultivators of the Psychological department of animal magnetism. My experiments in 1842 demonstrated that an apparent intercourse between the spiritual and material world was practicable with a considerable portion of the human race, and that apparently messages from the departed were sent to the living through the medium of impassible persons, but it never occurred to me as probable that

such communications would be made audible or would be recognized as anything more than a mental impression received by the impressible from its mysterious source.

The following extracts present the most important passages of the pamphlet of Capron & Barron:

“From the time the first page of this work in manuscript was finished, the authors have had stronger and stronger evidence that they are but discharging their duty in publishing to the world, not what is entirely new, but something which has been often muzzled and concealed by those who dare not tell what they have seen, felt and heard, in consequence of their fears of the hisses and laughter of skeptics.

“The bowing to popular opinion and prejudice in this matter, is one of the strong reasons that have prompted us to issue the present edition of three thousand copies of this work. In preparing it for the press, we have been cheered on by communications and encouragement from the same kind and friendly source which are believed to be the spirits of the departed.

“The class who think for themselves, regardless of proscribing creeds and dictation from others, will investigate this matter. We have received a good share of genteel and *christian* epithets, for investigating the subject thus far, but ask no favors or sympathy on account of this. We have lived to learn the cause of the opposition which this has received, and to learn that ‘truth is mighty, and will prevail.’

“In presenting this work to the public, we are not unconscious of the unpopularity of the subject with the mass of the community. Nor are we unconscious of the fact, that we may call down the ridicule of some part of the press and thousands of readers, who have heard of these manifestations only as an idle tale of ‘a haunted house,’ or as some common ‘spook story,’ growing out of the excited imagination of persons possessed of more marvelousness than causality, and therefore easily led to believe in anything that seems wonderful and unaccountable, whether it comes well authenticated or not. But a consciousness of having fairly, impartially, critically, and we may say *skeptically* examined the subject for the last two years in many different places, and under a great variety of circumstances, and that we are not alone in our investigations, but supported by hundreds of calm, considerate men, who have investigated as thoroughly and skeptically as ourselves, we have no hesitation in laying the facts before the world as a phenomenon, which, if not new in all respects, is certainly, in the strangeness, growth and extent of the manifestations, wholly unprecedented in the annals of the world.

“In regard to the *facts* presented in the following pages, they will be accompanied with proof too positive and conclusive to need a word in this connection in vindication of their truth. The idea of a fraud so extensively entered into by persons whose integrity

has never been impeached—without any apparent motive—with great annoyance to themselves—without compensation, in a pecuniary sense, would be far more mysterious and unaccountable, than to admit it to be just what it purports.

“If there are any, who after carefully weighing the testimony here set forth, still discredit it, let them come forward, investigate and prove to the world that it is a deception, and how it is done, and all candid men will acknowledge themselves greatly indebted to them.”

The author next proceeds to state that in 1846 the family of Mr. Michael Weekman, living in a little village called Hydesville, in the town of Arcadia, were frequently disturbed in the evening by raps at the door, the authors of which they endeavored to detect, but without success. However suddenly they might open the door no one could be seen. About midnight a little girl of their family, about eight years of age, screamed out with fright, and declared that she had felt a cold hand upon the bed and on her face. In March, 1848, the house being then occupied by the family of John D. Fox, a knocking was heard on the floor of one of the bedrooms, and the jar of the knocking was distinctly felt.

“When the rapping was heard, they felt a tremulous motion or jar on the floor, and distinctly felt it while in bed. This feeling has been observed by most persons who have examined the subject and heard the sounds. The best idea we may be able to give of the feeling, is to say that it very nearly resembles the application of a galvanic battery to whatever you stand upon. The jar seems more of that nature than that of a stroke from any tangible substance. The first time they heard it was in the evening, just after they had retired. The whole family occupied at that time the same room, and all distinctly heard the rapping. They arose and searched with a light to find the cause of the noise, which continued all the time they were searching, and near the same spot. It continued that night until they all fell asleep, which was not until nearly or quite midnight. From this time the noise continued to be heard every night.

“In the evening of the 31st of March, they concluded to call in the neighbors, the noise still continuing. At this time, none of the family had ever noticed it in the daytime. On the evening above alluded to (31st March), they retired uncommonly early, as they had been disturbed and broken of their rest for several nights, in a vain attempt to discover from whence the sounds proceeded. They thought that this night they would not be disturbed by it, whatever it was.

“Mr. Fox had not retired when the usual sounds commenced. The girls, who occupied another bed in the same room, heard the sounds and endeavored to imitate them by snapping their fingers. The attempt was first made by the youngest girl, then about twelve years old. When she made the noise with her fingers, the sounds

were repeated just as many times as she made them. The sound was not like that which she made, only the number of raps. When she stopped snapping her fingers, the sounds stopped for a short time. One of the other girls then said in sport, 'now do what I do; count one, two, three, four, five, six,' etc., at the same time striking one hand in the other. The same number of blows or sounds, were repeated as in the other case. As this slight manifestation of intelligence was displayed, she began to be alarmed, and desisted from trying any more experiments. Mrs. Fox then said 'count ten,' and there were ten distinct strokes or sounds. She then said, will you tell the age of ——, (one of the children,) and it was answered by the same number of raps that she was years of age. In like manner, the age of her different children was told correctly by this unseen visitor.

"Mrs. Fox then asked if it was a human being who was making that noise, and if it was, to manifest it by making the same noise. There was no sound in answer to this question. She then asked if it was a spirit, and requested if it was, that it would manifest it by making two distinct sounds. As soon as she had made the request, she heard the two raps as she desired. She then proceeded to inquire if it was an injured spirit, and to request an answer in the same way, and the rapping was repeated. In this way it answered her until she ascertained that it purported to be the spirit of a man, and that he was murdered in that house by a person who had occupied it some years before; that he was a peddler and murdered for his money. To the question of how old he was, there were *thirty one* distinct raps. She also ascertained by the same means that he was a married man and had left a wife and five children; that his wife was dead, and had been dead two years.

"After ascertaining so much, she asked the question: 'Will the noise continue if I call in the neighbors?' The answer was by rapping in the affirmative. They then, for the first time, began to call in their neighbors, to help, if possible, to solve this great mystery.

"They at first called in their nearest neighbors, who came, thinking they would have a hearty laugh at the family for being frightened; but when the first lady that came in found that the noise, whatever it might be, could tell the age of herself as well as others, and give correct answers to questions on matters of which the family of Mr. Fox was entirely ignorant, she concluded that there was something beside a subject of ridicule and laughter in those unseen but audible communications. These neighbors insisted upon calling in others, who came, and after investigation were as much confounded as the first.

"The family being somewhat alarmed and much fatigued, left the house, with the exception of Mr. Fox, to spend the night, and left the house in the possession of Mr. Fox and Mr. Redfield. The next day the excitement began to spread, and the house was filled

with anxious seekers for the unknown and invisible visitor. Through that day and up to that time, there were no sounds heard in the daytime.

"On Sunday morning, April 2d, the noise commenced in the daytime, and was heard all that day by all who could get into the house, as the crowd who came from all quarters was much greater than the house would hold. We have heard it estimated, that at one time there were as many as five hundred people who had gathered to hear the sounds, so great was the excitement at the commencement of these strange occurrences.

"On Saturday evening there was a committee appointed to ask questions and report what the result was, and it was nothing of any importance differing from what is already related."

A considerable number of the immediate neighbors of Mr. Fox, have given certificates (which are published in another pamphlet), describing these occurrences, and giving all similar accounts as to the first development of the sounds and what publicly occurred.

Strong testimony is also given in the form of an extract from Dr. Adam Clark's "Memoirs of the Wesley Family," showing that similar occurrences happened with them, which are minutely described by John Wesley, Samuel Wesley and his mother, and confirmed the declaration of Dr. Clark, that he himself, and his friends had witnessed similar occurrences, which could not be traced to any trick or imposture, and which appeared to be the forerunners of two very tragical events.

A chapter is next devoted to the probable philosophy of such manifestations, from which the following quotation is taken:

"May we not then safely calculate that man continues to progress beyond his present state of existence, and that the change which takes place at what is called death, is not so vast and so sudden as the world has generally supposed. Again: we cannot but quote the words of Mr. Fishbough in the *Univercœlum*, April 21st, 1849. 'From the commencement to the completion of the process of death, the spirit must certainly pass through every successive infinitesimal degree of liberation from the body. Each succeeding degree would in that case be scarcely, if at all, distinguishable from the immediately preceding one; and the spirit preserving its absolute identity throughout the whole process. These minute degrees of liberation, would serve as inseparable lines to connect the future with the present; and immediately after his emergence from the body, the individual will feel that he is not essentially, or in any respect very widely, different from what he was interiorly, immediately before he left the body. Does not this reasoning prove a very intimate relation between those in the spiritual who are nearest the natural world; and those in the natural who are nearest the spiritual world? And inasmuch as the liberated spirits must have the most lively remembrance of their former conditions, and sympathy with friends who are still in the body, and inasmuch, moreover, as



there are often many such friends who are in the intuitional, and just verging on the spiritual, state of mind, is there not every possible reason to suppose that spirits out of the body may communicate with such spirits in the body, by the infusion of their thoughts according to those laws of spiritual sympathy which have been indubitably exemplified in ten thousand cases, by the phenomena of human magnetism?

“Again: It is very evident that the inhabitants of those portions of the spiritual world which are immediately related to this planet, were once the inhabitants of this planet, and that they have passed upward through all successive degrees from the conditions which they occupied here, to the conditions which they now occupy.’ On the almost imperceptible change when the spirit first leaves the body, Emanuel Swedenborg says (A. C.—H. & H.): ‘As to what, in general, respects the life of souls, or spirits lately deceased, it was made manifest to me by much experience, that a man, when he comes into another life, does not know that he is in another life, imagining that he is still in the world, yea, in his own body; inasmuch, that when he is informed that he is a spirit, he is filled with wonder and astonishment, as well because he is altogether as a man, as to his senses, desires and thoughts, as from this, that he did not believe, when he lived in the world, that he was a spirit, or (as is the case with some), that a spirit could be such. But when the astonishment ceases, then they wonder that the church should be in such total ignorance concerning the state of man after death; that they should deny the existence of the spirit and dispute about substance, and parts with parts, which were never designed to have any place in the mind, because they obstruct the way to intelligence.’

“To the same effect speaks A. J. Davis, while in the clairvoyant state. He says (see *Principles of Nature*, p. 653): ‘And what may appear strange, is, that often when a spirit leaves the human form and is introduced into this sphere, it for a moment cannot realize the change, for it is imperceptible. Spirits retain the same bodily form in the spiritual sphere, and at first they feel as if they were only transformed to a country they knew not. It is, however, not long after the transition before the interior senses are opened; and then they behold and appreciate the change and the beauties with which they are surrounded. And some spirits appear to wonder that they did not see it before, and that they did not believe it while in the body; for now it appears so tangible and so perfectly agreeable with the universal teachings of natural law.’

“Thus we have the testimony of these men, well known as having laid before the world some of the most sublime and philosophical reasonings and facts in regard to the existence of a world of spirits, unseen but felt by their influence (and occasionally in a more tangible way), and heard by those who still remain in the body.

“Beside this, we have the testimony of clairvoyants almost without number, in almost every neighborhood, who are in private circles developing the great facts here set forth, while their names are unknown to the world; but the incontestable evidence they afford of their power to point out persons never known to them in their normal state, who have passed into the world of spirits, and their plain and artless descriptions of that state, is having an influence in their respective circles which cannot but put any one acquainted with the facts, strongly in mind of Swedenborg’s prophesy, that the year 1852 would be one that would decide the fate of his church or his doctrines. The probabilities now seem to be that his general spiritual theory will, not far from that time, be very generally received.”

Chapter V continues the history as follows:

“Like all new discoveries, this has become more perfect as it has been investigated and studied into. The mode of communication has gradually improved, until those who are most familiar with it can, without difficulty, get long and *correct* communications spelled out by the alphabet.

“For sometime the rapping was confined to that house, although, as stated in a former chapter, the family of Mr. Fox all left the house at times. While the neighbors were testing the floor and the walls of the house, and the family entirely away from it, the sounds were heard as distinctly as ever. We wish this to be distinctly remembered, as it has often been asserted by persons ignorant of the facts, or willfully malicious, that the sounds were *never heard*, unless in the presence of two of the daughters of Mr. Fox. *The facts already stated and proved, show that they commenced before that family occupied the house or lived in the neighborhood.*

“Subsequently, however, as was the case in the Wesley family, it seemed to evince a partiality for, or to manifest itself more freely in the presence of, the two youngest girls. Why this was so, they could not tell, nor will we at present conjecture. Up to the time of the first manifestations, none of the family had ever been magnetized.

“It soon began to be heard, not only in that house, but in that of some of the neighbors also.

“Part of the family went to Rochester to reside, and the same sounds were heard by the portion of the family in that city, while the part that remained in Hydesville continued to hear them there. By this time it had been discovered that the different sound or sounds in different places, purported to be the spirits of different persons. Indeed the proofs pretty soon began to be plain, that they were so, or, at least, that whatever it was, it had the power of telling the names of persons entirely unknown to the family, and often reminding them of something that took place in their own family, of which Mr. Fox’s family could know nothing, unless they had

the power to see through their thoughts and all space beside, which would be much more strange than to allow it to be what it purports to be.

“Not long after it began to be heard by this family in Rochester, it began to be heard in other houses in the same city, and among others, in the house of a Methodist clergyman, where the same sounds have continued from that time to this, as they have in other places and houses. The clergyman alluded to, related in a public audience in the city of Rochester the following, which will serve to show the intelligence sometimes manifested by this sound, which so many deny being anything but an imposition. ‘A Mr. P——, a friend of mine from Lockport, had come from that place on business, and put up with me. He told me that he had left at home a child sick. I requested him to go to Mr. G.’s to hear this ‘mysterious noise.’ He went, and like many others, could not make up his mind what it was. In the morning he again went, when the spirit who was in communication with him, spelled out this sentence: ‘Your child is dead!’ Mr. P. immediately found Elder J., and although he as yet had not seen or heard enough to convince him of its reliability, he thought it his duty to start for home.

“A short time after he started, Elder J. returned to his house, and his wife handed him a telegraphic communication from Lockport, which he opened and read as follows: ‘Say to Mr. P., that his child is dead!’”

“Thus did the tangible telegraph operated by human hands, confirm what some speedier telegraph had communicated nearly three hours before. This is an account that can be fully relied on, and we have the names of the parties for such as shall question its truth. All who have investigated the matter to any great extent, have found testimony equally convincing. Several persons who have carefully investigated this affair for the last two years, have kept a private journal in which they have entered many of the most singular occurrences that have come within their personal observation. Extracts from some of these will be given in another chapter.

“Soon after the first excitement in the city of Rochester, we hear of its manifesting itself in the adjoining towns, as well as in other places in the city. Among other places, the sounds were heard at the house of a Deacon Hale, of the town of Greece in Monroe county. He is a man well known and of unimpeachable character, so far as we have been able to ascertain, and his candor and honesty as a man or his strict adherence to the principles of the church of which he is a deacon, have not been called in question.

“Another fact in relation to his experience which we deem important, is, that he had not seen or had any acquaintance with the family of Mr. Fox, or any part of them, when they commenced at his house, or since that time, and yet he gets the communica-

tions as freely as they or any one else. We are not aware that any of his family have ever been placed under the influence of human magnetism. The manifestations at his house have been varied and singular.

"A Mr. G——, a well known citizen of Rochester, a member of the Methodist Episcopal Church, has long been familiar with these manifestations in his own house and in various places where he has been. There is one singular fact about the manifestations to Mr. G——, which may be related in this place. For a long time the answers could be obtained by any *two* of the family standing near each other; and there was no difference, as we are informed, in the freedom of the answers, or particular preference manifested to have any particular members of the family present. At length one of the daughters of Mr. G. was placed under the influence of magnetism and became clairvoyant. From that time none of the family could get communications unless the daughter who was magnetized was present.

"The daughter does not require to be magnetized in order to hear them but only to be present. There are a number of other families in Rochester who have the same manifestations, some very freely and some only occasionally.

"From Rochester and that vicinity, it began to be heard of in this city (Auburn) and like other places it was for a short time confined to one family.

"The first of its being heard in this city was when the youngest daughter of Mr. Fox visited us, and from that time it has continued in several families, and hardly a week passes without our receiving authentic information of some new place where these occurrences have commenced. We are informed of at least six families in Auburn who hear more or less of the same sounds.

"In almost every place where it has commenced, there has been at first but a few sounds and generally much more faint than after it became more common. It is a very common occurrence in the family and social circles to be talking of some matter connected with this strange development, and for all in the room to hear a distinct rap—perhaps two or three, as if confirming what was said. This is generally the way it commences at new places.

"It may be proper here to remark, that persons of any considerable degree of investigating powers, stand in no fear of being deceived, as the sounds have never yet been imitated, nor do we believe they can be. Persons who have heard but little of them and who have very vivid imaginations and large organs of wonder, may, at times, mistake some other sounds for the genuine ones, or those produced by the spirits; but a person who is not over imaginative never.

"We state this as it may, and probably will be, in many cases, said that it is some visible cause that produces the sounds. We are

aware that these charges have been made by persons at a distance, who have no knowledge whatever of the facts in the case.

“The same sounds are heard at several places within our knowledge in towns adjoining this city. In the town of Sennett, it is manifested in the family by the name of Beaver. The particular person in whose presence the sounds are heard in that family is a lad some ten years of age. With him it differs from most others in this, that while it very seldom answers to one alone, he gets the communication just as freely by himself as when two or more persons are present.

“This boy has never been magnetized nor have any of the family, and we have been informed by those who have seen it tried that they manifest no signs of being susceptible to magnetic influence.

“These are some of the facts that have come to our knowledge and are common property of the community from their being open and public cases. We know of numerous cases of private individuals, who declare that they have long heard these same sounds, but do not wish to incur the ridicule and contempt with which they know they must be visited, if they candidly inform their friends of the facts in the case, and what they know by their own experience.

“Another proof of the absence of collusion in the matter, is the fact that it is not confined to particular dwellings, so that there is no more a ‘haunted house’ than a haunted out doors, or a haunted sidewalk, for wherever the persons who seem to be in the right condition of body to get the communication are, there you will hear the sounds, whether it be in doors or out. This precludes the idea of machinery, for that could not be so suddenly changed from one house to another; or from a house into the open air.

“Before speaking of the strange phenomena—thought by some to be much stranger than the ‘rapping’ or the intelligence manifested through that medium; we give an account of the public investigations which were gone into in the city of Rochester, in the month of November, 1849.

“The first intimation that was received in regard to those investigations came from these sounds, through the use of the alphabet. Several persons were in company, trying, as usual, to gain some information in regard to the law which governs this strange communication. While they were thus investigating, the following was spelled out by the use of the alphabet, it being part of the message or directions for those present to follow. ‘You all have a duty to perform. We want you to make this matter more public.’ As this announcement was altogether unexpected, the persons began to discuss the difficulties, and remarked that the opposition and ridicule, that would be heaped upon any one who should attempt to lecture upon this subject, would be almost overwhelming. The answer to this was—‘That will be so much the better—your triumph will be the greater.’

“After receiving the most positive assurances from this invisible communicator, that the sounds should be heard in all parts of the Hall in response to the person who should lecture—that it was best, in order that slanders might be silenced, and the truth established, to go forward in the matter—the persons who were designated concluded to make the attempt. It was also intimated, from the same source, that this would prepare the way for a more general development of spiritual communication, which would take place at no distant day.

“Probably the best idea of the proceedings at Rochester can be conveyed to the reader by the following brief statement, drawn up and published directly after the investigations took place, in the *New York Weekly Tribune*, of Dec. 8th, 1849:

“Some two weeks since, we were in company with some persons who were getting communications from this invisible communicator when a message was spelled out to us to the import that the matter should be made more public—that the time had arrived for the people to investigate the whole affair; that it was a thing which will ultimately become known to all men, and that we should immediately take measures to have it investigated. The directions were then minutely given by these spirits, as they purport to be, and which we are willing to believe are, until we have as much proof to the contrary as it required to bring us to that conclusion. These directions will appear in the following history, as they were fully and strictly followed. The great object was to start investigation and clear those who had been hearing it for the last two years, from the imputation of fraud and deception.

“Accordingly, on the evening of November 14, a lecture was delivered in Corinthian Hall in the city of Rochester, and a full history of the rise and progress of these strange manifestations given. During the relation of these facts the sounds were distinctly heard by the persons in the Hall.

“After the lecture, a committee was chosen by the audience, composed of the following persons—A. J. Combs, Daniel Marsh, Nathaniel Clark, Esq., A. Judson and Edwin Jones.

“On the following evening the committee reported in substance, as follows: That without the knowledge of the persons in whose presence the manifestations are made, the committee selected the Hall of the Sons of Temperance for the investigation—that the sound on the floor near where the two ladies stood was heard as distinctly as at other places, and that part of the committee heard the rapping on the wall behind them—that a number of questions were asked, which were answered not altogether right nor altogether wrong—that in the afternoon they went to the house of a private citizen, and while there the sounds were heard on the outside (apparently) of the front door, after they had entered, and on the door of a closet. By placing the hand upon the door, there was a sensible jar felt when the rapping was heard. One of the committee placed one of

his hands upon the feet of the ladies and the other on the floor, and though the feet were not moved, there was a distinct jar on the floor. On the pavement and on the ground the same sound was heard:—a kind of double rap, as a stroke and a rebound, were distinguishable. When the ladies were separated at a distance no sound was heard; but when a third person was interposed between them the sounds were heard. The ladies seemed ready to give every opportunity to the committee to investigate the cause fully, and would submit to a thorough investigation by a committee of ladies, if desired. They all agreed that the sounds were heard, *but they entirely failed to discover any means by which it could be done.*

“After this report and some discussion on the subject, the audience selected another committee composed of the following persons: Dr. H. H. Langworthy, Hon. Frederick Whittlesey, D. C. McCallum, William Fisher, of Rochester, and Hon. A. P. Hascall of LeRoy. At the next lecture this committee reported that they went into the investigation at the office of Chancellor Whittlesey, and they heard the sound on the floor, on the wall and door—that the ladies were placed in different positions, and, like the other committee, they were wholly unable to tell from what the sound proceeded, or how it was made, that Dr. Langworthy made observations with a stethoscope to ascertain whether there was any movement of the lungs, and found not the least difference when the sounds were made; and that there was no kind of *probability or possibility of their being made by ventriloquism, as some had supposed—and they could not have been made by machinery.*

“Again after this report, another committee was formed, from persons who had opposed in the meeting all pretensions to there being anything but a trick.

“This committee was composed of Dr. E. P. Langworthy, Dr. J. Gates, Wm. Fitzhugh, Esq., W. L. Burtis and L. Kenyon. This committee met at the rooms of Dr. Gates, at the Rochester House, and appointed a committee of ladies, who took the young women into a room, disrobed them and examined their persons and clothing to be sure that there were no fixtures about them that could produce the sounds. When satisfied on this point, the committee of ladies tried some other experiments, and gave the young ladies the following certificate:

“When they were standing on pillows, with a handkerchief tied around the bottom of their dresses, tight to the ankles, we all heard the rapping on the wall and floor distinctly.

(Signed.)

MRS. STONE,

MRS. J. GATES,

MISS M. P. LAWRENCE.”

“In the evening the committee, through their chairman, Dr. Langworthy, made a very full report of their examinations during the day. They reported that they had excluded all friends of the two ladies from the committee room, and had the examination only

in presence of the committee of gentlemen, and ladies chosen by them. Notwithstanding all this precaution, these sounds were heard when the ladies stood on large feather pillows, without shoes, and in various other positions, both on the floor and on the wall—that a number of questions were asked, which, when answered, were generally correct. Each member of the committee reported separately, agreeing with and corroborating the first statements.

“Thus, by three days of the strictest scrutiny by means of intelligence, candor and science, were the persons in whose presence these sounds are heard, acquitted of all fraud.

“On Friday evening, after the lecture, three of the committee viz: Hon. A. P. Hascall, D. C. McCallum and Wm. Fisher, repaired to the house of a citizen and pursued their investigations still further. There were nearly a score of persons present. The members of the committee wrote many questions on paper, which no person present knew the purport of, and they were answered correctly. At times they would ask mentally and would receive the answers with equal correctness, and they were fully satisfied that there was something present manifesting an intelligence beyond the persons visible.

“One of the committees tried the experiment of standing the ladies on glass and failed to get any sounds; but the same was subsequently tried in presence of a large number of persons, and the sounds were as loud and distinct as before, on the floor, as usual.

“Such are the facts so far as the public proceedings are concerned (which is but a small part of these strange occurrences), with the committee’s reports greatly condensed.

“Thus the matter stands at present, and whether it is only a remarkable phenomenon which will pass away with the present generation, or with the persons who seem now to be the medium of this extraordinary communication; or whether it be the commencement of a new era of spiritual influx into the world: it is certainly something worthy the attention of men of candor and philosophy.

E. W. CAPRON, Auburn.

GEORGE WILLETS, Rochester.”

“The committees were composed of men who, on any other subject, would be trusted to investigate where life or property were at stake. We doubt if any citizen of Monroe county would refuse to submit the justness of his cause even were he to be tried for life or limb, to such men as those who composed the committees during the three days they were engaged in trying every mode to ferret out the cause of these sounds, and yet many persons persist in pronouncing those who even go to hear for themselves fools or knaves!”

“When we take into consideration the facts that this matter has now been spreading for two years—that every means has been tried in private circles, and committees appointed by public meetings—that all have failed to discover anything like collusion—we may safely assert that in regard to the sounds merely—the following facts



are established beyond dispute, viz: That the sounds are heard in various places and at various times—that those sounds are not made by, or under the control of, any person or persons, although manifested in the presence of particular persons; and that they evince a remarkable degree of intelligence. These facts, among those who have carefully investigated, are no longer disputed.”

However sincere the author of the pamphlet may be, his statement that no collusion had been detected is certainly erroneous. I have been informed by a gentleman familiar with the phenomena of animal magnetism, that he undertook, some months since, to investigate this Rochester mystery, and that he did undoubtedly hear those wonderful sounds, which were produced apparently by no earthly agency which he could detect; but unfortunately for his faith he made some experiments, in connection with two young ladies in whom he had implicit confidence, and was shocked by detecting them in an imposture—rapping with their feet to imitate the spiritual knocking. This mishap completely chilled his spiritual faith and enthusiasm. Several other instances of imposture are related by the correspondents of the New York Tribune, giving the whole matter rather a ludicrous air. However, no matter what impostures may occur, they would have no bearing on such a statement as the following from one of the authors of the pamphlet:

“On the 23d of November, 1848, I went to the city of Rochester on business. I had previously made up my mind to investigate this so-called mystery, if I should have an opportunity. In doing so, I had no doubt but what I possessed shrewdness enough to detect the trick, as I strongly suspected it to be, or to discover the cause of the noise if it should be unknown to the inmates of the house.

“A friend of mine whom I had long known as a skeptic in regard to any *such* wonders, invited me to go with him to hear it. I accepted the invitation with a feeling that was far from serious apprehension of communicating with anything beyond my power to discover.

“Before I heard the sound, we seated ourselves around a table. As soon as we got quiet, I heard a slight but distinct rapping on the floor, apparently on the under side. Although I concluded that such a sound *might* be made by machinery, I could see no possible motive in the family taking so much pains to deceive people, as they received nothing but annoyance and trouble in return for their pains. I proceeded to ask some questions and they were answered very freely and correctly. I asked if it would rap my age? It was done correctly. I then took my memorandum book from my pocket and *wrote* my questions so that no other person could know the nature of the questions. I would write, ‘rap four times; rap one; rap six; rap seven;’ and to each and every such question I got a *correct answer*. I then laid aside my book and proceeded to ask

similar test questions *mentally*, and as before, received correct answers.

“I could not believe that persons present had the power to discern my *thoughts* and make these sounds in answer, for the sounds have a peculiarity not easily imitated. To suppose this to be the case, would make the matter a still greater mystery. I knew they could not give those answers, for there were questions answered which they could not know anything about.

“At another time I tried the experiment of counting in the following manner. I took several shells from a card basket on the table (small lake shells), closed my hand and placed it under the table entirely out of sight, and requested as many raps as there were shells. It was done correctly. As I knew how many shells there were in my hand, I resolved to test it in another way, to see if there was a possibility of my *mind* having any influence in the matter. I took a handful of shells without knowing how many I took myself. Still the answers were correct. I then requested a friend who sat by the table, to put his hand in the basket, take out some shells without knowing the number and pass them into my hand, which I immediately closed and placed in a position where none could see it. The number was told as correctly as before.—We continued this class of experiments for a long time without the least failure in getting correct answers.”

Against such a mass of testimony, I can perceive but three defensible positions:

1. That all which is at all wonderful in this matter is the result of a systematic conspiracy, involving hundreds of dishonest persons playing upon an ignorant and credulous community; or,

2d. That the mysterious sounds are produced by ventriloquism, and the wonderful knowledge of facts displayed by those sounds arises from high clairvoyant powers in the parties to the imposture; or,

3d. That these sounds are really a new manifestation of the laws of spiritual life—a bold and successful burglarious invasion of the natural world by the invisible tenants of ghostdom, who are coming down from their high spheres of happiness, armed with love and truth, to assist in the redemption of mankind.

Which of these suppositions has the greatest amount of plausibility, I leave my readers to determine.

---

INSANITY FROM RELIGIOUS EXCITEMENT.—According to the statistics of Insane Asylums, religious excitement is a more powerful and prevalent cause of Insanity than even Intemperance. The following statistics, which are fair examples, illustrate the above proposition:

Ohio Asylum, insane from Intemperance, 32; Relig. Ex. 54.  
 Hartford Retreat, “ “ “ 103; “ “ 110.  
 Worcester Asylum, Int. 6½ per cent., Relig. Ex. 12¾ per cent.

## Familiar Table-Talk.

---

**SCIENTIFIC EXHIBITIONS.**—During the last two months, Cincinnati has had her full supply of wonderful displays, based upon *human impressibility*. These displays have been of the same character as those which have been made by the cultivators of animal magnetism in the United States for the last seven or eight years; yet as the majority of the people generally know little or nothing of the progress of the mesmeric art, the exhibitions were probably novel to a large number of those who witnessed them.

Large audiences have attended the exhibitions of the Messrs. Burr, which have been quite interesting and amusing, as well as the exhibitions and lectures of Mr. Rodgers.

For some years past, the mesmeric experiments of our country have been hardly entitled to the name of animal magnetism, as the operators have almost discarded every other agency but that of imagination in their most striking experiments. About seven or eight years since, Mr. Rodgers observed in his mesmeric exhibitions at Philadelphia, that the concentrated attention to the subject, and the tedious manipulations which had usually been deemed necessary might well be dispensed with, as many in the audience might be affected and brought under control by the lecturer during the course of his lecture. He succeeded very well in finding subjects among his audience who could be drawn upon the stand and made to undergo the usual variety of experiments. Since Mr. Rodgers' operations (who, I believe, was the first to adopt this method), a great portion of our mesmeric exhibitions have been conducted in that style—by operating upon the audience and selecting from the assembly those who yielded most readily to the somnolent or imaginative influences.

The phenomena of mesmerism depend upon the region of Somnolence, which produces not only great impressibility, but great activity of imagination, and facility of delusion or dreaming. This region being large or predominant in many individuals, they are naturally in a condition bordering upon what is called the mesmeric state—a state of imaginative impressibility. Such individuals readily become passive subjects under favorable circumstances, and unless they resist the influence of public speakers, are often carried away by strong impressions. This impressibility has much to do with the phenomena of religious revivals and political excitements.

At mesmeric lectures and exhibitions, those of the highly impressible class require very little influence to bring forth the mesmeric phenomena—sitting still for an hour or two, listening to

the lecturer, or to a strain of music, and gazing upon the speaker or any object placed before them, may be sufficient to evolve the mesmeric powers. Experiments may then be made either by the usual passes (or nervauric manipulations) of animal magnetism, by general sympathy between operator and subject, or by addressing the imagination of the subject by means of gestures, commands, assertions, etc. In the recent exhibitions in Cincinnati, all of these methods were resorted to by Mr. Rodgers. Mr. Burr relied mainly upon impressing the imagination.

Chauncey A. Burr (formerly a Universalist clergyman, and at present editor of the Philadelphia quarterly entitled the "Nineteenth Century") is a gentleman of fine literary powers—rather loose and declamatory in his style of writing, but well adapted to please and impress a popular audience as a speaker. In conjunction with his brother (a very energetic operator), he has attracted large and intelligent audiences for many nights in succession in Cincinnati. Mr. Burr is bold, out-spoken, radical, and liberal—not much devoted to any one hobby, but a lover of all forms of liberalism. He satirizes unsparingly the opponents of progress, and has sufficient humor to enliven his denunciations with pleasantry.—His lectures were of rather a literary character, and did not throw much light upon the constitution of man. His experiments were similar to those of Mr. Keeley. A number of his auditors were desired to hold in their hands a small metallic body (consisting of a galvanic combination of silver, copper, and zinc), upon which they were required to gaze steadily for ten or fifteen minutes, while profound silence was maintained by the audience. Messrs. Burr then approached their subjects and made passes over their eyes to deepen their somnolence, and a few manipulations to subdue their resistance, such as pressing firmly upon the intuitive region in the center of the forehead, striking firmly upon the shoulders and thighs and gesticulating with energy to enforce their commands.

To test the amount of influence exercised, the subject would be told to exert himself to rise if he could, while Mr. B., standing before him with a threatening countenance and fierce gesticulation, would assure him that he could not, and overawe his attempts. It was amusing to observe occasionally the struggle of a half-conquered subject, who would almost rise to his feet, until the threatening, forbidding look, and almost pugilistic energy of his operator would drive him back.

Those who could be controlled in this manner, would then be selected and led upon the platform, for a series of experiments upon the imagination. They would be offered a cane, for example, and told that they could not throw it down. If they appeared likely to succeed in the attempt, the operator, standing before them in the same earnest and threatening manner, would assure them they could not, and thus deepen the impression of their inability. It was amusing to observe, that instead of simply relaxing their grasp, and

letting the cane fall, they would make the most violent exertions with their arms and the whole body, but still hold on to the cane precisely as the operator desired. Yet a simple word from him would dissolve the spell and restore them to the full command of their muscles.

This command of the muscular system was the most striking feature of Mr. Burr's experiments. Fifteen or twenty subjects, for example, would be placed in a row, and at the word of command would commence whirling their hands around each other with great rapidity, and continue the process (in spite of the desire of any to resist it), until they were permitted to cease.

A great variety of scenes would be personated at the word of command. They would be assured that they were all drunk and would forthwith personate a drunken carouse,—or that a peach tree overhung their heads, and they would commence pocketing imaginary peaches,—or that a boat was floating before them in the river into which they might step. After getting on board, they were told that the boat was upsetting, and they went through the scene of swimming ashore (upon the floor of the platform). After a great variety of such scenes, Mr. Burr declaimed a piece of poetry (Longfellow's *Excelsior*), while his subjects looked on and fancied the scene, and finally knelt down and wept over the corpse which he depicted. In the midst of all these illusions, a single word was sufficient to dissipate them, and as he exclaimed "all right," they instantly ceased their performance, relieved from the delusion, and restored to a correct consciousness.

Of the truth of such phenomena, and the general good faith of the subjects there can be no doubt. They have been exhibited by many other operators, as well as Mr. Burr, to thousands, perhaps millions, of spectators, and the subjects have often been persons of intelligence and standing, members of the learned professions.

In 1841-2, I ascertained, that by the excitement of *Marvelousness*, or of *Somnolence*, such scenes as these might be produced—that any scene the operator desired might be personated by his subject; but I did not feel disposed to make such phenomena a matter of exhibition; nor did I suppose the imaginative impressibility so abundant in the community as experience has since proved.

In this imaginative and delusive class of experiments, there is no progress either in physiology or psychology. It is merely shown that man may be made the implicitly obedient creature of his imagination. I must confess an instinctive aversion to all such experiments, which make an imposing display before a popular audience, and excite a great deal of wonder without any real advance in knowledge. I feel too a great aversion to the practice of delusion and falsehood, even upon the most passively impressible subject. It may be that no great evil—no corruption of the moral sense—can be superinduced by such practices, but as they do not harmonize with my own internal sense of truth and honor, it was with difficulty that I could

even overcome my aversion so much as to exhibit a few such experiments before my class, to explain their philosophy, and show the facility of their production. Still, it is perhaps best that such exhibitions should be made, as they catch the unthinking, overpower skepticism, and excite no little interest, amusement, and wonder.

The respect that I feel for my fellow-beings engaged in the pursuit of knowledge, is not pleased in thus reducing them to puppets, played upon by a word. All the noblest and purest sentiments cluster around the scene of my experimental investigations, and I would fain exalt the agents of such pursuits to angelic intelligence and purity, rather than reduce them to the level of the mere automaton controlled by puerile hallucinations.

**ELECTRO-BIOLOGY.**—A lecture upon this subject by Dr. Alfred Smee, will be found in this number. It is interesting and ingenious yet I do not regard it as of any great value, until we have more decisive facts as to the analogy or connection between electricity and the nervaura of man.

The name *Electro-Biology* has been applied by Mr. C. A. Burr, in his popular lectures, to certain Mesmeric phenomena and doctrines. To this there are some objections, which I deem valid. The word *Biology* is used to signify the science of life, but neither Mr. Burr's experiments nor his lectures, so far as I am informed, embrace such a science. His experiments were merely illustrations of the philosophy of delusion or imagination, and the application of so comprehensive a term as *Biology*, to a few experiments and speculations concerning imagination and the nervous system, would be a gross misnomer. The application of this new term to old and familiar facts, and his general mode of presenting the subject, produced the impression that he claimed the whole matter as something new and distinct from what had been done by Mesmeric operators. This impression operated somewhat to Mr. B.'s disadvantage, but I understand that he personally makes no such claim. He merely claims to have given a *new theory* upon the subject. What this may be, I do not know, but as the whole affair is rather a casual engagement with Mr. B., aside from his usual avocations, I apprehend he has merely thrown together a few hasty speculations upon electricity in relation to the nervous system.

The term *Biology*, strictly speaking, is scarcely applicable to the science of man as analytically considered by the physiologist. Hence even Dr. Smee's application of the term is hardly justifiable. The Greek word *Bios* alludes not to the laws of life, to its *modus operandi* or interior structure, but to its external relations—to the *mode of living*. Hence *Bio-graphy*, from the same derivation, is appropriately applied to the description of a man's life, or the external manifestations of his life, while the term *Physiology* is applied to the internal or analytical science of life, to which Dr. Smee is disposed to apply the term *Biology*. In no such sense, therefore,

can we properly sanction the use of the word *Biology*; and its application by Mr. Burr to Mesmeric or Psychological phenomena, and still more the use of the term *Biologize* as a substitute for *Mesmerize*, is altogether unjustifiable—as well might we speak of a physician *Physiologizing* his patient, or a mathematician *Astronomizing* the planets. If we must have a term for the process of rendering an individual somnolent, imaginative or impressible, the appropriate term is *Somnolize*. This does not necessarily imply the production of sleep. The somnolescent state produced by the organ of Somnolence is one of reverie, dreaming, illusion and impressibility, and even when it produces complete somnolence or the Mesmeric state, the subject is perfectly conscious, and enjoys high intellectual activity. I hope, therefore, my readers will discard all such corruptions of language and use such terms as are truthful and correct, viz :

**SOMNOLENCE.**—A dreamy state of sleep-waking, in which the individual is highly impressible and imaginative, and may, like a dreamer, be partly or wholly unconscious of the true conditions of things around him.

**SOMNOLIZE.**—To produce somnolence.

**SOMNAMBULISM.**—Somnolence accompanied by locomotion.

**SOMNILOQUENCE.**—Somnolence accompanied by speech.

**PRESENTIMENTS.**—During the year 1849 the following paragraph was circulating among our American newspapers, and I laid it aside for publication:

**SINGULAR PRESENTIMENT.**—A remarkable anecdote concerning Bem the Hungarian general, is at present current in Vienna. For many years he has had forebodings of his death. He, himself, has for many years assigned the year 1850, as the term of his existence. During his stay in Paris he once dined with the American Ambassador. The conversation fell on forebodings, omens and the like. The Ambassador laughed at them, but Bem declared he firmly believed in them, and related how he had thrice seen, when in his twentieth year, his own gravestone, with his name and the date of 1850 on it. Bem received in Transylvania several dangerous wounds. The physician shook his head, but he answered it quite calmly by saying he had another year to live. On the faith of this vision, Bem exposes himself in battle to the hottest fire, and declares that the ball which shall hit him mortally will not do so before the year 1850. Now if Bem should die, according to his presentiment it will be set down as merely an odd coincidence. If he should not die, it will be set down as another confirmation of the fallacy of all such premonitions. But the chance is, that in the event of the fulfillment of the prediction, the greater number of people of “sound practical common sense,” will stoutly deny that there was ever any such prediction made, until after the event had become probable.

Not finding room for this statement during 1849, I find, now that 1850 has arrived, that our latest intelligence from Europe (Feb. 20 1850). is as follows:

“*Bem.*—A report of the sudden death of Gen. Bem, was telegraphed from Southampton to Liverpool just before the Europa sailed.”

ONE OF THE ANNOYANCES.—To hear a Mesmeric operator introduce his imaginative experiments, by saying: “These phenomena have received many different names—Mr. Burr calls it Electro-Biology, Mr. Fisk calls it Electrical Psychology, Mr. Sunderland calls it Pathetism, others call it Animal Magnetism, and a justly-celebrated gentleman, Dr. Buchanan of your city, calls it Neurology.” Sentences conveying a similar idea are also found in the columns of respectable newspapers.

It is to be hoped that in the course of time those who undertake to enlighten the public will become sufficiently well informed themselves to avoid these palpable blunders, and will not confound the *science of man*, whether called Anthropology or Neurology, with the amusing delusions of a Mesmeric exhibition, to which it sustains about the same relation as the science of chemistry does to an exhibition of nitrous oxyde gas.

This charlatanic parade of names for a few simple experiments, presenting nothing of novelty, which have long been familiar under appropriate names, as Mesmerism or animal magnetism, and this confounding of a profound science, resting upon anatomy and pathology, with the amusing exhibitions which attract a thoughtless multitude should be carefully avoided and condemned by an intelligent press.

The term Neurology, I have applied only to the science of the brain and nervous system. Among the evidences of that science, I have adduced certain experiments on the brain entirely distinct from the *imaginative* phenomena of Mesmeric operators; but these EXPERIMENTS are not the science, they are only its evidences or illustrations.

1 VALUABLE IMPROVEMENTS.—Gas for lighting is now manufactured from rosin at a much cheaper rate than it has ever been obtained from coal. We have heard nothing recently of Mr. Paine’s great discovery by which gas was to be furnished at a nearly nominal price, from the decomposition of water, thus giving us fuel and light almost gratuitously. COLLODION, or gun-cotton, dissolved in ether answers an important purpose in surgery. Every family should possess it. Upon application to a wound it dries into a thin pellicle, insoluble, transparent and air-tight—the most perfect protection that can be imagined, to injured surfaces. Model lodging-houses are in prosperous operation in Paris, Edinburgh and London, etc., thus giving great comfort to the laboring classes.