THE

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For the Magnet.

NEUROLOGY.

Mr. Editor:

Dr. Buchanan, from Kentucky, whose opinions and experiments, as published in the papers, have made him somewhat distinguished in the west, as you know, commenced a course of six lectures in this city, the first of the present month. The following was his programme:

1. Upon the principles of Neurology, and the history of the science.
2. Upon the human Neuaura, or nervous fluid, and its transmission from one person to another.
3. Upon the Electricity, Galvanism and Magnetism of the human frame, and other subtle imponderable agents not yet known to naturalists.
4. Upon the excitability of the human brain by Neuauric influence, and the application of this discovery to the cure of diseases and the improvement of education.
5. Upon the principles of the Neuauric operations, the relief of local pain, and the art of curing headache by Neuauric influence.
6. Upon the revolution in Phrenology or Moral Philosophy produced by Neuauric experiments.

These Lectures will be accompanied, if practicable, by *illustrative experiments* upon such gentlemen among the audience as are capable of feeling the Neuauric influence, and describing their sensations.

I heard every lecture; you were there also. *I was disappointed.* The promised experiments were not performed; and, without the facts on subjects of this kind, I understand nothing. I was not instructed, nor convinced. My own ignorance or stupidity, however, may have prevented my full conversion to the Doctor's theory. You are devoted to such matters, and I therefore make bold to ask your attention to a few suggestions, which I hope you will accompany with the necessary remarks in the pages of the Magnet.

"*Neurology*"—what's in a name? The Doctor claims to have discovered a *new agent*, the *Neuaura* —from *νευρον and αυρα*—a subtle imponderable fluid, secreted in and emanating from the brain, and pervading the nervous system; being, as it were, the atmosphere, the vital air, of the nerves. This is the foundation of a *new* science, which he calls "*Neurology.*" Is not this name liable to objection? One hundred years ago it was applied to another doctrine quite different, held by a large class of scientific men then known as *Neurologists;* it seems to mean the *science of the nerves,* while it is really the science of this mysterious fluid alone, — and its phenomena, as detailed by Dr. Buchanan, are so exceedingly like mesmeric phenomena, as clearly to belong to the same general class, if they are not the same. And, of all the names now too many for that kind of knowledge, I prefer mesmerism. Animal magnetisn, human magnetism, somnambulism, somnipathy, somniscience, sleepwalking, and neurology, are all objectionable, because they either presume the subject to be fully understood, which it is not, and to take its name from its nature, or they take the name from a single class of phenomena and apply it to the whole subject, which has a great tendency to mislead inquirers, and to give occasion to fallacious objections.

Now I know of no experiments of Dr. B. showing that his neuaura is any more a fluid of the nerves, than it is of the blood. It might as well be called aimataura as neuaura. These phenomena are eminently life—"The life of all flesh is the blood thereof." It seems to be admitted, that there is an extraordinary influence in human physiology, which is magnetic.—There is more iron in the blood than in the nerves;—wherever there is a nerve there is a blood-vessel. There is a continual oxydation going on in the system, which might well make the blood electro-magnetic.—There are two currents of the blood running through the system, and where they approach each other, as it were between them hangs the pendulous heart, "the seat of life." Who knows that its mysterious swinging is not caused by this magnetic influence, in perpetual circulation? I do not say that it is so. So many—the most striking, of these phenomena, are only manifestations of muscular action,—sometimes involuntary, unconscious muscular action,—who can say that this fluid, if such it be, has not its home in the muscles, affecting them as it were independently of the brain, which seems to take no notice of these movements? Now, is it not true, that it would be better to take the name mesmerism, signifying *nothing*, till the facts are known, and the principles ascertained? till we at least know whether there be, as Dr. B. asserts, *five* separate fluids pervading the system, each of strange qualities and powers, and each sufficient for any of these things, surely sufficient for all known facts— the neuauric fluid, the muscular fluid, the magnetic fluid, the galvanic fluid, the electric fluid, "and other subtle and imponderable agents not yet known to naturalists," or whether they are all one? Is not Dr. B. the only man who *knows* that magnetism, galvanism, and electricity are totally and widely different fluids? Is not this a signal illustration of the weakness of Dr. B. in philosophy, no less than in logic? multiplying causes for like effects, generalizing from a single instance, distinguishing when there is no difference,—which was apparent in his lectures.

If we must have a significant name, I know of none under which all the facts can be classed, unless it be *sympathology.* The whole subject is no more

nor less than that of human sympathy—sympathy of the body and the soul. What is the mode or the agent of its transmission, or the quality and functions of its harmonizing power, is still unknown. It will be time to theorise when careful observers shall have made a record of all its marvellous facts, from the infant's first smile in the face of its smiling mother, to the mutual influence of lovers, the mastery of popular speakers and leaders, and the greater mysteries of clairvoyance and phreno-magnetism.

The History of the Science.—Dr. B. discovered it a year or two since, by means so evident, and its operation and truth were so clear and simple, that he wonders it had not been suggested to every body. He discovered it by reflecting on the great difficulties which environed the received theories of the brain and nerves, and by passing galvanic currents through the brain. Its known history "hath this extent, no more."

Now, what I mainly ask of you, Mr. Editor, is to explain all this clearness and simplicity, and perfect apparentness, of which Dr. B. speaks, but does not illustrate, and which every one else has overlooked. His significant expression was, that he had discovered "a royal road" to the knowledge of man, physically, morally, and intellectually, "in one month, by the simplest means imaginable, the physiology of the brain and the sublime science of the mind are learned, and an hour's observation made the substitute for heavy folios of reasoning." This is, indeed, a royal road to science—the first that was ever opened!—Careful and wide observation, well-considered induction, lives of labor and thought, these are the old-fashioned ways to natural science.——Why was not a sign put up at the crossing, "when the trumpet sounds look out for the loco-motive!" No wonder that when Dr. B. came dashing along, blowing his trumpet, the plodders in the old ways on the slow turnpikes of investigation, the Galls and Spurzheims, the Bells, Broussais, and Vimonts, loaded down with a lifetime of facts, should have been turned topsy-turvy, their facts all spilled, and the *disjecta membra* of their systems scattered by the wayside—as has been done on this "one hour's observation" system.

The Royal Road.—A kind Providence has scattered through the community, for the express purpose of teaching us neurology, one person in a thousand, peculiarly susceptible to neuauric influence.—They are in this respect differently constituted from their fellow citizens, and it is by experimenting upon these "one in a thousand," that we learn the nature of those other nine hundred and ninety-nine who are not like them, learning the generic character from the idiosyncrasy—the rule from the exception. It is believed, that on "royal roads" alone, do we arrive at such conclusions. If only one lion in a thousand ate flesh, we should hardly infer from it that he had been sent to teach us that the lion is a carnivorous animal.

It is, also, worthy of remark, that the statistics of lunacy show that about "one in a thousand" of the human race are lunatics. This is a striking coincidence: of course, we are all crazy, and lunacy is the normal state of man. What a noble seminary is bedlam!

The Neuauric Influence.—The neuaura, says Dr. Buchanan, passes from one person to another by contact—sometimes without contact. It is stimulant, and the organs of the brain are thereby excited, and their proper functions revealed. This fluid takes the shortest course to the brain, no matter what may intervene. He thus destroys the neuauric equilibrium in any part of the body, exaggerating or diminishing the usual and natural function.

By practising upon these impressible subjects, Dr. B. gets his facts, and he uses one subject as a touchstone to find another. And thus he has discovered, that phrenology, physiology, and moral philosophy, are destined to a great revolution. Gall was a discoverer, according to Dr. B., but his system is imperfect, and in many points false. Dr. Gall's small number of faculties was always a stumbling-block to Dr. B.: they were so few—only thirty-four faculties, for the various operations of the human mind. Is it not true that Dr. Gall had about three times as many as the metaphysicians who had preceded him?—Another fault of Gall—he *mapped* the skull out into actually defined sections, as locations of the organs. The neuaura shows that the organs are infinite in number, and no one knoweth their place except by neuauric influence. They are located differently in different persons. All the organs are subdivided till *every fibre is an organ*, with its separate proper function; each feeling, act, and emotion of the mind has its organ; each physical function has its organ—all in the brain. Thus, the organ of thirst is subdivided into an organ for the love of cold water, another for hard cider, another for toddy, and so on (see Dr. B.'s pamphlet, page 60). So of language—an organ for Greek, another for Latin, another for Choctaw, &c. in every human head. Causality, I suppose, contains organs for all sorts of causes, from the great first cause down to the causes of the late Whig defeats. An organ for sleeping, and another for waking; another for dreaming; so an organ for walking, for running, for dancing—of course an organ for right hand across, others for forward two, for pirouettes and pigeonwings. Think of tune being made up of little organs for slurs, appogiaturas, crotchets, and all sorts of quavering fa, sol, las! And all this because human action is infinitely diversified.* Is not this a "royal way" of philosophising! What a broth of a revolution! *Ab uno disce omnes.* You, Mr. Editor, have published several hundred organs, also!† How many laws of motion govern the infinite motions of the universe? Have you and Dr. B. forgotten the effect of combination? Had the motions and forces of moving bodies been classified by you instead of the foolish old philosophers who wasted their time in profound thought, diligent observation, and careful analysis, we should undoubtedly have now rejoiced in as many motions and forces as there are orbits, and curves from the infinite ellipse to the perfect circle, instead of mere rectilinear forces. Gentlemen, the analysis and the generalisation which settles new faculties of the human mind, does not come by any hop, skip, and jump philosophy, nor from the revelations of one or two dreamers, epileptics, or lunatics, sleeping or waking—magnetised, galvanised, electrised, or neuaurised. What observer is so shortsighted as not to have perceived, that in the operations of the mesmeric or neuauric influence (call it by what name you please,) there are disturbing, modifying, and arresting causes, which are not only not measured and not described, but are even unknown and unguessed at, as there are in electricity, in light and heat, and in human sympathy. Study phrenology—the old phrenology, with a wise philosophy and a studious reflection upon the effect of all possible combinations of organs antagonising and harmonising, at rest and in action, singly and in groups, and you shall have a proper appreciation of whipsters, on royal roads riding over the system of Gall and Spurzheim because it is too limited!

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* The mode of ascertaining and establishing these organs, is as follows. A few days since I unfortunately trod on a wicked old sinner's gouty toe—he roared out, "D—n—t–n!" This proves that there is in the toe of every human being an organ of profane swearing.

† Not so! our correspondent has been misinformed.—Ed.

I have written too much already, in my rambling way, but I must say a word more "*Upon the excitability of the human brain by neuauric influence.*"—The neuauric fluid excites the brain as it passes into it: it passes by the most direct route, says Dr. B., toward the brain. Now, by touching the point of the chin, (to reach an organ of the brain!) and, also, by touching a place on the upper back part of the head, Dr. B. excites the organ of calorification, situated in the centre of the brain—it is a favorite experiment with him. What becomes of the mass of cerebral matter through which the fluid passes to reach the centre—why is that not excited? And all the organs on the route, why are they not on the *qui vive?* They are as quiet as sleeping mice when calorification is firing up "flames all around them," and a neuauric current pouring right into their nest. How is this?

One thing more. Dr. B.'s programme *promised experiments.* They were not given, because he preferred exhibiting before a committee. You recollect the little scene in the lecture room, when experiments were demanded. A committee of great respectability was appointed; the committee met; several weeks have passed, and there has been no report. Did Dr. B. put the committee to sleep, or did he excite their organs of silence, so that they cannot speak? Or, did his experiments dazzle them, so that they could not see? or, did the committee think it was all animal magnetism, and of course a humbug? Did Dr. B. establish his character as a great discoverer? did he take the committee a jaunt on the royal road, and have they not come back again? There could be no failure, of course, in a science so certain and so simple. Mr. Editor, you must know all about it—some of your mesmerised patients, can they not tell?

Seriously, the community, especially the class who attended his lectures, are entitled to *know the result.* No, I am wrong. The community have no right: they did not pay for the promised experiments; and the class—it is good enough for them: they should have sustained the gentlemen who wished to hold Dr. B. to his published promise.

Nov. 24, 1842. C.

For the Magnet.

EXPERIMENTS IN HUMAN MAGNETISM.

Dear Sir,—As the subject of Human Magnetism is beginning to attract more attention than formerly, it has appeared to me that its friends should make special efforts to enlighten the public mind, and remove those prejudices which are nearly universal, and which, while they exist, will effectually hinder the progress of this new and interesting science.

The grounds of unbelief appear to be, chiefly, of a two-fold nature: first, the strange and mysterious character of the facts exhibited, and which at first sight seem wholly inconsistent with the known laws of nature; and secondly, the doubtful and suspicious characters of those persons by whom these facts have been generally exhibited to the public eye, viz. itinerant lecturers, carrying with them, for the most part, their own subjects for exhibition, who are always regarded with suspicion.

It is obvious, that a science so singular and wonderful as this, can never gain credence in this manner. Let the intelligent and curious institute experiments in their own families, and among their own acquaintances, and they will soon have abundant reason to be convinced of the truth of Human Magnetism, in all its wonderful phenomena. In every village there are many good subjects for experiment, and many others who can operate with power and facility. I cannot but wish, too, that the old names of *mesmerism* and *animal* magnetism, against which there are strong prejudices, were exploded.

The following experiments upon two highly respectable and intelligent females of this city, performed by myself, may be relied on as strictly correct in every particular. I have witnessed similar results on many others, but these I exhibit as good specimens.

The first is Miss S., aged thirteen years, of a delicate constitution, dark complexion, and a highly nervous temperament. So susceptible is she, that I have thrown her into a magnetic slumber in five minutes, by barely holding her by the hand. When magnetised, like all others, her external senses are closed against all impressions, except through the operator. She is entirely deaf to all sounds from others, but will reply to the lowest whisper from him. She smells and tastes only through his organs. I have taken different articles of food into my own mouth: she always imitates all the actions of mastication and deglutition, and can tell what article I am eating. I have put a little cayenne pepper into my mouth: she would immediately complain that it was very hot, and burnt her badly. If I smelt hartshorn, she would complain that it made her nose tingle.—She was wholly insensible to external injury: a pin has been thrust through the skin without producing the least sensation, but any injury done to me she would immediately complain of as causing pain. A ludicrous instance I will mention. When she and Miss E., the other lady referred to, were both magnetised; out of mere mischief she pinched my hand severely, as she said, in order to hurt Miss E. The consequence was, *both Miss E. and herself* felt the pain alike, and fell to rubbing their hands smartly. She did not care to repeat the jest. When the eyes were perfectly closed, as they always are in this state, she could see every object in the room, with perfect distinctness, without moving her head. On being questioned, she said she could see through every part of the head, but there were two points from which she could see best—one on the upper part of the forehead, the other from the most prominent part of the occiput.

Miss E., however, possesses greater powers of vision than L., as I shall hereafter state. When first magnetised, she could not walk; but after a few repetitions, she could walk with ease. In her case, as in all others, there is a singular attraction to the magnetiser, and her very being is identified with his. Her hand would rise one or two feet to meet mine, and she would in no case suffer me to leave her. At first, before she could walk, if I left the room she would call me back, or perhaps remark that she knew I would not leave her. Latterly, she would follow me and bring me back. She could distinguish any article of mine from all others, although similar in all respects.

But the most interesting experiments, perhaps, are those relating to the organs of the *brain,*—confirming, to a great extent, the science of phrenology, while it greatly enlarges it. For these experiments, L., from the delicacy of her nervous system, is well adapted. All that is necessary to excite these organs is, to hold my finger opposite to them a moment, without contact. (I should premise, that neither of these young ladies know any thing of Phrenology.) On exciting the back part of the organ of alimentiveness, she would immediately call for food, and commence eating; but would immediately cease, on removing my finger. On exciting the fore part of the same organ, she would call for drink, and on removing my hand she would immediately cease, complaining that I would not permit her to drink. This experiment was often repeated. On exciting *acquisi-*

tiveness, she would immediately seize a knife, a piece of money, or anything of value within her reach, and hold it with a miser's grasp, so that it could not be taken from her without great violence, till some organ on the top of her head were touched, such as *benevolence*, *conscientiousness*, &c. when she would at once give it up. On exciting *reverence*, she would at once clasp her hands and place herself in an attitude of devotion, often shedding tears, and saying she felt very solemn. On exciting the organs of *combativeness* and *destructiveness*, she said she was very angry with me, would strike and pinch me, and once said she wished she had a knife that she might kill me. This from a young lady of great modesty and delicacy, only thirteen years old!

On exciting *self-esteem*, she raised her head, and on being questioned said she was thinking of herself that she was the prettiest girl in town; and on one or two very handsome girls being named, said they were very ugly. On exciting *philoprogenitiveness*, she said she did not like children, and threw away a handkerchief that was in her lap with indignation, calling it a child. On exciting the organ of *hope*, she felt happy, and saw bright prospects ahead. On exciting *ideality*, she held up her hand and exclaimed, "I see beautiful objects! oh, how beautiful!" and described the variety of colours belonging to them. On exciting *cautiousness*, she held her hands before her face, saying she was afraid, though I could not learn the ground of her fears. There is an organ of *fear*, not known to phrenologists, located in the extreme fore part of what is denominated the organ of *secretiveness*, the excitement of which produces painful results. I have ventured to excite this organ but twice, which on both occasions produced a dreadful scream, as from extreme terror, the effects of which continued one or two days. The small organs along the eyebrow have given the most satisfactory results. On exciting *number*, she would call for a slate, and solve a question in arithmetic; and on exciting the organs of *form*, *size*, and *constructiveness*, she would construct the figure of a house or something similar. On exciting *colour* she would see a landscape, picture, or some object presenting vivid colours. But the most remarkable effects on the whole, were produced by exciting the organ of *tune*. L. is no singer, and scarce ever attempts to sound a note; but when this organ was excited, she would express a desire to sing, and on some one commencing a song or hymn, she would join in and sing with accuracy, *repeating the words, though entirely new to her*, and on removing my finger from the organ, she would instantly cease, and commence again on replacing my finger, in perfect concert with the lady singing. This experiment I have often repeated, and uniformly with similar results. What renders this more remarkable, L. was not in communication with the singer, and could not hear a word unless tune was excited, nor even then if the words were repeated in an ordinary tone. The result of this experiment greatly surprised me, and induced me to repeat it a number of times, in presence of several witnesses. I would add that Miss L. has a *spinal affection* of some years standing, from which she seems to be rapidly recovering, under the use of this pleasant remedy.

The other lady, Miss E. is of a very different temperament; being plethoric, and of a vigorous constitution, of a light complexion, and possessed of considerable vivacity, and aged about 17 years.

In most of the experiments the results were very similar to those just described. I will mention a few particulars. On exciting the organ of number, she immediately stated a sum in algebra, reduced it to an equation, and proceeded to solve it. On exciting *form, size, and constructiveness*, she proceeded without saying a word to draw the form of a house;—"There," says she, with great vivacity, "is a house for you to live in, and there is your own dear self standing in the door." On exciting *philoprogenitiveness*, she took up the pencil which was still lying in her lap, and began to fondle it; some one tossed her a handkerchief rolled up; she took it, set it up in her lap and began to rock it, calling it her sister's infant, which she had never seen, and naming it Hannah. On my remarking that the child was very small, she replied, "Yes, Hannah is small of her age, but very pretty." On enquiring the color of its eyes, she said "they are of a light blue." On exciting another organ, she threw down the pretended child, and on being asked what it was, she replied, "*an old handkerchief*!" Perhaps some readers of this statement will hardly believe that this young lady was asleep during this exhibition, but I can assure them that she was sound asleep and wholly insensible to external stimuli, and when she awoke, she had not the slightest recollection of this or any other circumstance that transpired during the exhibition.

But this lady was most remarkable for what is called *clairvoyance*. I asked her the position of her eyes; she answered that they were fast closed and rolled up, which was strictly true. I then bandaged her eyes close, and took my station in a chair directly behind her. I asked if she saw me distinctly, she said she did, and that she always saw me. Some one from behind brought me a bonnet, which I put on my head; on which she immediately burst out into a loud laugh; I enquired what she was laughing at; why, says she, to see you look look so silly with my bonnet on your head. I asked her if it was the large hat which I had on when trying a similar experiment with L? "No," says she "'tis my old silk bonnet," all of which was the truth. I took a large bible in my hand which she named. I then took her work box from the table, which she immediately described. I then enquired how she could see me in the position I then occupied, without turning her head? With a laugh, she replied, "through my cranium to be sure." I asked through what part of her cranium?—she pointed to the prominent part of the occiput, and replied, "through this part;"—the same reply which L. had before given. I then attempted to make her read, and pointed to the title page of some book where the letters were large. She took it in her hand and held it near her forehead, and made out the title by spelling the words, but complained that the letters were too small, and that it hurt her to read. I gave her an eye-glass which magnifies considerably; I asked her if she could see better through that? She held it to her forehead, and replied, "I can see all the persons in the room distinctly through it," holding it still to her forehead and turning to different parts of the room. When following me about the room she would often walk backwards across the room till she came in contact with me, evidently seeing from the back part of the head, though I have no doubt she sees best through her forehead. I once proposed to her to play on her piano; and although in a natural state she cannot play without her notes, she could now play many tunes from memory. Having struck a very lively tune she called on the company to dance; at this moment I touched the organ of *reverence*; she instantly stopped, hung her head, and shed tears; after which she struck up a melancholy strain. At this time she noticed that several keys of her piano were out of tune, which she had never discovered before, and could not detect after waking. Her teacher of music being present, remarked that her ear was much more accurate than when awake. At one time I

magnetized both the young ladies together, and being, of course, in communication, they carried on a conversation, so replete with wit and repartee, that it cannot be described, and which I am satisfied they never could have done while awake. While together in a sleep-waking state, a strong sympathy existed between them, so that on exciting any organ in one would immediately produce a correspondent excitement in the other, although seated in opposite parts of the room. This was a curious circumstance that I have never before seen stated. On magnetizing the neck of E. who had a slight enlargement of the thyroid gland, L. complained that it made her throat burn, and continued to complain, holding her hand to her own throat, during the operation. They were both averse to handling metals, and a ring on my finger at one time coming in contact with L. gave her much pain. On one occasion she complained very much of a few drops of water, which fell on her hand, saying it burnt her; and a little having dropped on her apron troubled her very much, so that she at length took it and threw it aside. I do not know but this last circumstance may be peculiar to L., as I have never before noticed it.

When in this state, so far as I have seen, they are quite happy, and very unwilling to awake. I have sometimes found it difficult to awaken them in this state of mind. When magnetized together, E., whom I intended to awake first, was very unwilling to be disturbed, and undertook to counteract all my passes, and manifestly with considerable effect, as she was longer in waking than usual. On proposing to wake L. she declared positively that she would not awake. After trying some time in vain, I opened the door near her; she complained of the cold, and promised on her honor that if I would shut the door she would awake. I shut the door and she immediately opened her eyes. This shows the power of the will in this respect. On waking, they uniformly forget every thing that transpired in their sleep-waking state and are conscious only of a refreshing sleep of a few minutes duration. But when again magnetized, all the events of their previous sleep-waking are distinctly recollected as though they had just occurred. Thus the different periods of their magnetic existence constitute with them, one continued and distinct state of being, in which they are constantly progressing, till at length they seem as much at home in the *magnetic* as in the *natural* condition. I have given each of these ladies some phrase in Latin or French, to remember on waking, and they have invariably recollected that phrase and nothing else. At the last magnetising I told L. to request her aunt, with whom she is boarding, to give her coffee at breakfast the next morning *without cream*, and to forget it till that time; at the same time Itold E. to ask her mother *not to give her coffee* the next morning at breakfast, with the same charge to forget it till then. After waking I tried to bring these things to their recollection, but in vain. At breakfast next morning, while at the table, each recollected the precise charge given her which had never occurred to them till that moment. Each of them, especially E. have repeatedly described to persons with whom they were in communication, persons and places, which those persons had in their minds at the time, with great accuracy and minuteness; this arises evidently, from a sympathy with the persons in communication with them.

I have thus detailed a portion of the facts and experiments which I have lately witnessed, which may be relied on as strictly correct, and can be proved by witnesses of the highest respectability.

I have not room to state many important inferences which may be deduced from these facts. I will barely state that Miss L. has been for years suffering from a painful affection of the vertebra of the neck, from which she is rapidly recovering.

Respectfully,

JOHN COTTON, M.D.

Marietta, O. Nov. 3, 1842.

For the Magnet.

ANIMAL LIFE.

BY DAVID PORTER, M.D.

Sir:—At the suggestion of some friends, I address to you a sketch of my theory of life, in order to ascertain what relation, in its principles, it may bear to human magnetism. With regard to the peculiar claims of the latter, I know but little, having never witnessed any performances of the kind; but I gather from various sources, that the believers in human magnetism, consider the laws of life as essentially electrical. Thus far, then, we agree. For many years I have considered the great laws of life as none other than electrical laws. Nor has this been a hasty view of the matter, but the result of much patient investigation in health and disease, for more than twenty years. I have lately, moreover, in dipping into some back numbers of your Magnet, learned that electricity, galvanism, and magnetism, in your opinion are but different displays of the same principle. Here again, we shall agree; and consequently, you will perceive, that I am disposed to consider nothing in human magnetism, improbable, which may be fairly referable to electric, galvanic or magnetic laws.

The term galvanic battery, I applied to the nervous system, in a theory of life, published thirteen years since; I taught the same to students for several years before. And the only difference between us, now, would seem to be, that you have brought to light this battery in its *external* relations and powers, while my attention has been confined to its *internal* relations, as are displayed in the common functions of life. It may, then, be a matter of interest to ourselves, and perhaps to the cause of science, to ascertain how far, after pursuing different and in many respects opposite courses of investigation, we may have arrived at the same ultimate conclusions.

In bringing the subject of life before the public, we must expect to be met by prejudices from even the more intelligent reader. I will frankly confess, my theory has been considered by my medical brethren as near akin to human magnetism, and equally visionary. And from past experience, I can very easily fancy myself met by such language as this:—"Sir, I am loth to give any attention to so abstruse a subject—I have fatigued my brains already, to no purpose, in this unprofitable investigation, I have read authors without light or profit. All their explanations have only tended to render the subject more obscure. Theory after theory has left nothing in my mind but learned verbiage. And to crown the whole, the wisest of the medical faculty, whose peculiar business it is to scrutinize the subject, have given it up in despair, &c." All this I will meet by merely asking a candid and liberal perusal, while I attempt to show that our subject, after all, is but a part of mechanical philosophy, and consequently that the term *life*, necessarily involves no mystery whatever.

All writers, from Hippocrates to John Brown, seem to have regarded life as a principle, under some form or other. It was the physis or nature of Hippocrates, and moving principle of Aristotle, the soul or anima medica of Stahl; the Archeus or vital aura of Van Helmont, the impetum faciens of Kaauw

Boerhaave, the ors medicatrix nature of Gaubius, the sensorial power of Darwin, the materies vitae of Hunter, aud the vis vitae, vital force, and vital principle of later writers.

Under all its names it seems still to have been regarded as a principle, till Cullen first, and subsequently Bush and Brown, made it a forced state from the operations of agents called stimuli, or bodies whose susceptibility of their action is called excitability. By those writers, however, life is not explained, but the difficulties are merely removed from one name to another. The excitability of Bush and Brown, is really left to involve all the mysteries to which the hard names of their predecessors had been applied.

Next comes Lawrence, who makes life a state arising from certain vital properties, superadded to common matter. The vulgar, he says, are apt to regard life as the sign of a particular principle. He considers the term applicable to exceptions only, to general laws, and defines life to be "the assemblage of the functions and the general result of their exercise."

Dr. Parr rather quaintly tells us that life consists in the "animation of the primordial germ." In other words, life is life.

The difference between all these learned writers, may, perhaps, be fairly embraced in the question, is life a distinct substance, or is it merely a peculiar property of matter? We say neither; and venture to advance our humble belief, that the functions of life, like the operations of any inanimate machine, are mere results of the common properties of matter, variously modified by composition, arrangement, and form. Now, with the fearful odds against us, we venture to take ground, that neither of the former opinions can be sustained until the latter is proved to be impossible. It is a plain maxim in philosophy, that while well established principles may furnish explanations, we are not at liberty to adopt others which are unknown.

Let us, then, see whether the phenomena of life may not be mere physical results of common physical principles. If this view is made out, life will present itself neither under so mysterious an aspect as it is fashionable at present to consider it, nor as a "mere question of metaphysics foreign to medicine," as a popular medical writer of our own time and country, would have it.

The grand essentials of vital function, we may assume, are a vascular system of some kind to contain a fluid, and power to put that fluid in motion.—Among vegetables, sufficient power for the purpose, seems to exist in external agents; but where locomotion is necessary, it must be supplied by a nervous system within. The evidence of a grand moving power in every living being would appear searcely to be mistaken; and yet writers on general anatomy would seem to view the tissues, not as mere instruments of that power, but rather as many sources of it; or in other words, they contemplate the several organizations as not merely adapted to execute their functions; but also, to originate the power which impels them. The latter we must recollect, however, is altogether gratuitous. We clearly trace in every part organic provisions to nourish it, and adapt it to its functions, but none for originating power, except in the nervons system; and even here, most probably, it is not originated by any particular organization of substance; but rather in virtue of the common properties of unorganized matter.

It is very difficult to get rid of first impressions.—They abide with us, not only in our contemplations of life, but even of the works of art which we do not at first understand. The untutored savage, when gazing at any exquisite piece of human workmanship, is not likely to refer what so much delights him in its effect and operations, to mere form and arrangement of common matter, under the guidance of every day laws. His reflections naturally lead him to refer the whole to some new principle or law, or at least, to something of which he was before, totally ignorant. He cannot believe, that the whole power of the maker consisted in giving form and arrangement to common matter. Principles familiar to him in his own rude operations, seem too simple for the purpose. And thus, what is a mere improvement on his powers, seems so radically different, that his superstition is excited, and as usual, his reason takes wing.

A delusion somewhat similar to that which occupies the mind of the savage, regarding the more ingenious works of civilized man, in my humble opinion, occupies the mind of the latter regarding living bodies, which are at last, but machines of the great architect, constructed, it is true, with infinitely more skill, but out of the same raw material, which we possess in abundance. The perfection of organized bodies so far transcends our mechanical powers, that we have difficulty in conceiving them to be regulated by the same laws. The adaptations of substance, form, and arrangement, to their ends, so far transcends our powers, that, like the savage with regard to the achievements of human ingenuity, we look to something more, or refer what we see to something out of reach, of which we cannot avail ourselves, in our own performances. We may not, thus, become strictly superstitious, but, in referring to unknown causes, effects which are referable to those well known, we certainly make an approach to superstition.

I hope I shall be able to show, that no distinct principle or property is necessary for the functions of organized being, and certainly if not necessary, we cannot infer their existence according to any fair, philosophical maxims. The question, then is, do the phenomena of life require for explanation, a distinct principle, or entirely endowed with peculiar properties, or may they not be contemplated as simple displays of the common laws of inanimate matter, controlled by circumstances of mere form, arrangement and composition. After much close scrutiny, I am induced to embrace the latter opinion; I cannot agree to part with it, until some law of life incompatible, or at least, totally inexplicable by it, is produced. Accordingly, sir, if it meet your approbation, I wlll undertake to demonstrate to the readers of the Magnet, that the anatomy of living bodies presents galvanic structure, which, according to acknowledged laws, not only produces the physical functions, but executes the purposes of the immaterial part or mind of man, and instinct of inferior organized beings.

Rosstraver, Westmoreland Co., Pa. Nov. 9, 1842.

ANTHROPOLOGY.

THE MORAL FACULTY.

BY THE LATE BENJ. RUSH, M.D.

The influence of ASSOCIATION upon morals opens an ample field for inquiry. It is from this principle, that we explain the reformation from theft and drunkenness in servants, which we sometimes see produced by a draught of spirits, in which tartar emetic had been secretly dissolved. The recollection of the pain and sickness excited by the emetic,

naturally associates itself with the spirits, so as to render them both equally the objects of aversion. It is by calling in this principle only, that we can account for the conduct of Moses, in grinding the golden calf into a powder, and afterwards dissolving it (probably by means of hepar sulphuris,) in water, and compelling the children of Israel to drink of it, as a punishment for their idolatry. The mixture is bitter and nauseating in the highest degree. An inclination to idolatry, therefore, could not be felt, without being associated with the remembrance of this disagreeable mixture, and of course being rejected, with equal abhorrence. The benefit of corporeal punishments, when they are of a short duration, depends in part upon their being connected, by time and place, with the crime for which they are inflicted. Quick as the thunder follows the lightning, if it were possible, should punishments follow the crimes, and the advantage of association would be more certain, if the spot where they were committed were made the theatre of their expiation. It is from the effects of this association, probably, that the change of place and company, produced by exile and transportation, has so often reclaimed bad men, after moral, rational, and physical means of reformation had been used to no purpose.

As SENSIBILITY is the avenue to the moral faculty, every thing which tends to diminish it tends also to injure morals. The Romans owed much of their corruption to the sights of the contests of their gladiators, and of criminals, with wild beasts. For these reasons, executions should never be public. Indeed, I believe there are no public punishments of any kind, that do not harden the hearts of spectators, and thereby lessen the natural horror which all crimes at first excite in the human mind.

CRUELTY to brute animals is another means of destroying sensibility. The ferocity of savages has been ascribed in part to their peculiar mode of subsistence. Mr. Hogarth points out, in his ingenious prints, the connexion between cruelty to brute animals in youth, and murder in manhood. The emperor Domitian prepared his mind, by the amusement of killing flies, for all those bloody crimes which afterwards disgraced his reign. I am so perfectly satisfied of the truth of a connexion between morals and humanity to brutes, that I shall find it difficult to restrain my idolatry for that legislature, that shall first establish a system of laws to defend them from outrage and oppression.

In order to preserve the vigour of the moral faculty, it is of the utmost consequence to keep young people as ignorant as possible of those crimes that are generally thought most disgraceful to human nature. Suicide, I believe, is often propagated by newspapers. For this reason, I should be glad to see the proceedings of our courts kept from the public eye, when they expose or punish monstrous vices.

The last mechanical method of promoting morality that I shall mention, is to keep sensibility alive, by a familiarity with scenes of distress from poverty and disease. Compassion never awakens in the human bosom, without being accompanied by a train of sister virtues. Hence the wise man justly remarks, that "By the sadness of the countenance, the heart is made better."

A late French writer in his prediction of events that are to happen in the year 4000, says, "That mankind in that era shall be so far improved by religion and government, that the sick and dying shall no longer be thrown, together with the dead, into splendid houses, but shall be relieved and protected in a connexion with families and society." For the honor of humanity, an institution,* destined for that distant period, has lately been founded in this city, that shall perpetuate the year 1786 in the history of Pennsylvania. Here the feeling heart, the tearful eye, and the charitable hand, may always be connected together, and the flame of sympathy, instead of being extinguished in taxes, or expiring in a solitary blaze by a single contribution, may be kept alive by constant exercise. There is a necessary connection between animal sympathy and good morals. The priest and the Levite, in the New Testament, would probably have relieved the poor man who fell among thieves, had accident brought them near enough to his wounds. The unfortunate Mrs. Bellamy was rescued from the dreadful purpose of drowning herself, by nothing but the distress of a child, rending the air with its cries for bread. It is probably owing, in some measure, to the connection between good morals and sympathy, that the fair sex, in every age and country, have been more distinguished for virtue than men; for how seldom do we hear of a woman devoid of humanity?

Lastly, ATTRACTION, COMPOSITION, and DECOMPOSITION, belong to the passions as well as to matter. Vices of the same species attract each other with the most force—hence the bad consequences of crowding young men (whose propensities are generally the same) under one roof, in our modern plans of education. The effects of composition and decomposition upon vices, appear in the meanness of the school boy, being often cured by the prodigality of a military life, and by the precipitation of avarice, which is often produced by ambition and love.†

If physical causes influence morals in the manner we have described, may they not also influence religious principles and opinions?—I answer in the affirmative; and I have authority, from the records of physic, as well as from my own observations, to declare, that religious melancholy and madness, in all their variety of species, yield with more facility to medicine, than simply to polemical discourses, or to casuistical advice. But this subject is foreign to the buisness of the present inquiry.

From a review of our subject, we are led to contemplate with admiration, the curious structure of the human mind. How distinct are the number, and yet how united! How subordinate and yet how coequal are all its faculties! How wonderful is the action of the mind upon the body! Of the body upon the mind!—And of the divine spirit upon both! What a mystery is the mind of man to itself!—O! nature!—Or to speak more properly. O! THOU GOD OF NATURE!—In vain do we attempt to scan THY immensity, or to comprehend THY various modes of existence, when a single particle of light issued from THYSELF, and kindled into intelligence in the bosom of man, thus dazzles and confounds our understandings!

The extent of the moral powers and habits in man is unknown. It is not improbable, but the human mind contains principles of virtue, which have never yet been excited into action. We behold with surprise the versatility of the human body in the exploits of tumblers and rope-dancers. Even the agil-

* A public dispensary.

† A citizen of Philadelphia had made many unsuccessful attempts to cure his wife of drinking ardent spirits. At length, despairing of her reformation, he purchased a hogshead of rum, and after tapping it, left the key in the door where he had placed it, as if he had forgotten it. His design was to give her an opportunity of destroying herself, by drinking as much as she pleased. The woman suspected this to be his design, and suddenly left off drinking. Anger here became the antidote to intemperance.

ity of a wild beast has been demonstrated in a girl of France, and an amphibious nature has been discovered in the human species, in a young man in Spain. We listen with astonishment to the accounts of the *memories* of Mithridates, Cyrus, and Servin. We feel a veneration bordering upon divine homage, in contemplating the stupendous *understandings* of Lord Verulam and Sir Isaac Newton; and our eyes grow dim, in attempting to pursue Shakespeare and Milton in their immeasureable flights of *imagination.* And if the history of mankind does not furnish similar instances of the versatility and perfection of our species in virtue, it is because the moral faculty has been the subject of less culture and fewer experiments than the body, and the intellectual powers of the mind. From what has been said, the reason of this is obvious. Hitherto the cultivation of the moral faculty has been the business of parents, schoolmasters and divines.* But if the principles, we have laid down, be just, the improvement and extension of this principle should be equally the business of the legislator—the natural philosopher—and the physician; and a physical regimen should as necessarily accompany a moral precept, as directions with respect to the air—exercise—and diet, generally accompany prescriptions for the consumption and the gout. To encourage us to undertake experiments for the improvement of morals, let us recollect the success of philosophy in lessening the number, and mitigating the violence, of incurable diseases. The intermitting fever, which proved fatal to two of the monarchs of Britain, is now under absolute subjection to medicine. Continual fevers are much less fatal than formerly. The small-pox is disarmed of its mortality by inoculation, and even the tetanus and the cancer have lately received a check in their ravages upon mankind. But medicine has done more. It has penetrated the deep and gloomy abyss of death, and acquired fresh honours in his cold embraces.—Witness the many hundred people who have lately been brought back to life, by the successful efforts of the humane societies, which are now established in many parts of Europe, and in some parts of America. Should the same industry and ingenuity, which have produced these triumphs of medicine over diseases and death, be applied to the moral science, it is highly probable, that most of those baneful vices, which deform the human breast, and convulse the nations of the earth, might be banished from the world. I am not so sanguine as to suppose, that it is possible for man to acquire so much perfection from sciences, religion, liberty and good government, as to cease to be mortal; but I am fully persuaded, that from the combined action of causes, which operate at once upon the reason, the moral faculty, the passions, the senses, the brain, nerves, the blood and the heart, it is possible to produce such a change in his moral character, as shall raise him to a resemblance of angels—nay more, to the likeness of God himself. The state of Pennsylvania still deplores the loss of a man, in whom not only reason and revelation, but many of the physical causes that have been enumerated, concurred to produce such attainments in moral excellency, as have seldom appeared in a human being. This amiable citizen, considered his fellow-creature, man, as God's extract, from his own works; and whether this image of himself, was cut out from ebony or copper—whether he spoke his own or a foreign language—or whether he worshipped his Maker with ceremonies, or without them, he still considered him as a brother, and equally the object of his benevolence. Poets and historians, who are to live hereafter, to you I commit this panegyric; and when you hear of a law for abolishing slavery in each of the American states, such as was passed in Pensylvania, in the year 1780—when you hear of the kings and queens of Europe, publishing edicts for abolishing the trade in human souls—and lastly, when you hear of schools and churches with all the arts of civilized life, being established among the nations of Africa, then remember and record, that this revolution in favour of human happiness, was the effect of the labours—the publications—the private letters—and the prayers of ANTHONY BENEZET.*

I return from this digression, to adress myself in a particular manner to you, VENERABLE SAGES and FELLOW CITIZENS in the REPUBLIC OF LETTERS. The influence of Philosophy, we have been told, has already been felt in course. To increase and complete this influence, there is nothing more necessary than for the numerous literary societies in Europe and America to add the SCIENCE OF MORALS to their experiments and inquiries. The godlike scheme of Henry IV. of France, and of the illustrious queen Elizabeth, of England, for establishing a perpetual peace in Europe, may be accomplished without a system of jurisprudence, by a confederation of learned men and learned societies. It is in their power, by multiplying the objects of human reason, to bring the monarchs and rulers of the world under their subjection, and thereby to extirpate war, slavery, and capital punishments, from the list of human evils. Let it not be suspected that I detract, by this declaration, from the honour of the Christian religion. It is true, Christianity was propagated without the aid of human learning; but this was one of those miracles, which was necessary to establish it, and which by repetition, would cease to be a miracle. They misrepresent the Christian religion, who suppose it to be wholly an internal revelation, and addressed only to the moral faculties of the mind. The truths of Christianity afford the greatest scope for the human understanding, and they will become intelligible to us, only in proportion as the human genius is stretched, by means of philosophy, to its utmost dimensions. Errors may be opposed to errors; but truths, upon all subjects, mutually support

* The people commonly called Quakers, and the Methodists, make use of the greatest numbers of physical remedies in their religious and moral discipline, of any sects of Christians; and hence we find them every where distinguished for their good morals. There are several excellent *physical* institutions in other churches; and if they do not produce the same moral effects that we observe from physical institutions among those two modern sects, it must be ascribed to their being more neglected by the members of those churches.

* This worthy man was descended from an ancient and honourable family that flourished in the court of Louis XIV.—With liberal prospects in life he early devoted himself to teaching an English school; in which for industry, capacity, and attention to the morals and principles of the youth committed to his care, he was without an equal. He published many excellent tracts against the slave trade, against war and the use of spirituous liquors, and one in favour of civilizing and Christianizing the Indians. He wrote to the Queen of Great Britain, and the Queen of Portugal, to use their influence in their respective courts to abolish the African trade. He also wrote an affectionate letter to the King of Prussia, to dissuade him from making war. The history of his life affords a remarkable instance, how much it is possible for an individual to accomplish in the world; and that the most humble stations do not preclude good men from the most extensive usefulness. He bequeathed his estate (after the death of his widow), to the support of a school for the education of negro children, which he had founded and taught for several years before he died. He departed this life in May, 1784, in the seventy-first year of his age, in the meridian of his usefulness, universally lamented by persons of all ranks and denominations.

each other. And perhaps one reason why some parts of the christian revelation are still involved in obscurity, may be occasioned by our imperfect knowledge of the phenomena and laws of nature. The truths of philosophy and Christianity dwell alike in the mind of the Deity, and reason and religion are equally the offspring of his goodness. They must therefore, stand and fall together. By reason, in the present instance, I mean the power of judging truth, as well as the power of comprehending it. Happy era! when the divine and the philosopher shall embrace each other, and unite their labours for the reformation and happiness of mankind!

THE MAGNET.

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WHAT IS IT?

Our readers and patrons know, that we did not commence this work for the establishment of any preconceived, favourite, theory. Our object was, the collection of such facts as would tend to explain the phenomena of life, or to show the nature of that agency by which one living body is made to *sympathise* with another. And though we have for years been a patient observer of the various phenomena attending the states of monomania, insanity, dreaming, somnambulism, and the like, yet, it sometimes seems as though we knew less and less of the philosophy of this matter, and as if it were bordering on presumption for any one to think of penetrating the secrets of nature to the extent we have undertaken.—Although, from the first, the light has seemed to shine upon our investigations, yet we feel more and more compelled to confess our ignorance, when speaking of the phenomena attending all the manifestations of human life.—We have read the books of ancient lore, we have carefully examined the various theories put forth from time to time by the learned, for the purpose of arriving at the truth in this matter; but we freely confess, we are as far from being satisfied as ever, except in so far as we have been able, by our own experiments on living bodies, to arrive at a few conclusions, which we are ready to believe will bear the test of the most rigid inquiry.

Our readers will see, from a communication in our present number, that a correspondent has commenced a series of articles, in which he proposes to show what animal life is. Success to him. But we doubt not, that he will, in the end, beg off, like the ancient philosopher, when requested to explain the essence of God, whose answer, as often as requested, was, "Give me more time."

It is plain, that in order to ascertain what life is, we must examine it in all its different manifestations, from its beginning, up through the various changes of nature. We must look at it in cases of mental derangement, trances, catalepsy, &c.

There are numerous mysteries attending what is called the magnetic sleep, which have never been explained.—We call this state *somnipathy*, because it is a state resembling *sleep*, and it is brought on by *sympathy* with the operator. But, numbers whom we have put into this state have, while in it, inquired *why* we called it a state of *sleep?* They have insisted, that it was not a state of sleep, at all. One of our patients, while in this state, does not remember that he was ever in any other state; and yet, at the same time, all the ordinary avenues to the senses are fast closed. He can neither see, hear, smell, taste, nor feel, without the consent of the operator. How is this? He is alive; he can be made conscious of things, can be made to have clear and distinct perceptions of distant objects, which neither he nor the operator ever saw!

Again. Without the will of the operator, when restored to his natural waking state, he remembers nothing said or done to him in his state of *somnipathy;* nay, his own will, the machinery of his own mental operations, is frequently found to be completely under the will of the operator. For instance: the operator says to his patient, while in a state of somnipathy, "to-morrow, at 9 o'clock, you must read the 14th chapter of St. John." The patient is waked up, but remembers *nothing* of this direction till precisely nine o'clock the succeeding day, when he feels singularly inclined to read that particular chapter, and when the moment arrives he opens the Bible and reads it. Again: the operator says to his patient, when asleep, "to-morrow, at such an hour, you must go into this state again, or at such an hour you must fall into a state of natural sleep, and sleep just so many hours, and then wake up." The patient obeys to the very letter, and this, too, without being in the meantime able to give any reason for what he feels inclined to do. This we have done, times without number. Now we ask, What is it that subjects the mind of the patient, in such cases, so completely to the will of the operator?

And then, again, the various ways in which different persons are affected by similar processes, would seem to set all rules at defiance. One person is put to sleep by holding a piece of steel in the hand; another, in a state of somnipathy, is waked up by the same means; and by the same means one person is attracted, while another is repelled by it. One patient remembers nothing in his waking state which took place in his sleep, except what he is directed to remember by the operator; another remembers every thing; a third remembers nothing at one time in the somnipathic state, which took place in a previous state of somnipathy; but it is not so with the fourth, who remembers every thing done in the same state at all previous sittings. Another patient remembers everything in the sleeping state, from one time to another, except what he is made to do by the excitement of any one of the mental organs; but what he does under these excitements, he never has any recollection of, except when the same organs are again excited.

It is remarkable, that in some the somnipathic state differs so essentially from the waking state, while in others it seems scarcely to differ at all. Indeed, some, we know, seem to be in a state resembling somnipathy nearly or quite all the time. We know an intelligent lady in this city, who assures us that she is frequently conscious of being in two different states, in which her perceptions of things are arrived at by entirely different mental processes. Mr. Inman, of whom Dr. Buchanan makes such an account, is one of this class. We have had one patient, who would on no account consent, in his sleeping state, to be made acquainted in the waking state with

what he said or did in his sleep; and as soon as he arrived at some knowledge of this kind, he would not be put to sleep any more. He had been afflicted with a most singular nervous difficulty, and gave directions, in his sleep, for his own management when awake, precisely as though they had been designed for another person.—*Query:* How could the same *mind* be ignorant of its own volitions, so soon after they were formed?

Dr. R. Nelson, of this city, assumes that there are six imponderable elements, namely, *electricity*, *galvanism*, *magnetism*, *caloric*, *light*, and *life*. Nothing is known of either of these elements, except as they appear in their effects on matter.* And we confess, we have heard from him a few reasons in favour of this theory, which appear quite plausible.

It is true, there may be a strong *affinity* between these elements, without any positive *identity*. But the reasons for believing there was some identity between them, have appeared to us so strong, that we have been ready to admit this view, though, indeed, we are far from being fully satisfied with regard to it. It may appear, at last, that life is a distinct element; but it would rather seem to be a compound, made up, perhaps, of the other imponderable elements before mentioned. That life is *always* accompanied by electricity, caloric, galvanism, and magnetism, is certain: no change ever takes place in matter, without the action of electricity. But that life is not either of the above elements, separately and in its natural state, or without *modification* or *organization*, is plain. If it were, we should find it invariably governed by the well-known electrical or galvanic laws; this, however, is not the case. So far, therefore, as we can now see, life would seem to be the *quintessence* of these imponderable elements, modified and organised, in the matter of which living bodies are composed.

Life may certainly be an element, as much so as light or electricity; nor do there seem to be more difficulties in ascertaining its nature, than in explaining the essence of matter, galvanism, or caloric. Indeed, there are many mysteries in the laws of chemistry, over which hang clouds of impenetrable darkness; and yet, we are but too apt to suppose that the laws of matter have been all laid open to the gaze of the passing observer, while those of life and its various phenomena lie hidden where no human investigations will ever be able to penetrate.

DR. BUCHANAN'S LECTURES.

If we know our own heart, we sincerely desire to do justice to the claims of Dr. Buchanan; but we must confess, that the position in which he has placed himself to the science which this work is designed to elucidate, renders it somewhat difficult to speak of him as we could desire to do. However, we have long since decided to go for the truth, and right; and never to suffer an injury perpetrated against ourselves, to prevent us from a free and candid acknowledgment of what may be due, even to one who has rendered himself liable to the severest censure.

Want of space prevented our saying, in our last, all we designed to offer on the Doctor's theories; and it is not, now, so necessary, perhaps, inasmuch as one far more competent has favoured our readers with a communication on this subject, which will be found in our present number. We regret that we are not at liberty to give the name of the writer of that article, as we are confident, if we were to do so, it would secure for it a candid reading, and satisfy all that he is fully competent to do full justice to this subject. His opportunities for judging, in this case, have been ample; and the relations heretofore sustained by our correspondent to science, entitle his opinions to the respectful attention of all who wish to know the truth. Since that article was in type, the committee referred to by our correspondent have made their report, which covers one page of the Evening Post. They express no opinion of the Dr.'s theories, but merely give an account of his views in his own words, and also the experiments performed by him in their presence. These were not very numerous; but, as far as they went, we should judge they must have been interesting. The most of them, it seems, were performed on "Mrs. R." of this city, an intelligent and highly respectable lady, who, if we mistake not, had for a year past been the subject of numerous magnetic operations, for her own health and other purposes. The committee, we think, should have been made acquainted with this fact.

Below, we give a statement of Dr. Buchanan's theories, in his own words. It was recently drawn up for the committee appointed to report on his experiments. The reader will notice a few statements in this article, on which one remark may be given. It will be seen, that Dr. Buchanan reverses the order of science, by including the greater in the less. *Physiology* necessarily includes every thing which relates to the influence which *life* has over matter, and of course it embraces the science of the *nerves*, for there are certainly two, if not three nervous systems, if we may so speak, in the human body. There are the nerves of motion and the nerves of sensation, and then if we add, according to Dr. Nelson, the nerves of nutrition, we have at least three. At any rate, Dr. B. is at war with science, in elevating *Neurology* above *Physiology*. What should we think of an author, who should attempt to give a correct account of Physiology, and yet omit a description of the nerves, and their functions?—Yet this any one might do, if neurology includes physiology. But the reasons for the use Dr. B. is attempting to make of this term, are apparent: he wishes to immortalize his discovery of the *excitability* of the separate organs of the human brain, in the waking state, by the mere application of the human hand to the head. To this no one can have any objection; but when he extends his claims to the monopoly of what he never discovered, and to that which was known hundreds of years before he was born, he certainly exposes himself to such rebukes as our correspondent has ministered to him in our present number.

Dr. Buchanan's calling those experiments which have been performed by magnetisers upon patients in the somnipathic state, *his* experiments, is worthy only of a smile,

* As Dr. Nelson has confessedly paid great attention to these abstruse questions, it is much to be desired that he would favour the public with his views, in a volume on Human Physiology.

as it doubtless came from the same organ which was "*excited*" in his own head, when he said in his book, page 70, "*Such has been my progress, that but few important principles have been left for future discovery*"!

Dr. B. assumes, that experiments made upon subjects in the waking state, are free from "imaginative excitement," which invariably accompanies a state of somnipathy. That he errs in this assumption, we are confident. While we know, very well, how liable we are to be deceived by the results which appear in the somnipathic state, we know, equally well, that persons wide awake are as often liable to the same "imaginative excitement." It is just as easy to bring out "imaginative" results from persons in a waking state, as from those asleep; and this we have fully and repeatedly demonstrated.—The following is Dr. Buchanan's statement:

The word Neurology, as it relates to man, is but another name for the great science of Anthropology, because the science of the nervous substance necessarily includes all the manifestations of mind and life connected with or dependent upon that substance, which we know is the seat of life and the organ of the mind.

Physiology, Pathology, Insanity, and what has been called Animal Magnetism, Mental Philosophy or Phrenology, Craniosopy, Physiognomy, Education, &c. are *partial views* of the phenomena and systematic laws of the human constitution, which constitute the science of Neurology.

The characteristic feature of that system of Neurology which I have brought before the public is, that it has been established by means of cautious and decisive experiments, and may easily be verified by any individual who has the necessary patience to pursue the investigation of the subject.

The experiments consist in exciting the various functions of the nervous substance in the cranium or the body, by the application of the proper stimulating agents. Every article of the materia medica possesses, in some form, or to some extent, the power of exciting and modifying the functions: Galvanism, Electricity, Magnetism, and Caloric, possess efficient exciting powers; but no agent that I have used possesses so efficient, and at the same time so congenial an influence, as the aura of the nervous system.

This neuaura, which is the agent by which one individual makes a physiological impression upon another when in contact, is radiated and conducted freely from the human hand. The experiments which I have made in your presence, consist in applying this neuaura to the various portions of the brain, upon which it may make an impression through the cranium and the face, which present no obstacles to its transmission.

To develope important results from such experiments, it is necessary that we should make them upon persons whose cerebral action is easily excited or deranged by slight influences. It is necessary that the portion of brain which we excite should be so energetically stimulated as to become predominant over all the other portions, and to manifest its functions in a pure and distinct form, unmingled with any different or counteracting functions. It is also extremely desirable that the experiments should be made upon persons whose mental cultivation, sagacity, and integrity, render their descriptions of their own sensations cautious, exact, and worthy of implicit confidence.

As *my* experiments have been repeated by many phrenologists and others, and have generally been attempted by them during the state of somnambulism superinduced by mesmeric operations, I would remark, that such experiments are often highly deceptive and inaccurate. Experiments should be made in the natural condition of the subject, and free from the imaginative excitement which belongs to somnambulism. As far as I have heard of the result of the somnambulic experiments, I know of but few cases in which the operator has not been misled by his imaginative subject.

An extensive course of experiments upon persons of intelligence, in their natural state of mind, has established and placed beyond a doubt the fact, that the brain, as a psychological organ, manifests an immense number of mental functions, and that there are no phrenological divisions in the brain, other than the unfractuosities of the convolutions, and that there are no simple primitive cerebral organs manifesting a pure special single function, unless we carry our subdivisions so far as to make a primitive organ of each constituent fibre of a convolution.

The number of cerebral organs which we may recognise is, therefore, a matter of arbitrary arrangement, as we may divide the brain for convenience, into three, four, or five regions, or with equal precision and functional accuracy into three, four, or five hundred. From fifty to a hundred subdivisions would be as many as we can learn to locate correctly, and is a sufficient number for practical purposes.

It is established with equal certainty, that the brain is as much a physiological as a psychological organ, and that it maintains its sympathies with the body, and exercises its controlling power over it, by means of certain conductor organs at the base of the encephalon, by which it radiates volitionary, circulatory, and secretory influences to the muscular system and other tissues of the body. —Each portion of the brain has an intimate relation or sympathy with its particular region of the body, and exercises a modifying influence upon the general circulation and innervation of the system. It is through the conductor organs that the special relations of the brain and body are established, and all the physiological effects which may be produced by operating on the brain, may be as easily, and, indeed, more promptly evolved, by operating upon the corresponding conductors, which transmit their influence directly.

Thus do we explain the relations of the brain to the body, and by carrying out the mathematical laws of cerebral physiology, we show the influence of each hemisphere of the brain upon the opposite hemisphere, and through that upon the corresponding half of the body.

To explain the relations of the mind to the brain, and the peculiar mode or laws of their connexion, would not be a more difficult task than to explain the relations between the brain and the body—either of which would seem to the novice a chimerical undertaking.

This higher psychological philosophy, however, constitutes no part of the psychologico-physiological system to which I have called the attention of the public, and which aims at extensive educational and medical utility. Of this system I have given you a few imperfect illustrations, and regret that I have not had the opportunity of illustrating, in your presence, the beneficial influence which may be exerted upon the sick.

The experiments with medicines applied to the fingers, were designed to illustrate some important principles in reference to human impressibility, and the mode in which medicines produce their effects.

The experiment of bringing an impressible person into contact with the head of another, illustrates the laws of transmission of the neuaura, and presents us a method of accomplishing a perfect diagnosis of disease, as well as of exploring the physiology of the brain, and ascertaining the characters of particular individuals. This method, which I have been for some time engaged in applying to practice, must ultimately take the precedence of all other methods of diagnosis and examination, either for character, for disease, or for the establishment of scientific principles.

SYMPATHOLOGY.

We have it in contemplation to give our views, somewhat at length, on the cure of disease by sympathy. The little pamphlet we published on this subject a few months ago, is out of print; and the subject is certainly worthy of more attention than has hitherto been given to it.

We see, by a pamphlet recently sent us from Columbus,

Ohio, that the *Iatroleptic** practice of medicine has been revived, with considerable success, in that region. We are quite ready to believe, that the chief agency in this practice is sympathy, and which is exerted by passing the hands over the part diseased.

MEDICINAL.

CASES.

Within the last three months we have received accounts of various cases of relief, and cures effected, by what Dr. Caldwell calls the "cerebral medicine." The edition of our Directions is entirely exhausted; and we have heard of their having been followed in many cases with decided success.

Yet, we must caution our readers against having their anticipations too much excited by what they may hear of cures performed by sympathy. We are far from wishing to authorise the hope of cure, in any and every case of disease. Every thing, as it were, depends on the *susceptibility* of the patient. True, there may be but few cases where some slight *relief* could not be given, by an experienced operator; but we do not know enough of this agency to induce the belief, that it may, at present, be considered a panacea for "all the ills that flesh is heir to." That different operators have succeeded in performing some very extraordinary cures, is true, and we have been successful in a few remarkable cases of our own; but yet, we know but little of the laws of this agency. And this is saying no more, than we might affirm of the materia medica. Who has been able to tell, why the same medicine does not always produce the same results on different persons, and at different times, not even on the same person? Does not every thing depend upon the idiosyncrasy of the patient? And do we doubt the efficacy of any medicine, merely because it does not always produce the same effects, in the same time, upon different patients, or indeed upon the same patient?

Of one thing we feel well assured, and that is, that the reasons why sympathy has been suceessful in the cure of any disease, depends on the same, or similar conditions, which render medicine beneficial in any case, and which are not so well understood by physicians as they should be. The case of Mr. H., stated below, may illustrate this remark. When we first saw him, he was completely prostrated, and strong fears were entertained for his life. Five different and skilful physicians had been consulted in his case; and three were in daily attendance on him, when he requested us to undertake his case. But we declined, for a number of reasons. In the first place, he was very low, and we could not feel willing to undertake his case while three physicians were visiting him daily; for if we succeeded in curing him, of course, our process of operating would have none of the credit, while he had been taking the prescriptions of his physicians all the while. And then, we could not advise his dismissing his physicians, as he might die in a very short time, and in that case, of course, we should have to bear the blame. And then, again, we could scarcely spare the time necessary to devote to the case.

But finally, the patient and his family took upon themselves the responsibility of deciding, that his physicians should continue to visit him without knowing of his being attended by us, and that he should not in the meanwhile take their prescriptions, nor let them know of his decision. And justice requires that we should state, that we were by no means pleased with this arrangement, nor could we consent to undertake the case, till after much entreaty.

But the effects of our process in this case were immediate, and quite astonishing. About a week after we commenced with him, and after he had ceased following the doctors' prescriptions, his family physician observed to him, that their mode of treatment had been so successful that they concluded it best not to change it, and hence they wished him to go on with the same another week, or words to that effect. The following is his own account of his case:

XVI. EPILEPSY.

About the first of September, 1842, I was seized with convulsions, which deprived me of my strength, and which at the time entirely bereaved me of reason. They came upon me with such violence, that I was completely prostrated, and for three weeks was attended by five different physicians, who pronounced me epileptic, and said that I had a nervous affection of the heart and arteries, and they treated me accordingly. Finding myself daily growing worse, and fearing for my life, I sent for Mr. Sunderland, who, as soon as he saw me, told me that the cause of my disease was located in the brain; and after some hesitancy he consented to *attempt* my restoration by magnetism. Though I did not dismiss my physicians for some time after, I did not take their prescriptions, nor make them acquainted with the fact that I had put myself under the treatment of Mr. Sunderland. From the hour that he commenced magnetising me, *I began to recover;* and in the course of three weeks after I considered myself restored, which both myself and my family can attribute to nothing else, under the Divine blessing, but the process used by Mr. Sunderland; and, as a testimony of my gratitude, I have made this declaration of the facts in my case. P. O. HORN, 41 Suffolk st.

New-York, Nov. 15, 1842.

Witness, PETER P. GOOD.

ORGAN OF LANGUAGE.—The following account is interesting, as it tends to show the location and function of one of the cerebral organs. It is from an intelligent young lady, and may be depended on as correct:

West Troy, N.Y., Dec. 5, 1842.

I will, with great pleasure, relate the circumstances regarding what I supposed to be an affection of the organ of Language. It was, as nearly as I am able to recollect, at the age of fourteen, that, in connection with a severe pain *directly over each eye*, and an exceedingly disagreeable sensation in the eye itself, I found myself deprived of the *power of language*. At first, uttering words, though with difficulty—being unable to convey any idea in appropriate expression. The *thought* was perfectly definite; but the language in which it was attempted to be conveyed, utterly incoherent. As the pain increased in intensity, the capability of speech was entirely lost. There was always a numbness of the left hand attending these attacks. If it were endeavored to remove this by friction of the skin, I experienced a peculiar sensation in the arm, and immediately a sympathetic sensation and numbness of the tongue.

I am not aware that my mind was disordered in any of its functions, except that of investing ideas with language. I remarked above, that I usually perceived no

* From two Greek words, signifying a *physician*, and to *anoint*.

defect in the conceptions of the mind—this was the case. I was, however, during one of these attacks, unable to recollect either the names of my most familiar friends in the room with me, or even my own name! As soon as I could recal names, I became able to articulate a little, at first indistinctly, gradually recovering the use of words. I have experienced some three or four of these peculiar affections, and have invariably found myself for weeks, and even months, under an inconvenience as to language. I once attempted reading, before aware of the approach of one of these singular visitations, and found myself powerless to confine the eyes to any one point.

E. O. SHAW.

PHYSIOLOGY.

MAN AND HIS DISEASES.

The following are further extracts from the interesting work of P. Cunningham, Surgeon in the British Navy, from which we have quoted in the preceding numbers of the Maguet.

But in giving these quotations, we must repeat that we do not concur in all the views of this, or any other author, whose writings we may publish. The views here set forth are interesting, if not philosophically correct in all respects; and that some, or most of them, *approximate* very near the truth, all will probably admit, who have any considerable knowledge of the laws which govern the animal economy.

The singular relief afforded by the application of flour to a scalded foot, on board his Majesty's ship Tyne, naturally excited my curiosity and set my mind at work, to find out the cause why it and cotton wool, both apparently inert bodies, should be productive of such sudden and decisive benefit in burns and scalds. That this benefit could not solely be owing to the exclusion of air, seemed evident from both cotton wool and flour being too porous to effect this; when a thought struck me that it might arise from their non-electric conducting qualities, by which they would exclude the atmospheric electricity from the diseased parts. Seeing that should this view be correct, the same applications would give the same relief in all local inflammations, I consequently tried the effect of cotton paddings upon these, as well as upon bruises, pulmonic pains, &c., and uniformly found a similar relief to accrue. Following up this inquiry, I perceived that the similar relief by blisters, cauterisations, and plasters to pained parts, as well of dressings to sores, could be explained on the same insulating principles, seeing that the substances applied were either non-electric conductors, or converted the skin into a non-conductor by oxidating it.

While experimenting in this way, I was consulted by a female at Islay, Peru, relative to a tic doloreux of three years' standing, affecting the branches of the portio dura, the incessant torment of which had reduced her to a skeleton. The pain always commencing at the point where the nerve emerges before the ear, I forthwith charred the surface with caustic, and further insulated the part with a padding of cotton wool, when immediate relief ensued, and on my return, two months after, I found her fat and healthy. I made no further advances in the above subject until perusing Sir John Herschel's Outlines of Natural Philosophy, in 1833, when the grand idea of Dr. Arnott's, therein referred to, of the brain being a great electric battery, opened up at once a new world before me, from the connexion thus pointed out between the above and the results of my previous investigations. Upon a due reflection therefore upon the subject, I was eventually led to the conclusion, that the proximate cause of all diseases is inordinate galvanic action, and that the activity of the remedies usually administered for the relief thereof is proportioned to the local intensity of the galvanic action excited by them, or, in other words, to the facility with which their constituents are decomposed by the galvanic placids, being, generally speaking, therefore, poisonous, emetic or purgative, according to the relative facility of their decomposition. Forty years have now elapsed since Galvani demonstrated the animal body to be a galvanic machine, therefore the only marvel is, that the cause of the bodily growth and decay should not hitherto bave been ascribed to galvanic action, seeing as we do, the analogous changes it is capable of producing in dead matter, both animal, vegetable, and metallic, submitted to its influence, in the common experiments of the class-room. The above view relative to disease seems indeed fully exemplified by all the insulating remedies checking its local progress, as well as by the general remedies acting beneficially according as they diminish the intense galvanic action, by attracting the electro magnetism, exciting it from the system, or causing a translation of it from one part of the body, or from one class of vessels to another. If we apply the solutions of sulphate of zinc or copper, or of acetate of lead, to the external parts of the body, or the black oxide of mercury (as in the black wash) to a sore, or mercurial ointment by friction to the skin, we invariably find the oxide in the above metallic salts to be gradually separated from the acid, and left adherent to the cloth or the skin, and the mercury in the mercurial oxides to be also more or less disunited from its oxygen, and left in globules on the surface of the sore or that of the body. If again we exhibit the sulphates of copper and zinc as emetics, we find them always more or less decomposed on ejection, while every medical man must have repeatedly witnessed the fact of the decomposition of calomel when exhibited as a purgative, in the dark tinge which its black oxide gives to the mucous evacuations produced.

There are many well-authenticated cases of mercurial globules being found in the bony cells after death, while deaths by lightning have a close resemblance to those by poisons, a rapid lividity, tumefaction and putrefaction of the body ensuing in both. The poisonous oxides and salts we find to be those whose constituents have the weakest affinity for each other, and are consequently the most easily separated by galvanic influence. Thus metallic oxides and metallic salts are, generally speaking, more and more active in their operations in proportion to the amount of acid or of oxygen united with them, from the acid as well as the oxygen having a less and less affinity for them in proportion to the quantity of ether which the above salts or oxides contain; so that the easier the separation of their constituents by galvanic influence, the more intense will naturally be the galvanic action produced. Thus the sub-muriate of mercury, containing about four per cent. of oxygen in its oxide, operates in a four grain dose as a salutary purgative, while the muriate, containing about eight per cent., operates in the same dose as a violent poison.

We see a good exemplification of the mode of action of metallic poisons in that of the nitrate of silver, an easily decomposible metallic salt, a sort of effervescence taking place on its application to the skin, which becomes speedily black from the oxide deposited upon it; and we have only to suppose this metallic salt applied to the coats of the stomach

instead of the skin, to form a just conception of the mode in which most poisons act. The deadly consequences of the inhalation of carbonic acid into the lungs, are doubtless also referable to the intense galvanic action excited there: the body after death from this gas, pourtraying the same appearance as when destroyed by lightning or the stronger poisons; rapid swelling, discoloration, and putrefaction ensuing, while the burning heat in the breast and windpipe is similar to that experienced in the stomach from arsenic. It seems an *extraction* in intensity of the electro-magnetism of the vital parts, by which their organic structure is effectually destroyed as it would have been by an intense electro-magnetic *introduction;* there being no difference in the living body between a burn and a chilblain, or in living vegetables between a frost-bit ear of corn, and a sun-singed one.

To the above intense electro-magnetic extraction may also be ascribed the frequent fatal effects of a draught of cold water in an over-heated body.

CHANNEL OF ELECTRO-MAGNETIC INTRODUCTION.

That certain species of food and drink supply atomo-electricity to the body is evident from the heating effects that many of these produce; but the body being capable of heating itself in an intense degree by exercise alone, shows that the above are not the only mediums of electric introduction. The general belief is that respiration is the great channel through which electric heat is conveyed; but if we rely upon our own feelings, we will find that it diminishes instead of increasing bodily heat. When we are overheated we breathe quickly, which nature could never have intended to increase that heat of which there is already too much; on the contrary, our feelings tell us that respiration is a cooling as well as an exhausting process, while, when we wish to keep warm in a cold winter air, we hold in our breath, or breathe through the folds of a handkerchief to prevent the air which we find *chills* our body instead of *heating* it, from rushing in too rapidly upon the lungs. Dogs indeed, that for very wise reasons perspire almost solely by the mouth and tongues, open wide their mouths, loll out the tongues, and breathe quickly, as the only medium of *cooling* their bodies. The lungs, therefore, seem to be the great safety-valves of the body, the main channel through which the electricity and magnetism, after performing their various important functions, are conveyed off by the attractions of the nitrogen and oxygen inhaled at each atmospheric draught. We see here a wise dispensation of Providence in the amount of oxygen in the atmosphere being only one-third of that of the nitrogen; for were they equal, the atmospheric air would act as a poison to the body by the intensity of the galvanic action which this equality would admit of being excited in the system. If, again, nitrogen only were contained in the atmosphere, the body would be overchilled by the nitrogen carrying off the electricity, and leaving the magnetism, finding, as we do, that the breathing of pure oxygen, by carrying away the magnetism which *cools* the body, and leaving the electricity which *heats* it, causes death by overexcitement, or, in other words, by the inflammatory fever produced.

As the body, therefore, cannot receive a sufficiency of electro-magnetism through the medium of food, and none can be received through that of the lungs, it must receive it through the only other channel left, viz. the skin. That electro-magnetism passes readily through the skin we know from the rapid transmission of that of the electric and galvanic batteries through it, from the frequent deaths by lightning, and from the readiness with which atomo-electricity heats the whole body, when the surface thereof is exposed to its influence.

Electro-magnetism is most readily attracted, as well as carried off, by pointed substances; and hence the readiness with which the human body is heated or cooled by simply exposing the hands or the feet (pointed substances) to the fire or the cool air. The hair is also a pointed substance, and as nothing was made by the Great Creator in vain, we may be assured that *use* and not *ornament* was the purpose for which it was intended, and that the above purpose was that of transmitting electro-magnetism to the body, our own feelings as well as reasoning from facts daily presented to our view, sufficiently convince us of. To what else are we to ascribe that writhing and creeping, as well as bristling-up kind of sensation in the hair of the head, universally felt, when strong emotions move us, and so frequently alluded to by poets, and pencilled by painters. To what else can we ascribe the curious fact of every diseased blotch or pimple in cutaneous affections having invariably *a hair in its centre*, or of the hair of the head being bleached white by great mental emotion in a single night, a circumstance so analagous to the destruction of vegetable colours by the electro-magnetic currents of the galvanic trough, as to leave scarce a doubt of the hair owing the sudden destruction of its colour to similar currents rushing through it. We perceive in fact hair to prevail upon, or in the vicinity of parts in proportion to the importance for which they were designed, the head and face being most intensely covered, as appertaining to the most important organ of all, the brain, and the pubis the next so covered, as appertaining to the organs next in importance, viz. those for procreating the species; while the organs of sight, of hearing, and of smell, are all equally characterised by the long and bristly hairs surrounding them.

The depressing emotion of fear, from the paleness and cold shivering, as well as the bristling-up sensation in the hair which it produces, is evidently owing to the *escape* of electricity from the body, while that of joy and other similarly exciting emotions, by their heating and flushing effects, are in like manner evidently owing to the *entrance* of electricity into the body, because electricity being the power which produces heat, its intense escape will naturally chill and enervate the body as much as its intense entrance will flush and invigorate it. From the attactions of electricity and magnetism for bodies being the reverse of each other, it may therefore be concluded that the power of bodies to conduct them, must be the reverse of each other also: seeing that this power of conduction (as I have demonstrated in the early part of the work) must depend upon the attraction of the conducting bodies for the substances which they conduct, so that good electric must be bad magnetic conductors, and *vice versa.* All *dark* coloured bodies having, therefore, a *strong* attraction for atomo-electricity, must consequently have a *weak* attraction for atomo-magnetism, making them thus *good* conductors of the *first*, and *bad* conductors of the *last;* while again *light* coloured bodies having a *weak attraction* for atomo-electricity must, for the same reason, have a *strong* one for atomo-magnetism, rendering them good conductors of the latter, and bad conductors of the former. Dry wood being a bad, and moist wood a good *electric* conductor, so also dry bodies I conceive will be good, and moist bodies bad *magnetic* conductors. From the above, therefore, the *colour*, as well as the state of *humidity*, of the hair, must have great influence on the human temperament by the differ-

ent amounts of electricity and magnetism, which the different grades thereof are capable of conducting into the system, a conclusion sanctioned by the observation of all ages as to the colour of the hair influencing the disposition.

The different coloured rays of the sun containing (as I have previously exemplified) different proportions of electricity and magnetism, therefore different coloured hairs will naturally attract the rays corresponding to their colour, and thus render the temperament either a warm or a cold one, according to the respective amounts of electricity and magnetism which they are capable of conducting. Red-haired people have always been as noted for possessing warmer passions than those with other coloured hair, as the red rays of the sun have been for containing more atomo-electricity or heat than any other description of his rays, the white hairs of the Albino youth pourtraying, on the contrary, a temperament *naturally* cold, and the white hairs of old age, one made *artificially* so through the blanching of them from long continued electro-magnetic action; attracting the cold, pale-coloured rays of the sun according as they assimilate to them in tint.

BRAIN AND NERVES.

Although by the ready introduction of electric matter through the medium of the skin, as before exemplified, it appears evident, that local parts derive much of the electro-magnetism which retains them in health, or pushes them into disease, from *external* sources; yet some great internal reservoir must be required to supply the above when external sources fail, as well as to give a leading direction to all those energies primarily derived from internal impulses, or in other words from volitions of the mind. That the brain is this great reservoir our internal feelings tell us if nothing else did; while our external senses similarly point it out as the great centre to which all their currents tend—those senses by which we judge and form our opinions, viz. the senses of hearing, seeing, smell, and taste, all of which are concentrated round this great centre, for no other seeming purpose except that of a more speedy and intimate communication therewith. Mass-electricity and mass-magnetism, however, being contained principally on the surface of bodies, therefore we may conclude that it is contained principally on the surface of the brain, and that of the various lobules and cells into which it is divided, so divided in all likelihood for no other purpose except that of containing a large electro-magnetic amount in the least possible space. The brain being a fatty substance, and fat being a bad electro-magnetic conductor, we may presume that the membranes are the containing bodies, the brain merely serving as their insulator, to prevent a too promiscuous communication among the various organs of the head, by which their diverse functions might be less distinctly as well as less energetically pourtrayed. The nerves being mere prolongations of the brain, must necessarily be the ducts along which the electro-magnetic current poured out from the brain is conveyed; the pia mater being in all probability the membrane conveying it from (as well as of containing it in) the brain; while being conveyed along the outside of the nerves, they will thus be able to convey it in a larger mass as well as with less risk of injury to their structure than if their more internal parts had been made the medium.

The voluntary nerves are large and have few ganglia or plexuses, because the volitions of the mind through the electro-magnetic current requiring to be powerfully as well as quickly conveyed, large channels, free from retarding obstacles, are consequently required so to convey them.

The involuntary nerves, on the contrary are small, have numerous ganglia and plexuses, and communicate with almost every nerve of sense, or division of the brain; because the electro magnetic current to be conveyed is small, and consequently small ducts suffice to convey it: its impetus at the same time requiring to be checked by the retarding attractions of ganglia and plexuses, to prevent its too intense rush upon the vital parts; while an extensive system of sympathetic communication is demanded between these vital parts and every division of that great centre of sympathy, the brain as well as with the nerves conveying the external sympathies thereto, in order that those vital parts, on which all others are dependent for vital sustenance, may respond to every call which the brain makes upon them for a supply thereof to the parts of the body requiring such, over the whole of which parts it exercises so supreme a control.

The smallness of the origin of the vital nerves in the brain, and the retarding action of the ganglia and plexuses upon the electro-magnetic currents, will also prevent the will from exercising a direct influence over the vital parts; an influence which would necessarily tend to endanger life, by placing it under the unchecked control of all the passions and emotions to which the mind was exposed; and I doubt not but a dissection of those recorded to have been able to stop the action of the heart at will would have shown the origin of the sympathetic in the brain to be unusually large. That electricity is in considerable excess over magnetism in the human body, is evident by the general high temperature which it maintains; while considering nitrogen as carrying off the superfluous electricity, and oxygen the superfluous magnetism, we may presume that they were wisely apportioned in the atmosphere to the respective amounts of electricity and magnetism which the body contains. The nitrogen being double the amount of the oxygen in the atmosphere, it may be concluded that the amount of electricity in the human body is double at least that of the magnetism. The amount of electricity will thus be double also that of magnetism on the superfices of the brain; and as they always occupy opposite sides of bodies, they will in all likelihood occupy all opposite superfices of the pia mater, and consequently move along the nerves in the same way, unless it may happen that one moves along the inside of the dura mater and the other along the outside of the pia mater.

MUSCULAR ACTION.

An increase of electricity in bodies causing them to expand and a diminution of it in them to contract, so to an alternate increase and diminution of electricity in the muscular fibres, muscular actions may be ascribed, seeing that in the human body in a state of health, electricity exceeds magnetism, and therefore must render the latter subservient to its inclinations. The will has sufficient power to regulate the actions of the voluntary muscles, by impelling the electricity into one set while withdrawing it from another, and by this means cause an alternate elongation of the one and contraction of the other, thus enabling the voluntary muscular actions to be effected. We find, however, that all powerful exertions of the voluntary muscles require to be assisted by drawing a full draught of atmospheric air into the chest, which by its affinity for electro magnetism, attracts that of the contracting muscles towards the lungs, and thereby enables a stronger muscular contraction to be effected, than could be effected by the will alone. A curious example of this power of an atmospheric inhalation over the

electro-magnetism of the human body is shown in the singular ease with which one person may lift another from the ground, by making the effort at the moment of drawing in the breath, which attracting the electro-magnetism of the body toward the lungs, thereby diminishes the body's hemispheric attraction, or, in other words, its weight. To attain, however, this point, the person lifting must inspire at the same instant as the person lifted, otherwise the electro-magnetism of the former will flow into the latter, and thus in a great measure neutralise the effect aimed at. The action of the heart and arteries depending but little on the will, a different system of machinery is consequently required to carry it on.

I have before shown, that white bodies are bad, and coloured bodies good electric conductors: consequently, while the red muscular parietes of the auricles and ventricles are good conductors, the *white* tendinous partitions separating them are bad conductors; so that the electricity is insulated in the above parietes, until its quantity is sufficient to overleap, as it were, this tendinous barrier, and enable it to pass onwards. On the electricity, therefore, being poured by the great sympathetic nerve into the muscular parietes of the right auricle, the latter will consequently expand, thereby dilating the auricular cavity, and enabling the venous blood to flow freely into it. While, however, this expansion is taking place in the auricle, its adjoining ventricle is undergoing a corresponding contraction, from its electricity passing onwards to the left auricle, leaving the right ventricle thus in a fit state to attract the superabundant electricity from its auricle, and so transmit it onward through the left auricle and ventricle of the heart, and finally through all the vessels of the body, carrying the blood at the same time along with it in its progress by the vascular contractions and expansions which it excites.

[Our author has a chapter, which follows here, on the conception of the human system, but which we omit.]

INFLUENCE OF THE MIND ON THE FŒTUS.

The belief of objects influencing the fœtal growth and appearance through the medium of the mind, is too deeply in accordance with the human feeling ever to be shaken by any theory however plausible. It is indeed as old as the days of Jacob, when he placed the peeled rods before the conceiving flocks and herds, and thereby engendered a motley-coloured progeny; and if we dispassionately examine it, we shall find more and more reason to appreciate its justness. It is in fact nothing more than a manifestation of that influence which the mind, either directly or indirectly, exercises over every action, voluntary or involuntary, intellectual, mechanical, or chemical, in the human body. We excite the voluntary muscles to direct action, because the involuntary nerves have large communications with the brain, and are consequently capable of powerfully rousing the parts with which they are connected, by the energy of a single impulse, while the communications of the involuntary nerves with the brain being small, and the motion of the electro-magnetic current conveying the impulses also retarded by the influence of ganglia and plexuses; consequently the lesser energy of the impulse, as well as the retardation thereof, conduce to that deception we popularly labor under, of the will not exercising its influence over the heart, stomach, intestines, &c., the same as over the voluntary organs. In the involuntary organs, something like a forcing power is requisite to make the mind's influence sufficiently apparent, such a power as our passions or our fears conjure up; the heart, the stomach, the intestines, and, in fact, the minutest functional part being eventually influenced thereby, in proportion to the intensity or continuance of that power. Thus, joy, anger, surprise, and fear, all primarily agitate our hearts by quickening, diminishing, or rendering irregular its action,—sickness and vomiting probably next ensuing, according to the nature of the mental impression, even the intestines and bladder being ultimately affected in cases of great fear, causing an involuntary discharge of their contents by the escape of that electricity on which the expansion of their muscular coats depended.—The very thought of eating fills our mouth with saliva, while shame and anger flush our cheeks, and fear blanches them—all in obedience to that indirect mental impulse we all feel, but the theory of whose action defies all our powers of unravelment.

While warmed by the visionary contemplation of imaginary objects, we feel every thing thus pictured forth thrilling through us in intensity, proportioned to the exciting, soothing, or saddening sensations to which they give rise. We can in the mind's eye picture forth imaginary fields we intend to ornament, or houses to build, and I doubt not, were it permitted us to have the whole arcana of the mind tinted out in panoramic outline before us, we would find every object pictured forth before the mind's eye—pictured forth also in electro-magnetic coloring upon the portion of the brain destined for such impressions. The direct or indirect influence of the mind being such over all the feelings and functions, I see no just reason, therefore, why the same influence should not similarly affect the great function of the uterus in the moulding of the fœtus. In what other way can we account for the resemblance of the infant to the father or the mother, or to particular relatives whom the mother has been interested about, and consequently would have oftener in her mind's eye? and why should we not extend the same principle to every other object that moves her deeply during the early months of gestation, before the fœtal form was perfected?

Form, feature, colour of hair, as well as preternatural marks or mouldings, may all, I conceive, be produced by objects moving the feelings of the mother strongly during the above period. If she think much about the husband at this time, the child will be disposed to resemble him, and if much about herself, to resemble her: but as every object of nature that powerfully excited her would tend to similar results, I would therefore conceive the resemblance of a child to any other person beside the husband, as no more a proof of the mother's infidelity, than the various blemishes or deformities that might disfigure it. Hence the feeling seems founded in reason, which prompts husbands to comply with the fancies of their wives during gestation, as well as to guard against their witnessing any horrifying sights which might tend to disfigure the infant.

The different proportions of electricity and magnetism existing in the atmosphere at the period of the fœtal formation of hair and feature, will also have an influence thereon. Thus we find the hair and eyes of the mixed Gothic race born in the West Indies almost uniformly dark, while those of the same race, born in the polar regions, are more or less light-colcured, from electricity being superabundant in the first region, and magnetism in the second; and thus each forming the hair and eyes of a colour in accordance with its own affinities. It is as much to the natural superabundance of atomo-magnetism in the atmosphere, as to its intense reflection from the snow, that we may attribute the turning white of the coats of animals during the polar winters, a magnetic influence as destructive to the colouring matter of the eye as it is to that of the

hair: snow blindness and moon blindness being both referable to a blanching of the pigment of the eye by the atomo-magnetism reflected from the above bodies. If we carefully investigate into the causes of the different coloured hair and eyes of children, we may hereafter find that much of the above depends upon the earlier fœtal development being in summer, or in winter, or even when snow was upon the ground, or magnetico-epidemic diseases prevailed, the electric prevalence tending to darken, and the magnetic to whiten, every susceptible body exposed to their influence.

THE NERVOUS INFLUENCE.

DEFINITION OF SELFISHNESS.

We have a natural aversion for painful, and a natural wish for pleasing sensations, both moral and physical. We therefore endeavor to avoid whatever causes the one, and to seek whatever produces the other, as far as lies in our power. The feeling is in itself innocent and allowable; indeed, it forms part of our nature, and cannot be destroyed; but it may be so strong as to overcome every consideration for the comfort and happiness of others—this excess is selfishness, which if not repressed, draws us more slowly, but more irrevocably in the path of vice, than the violence of passion. By degrees, all that opposes our gratification becomes hateful; we acquire an aversion for all those who may interfere with this object by their own views, their authority, or even their existence: the feeling grows more insatiable by indulgence; we end by overthrowing every barrier that opposes us, and by perpetrating every crime that is necessary for the accomplishment of our designs. Such is the course of the cold-blooded villain; and if I were to decide upon the temperament of Satan, I should pronounce it to be phlegmatic.

SELFISHNESS INNATE.

Selfishness, as far as it consists in an immoderate desire for self-gratification, is innate, and forms part of the animal character which may be easily observed in children; but the evil feelings which frequently accompany extreme selfishness grow from it by the culpable operation of the mind, in consequence of the opposition which the passions of others present to our views and wishes—we bring into the world an unreasonable desire to *please ourselves*, but not to *injure others*. The malignant passions are what I call spiritual vices, and have not, like irascibility, cowardice, gluttony, etc., their origin in the nervous constitution. Hatred, malice, revenge, and envy, form part of the black catalogue. Of all these revenge is the most natural, and envy the least; because it is a painful feeling excited by the happiness of others, even when it does not interfere with our own. I therefore look upon it as the climax of spiritual depravity.

SELFISHNESS THE MORE USUAL ATTENDANT OF THE PHLEGMATIC CHARACTER.

Selfishness is the more usual attendant of the phlegmatic than of the ardent temperament; because it is more compatible with deficiency than than with excess of feeling, and it is of course more likely to inhabit a *cold* heart than a *warm* one. The ardent temperament is also more susceptible of mental and bodily pain than the phlegmatic; and we generally find that those who have suffered most know best how to feel for others.

GENEROSITY NOT CONFINED TO THE ARDENT TEMPERAMENT.

I am far from asserting, however, that generosity of feeling exclusively belongs to the ardent temperament; on the contrary, it is in the phlegmatic character that sensibility is the most pure and disinterested, when it *does* exist, because it is free from passion, and from any view to selfish gratification. But then we only meet with it in minds of a certain cast, whereas sensibility *pervades* the ardent temperament, owing to the superior delicacy of the nervous organization; in one temperament it is constitutional, in the other it is not.

DEFINITION OF SENSIBILITY.

This will be best understood, by defining the term sensibility. It is, I apprehend, the combination of a quality of the mind, and a peculiarity of the nervous constitution. When a benevolent turn of mind is united to a strong nervous susceptibility, it constitutes genuine sensibility. Benevolence without delicacy of feeling, is mere good nature: susceptibility of feeling, without benevolence, is mere irritability.

SENSIBILITY OF THE ARDENT TEMPERAMENT.

Genuine sensibility most naturally belongs to individuals of ardent temperament and powerful intellect. The weaker the mind, the more it assumes the character of nervous irritability; and this causes us to feel more keenly for ourselves than for others. True sensibility may be met with in phlegmatic individuals of high intellectual powers; otherwise this constitution is seldom troubled with any stronger sentiment than goodnature. Goodnature is, however, the first degree of sensibility; for it is a feeling of general benevolence—a feeling that leads us to sympathise with our fellow creatures in their grief and joy; and to alleviate the one and contribute to the other, as far as lies in our power; but the sympathy is neither deep nor permanent, and the good will is too indiscriminate to call forth much corresponding sympathy. We find four different kinds of sensibility in the four different classes of character.

SENSIBILITY OF THE STRONG MIND AND ARDENT TEMPERAMENT.

First, the sensibility of the strong mind combined with the ardent temperament, which is of the source of all the *natural* great qualities of the mind, that is, of the qualities that are born with us, and that develope themselves before external causes operate any change in the disposition: an innate love of truth, a high sense of honour, and an exquisite delicacy of feeling adorn this lofty character—enthusiastic in friendship, devoted in love, magnanimous in enmity, generous and humane to all suffering beings—this favorite of nature is formed to command admiration and captivate the affections. But long-continued happiness seldom falls to the share of so susceptible a being; and in a world of cares and troubles the joys of life can only serve to brighten his horizon with a transient light, as the aurora borealis illuminates the northern skies with a temporary splendor—deep, tender, and impassioned, this kind of sensibility is too apt to prey upon the heart that harbours it, and to wear out the constitution by exhausting the nervous energy.

SENSIBILITY OF THE WEAK MIND COMBINED WITH THE ARDENT TEMPERAMENT.

If the exalted sensibility of a great mind be a fatal gift, how much more detrimental to the happiness of its possessor is the susceptibility of a narrow mind combined with the ardent temperament; the feelings are keener, the power of regulating them weaker, and the capability of sublime enjoyments, which is some compensation to an elevated mind, is totally wanting: to which may be added, that the morbid irritability of the body, especially of the stomach

(that scourge of the ardent temperament) is borne with less patience. In this character, the acuteness of the sensations creates an eagerness for the gratification of every wish, that gives a certain degree of selfishness, though this quality is not natural to the ardent temperament, and it causes an impatience under the slightest opposition, that is one of the chief causes of ill temper. Ill temper! thou troubled and harrassing spirit, sent by the enemy of mankind, to blast all who yield to thy influence! who keepest more than half of the human race within thy dark and stormy dominions! what an abode of peace, and joy, and love would this earth be, if thou wert only exterminated! Villains and their crimes only disturb us at times, as tempests obscure the summer sky; but where thou spreadest thy dusky wings, the brightness of the daily sun is lost, and the flowers that spring up in the thorny path of life are blighted under thy baneful shadow! Unfortunately, this quality does not belong exclusively to the weak and narrow minded: the most highly-gifted mortals are equally liable to irritability, especially if harrassed with chronic diseases, but in this case it is usually accompanied by generous feelings, while, in the former, it is apt to shew itself implacable, blind, tenacious, and incorrigible; increasing in acrimony with increase of age. The reflexion and experience of years often calms the turbulent passions of a strong mind at the decline of life; when all earthly things are passing away, the storms of the world cease to darken the mental horizon; their thunders roll at a distance; and the decaying light of a great intellect sinks, tranquil and unclouded, with all the softened splendour of the setting sun. We have now considered the defects that often attend *mere nervous* sensibility, which is certainly an enemy to inward peace, productive of vehement and ungovernable passions, of a jealous and unreasonable wish to monopolize all the affections, of a vain conviction of a superior delicacy of sentiment, and of all the evils that result from the ascendancy of the imagination over the judgment.

PHLEGMATIC TEMPERAMENT WITH MODERATE CAPACITY.

We can hardly find a greater contrast to the nervous irritability of a weak and ardent mind than the calm and placid feeling of general benevolence that constitutes the sensibility of a plain phlegmatic, supposing the goodness of heart, and the capability of the understanding to be equal in both individuals, the surface of their minds will present as different an appearance as the smooth summer lake reflecting the soft beams of an unclouded moon, and the restless ocean fretting upon a rocky shore in a stormy latitude. Natural, cheerful, and unpretending, obliging without effort, and without display, goodnature is always pleasing, though its indiscriminate application diminishes its value in our eyes; for I believe that we would rather be harrassed by those who love us *exclusively* than made easy and comfortable by attentions that must be enjoyed in common with others.

PHLEGMATIC TEMPERAMENT COMBINED WITH A STRONG MIND.

The sensibility of a high-minded phlegmatic, at once rational and tender, is *formed* by the reason and the imagination; it is not a natural quality, but a superstructure raised by these faculties upon a foundation of innate benevolence. This kind of sensibility, which is rare, because it does not belong to the natural character, may easily be distinguished from every other by the period of its developement, for it appears after the reason is matured, and it gains strength with increase of years; whereas mere goodnature and nervous sensibility shew themselves in early infancy, and lose their warmth (the latter at least) when the feelings are blunted by age. If we could look for *true* happiness, which can only be obtained in proportion to our capability of bestowing it upon others, we must seek it in this beautiful combination of diffused benevolence and particular affections; in this angelic feeling of love and charity to every fellow-creature, guided by the reason to every useful purpose, without the least reference to self, and accompanied by an unaffected simplicity that neither seeks nor shuns the attention of the world, to which it is indifferent, only looking to the approbation of the Father of Mercies, and the eternal reward of the just. If the human mind can be imperturbable, it must be where successful benevolence produces a sublime feeling of satisfaction, and ingratitude rouses pity rather than indignation; where every sentiment of anger and impatience is extinct, and that we say with the angels, in all sincerity, and at all times, "Peace, goodwill towards men."

From this explanation it will be sufficiently evident that I have no intention of utterly denying sensibility to the phlegmatic character, nor indeed can I deny some portion of selfishness to the ardent temperament: for bad tempers may be found combined with every degree of intellect, and those who indulge irritable feelings at the expense of the feelings of others are certainly selfish so far. Hence generosity and selfishness sometimes exist in the same character: this may seem paradoxical, but it is only one of the innumerable inconsistencies of our nature.

ADVANTAGES BALANCED IN EACH TEMPERAMENT.

Hitherto I have seemed to bear hard upon the phlegmatic temperament, but I do not suppose that merit belongs to one constitution rather than to the other—each possesses its own peculiar advantages and disadvantages. If the vices of the phlegmatic temperament are of a darker hue than those of the ardent, its virtues are of a more pure and intellectual cast: if the malignity of the phlegmatic character is more iniquitous than the violence of the ardent spirit, the virtues of a mind superior to every passion, acting habitually from moral and religious principle, and in the full and uniform possession of its own powers, commands more respect, though perhaps less love, than the natural goodness of a warm heart, whose influence is partly involuntary. Kind feelings are, it is true, most natural to the ardent temperament, springing spontaneously therein, as fragrant shrubs spread in the wildest luxuriance under the influence of a tropical sun; but good principle can supply their place in a colder constitution, and lead us further and more steadily in the service of others, than even the most refined sensibility, unless this be aided and regulated by a very sound judgment. A high degree of sensibility under the *complete* control of the intellectual power would constitute perfection: such a combination of the noblest attributes of each temperament, does not belong to the nature of man; but it was the character of our Divine Model which we must imitate, by curbing our feelings, if they are violent, and by forming and elevating them, if they are deficient. The last duty may appear to some quite impossible; but there is no imperfection which the mental power, vigorously exerted, may not remove with the Divine assistance. Under the influence of high motives, our spiritual part may overpower the animal nature, and by its constant operation, *create* sentiments pure and noble, and worthy an intellectual being. The phleg-

matic character possesses the capability of being *moulded* by the rational powers; the feelings of which it is susceptible are not violent, but steady and deep; they are more equable, and consequently productive of more tranquil happiness to the objects on whom they are bestowed, than those which appertain to the ardent temperament. The latter, indeed, shew more passion and raise stronger emotion, but strong emotions do not constitute true happiness. The sparkling flame that expends itself in blazing to the skies, and the impetuous torrent that pours its waters for a season through the arid plain, are far less useful than the silent and steady sunshine that illuminates each day of our existence, and the gentle current that bears us smoothly on in its tranquil bosom.

PHYSICAL CHARACTERISTICS OF THE PHLEGMATIC TEMPERAMENT.

The phlegmatic temperament is distinguished by light air, eyes, and complexion. This physical attribute pervades it throughout, except where a modification has been produced by intermarriages between the two temperaments. In this case, the characteristics of each are softened and blended, and sometimes, but rarely, the physical distinctions of the one are joined to the moral and intellectual character of the other. The complexion excepted, a greater variety may be observed in the physical characteristics of the phlegmatic than of the ardent temperament. In combination with a firm fibre, it exhibits athletic strength, and the giant belongs to this temperament, while the dwarf is more frequently found in the other: when, on the contrary, it is united to a lax fibre, it shews weakness in every degree. The first combination is best exemplified in the heavy English clown: as the individuals in this class generally intermarry, they are more likely to show the peculiarities of the constitution in all its purity; here, the round head, the dull eye, great ears, low forehead, clumsy form, and above all the flat instep, proclaim the phlegmatic temperament without intermixture. A good-humored corpulency and the glowing hue of health, are its frequent accompaniments, for physical strength and a placid temper can hardly fail to produce a wholesome enbonpoint; the freshness of youth is preserved longer, owing to the absence of irritability. The senses are often dull, but this arises more from a tardiness of communication between the external organs of sense and the sensorium, than from any organic defect; the length of the interval, which I have marked distinctly, I ascribe to a sluggishness in the motion of the nervous fluid. When the phlegmatic temperament is united to a lax fibre, and runs into *length*, it exhibits more gentility in the external appearance: the form is more slender, the head smaller, the limbs more delicate, and the activity resulting from a light and supple frame supplies, in some measure, the place of strong muscles and large bones. The characteristics of the phlegmatic temperament, thus softened down, are more suitable to the female than to the male sex, for they may combine all that makes woman lovely. The eye of heavenly blue, the light brown hair, the complexion of lily white, mingled with the soft tints of the rose, the round limbs and slender shape, and the angelic sweetness of a countenance unruffled by the storms of passion, which constitute the charms of a northern beauty, are irresistibly attractive.* At the same time, the phlegmatic temperament is by no means incompatible with manly beauty, when it exhibits the majestic mien, noble stature, and calm dignity of a Hercules, and can be likened to "Il leon che posa," as Dante would express it; but this style of figure and appearance is as rare as the happy combination of strength and tranquillity which it denotes.

* Such is the wife that a prudent man ought to choose; for the most rational expectation of a constitutional quiet temper is derived from a fair complexion, unless some confusion in the hereditary qualities has arisen in consequence of cross-marriages. Above all, I would recommend it to all those who value a peaceful life not to select a short woman, with black hair and a strong fist.

THE PHLEGMATIC TEMPERAMENT COMBINED WITH A WEAK INTELLECT—INTELLECTUAL CHARACTERISTICS.

Dulness of perception, weakness of memory, total want of imagination; the ideas are few, and the notions are formed with slowness and difficulty. From the imperfection of the intellectual and mechanical action results every degree of stupidity, down to idiocy, which shows a morbid deficiency of the cerebral power.

THE FEELINGS—GOOD QUALITIES.

Mildness, gentleness, meekness, goodnature, evenness of temper, contentedness, humility, patience, taciturnity, industry, frugality, an exact but often mechanical performance of the moral and social duties, and the absence of every violent feeling.

PASSIONS.

Avarice is as much the constitutional passion of the phlegmatic, as ambition is of the ardent temperament; but it is seldom found in combination with a strong intellect. It is the *only* passion of a feeble phlegmatic mind, the feelings in general being too weak to come under that denomination, except in some few hearts so thoroughly indisposed as to harbour envy and cold malignity.

EVIL QUALITIES.

Here we may find the greatest degree of selfishness, sensuality, covetousness, sullenness, obstinacy, ingratitude, and insensibility; a weak and indolent disposition, and a total want of mental as well as bodily energy. The temper, though not irascible, wants generosity, and when once offended is not easily appeased; for placability can only be the virtue of a strong mind or a warm heart, unless it is created by the power of religion. Low cunning, and a propensity to thieve and to lie, are sometimes to be met with, but this may result from a bad education and narrowness of intellect, in either temperament. The defects of the phlegmatic character are most apparent in uncivilized man, who exhibits a sullen ferocity, mingled with cowardice and cold-blooded cruelty, instead of the fierce and heroic courage of the savage of ardent temperament.

THE PHLEGMATIC TEMPERAMENT COMBINED WITH A STRONG INTELLECT—PHYSICAL CHARACTERISTICS.

The energy which is derived solely from strength of the intellect, and not from the constitution of the nerves, cannot be supposed to modify the external form; we even find that a great mind, in this case, may animate a frame of the most unpromising appearance, but the countenance will reflect the benign intelligence and dignified composure that reigns within us, as in the opposite temperament we see the animated and ever-varying features illuminated by a soul of fire.

INTELLECTUAL CHARACTERISTICS.

The mental powers in this constitution are more characterised by solidity than brilliancy, and their mode of operation may be described by the motto, "slow and sure." The perception is clear, the judgment sound, the reasoning faculty strong; the imagination participates in the strength of the other in-

tellectual powers, but though it may be *fertile* it cannot be *lively*, unless it is animated by a combination of the two temperaments. Wit derives so much assistance from the rapidity of the cerebral action, that we never find it in a constitution totally destitute of nervous energy, and the inventive power of the purely phlegmatic brain is always of a serious cast.

ITS FEELINGS—GOOD QUALITIES.

It is in this character that we usually find fortitude, justice, temperance, prudence, discretion, probity, cool and steady courage, firmness of purpose, unwearied perseverance, unshaken constancy, inflexible integrity, universal charity, candour, forbearance, equanimity, purity of mind, habitual serenity, calmness and moderation in prosperity, resignation in adversity, and an equal, mild, and rational spirit of devotion; to which are sometimes added, feelings profound and unchangeable, lying too deep to be within the reach of common observation. Here truth and honour find a secure foundation in conscience and principle, while, in the ardent temperament, they have sometimes no other support than good feeling, which is not calculated, from its nature, to form the sole prop of human virtue.

EVIL QUALITIES.

If the disposition is unamiable, it shews selfishness, pride, haughtiness, reserve, frigidity, sternness, implacability, tenacity of opinion, uncharitableness, hypocrisy, suspiciousness, want of liberality combined with ostentation, and the absence of every generous sentiment. When angry feelings arise, they have their source in wounded pride or disappointed selfishness. The passion of anger does not then burst forth with fury and vehemence: it shews itself by the cutting sarcasm, the bitter taunt, the cold sneer, the merciless reproach, or it is concentrated and broods in sullen silence within the dark recesses of the soul.

OBSERVATIONS—VARIETY OF CHARACTER IN THE PHLEGMATIC TEMPERAMENT.

The phlegmatic temperament contains a greater variety of characters than the ardent, because the reason frequently effects great changes in the feelings of the former, while those of the latter, in general, only require to be *moderated*. In the phlegmatic temperament, the intellectual and animal parts of our nature are sometimes characterised by *opposite* qualities, and the mere development of the understanding has often effected such an alteration in the disposition, that the boy has been scarcely recognizable in the man. The natural operation of a good intellect is to elevate the mind, and instances have occurred within my own observation, in which selfishness, sensuality, duplicity and pusillanimity, have been entirely superseded by disinterestedness, sincerity, courage, and temperance. A *partial* change causes great inconsistencies in the internal feelings, if not in the external conduct. Of all characters, this is the most difficult to understand: when the constitution is phlegmatic, and the judgment directs the actions and governs the feelings, the natural disposition may escape the penetration of the keenest observer, while the ardent character stands revealed to every eye, that is, with respect to its qualifications; for discretion is by no means incompatible with it, when the intellect is good.

ANIMAL CHARACTER HEREDITARY.

Such, in my opinion, are the general effects of the nervous influence upon the character; many errors may have crept into the enumeration of the attendant qualities, but with regard to the hypothesis, every observation during a course of years has strengthened my conviction of its correctness.

I have only to add, that the ardent and phlegmatic characters are *hereditary*, that is, as far as they are influenced by the nervous action. The talent which often prevails through whole families, once led me to suppose that the powers of the immaterial principle were inheritable; but this opinion, which to me was always unsatisfactory, has given way to the belief, that family talent is attributable to the inheritance of the nervous constitution, and need not imply any transmission of the pure intellectual powers. The physical constitution is certainly hereditary; and if the energy of a well-constituted brain gives facility to the mental operations, we may attribute family talent to the transmission of *family brains*, especially as it is observable that the powers thus inherited are precisely those which derive the most assistance from the cerebral action. The inheritance of the character is more evident in the brute than in man, because it does not, as in a rational being, undergo any change from the development of an intelligent power; besides which, each temperament runs through a whole species (except in the horse, the dog, and the monkey tribe), while man exhibits each of the two,* and a mixture of both, from intermarriages.

In general, the best, because the most moderate characters, result from the union of families differently constituted. When both the parents are phlegmatic, the progeny is generally dull, and destitute of natural talent; when both are of the opposite character, the offspring frequently surpasses them in vehemence of feeling. Most usually, the effect produced by the union of opposite characters is a difference of temperaments among brothers and sisters.—In this case, the physical attributes of one temperament are *sometimes* combined with the mental attributes of the others, both shewing a milder cast of character.

The same temperament may be traced through a whole nation, when it is not of a mixed origin. Generally speaking, we find that the inhabitants of warm latitudes are of the ardent temperament, and those of cold and damp climates, phlegmatic. But the nature of the temperament cannot be entirely attributable to climate; for I have observed that families preserve their own distinguishing characteristics through succeeding generations in every climate.—Thus the northern and southern Irish, who are of a different race, still shew a great difference of character, though inhabiting the same latitude: the first are of Scotch origin, and the latter are supposed to be a colony from Spain, which their warmth of temper renders, I think, not improbable.† The English, who derive their origin from several nations, perhaps exhibit a greater mixture of temperaments and variety of character, than any nation under the sun, but the phlegmatic certainly predominates. The ancient Britons were of the ardent temperament (as the Welsh temper can testify), and also the Normans; but the Saxons and Danes were of the opposite constitution. The Spaniards, Portuguese, Italians, and Greeks,‡ are of the ardent temperament; the Germans, Swedes, and pre-eminently the Dutch, are phlegmatic.

PARALLEL BETWEEN THE ARDENT AND PHLEGMATIC TEMPERAMENTS.

The advantages and disadvantages of the two temperaments seem to be nearly balanced. The ardent

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* Might we not account for this, by supposing that Adam and Eve were of different temperaments? In this case, some of their progeny might inherit the one, and some the other.

† The Scotch phlegm, however, is confined to the Lowlanders—the Highlanders are of the ardent temperament.

‡ The ancient Thebans were phlegmatics.

temperament gives more facility to the attainment of intellectual superiority, and the phlegmatic to the acquisition of moral qualification, because the *strength* of the nervous action gives vigour to the mental operations, and waywardness to the feelings, and its *feebleness* produces the opposite effect. The intellect never blazes forth with such splendour in the phlegmatic as in the ardent temperament; but the reason gives a more steady light, by which the mind is better enabled to avoid the errors resulting from prejudice and from enthusiasm. Indeed, the weakest mind may pursue its course in the path of virtue and truth with more security in this temperament, by the help of the humility, meekness, and resignation, which are its characteristic virtues. Perhaps we might, at a first view, be tempted to give the preference to the phlegmatic constitution from these considerations; and so we ought, if the other was compelled to retain its imperfections; but this is far from being the case, and as merit is proportioned to exertion, the balance even preponderates in favour of the ardent temperament, when its powers are directed to the correction of constitutional defects: the task of the phlegmatic character being more easy, it is more responsible, and its faults are less pardonable. The latter labours under this disadvantage, that although it may be equalled by the ardent character in moral perfection, it cannot in return equal it in intellectual attainments, even supposing the intellect and the exertions to be as strong, for the best workman can never execute so good a work with blunt tools, as one of the same ability with excellent instruments. However, when the physical constitution is sound, and the intellect powerful, the deficiency of the nervous action is sometimes too trifling to produce any very sensible effect; it is disease that displays the difference in a striking manner, by increasing the irritability of one constitution, and the languor of the other.

COMPARATIVE HAPPINESS.

There is one point, however, in which the phlegmatic individual has the decided superiority, that is, in the possession of *this* world's happiness. My assertion will, I think, easily admit of proof. When pleasure and pain are felt keenly, the portion of suffering must exceed that of enjoyment, because we are most liable to physical and moral pain, not only from the present constitution of this world, but from our own perverseness and want of judgment. Again, every rational mind will acknowledge that violent and tumultuous sensations, even of the pleasurable kind, do not produce true happiness, and that the excess of joy is even painful. The calmness and habitual serenity of the phlegmatic character (supposing it to be well disposed), is far preferable to the strong emotions produced by the gratification of the most ardent wishes; and who does not perceive that the more eager are the wishes, and the more exquisite the satisfaction, the greater is the dread of losing the blessing we possess, and of seeing what no human power can retain escape in a moment from our grasp? The moderate and reasonable enjoyment of what is granted to us, and an habitual preparation for the hour of trial, when it may be withdrawn, can hardly be expected from a mind possessing acute sensibility; while the well-regulated phlegmatic character enjoys a peace and tranquillity which is, in a great measure, independent of external circumstances, because it arises from the habitual subjection of the feelings to the government of the reason.

CONCLUSION.

Moral Inference.—The conclusion which we may draw from this general view of the human character is, that our advantage is in proportion to the preponderance of the intellectual power over the moral and physical sensations, and that all our exertions must be directed to the acquisition of this spiritual dominion. Man seems to be a compound being—not merely a being possessing a body and soul, but one in whose mind two different natures are united, viz. an animal and an intellectual nature. We possess many feelings and inclinations in common with the animal creation; and in proportion as the immaterial principle gives way and is governed by the sensations, or rules and directs them, we descend towards the brutish, or rise towards the angelic nature. The pride of man disclaims all relationship with animals; but as we are too apt to imitate them by following the impulse of our feelings, without consulting our reason, it is better that we should be aware of the connexion, that we may make it as distant as possible. It is not by acknowledging that we *have* animal qualities, but by weakly yielding to their influence, that we degrade ourselves; and it is when we consider our natural disposition as a sufficient excuse for the violence of our conduct, that we forget our true rank, and do injustice to the powers of the will and the understanding. The strength of the will is usually proportioned to the violence of the character; for we find that those who have strong passions can show a determined will in overcoming every obstacle to indulge them. Why not employ this resolute disposition in *opposing* them? But unfortunately, the motives placed in the opposite scale are seldom sufficiently weighty to overbalance the violence of the sensations. Here we may see the utility of religious feeling, which is always sufficient if it is *sincere:* while prudential considerations, and even the strongest earthly affections, are too weak to stem the torrent of the passions. The duty of self-control is imperious and indispensable; brutes alone are incapable of governing themselves; but their passions and inclinations are regulated by instinct, and are given for the express purpose of directing their actions; whereas ours are chiefly intended as a means of trial and temptation in our course of moral discipline through a life of probation. The soul of man is not formed for a state of vile subjection to the moral and physical sensations. Let us therefore use to their utmost extent the noble privileges that give us an elevated rank in the creation, and that enable us to trample upon our animal nature, and to qualify ourselves for our future glorious destination.

MISCELLANEOUS.

AERIAL EXPERIMENTS.

During the preparatory arrangement for my 38th ascent, made from Gettysburg on the 10th inst., it was suggested by Professor Jacobs, of Pennsylvania College, in company with several other scientific gentlemen, to make some experiments upon the spiral ascent of the small Balloons that were sent off as pilots. Having often noticed that they revolved in a direction opposite to the revolutions of the hands of a clock, lying with its face upwards, Professor Jacobs proposed that the remaining two pilots should be started with a rotary motion opposite to that which they assumed when let off uninfluenced. Accordingly they started with considerable impetus in that way, but invariably, that motion subsided, and the first mentioned took effect, and continued as far as they could be seen, which was until they passed into the clouds. The large Balloon also revolved in the same way; and in pursuing these experiments, by throwing down, when above the

clouds, substances of different kinds and shape, they all fell with a rotary motion from right to left in front, the same as the Balloon. The atmosphere at the time of starting—12 minutes before 4 o'clock,—was perfectly calm and the heavens were completely partitioned from the earth, by a thin layer of clouds. In 15 minutes from the moment I left the earth the Balloon penetrated the clouds. The height from the earth to the clouds was 3900 feet thick. The air, as I ascended, became slightly colder, until entering the clouds, when it became somewhat warmer, and when emerging from the upper side, the sun shed his rays most powerfully upon the Balloon and my body. The expansion of the gas from this point caused an accelerated ascent.

The phenomenon of refracted light was beautifully displayed on the clouds beneath when viewed from a distance above them, and my attention was particularly drawn to its operations. It appeared on this occasion, that the cause assigned to its production on a former voyage, was not altogether correct, as there was no profuse escape of gas at this time, and none except what escaped by diffusion.

The shadow of the Balloon was well defined on the clouds, and the halo formed of the prismatic colors, was brilliant; the lower point of the shadow was a little above the centre of the halo, and in the centre of the halo was a dark spot, which appeared to be the shadow of the car.

There also appeared a fainter shadow, a little below the centre downwards, as represented in the wood cut, which at times was nearly as well defined as the upper, but in general very imperfect, sometimes resolving itself into a mere line, then suddenly flashing outwards again, much in this respect like the waving motion of the Aurora-Borealis; this motion I discovered was caused by different degrees of thickness of the clouds as they passed along. The halo and shadows varied in size, as the Balloon ascended or descended whilst sailing above the clouds. What appeared most remarkable to me, was the appearance of this Phenomenon after the Balloon had descended between the clouds and the earth. The clouds had in places dispersed, and whenever the Balloon fell into the sun's rays, the prismatic colors were displayed on the green grass, and over the tree tops, but not in regular circles, at least not so in appearance. It appeared more like the light of a distant fire, when reflected in the atmosphere. During the early part of the ascension, when several thousand feet from the earth, there appeared a magnificent sight towards the west. A large space of the mountainous region was receiving a flood of light from the sun, which gave it a peculiar lustre, such as I have never yet seen, though it has often happened that the sun was only shining in spots: the country all round lay in deep shadow, giving it a deep contrast. On entering the clouds, I discovered them to have a more milky appearance than is usually the case. It was also a general remark by the spectators on my return, that the Balloon "looked white," as it passed deeper into the clouds until it was entirely lost to sight. After remaining in the atmosphere eight minutes less than an hour, I descended through the clouds and found that I was within a mile of the starting point, when I finally reached terra firma 2½ miles from the place of departure.

These interesting facts are given with as much precision as sketching and noting the exact appearances could render it. The height of the clouds was taken by Professor Jacobs, and the result of these experiments and observations was promptly submitted to his investigation.

In conclusion I would remark, that there are various causes by which the appearance of this Phenomenon may be effected. First, the medium round the Balloon may be rarified by the action of the sun on the black silk. Second, the diffusion of gases whilst the Balloon was almost stationary. Third, the peculiar state of the clouds at the time. Fourth, the prismatic colours may have been formed on the opposite side of the clouds from me, as the stratum was thin, and at places I could faintly see the earth through it, as it had very much that appearance, from the fact that the colors were seen on the earth. These interesting details are thus submitted to the public's philosophic consideration, by your obedient servant,

JOHN WISE.

Lancaster, September 14, 1842.

Intelligencer and Journal.

INFLUENCE OF ELECTRICITY.

Extracts from Dr. Madden's Infirmities of Genius.

In the south of France, there are whole vine-yards in which numerous electrical conductors are attached to the plants for the purpose of increasing the progress of vegetation, & of invigorating the vines. In the same manner does electricity act upon the animal body, the circulation being quickened by its stimulus, and the fluid driven through the small capillary vessels with increased velocity.

Some recent discoveries of Dr. Wilson Philip have proved that the circulation in the smaller capillary tubes may continue some hours after apparent death, and that their current in life is not synchronous with the motions of the heart, so that the ordinary theory of the circulation of the blood is inadequate to its explanation. An observation of Brydone however throws no little light npon the subject. "If you cause water," he says "to trickle through a small capillary tube, the moment you electrify the tube the fluid runs in a full stream. ☞ Electricity," he adds, "must be considered the great vivifying principle of Nature, by which she carries on most of her operations. It is the most subtle and active of all fluids. *It is a kind of soul which pervades and quickens every part of nature.*"

When an equal quantity of electricity is diffused through the air and over the face of the earth every thing is calm and quiet, but if by accident one part of matter has acquired a greater share than another the most dreadful consequences ensue till the equilibrium is restored; nature is convulsed with earthquakes, whirlwinds, lightnings, meteoric projections, &c. But it is not the elements alone that are thrown into disorder by these electrical changes: every thing that is organic is effected by them. The vigour of plants is increased or diminished, as also the nervous energy which has presidency over animal functions. Especially is this observable in persons of delicate health. They are ever and anon exalted or depressed according to the direction of the wind. Who has ever experienced the effects of the Sirocco of the south of Europe, the poisonous Kamsin of the east, or even the summer south-east wind of our own climate (England) without feelings of indescribable lassitude, not to be accounted for by any alterations of temperature, but obviously owing to the electrical changes superinduced. During the prevalence of these winds the atmosphere is almost altogether deprived of electricity, and the nervous system, simultaneously, is deprived of its vigour. In damp weather, likewise, when electricity is absorbed rapidly by the surrounding moisture, every invalid is aware how unaccountably dejected his spirits become and how feebly the various func-

tions of the body are performed, especially those of the digestive organs. This state of morbid irritability in the whole frame continues till the north or west wind "awakes," as Brydone has well expressed it, "the activity of the animating power of electricity which soon restores energy and enlivens all nature."

In very frosty weather on the other hand, when the atmosphere is surcharged with electricity, there is a corresponding elevation of the spirits which sometimes amount to an almost painful state of excitement. In our temperate climate, perhaps, this phenomenon is seldom witnessed, but to a certain degree the exhilarating effect of very cold dry weather is evident enough.

Rosseau has eloquently described the extraordinary elasticity of spirits which he experienced in ascending some of the higher regions of the Alps.

The painful effects arising from too much electricity in the air were experienced by Professor Saussure and his companion. While ascending the Alps they were caught in the midst of thunder clouds, and were astonished to find their bodies filled with electricity, and every part of them so saturated that sparks were emitted with a crackling noise, accompanied by the same painful sensations which are felt by those who are electrified by art.

Larry, in his memoirs of the Russian campaign, mentions his having seen similar effects: on one occasion, he says, when the cold was excessive, the manes of the horses were found electrified in a manner similar to that described by Saussure.

Natural electricity has hitherto been little investigated except in the case of its evident and powerful concentration in the atmosphere. Sir Humphrey Davy says of it—"its slow and silent operations in every part of the surface of the globe will probably be found more immediately and importantly connected with the order and economy of nature, and investigation on this subject can hardly fail to enlighten our philosophical systems of the earth, and may possibly place new powers within our reach."

Priestly sums up his opinions on this subject in these emphatic terms:—"Electricity seems to be an inlet into the internal structures of bodies on which all their sensible properties depend; by pursuing therefore this new light the bounds of natural science may possibly be extended beyond what we can now form any idea of; new worlds may be opened to our view, and the glory of the great Newton himself may be eclipsed by a new set of philosophers in quite a new field of speculation."

Dr. Paris, in his biography of Sir Humphrey Davy says, "he (Sir Humphrey) supposed the heat of the animal frame to be engendered by electricity; taking it furthermore, to be identical with the nervous fluid—*sensations being* in his view *motions of the nervous ether exciting medullary substance of the nerves and brain.*"

THE PAST AGES.

We are struck with amazement at the wonderful remains of former times. In every quarter of the globe we find some interesting memorial of by-gone ages. The spirit of investigation has opened the entombed cities of Herculaneum and Pompeii, and presented to our view the people and their mode of living—with their advance in the arts and sciences, at their era of existence. In the pyramids, we trace a people that have long since left the stage of existence—but have given us strong indications of their matchless achievements. Nature, too, hath opened up her great volume for us to see the relics of a race of animals that have written their history by their bones. The immense amount of the mere remains of the extinct races, that are to be found on the land, and on the margin of the sea, proclaims the might of a God who called every thing into existence by the word of his power. The wonderful amount of mammoth skeletons that have been found is truly astonishing. Henderstrom, in his journal, says that the bones of this animal may not inaptly be called the peculiar produce of Siberia and the Northern Islands. He observed, that the farther he proceeded towards the north, the smaller in size, but the more abundant in quantity, became these relics of a former world. In the Lachow Islands it is a rare circumstance to discover a mammoth's tooth weighing more than 3 poods, equal to 108 lbs. English; whereas, in the interior Siberia it is not an uncommon thing to meet with one of four times that weight. On the other hand, the immense quantities of these bones found in the Siberian Islands, form one of the most remarkable phenomena connected with these singular remains.

In the words of Sannichow, one of Henderstrom's companions, "the first of the Lachow Islands is little more than one mass of mammoth bones;" and though for upwards of 80 years, the Siberian traders have been bringing over annually large cargoes of them, there appears as yet no sensible diminution in the apparently inexhaustible store. The teeth in these islands are also much whiter and more fresh than those of the continent. The most valuable are met with on a low sand bank on the western coast; and there after a long prevalence of easterly winds, the sea recedes, a fresh supply of mammoth's bones is always found." Henderstrom infers, from this, that large quantities must exist at the bottom of the ocean.

DURATION OF SLEEP.

Of the duration of sleep, the period varies in various men. John Hunter, Frederick of Prussia, Napoleon and other great men, slept but little. The Duke of Wellington is also a little sleeper. Boerhave says, that on one occasion, his mind being much engaged, he could not sleep for six weeks. He probably meant to write "not soundly." He added the case of a student, who adopted the strange theory that the natural condition of man was sleep; and to test the truth of the doctrine, slept eighteen hours of the twenty-four; and as might be expected died of apoplexy. The elder Descrozilles seems to have slept two hours out of the twenty-four.—*Ann de Chimie.* However the number of hours passed in sleep varies from 6 to 12. The indolent, and those whose avocations or fortunes doom them to inert life, sleep many more hours than are necessary; but eight or nine hours would seem to be about the fair proportion which every man ought to take who values his health, or expects his intellects to be in a fit state to enjoy life.

Habit, climate, constitution, calling, age, modify, however, the duration. Infancy requires much sleep; more than is generally allotted to it in England; and manhood is the medium between the wants of youth and the necessities of age. Some old people as we have previously remarked, sleep much—Parr slumbered away the greater part of his time, and De Moivre when eighty-three years of age, slept twenty hours of the four and twenty. But these are exceptions of this law of nature, and Rickerand affirms that old men have short sleep, light, and broken; as if, says Grimaud, according to Stabl's notions, children foresaw that, in the long career before them there was time enough for the performing at leisure all the acts of life; while old men,

near their end, feel the necessity of hurrying the enjoyment of good, already about to escape. Dr Ellis-ton writes—"Old people sleep lightly and frequently; and altogether but little unless lethargic disease come upon them, which is very common. I heard Baxter, the coachmaker, declare that he never took more than three hours' sleep, during the most active period of his life. The celebrated General Elliot never slept more than four hours out of the four and twenty, and his food consisted wholly of bread, water and vegetables."—*Dr. Burn's Anatomy of Sleep.*

EXERCISE.

Many people look upon the necessity man is under of earning his bread by labour as a curse. But it is evident from the structure of the body, that exercise is not less necessary than food for the preservation of health; those who labour are not only the most healthy, but generally the most happy part of mankind. This is peculiarly the case with those who live by the culture of the ground. The great increase of inhabitants in infant colonies, and the longevity of such as follow agriculture everywhere, evidently prove it to be the most healthy as well as the most useful employment.

The love of activity shows itself very early in man. So strong is the principle, that a healthy youth cannot be restrained from activity. Our love of motion is surely a strong proof of its utility. It seems to be a law throughout the whole animal creation that no creature, without exercise, should enjoy health, or be able to find subsistence.

Inactivity never fails to produce a universal relaxation of the solids, which dispose the body to innumerable diseases. When the solids are relaxed, neither the digestion nor the secretions can be duly performed. How can persons who loll all day on easy chairs, and sleep all night on beds of down, fail to be relaxed, nor do those much mend the matter who never stir abroad but in a coach.

Glandular obstructions generally proceed from inactivity. These are the most obstinate maladies. So long as the liver, kidneys and other glands, duly perform their functions, health is seldom much impaired, but when they fail it is difficult to be restored.

Weak nerves are also the constant companions of inactivity. We seldom hear the laborious complain of weak nerves. This plainly points out the sources from which nervous diseases generally originate, and the means by which they may be prevented.

It is absolutely impossible to enjoy health, where the perspiration is retained in the body—it vitiates the humours, and occasions the gout, rheumatism, &c.

No piece of indolence injures the health more than the custom of lying in bed too long in the morning; the morning is undoubtedly the best time for exercise, as the air braces and strengthens the nerves. Custom soon renders early rising agreeable, and nothing contributes more to the preservation of health.

Every person should lay themselves under some sort of necessity to take exercise. Indolence, like other vices, when indulged, gains ground, and at length becomes agreeable. Hence those who were fond of exercise in the early part of life, become quite averse to it afterwards. This is often the case with gouty and hypochondriac persons, and frequently render their diseases so difficult to cure.

Indolence not only occasions diseases and renders men useless to society, but promotes all manner of vice. The mind, if not engaged in some useful pursuit, is constantly in quest of some ideal pleasures. From these sources proceed most of the miseries of mankind. Certainly man was never intended to be idle. Inactivity frustrates the very design of his creation, whereas an active life is the best and greatest preservative of health.—*Oracle of Health.*

Music Physiologically Considered.—The physical benefits of the study of music, especially vocal music, are not less striking than the moral and intellectual advantages we have mentioned. Exercise gives vigor, and there is no part of the human system which requires more attention for the acquisition of a desirable degree of strength than the vocal organs, which are so fatally deranged by exposure in our rough climate. This is no chimera. The personal experience of many a singer may be appealed to, in confirmation of our position; and if there be one thing which is likely to check the seemingly peculiar tendency to consumption in our population, it is the early and systematic culture of the vocal organs in singing.

"A fact," says an American physician, "has been suggested to me by my profession, which is that the exercise of the organs of the breast by singing contributes very much to defend them from those diseases to which the climate and other causes expose them."

A musical writer in England, after quoting this remark says, "the Music Master of our Academy has furnished me with an observation still more in favor of this opinion. He informs me that he had known several persons strongly disposed to consumption, restored to health by the exercise of the lungs in singing. But why cite medical or other authorities on a point so plain? it appears self-evident that exercises in vocal music, when not carried to an unreasonable excess, must expand the chest, and thereby strengthen the lungs and vital organs."

The amount of exercise derived from the practice of singing, is much greater than would be imagined by those not versed in it; and the fatigue incident to prolonged exertion in singing, is as positive as that which follows sawing wood, or riding on horseback. During a residence of nine or ten months in Germany some years ago, we were much struck with the fact, that diseases of the lungs of all sorts were far less common there than with us. Is there any difference in the situation or habits of the people, to which this result may be ascribed with so much probability, as the different customs ef the two nations with regard to vocal music? In Germany, every body sings; in America, nobody. In Germany it is an art honored and loved; in America it is treated with indifference.

Singular Spontaneous Explosion of Rocks.—The Ogdensburg (N. Y.) Times mentions a singular occurrence which happened at Norfolk, in that State, on the 15th ult. and which has produced much speculation in the village. An individual named Cochran, while walking in the wood at the latter place, had his attention excited by a cracking sound, which was instantly succeeded by a tremulous motion, and a rising of the earth just before him. Alarmed at the phenomenon, and expecting a shock of an earthquake, he precipitately turned to retreat to his house, when at that moment an explosion occurred, the intonation of which was as ponderous as that of a smart blast of rocks by powder—rending the rock asunder, and throwing out 30 or 40 pounds of fragments. The rock appeared perfectly sound, and is a continuous lime rock from the bank of Racket river, and distant therefrom about 30 rods; and at this place formed the base of the road, and covered with little or no earth. The phenomenon, it is said, is attested by credible witnesses.—*Richmond (Va.) Aurora.*