

Paige (A)

MENTAL AND PHYSICAL
ELECTROPATHY,
OR
ELECTRICITY;
ITS
PHYSIOLOGICAL RELATIONS
AND
MEDICAL APPLICATIONS:
BY
DR. A. PAIGE.

Surgeon Genl's Office.
LIBRARY
W 40775
PHILADELPHIA:

BROWN'S STEAM POWER BOOK AND JOB PRINTING OFFICE, LEDGER BUILDINGS.

1852.

P R E F A C E .

FROM the observation and experience of more than nine years devoted exclusively to the study of electricity and the treatment of diseases upon its principles, during which time its effects, when differently employed, have been witnessed upon more than *eight thousand* individuals, the author of the following pages has found, or thinks he has found, that this hitherto "mysterious agent" possesses much more important relations than have been usually assigned to it. His own study and experiments, together with much useful information derived from others, have enabled him to present it in what appears to him to be its proper connection with the other elements which constitute the material universe—its office therein—its physiological relations, and something of its practical advantages in the treatment of diseases.

He regrets exceedingly that the duties of his profession prevent his giving a more extensive treatise upon the subject, and that what is presented is but so imperfectly prepared. As his object, however, is the promotion of truth, and the cultivation of a more consistent system of practice, founded upon principles more intimately connected with the elements of life, rather than the cultivation of the flowers of literature, if he succeeds in making himself understood, he will be satisfied.

It affords him pleasure to know, that other and more mighty minds are laboring in the same field—that since he has been attempting to glean up the scattered fragments of truth which those who commenced the work before him let fall, and to reduce

them to a system, others, and those better prepared for the work, have turned their attention to the same field of research. Besides different individuals in our own country who have lent the subject their aid, he might present the names of many of the most gigantic minds in European countries.

Since most of the following pages were prepared, and a part of them in type, he has been much pleased to find copied into the Medical Journal of Boston a very valuable lecture delivered before the Royal College of Physicians in London, by J. C. Badeley, M. D., Cantab, &c., in which the subject is involved, and to a very great extent presented in the same light in which he has been accustomed to view it in lectures delivered in years past, in Boston and elsewhere. This omens much good, and he most earnestly desires the further aid of the profession in perfecting what he most honestly believes will finally prove of the greatest possible advantage to mankind, and honor to them—the establishing of a system of medical practice based upon the true principles of vitality—*the vital force—electricity.*

MENTAL AND PHYSICAL ELECTROPATHY.

The physiological relations of electricity, with its use in the treatment of diseases, to which I have seen fit to apply the term electropathy, mental and physical, are best understood by considering it in connection with the more ponderable elements with which we are acquainted, in their organism and decomposition, and the influence of such changes in producing and curing disease. For centuries, the most eminent naturalists, philosophers and physicians have been laboring to trace out the various constituents of matter, with their chemical and physiological relations, that the effects of their natural and artificial changes may become palpable. These efforts have become successful in a high degree. The pathology of many diseases has been well established, their specifics are known, and a comparatively perfect system of medical science exists. But none will hazard the assertion, that that science is beyond the reach of improvement. In every land, its real friends, and the friends of humanity, are still eager to seize upon every rational opportunity to perfect the science—the foundation of the healing art.

By one possessed of this desire in common with others, and for the purpose of contributing to so noble an object, these lines are indited.

If not with equal success, it has been my privilege for years, while those around me have been engaged with the grosser elements, to study, and to experiment with a higher and more powerful agent. Though the term may be arbitrary, this agent will be here spoken of as an element, and such classifications of elements given as will suit my present purpose.

Electricity is the fourth, in our general classification of elements—earth, water and air being the first three. The first comprises all the solids as they exist, whether organized or unorganized, inert or in motion, animate or inanimate. This element has its laws, through which, when understood, we can organize or destroy. Examples of

this will be given as we proceed. It gives visible form to our bodies, and, for their existence, our bodies are dependent upon its laws. So, too, with water, or the *aqueous element*. It has its laws, and an intimate connection with the solids. Yea, it even exists in them, having, for a wise purpose, insinuated itself into every part. It constitutes the principal part of our weight, and about the same proportion of the earth's gravity. Upon it, too, and its laws, our bodies are consequently dependent.

The animal mechanism presents the most perfect adaptation of our bodies to these elements, and a wise provision for their reception. They are both adapted to the stomach, and the stomach to them. But if the one be not in a condition to receive the others, or if it receives them in too large quantities, or in an unprepared state, the result is a disturbance called disease. It is the office of medical science to teach us how to ascertain the nature of such disturbance, and how to restore peace. This is best done by resorting to the element disturbed, and by practising upon the principles of its laws. Medicines are prepared for this purpose, and, when rightly administered, will accomplish the object.

But above the solids and fluids of earth there is an atmospheric element. It gathers around, and even enters into, the elements below, having its laws and offices there to fulfil. Our organism recognizes its adaptation to our systems. As the stomach receives the solids and fluids ever required to support life, so do the lungs receive the atmosphere, and in a healthy state the adaptation is complete. But the lungs may be disturbed in their action, or the atmosphere become impregnated with disease, and this may be communicated to them, and threaten their destruction. How shall this result be best obviated? Our theory is, a disturbance or disease in either of these departments must be met and quieted through the element disturbed. As well might we expect to quiet the winds of heaven by throwing pebbles into the ocean, as to attempt to cure pulmonary diseases by medicines alone, when thrown into the stomach. If the weekly reports of deaths from such diseases in our city, with all the medical treatment received, do not prove the truth of this remark, I know not but I shall be forced to sustain the strong position assumed by philosophy alone. Important improvements in the treatment of this class of diseases have been suggested, based upon the principles here presented, and, to a limited extent, success-

fully reduced to practice. But my special object now is to deal with an element still higher.

Electricity, in point of rarity, if not expansiveness, is as much above the element of air, as the atmosphere is above the solids and fluids of earth. Its subtle grasp is fixed upon the minutest atom that floats in space, and upon the solid granite at the mountain's base. For numerous experiments prove it to be alike the power of attraction—the substance of the universal law—and the organizing, animating, and sustaining power. If this be so, planets in their revolutions are governed by its power, as well as the heaving ocean, and the beating heart. By it, in the hands of Deity, worlds are made, crystals formed, vegetables animated, the animal mechanism organized, the vital functions established and sustained.

If the existence of each of the other elements be important to the preservation of the earth with its inhabitants, and its loss the destruction of the whole, how much more the importance of this subtle agent! If the relations of the other elements to the animal economy, with the laws by which they are governed, be indispensable to the study and practice of the healing art, how much more indispensable is it that the relations of this agent be known, and its laws understood! Eminent authors, from the most satisfactory experiments and observations, contend that it is indeed the "*vitalizing force!*" Disease is a disturbance of that force, whatever it be, and the practitioner's object its restoration; and how shall he attain his object, except by chance, without understanding its principles, and how to control its secret movings?

We have noticed the adaptedness of the animal mechanism to the several grosser elements—the stomach to the solids and fluids, and the lungs to the atmosphere. No one can fail in this to discover the wisdom of Providence, or the designs of the Eternal Mind. If by his decree the stomach was formed, then by his eternal wisdom and goodness the endless variety of solids, in all their perfection, with the natural beverage, water, were adapted to the stomach. Did he create the heaving lungs, and inflate them with his own breath? he also created the atmosphere, and, in the most perfect manner, adapted that atmosphere to the lungs, for the preservation of that breath. Did he create man from the dust of the earth, giving him a material body for a season? this was not done till the earth was formed, and every want of his provided for. Has he subjected man to disease?

he has prepared for him a balm in Gilead. So far as the grosser elements are concerned, then, we find the most perfect adaptation of each to our physical being, and of our organism to each.

Does this perfection and harmony in God's works here cease? Or, may we look for it in greater perfection in the higher elements?

There is in the anatomy of our bodies a finer organization than the stomach or lungs, with a higher organ with which it is connected—the nervous system, with the brain for its centre. In more perfection is this system adapted to the element of electricity, and electricity to it, than the lungs to air, or the stomach to the staff of life. If electricity in the external world possesses the power of motion, and of organization and decomposition, may we not reasonably expect it to perform a similar office in the material of our bodies? If its power controls the constituents of matter, ere they are brought into form, must it not be exercised upon the elements of our bodies? If by chemical action it may be employed in the organization and decomposition of other bodies, may it not be employed in performing the secretions and excretions of the animal structure?

It is the higher element, and the more powerful. It penetrates all, and its changes affect the condition of all, whether it be latent or in action. It is by science brought within our reach, and with it the human system becomes a mere plaything.

We have said, that in the animal economy it is adapted to the nervous system, and the nervous system to it. Every organ, gland and tissue is supported by nerves. Nerves are not self-operating, or possessed of power to act any more than the lungs or stomach. Hence they may exist in form and substance perfect, as is often found in cases of paralysis, but have no power of action. As are the lungs when deprived of atmosphere, so are the nerves without electricity. Rarified air renders the lungs weak, diffused electricity renders the brain and nervous system so, and through this the whole system.

But HOW is the system supplied with this agent? And FROM WHENCE is it obtained? How does it become disturbed? And how may it be restored? It is evident, a force continually employed, as has been suggested, would soon be exhausted, were there no means for constantly renewing the supply. These questions, therefore, are important, and must be satisfactorily answered, before our views of the pathology of disease be understood, or the rationale of its cure.

Nature has provided three avenues through which the animal functions are furnished with this life-important force. First, the stomach and its appendages. Both solids and fluids are possessed of electricity in large quantities. When either are received into the stomach, electricity is received, and when digestion, or decomposition takes place, this is set at liberty, and diffused through the system, imparting strength, vigor and warmth—the vital force. The quantity of this subtle agent thus received into the system at a single meal is truly astonishing. Every article of food is charged with it, but as an illustration of the quantity thus supplied, we will refer particularly to nature's beverage—water. Professor Farraday asserts, that from actual experiments, he finds that a single grain of cold water is possessed of electricity enough to charge 800,000 Leyden jars of the usual dimensions! What a surprising quantity does the system, then, receive, in drinking a full glass!

But, so far as proper digestion is concerned, this avenue may be closed. The stomach becomes diseased, and, were there no other means of restoring the supply, in full or in part, death would evidently be the result. But the great Designer of our bodies has been more provident in supplying us with this vitalizing agent. He has opened a river of life through the lungs.

Second, the lungs afford another avenue through which the system is supplied with electricity. And how is this accomplished? We have said, electricity pervades matter in an unorganized as well as an organized state. It pervades the atmosphere. At every full inspiration we receive about ten cubic inches of oxygen into the lungs. Of this but only one-eighth disappears, the rest being converted partly into carbonic acid, and partly into water by its combination with the hydrogen of the blood. And yet, the whole of the air respired is in a state unfit for the support of life or combustion! In its respiration, therefore, the oxygen must have been deprived of the principle to which it owes the power of supporting life and heat. *That principle is electricity.* When the oxygen is received into the lungs, the electricity is disengaged and taken up by the blood. The blood, by its instantaneous change at this point in its circulation, from the dark venous appearance, to its rich arterial brightness, gives evidence that the electricity thus received gives to it renewed vitality. Experiments upon blood, whether in the system or after it is taken from it, where, by mechanical electricity, it is restored to

all its arterial richness, afford conclusive evidence that electricity does vitalize the blood. As every breath brings a new supply, what must be the quantity of this powerful agent received through the lungs in an hour—a day!

But the lungs may be disturbed in their action, and but a small quantity of air received; or the air may be stifled, or deprived of this important agent, and the supply be thus in part cut off. This produces similar effects upon the system to those experienced when the stomach becomes inactive. In either case, there is evidence throughout the system of a loss of vital force—there is paleness, languor, organic disturbance and functional derangement. If both avenues are obstructed, of course the same effect becomes still more apparent.

Third, there is still another avenue to be considered. The surface of our bodies is but the termination of nerves. Not a point can be found where the finest needle can be introduced without coming into contact with nerves. Nerves, as we have seen, are the conductors of electricity. We have also seen that the atmosphere is charged with this element as well as water. When properly exposed to atmospheric action, the nervous system, with its millions of ramifications, as in the skin, affords another avenue through which to receive the vitalizing force. Through this avenue, too, it may make its escape. Hence, changes in the condition of the atmosphere electrically affect the vital functions and the spirit or mental powers. Besides the effects we all experience from such causes, many instances will be called to mind where patients laboring under different diseases are known to suffer from violent paroxysms at those hours of the day when electrical changes take place. Perhaps it will be proved, that different epidemics have their origin in a disturbed state of this element, instead of the grosser, and that, by reason of some peculiar condition of our bodies, electrically, some are made victims while others escape with impunity.

As in the other instances named, this avenue may be obstructed. Neglect to cleanliness, improprieties in dress, unreasonable exposures, have their effect in thus depriving the system of its proper supply of vitality, and before health and strength, mental and physical, can be fully enjoyed, attention must be paid to each of the avenues through which the immediate element of life is obtained. We can live, or half live, with a derangement of the digestive appa-

ratus, or with our lungs half inflated, or with the surface glued over with impurities. We can live, or half live, on food indigestible, or in air stifled or impure, or with our bodies so clothed, that no electrical action can take place, but we cannot live as nature designed we should, nor enjoy the pleasures the God of nature has provided for us.

With this view of the electrical relations of our bodies to the physical world, with the source from which they derive this element of life, and the manner in which it is received, we may proceed to speak more particularly of its operations in the system—its disturbance, or the causes of diseases, and some of the means employed in their cure.

Not two kinds of electricity, but one kind in different states, exists in the human economy. First a latent state, in which this element pervades the material of our bodies in common with all matter; and second, an active state, in which it is called into exercise for the support of voluntary and involuntary motion. The first is subject to the chemical changes common to the grosser elements. The second, by its connection with the nervous system, becomes the vitalizing force—the power of organic motion.

The neurine mass, which, according to Solly, constitutes the substance of the brain and nervous system, is the best possible conductor of this fluid, and its immediate recipient. In health, it is positively charged, the system strong, and the functions of every organ regular. The brain, constituting the principal bulk of this substance, becomes in the economy the great reservoir of this element, with the different nervous systems like distributing-pipes ramifying therefrom, dividing and sub-dividing, that it may be communicated to every part. Through the action of this fluid upon the nerves, the functions of every organ are performed. Without it, like the telegraphic wires without the electrical action of the battery, there is no motion. With it, otherwise silent organs are made to speak.

A part of the functions of life are voluntary, but those upon which its existence chiefly depends are involuntary. Hence a part of the electricity in the system is under the control of mind, but a greater part is not. It may be exhausted by an excess of either voluntary or involuntary action. The stomach may be required to perform too much labor, thereby depriving the brain of its force,

and rendering the mind sluggish, while too much mental labor produces indigestion and general derangement of the system.

Study, grief, care, anxiety, physical or mental excitement, by exhausting the same force employed in the performance of the more direct functions of life, induce derangements in those functions. The nervous system thus deprived becomes enfeebled, and the individual is said to be nervous. The divine and the villain, by an excessive exercise of the mind, though on different subjects, suffer alike the dyspepsia, and give the same evidence of disease. The mourner and the lover, by brooding over the objects of their loss—one by death, the other by voluntary desertion—lose alike the appetite, and perhaps pine away and die. Upon the principles of electrical action this is easily explained. The system receives a given amount of this element, according to the condition of the avenues described. Every physical action and mental emotion is performed through the action of this force. An excess not only exhausts its supply in the part exercised, but, to a limited extent, the whole system. This is true of the exercise of individual organs, as well as different systems in the economy.

It is asserted by Marshall Hall, and the remark is generally approved by the profession, that "disease of a latent lobe of the cerebellum induces paralysis of the opposite side, and chiefly of the lower extremities. Disease of the middle lobe of the cerebellum is denoted by erection of the penis. Disease of the medulla oblongata indicates paralysis of the respiratory muscles, and consequently, when complete, instant death."

The disturbance in the functions of different organs by attacks made upon the brain, is as true in other respects as in those suggested by Marshall Hall; and in support of the view we have taken of the electrical action of the economy, nothing can be more conclusive. The functions of the eye are performed through nerves connecting it with the brain, from which it derives its vital energy. If the brain be affected by injury or otherwise at the point where this connection takes place, the electrical action of the nerves and the functions of the eye are alike disturbed. When this action ceases entirely, the amaurosis becomes complete. The same is true of the auditory nerves, the olfactory, and indeed of the nerves through which every sense is enjoyed, or the functions of any organ performed. It is not difficult, therefore, to account for different

local and organic affections, upon the principles of an electrical disturbance in the brain. And when we reflect that this organ is the immediate residence of the mind, and that the mind is dependent upon its electrical support or vital action, we can imagine how mental labor excessively performed exhausts the system and deranges its organic action. The perplexities of the counting-room—the anxieties of relatives in sickness—the excitement consequent on great occasions—strong emotions of fear, anger, love, or grief, all lead to such diseases as have their origin in an exhausted state of the electrical forces.

The effect of such emotions is in some degree apparent to all in the increase and variation of the pulse; but in those who labor under local weakness or affections of the heart, the effect becomes positive, as it often causes instant death. It is an important fact, that in many such cases of sudden deaths, said to be from disease of the heart, examinations of that organ give no traces of disease, the calamity being entirely the result of a disturbance in the electrical element, itself invisible, though its effects, as in many other instances, are most mournfully palpable.

But the exhaustion of this force is not always from excessive mental effort, nor is the brain always the organ first attacked. As has been intimated, the functions of individual organs may be too severely taxed. This leads to their exhaustion, and this, by calling upon the system for an extra supply of the vitalizing force, enfeebles other organs, and debilitates and deranges the whole economy. How many suffer in this way from venereal excesses alone!

We have referred to the effect of a disease of the middle lobe of the cerebellum as noticed by Marshall Hall. With equal truth we may say, that excessive excitement of the genitals induces disease in the cerebellum, and thereby loss of nervous energy and muscular power. At the expense of such excitement the senses are often deranged, hearing lost, vision impaired, reason dethroned, and humanity sunk lower in the scale of being than the brute creation. The vital force, the element of life, cannot be exhausted in such excitement without depriving more vital organs and higher functions of their supply—it cannot be protracted without shortening life and debasing the soul.

But the disturbance of this element in the economy is not from exhaustion by excesses alone. Changes in the grosser elements

without, and their chemical actions within our systems, have their effects in changing the relations of this more subtle agent. It is well known that if the Leyden jar be charged, and placed in a dry atmosphere, it may retain the electricity for hours, perhaps a day. But if placed in a damp atmosphere, or if a damp current of air reaches it, the electricity escapes immediately and imperceptibly.

Through the avenues we have mentioned, our systems are ever being charged with the same element. When the atmosphere is dry and the heavens clear, this element of life invigorates and strengthens us. Even invalids suffer but little from their diseases, being so fully charged with the vitalizing force. How sensibly do such feel the effects of the dampness of an east wind! The subtle element of life is imperceptibly diffused from the system, chronic pains are felt, the circulation enfeebled, and the lungs, if in the least diseased, so deprived of vital energy as to be scarcely able to exercise at all. Such phenomena, though often witnessed, are still mysterious, unless explained upon the principles here presented.

A current of damp air from a window has often so deprived portions of the system of electricity, as to induce paralysis. Damp feet conduct it from the bodies of those in feeble health to such a degree, as to cause the most alarming effects. Many, by resting against damp walls or iron pillars, have experienced such derangement in this element, as to cause life-enduring suffering. Changes in the electrical condition of the atmosphere, which are often very considerable, also change the condition of the same element in the economy of our systems.

It is only necessary to refer to the fact, that the mariner's compass, which is made to traverse by being charged with electricity, and is ever under its control, loses this power in the time of a tempest, by the active state of this element around, for sufficient argument to prove the position assumed. Very susceptible persons often experience sensations from a disturbed state of the electrical element within them, long before the state of the heavens declares, that a tempest approaches. Some, by reason of a peculiar state of the brain, become drowsy and fall asleep. Others, from a similar state of the stomach, are nauseated and vomit. All whose nervous systems are enfeebled dread its approach, and some become frantic through fear, being taught by the silent language of instinct, that those whose systems are thus affected are specially liable to be injured.

He whose body is positively charged, and consequently strong and robust, can bear a strong shock from the battery, while one in an opposite state can bear but the least without injury. The first may be "struck by lightning" and not injured, while the other is killed, when the lightning comes not near him. Other conditions of the atmosphere electrically produce other and very different results upon the economy; for there is no particular in which it experiences greater changes.

Irritation, mechanical or chemical, produces electrical disturbance in the economy, and consequently is the cause of different diseases. All have learned, that electricity is excited by friction. This is a principle in nature, and equally applicable to animate and inanimate matter. The most healthy part of the body may be selected, and by a constant friction, or rubbing even with the hand, become highly irritated. If the friction be kept up, the irritation soon amounts to actual inflammation; and if still continued, ulceration or decomposition takes place. This is an electrical decomposition, and easily explained upon the principle of chemical electricity.

The friction excites electrical currents to the parts irritated, and their effects are as positive as if induced by the battery. The most solid material may be decomposed by electrical action, and why not that less firmly organized?

Chemical irritation, which may be induced by changing the chemical relations of the body by external or internal applications, produces the same results, acting upon the same principle. An indolent ulcer produced by either method, while it is the seat of immediate chemical decomposition, deprives the whole system of the vital flame, electricity. It is excited in unbroken currents to the part diseased, producing the work of destruction both there and throughout the system. Nor will this work cease till these currents are broken.

The minutest particle of matter received into the system is often sufficient to thus change the chemical relations of the whole structure. The subtle agent, electricity, feels the change, and through its disturbance the disease becomes apparent. *Ramollissement du Cerveau*—Softening of the Brain—a disease upon which there are conflicting opinions, is a case in point. Most French pathologists attribute it to inflammation, while some call it a disease *sui generis*. Solly thinks it arises from either inflammation, from a total failure of the circulation, or from "local and general anæmia." Dr. Bur-

nett makes two kinds of ramollissement, an inflammatory and a non-inflammatory, which, upon the principles we have suggested, may be two stages of the same disease, and therefore correct.

The irritation may commence with the *corticle* substance or hemispherical ganglion, impairing the intellectual faculties, and manifesting itself in disturbances of the mind; or in the medullary structure, manifesting itself in involuntary convulsive movements, in which case it usually terminates more rapidly. In either case, the microscope will satisfy the observer that the substance attacked is actually undergoing decomposition.

In all inflammations the same results are apparent, the decomposition being more rapid in parts the most delicate, and how is this better explained than upon the principle of chemical electricity as described?

That mental excitement, to which we have referred, induces irritation, and if persevered in, inflammation of the brain need only to be asserted. But upon what principle, is a question among the profession yet unsettled. Our argument is, electricity controls the minutest particle of organized matter, and the elements which constitute that particle. A disturbance in this element weakens its grasp, and changes its relation to the constituents of our bodies. It is the medium element—the connecting link between the higher element, mind, and the grosser elements of earth. Hence it may be disturbed by undue mental effort, protracted mental excitement, physical excesses, or the chemical actions of the system. From whatever cause, the disturbance must be arrested, and the proper equilibrium restored, or disease and death be the result. This leads us to a consideration of the more important division of our subject—diseases, and the rationale of their cure.

If the premises assumed be correct—if electricity possesses those relations to which we have referred, being indeed the element of life—the vitalizing force, and consequently the vital functions, subject to its changes as described, nothing can be more rational than to expect relief through remedies which act upon its principles. Such remedies are indeed numerous, too numerous to be detailed in the narrow limits allowed me. A few general remarks must suffice.

In the practice of electropathy, as in the practice of every other system, our success depends quite entirely upon a correct diagnosis or examination of the symptoms in the case. The electrical condition

of the system must be carefully determined, and the cause of disease understood. Does the system receive its proper supply of this element of life? Are each of the avenues through which it is received in a healthy state? Is there any local obstruction to prevent its action upon any part of the mechanism of the body? Is there any chemical disturbance in the grosser elements below? or, is the higher element, mind, exerting no unfavorable influence upon this its connecting link? Before any attempt is made to regulate this element of vital action when disturbed, inquiries of this kind must be instituted, and satisfactorily answered.

The most direct medium through which to reach the vital force, is the element electricity, which, as we have seen, when received into the system constitutes that force. Science has placed this element at our disposal, and provided means through which we may regulate the functions of each organ at pleasure. The idea of thus holding at our command an agent so nearly allied to vitality itself, is both full of beauty and full of truth.

Its physiological relations, and adaptation to the brain and nervous system, have been presented. It is to that system the natural element, as much so as atmosphere is to the lungs, or food and drink the proper elements of the stomach. As the functions of the lungs, the stomach, and indeed of every organ, gland, and tissue comprising the economy, are performed through the action of this agent upon the nerves—as we have it at our control, by its proper application, we can regulate those functions as we will. Are the functions of the lungs disturbed through nervous weakness or muscular contraction? By mechanical means this agent may be supplied to them for a season, or until they are fully inflated, and, through the oxygen received, enabled to supply themselves. Are the nerves of the heart enfeebled, and its office in the circulation but irregularly performed, leaving the sufferer exposed to sudden death through some strong emotion or undue excitement, as in many cases of recent occurrence? The skilful operator temporarily supplies the vitalizing power, thereby changing the electrical relations of the system, until strength is obtained and the cure complete. So with local weaknesses and functional disturbances of every organ, when arising from nervous weakness, either local or general.

The stomach, which, as we have seen, is one of the principal avenues through which the system receives electricity, may have

become inactive through nervous debility, the improper use of drugs, or improprieties in diet, as in dyspepsia. It is unable to digest food as in health, and consequently a large supply of vitality is cut off from the system. By mechanical electricity its functions are restored, it is enabled to digest some of the more simple articles of diet, and these, by affording electrical power, keep up its action. The avenue is thus opened, and the *dyspepsia cured!* Perhaps the bowels are constipated, or from weakness relaxed, by being overtaxed with purgatives, or from sedentary habits; a judicious application of electricity restores a healthy action, which, with regular habits, becomes permanent.

The circulation seems to be much under its control, and dependent on it. In all persons with an enfeebled nervous system, we find an irregular circulation, coldness of the extremities, and other evidences that the blood is not possessed of proper vitality. If the system in such cases be charged with electricity, the blood assumes a healthy appearance, the circulation is improved, and warmth and vitality restored. The various secretions of the system also feel its power, and are changed by its use. I have recently witnessed its effects upon a person in whom perspiration upon the whole right side was entirely suspended, while the left perspired freely. A few applications of electricity to the side affected restored it permanently.

The most simple experiments illustrate its office in these important functions. A vein may be opened in an individual when charged with electricity by insulation, when it will be found, that from an actual increase in the circulation, the blood will spirt to a greater distance than when not insulated. The same effect will be noticed by taking the pulse under similar circumstances. Such applications repeated for a few times at proper intervals will restore the circulation and vitalize the blood. Other irregularities, having their origin in a weak and torpid state of the system, have an infallible specific in electricity. In affections of the liver, its use has been attended with the most happy results. By giving tone and energy to the part to which it is applied, its proper application restores the secretions of this organ when in a *torpid* state, and by promoting absorption it may be employed with much success in *enlargement of the liver*. Its effects in such cases are as immediate, and much more pleasant than that of the usual remedy in such cases—calomel. Dr. Philip says of its use: "I have repeatedly seen the same effects

upon the biliary system which arises from calomel—a copious discharge from the bowels, coming on within a few hours after its employment.” Urinary and uterine weakness and other affections are treated with equal success by its judicious application.

Its effect in restoring a healthy action to different organs when their functions have been disturbed, has led to many amusingly absurd conclusions on the part of those who have witnessed the result, without knowing upon what principle it has been produced. For instance, it has been applied to the stomach when in a weak and inactive state, giving tone and action there, or to the whole system when prostrated by exhaustion or disease, invigorating and restoring strength, when it has been pronounced a *stimulus*. Its effects upon the kidneys and urinary system have led some to declare that it is possessed of all the properties of an *active diuretic*. Its success in restoring and controlling the functions of the womb and its appendages, have led to the assertion that “*it is the only direct emenagogue in nature.*” Its astonishing power over each of the systems in the economy, and its success in restoring their individual functions, have thus, by different observers, made it to possess about as great a variety of medical properties as all the drugs and medicines in the shop of a city apothecary. It exerts a sedative influence in soothing the nerves when laboring under excitement, and discharges the duty of an opiate in easing pain and giving rest. It becomes an irritant when applied for the purpose of irritation—a purgative when applied for purgation—an emetic when for the purpose of vomiting, &c., and all this because it controls the vital powers of the system, or becomes that power, and consequently changes its action according to the manner in which it is employed. By controlling its natural functions, it becomes to each system or individual organ what those remedies are which exert a similar influence. It enables each organ to perform its office, and by regulating it, as we may by means within our power, we regulate each organ, increasing its action by increasing its power, or diminishing it by inducing a portion of the power exercised to other parts.

The solids and fluids which constitute our mechanism are dependent upon this agent. Absorption, the secretions and excretions of the system, are performed through its action upon the nervous system, as much so as those offices of the economy to which we have referred. Is there congestion, or are there enlargements, the formation of

tumors, or other derangements of this kind? We may so increase the vital functions of the part affected as to dissipate the substance thus deposited, and give immediate relief. So effectual is the use of electricity in cases of this kind, where the locality of the disease would prevent the use of the knife, that Braithwaite in his *Retrospect* says, "An instrument for its use should be in the hands of every surgeon!" Swellings, enlargements from injuries, or scrofula, are at once reduced by this agent when properly employed.

Diseases of the brain and nervous system are directly within the control of electricity. As we have seen, it is to this portion of our mechanism what air is to the lungs, or the solids and fluids to the stomach—its natural element. We have also suggested, as the most rational system of curing diseases, that they be reached through the element in which the disturbance takes place. As electricity is so perfectly adapted to the nervous system, of which the brain is the centre, it is the proper medium through which to control diseases in that system. It is true, the avenues through which it is supplied are in part of the grosser elements, and that through disturbances in them the nervous system is deprived of its full supply of electricity. It is also true, that in such cases the grosser elements are to be restored. But it is also true, that that disturbance often commences in an exhaustion or other derangement of the element of the nerves, and that it is supplied through organic action dependent upon nervous energy, which must be obtained before they can perform their office. The respiratory nerves may be weak or paralytic, and how can the lungs perform their functions before they are strengthened? The nerves supporting the liver or the stomach may be similarly affected, and how shall their offices in digestion be carried on before the vital action is restored? Blue pills, purgatives, or emetics, may change the relations of the grosser elements, and promise health, but they strengthen not the nerves, and hence, when the disease originates in them, the disease is not cured. In such cases, as we have said, the skilful practitioner seizes upon the higher element, applies it temporarily to the nerves supporting the part diseased, or until its functions are performed, when it supplies itself, and contributes to the vital energy of the economy. The avenue to electricity is thus opened, and the whole nervous system is improved and strengthened. In expending this strength properly upon the mechanism of our bodies, we receive renewed power—more of the element of life.

But, in its action upon the nerves, this element may be obstructed, as well as the mechanism through which the solids or fluids are circulated. It may be excited in too great a degree to some single organ or portion of the system, carrying with it the solids and fluids subject to its action, producing local derangements, congestion, inflammation, &c. This deprives other portions of the system of their supply, and at the same time threatens the destruction of the part surcharged. This is illustrated in such diseases as brain fever, congestion of the lungs, and local inflammations.

In such diseases, the only hope of relief is in inducing electricity to other parts. Counter-irritants often accomplish this, as they act directly upon electrical principles; but electricity acts more directly upon electricity than solids or fluids can act upon it, and, when not excited by other means, will of itself restore an equilibrium. Perhaps the treatment of brain fever will serve as an illustration.

This is often induced by great mental excitement. The exercise of the mind induces electrical action in the brain, and excites to it the blood in undue quantities. The brain becomes congested with blood, and heated by electrical action. The mind is disturbed, and the sufferer has no rest. His delirium and restlessness increase still the electrical disturbance of his system, and this again the disturbance of his mind. His physician knows if he could obtain rest, that the disease would be abated. But how shall rest be obtained? Opiates are given. If these quiet his mind there is hope; for while he rests, the electrical forces are changed. But if these and irritants fail, there is no hope! In such a case how very important that he into whose hands the sufferer has committed his life should understand the electrical forces of the body, and how to regulate them! No element is more easily excited than this—none more easily controlled. A very simple remedy which the electropathic practitioner employs will give immediate relief in cases like this.

The same principle is involved in a disease of the eye. From its over-exercise, especially if weak, or from its receiving too brilliant a ray of light, it becomes irritated. This irritation excites in it a superabundance of electricity, and this brings with it the blood and humors of the system, if any, causing congestion, inflammation, and if long continued, the destruction of the eye. Now it is perfectly evident, that the cure depends upon a change in the relations of that element which controls the lower. First, the irritation must be

suppressed. The eye must be closed to the light, irritants withheld from it, and if employed at all, they must be applied as counter-irritants to other parts. This changes the electrical forces of the system, and assists in the cure. Opposite currents may also be employed by mechanical means, or agents exerting a negative influence, until a healthy action only is produced.

In all cases of paralysis, whether local or general, partial or complete, the use of electricity, mechanically excited, will be found useful. There is in this class of diseases either an exhaustion of this element in the system, or obstruction to its action on the part affected. Mechanical electricity not only affords a temporary supply, thereby changing the electrical forces of the system, but by its increased action removes obstructions also. This must be accomplished, or no permanent relief will ever be obtained.

Thus far we have spoken of electricity principally as it is mechanically employed. It is perhaps proper to remark in connection, that whether excited by this or other means, to which we may refer, we do not pretend that it is the small quantity we employ that gives vitality to the system. This idea, though often conveyed by those who style themselves *Electricians*, only betrays their ignorance of those principles upon which their practice is based, and their inability to practice it with any assurance of success.

It is not the small amount of virus received into the system that actually produces these derangements which are often experienced from the slightest touch, or at a single breath, but, as in vaccination, it is the chemical change effected in the economy, and the relations thereby established between our bodies and the surrounding elements. It is not directly from the small grain of medicine received into the stomach that such important changes take place in the vital functions, but from its chemical effect upon the stomach and the constituents of our bodies, the relations of which are changed, both towards themselves and the higher elements of life. So with the element electricity. A shock—a gentle current passed through the system—does not there remain to carry on the functions of life, but by its effects upon the immediate element of life, its relations to that element, both within our systems and the external world, are changed, and that change is felt. So, too, when it is applied to a single nerve or organ, it is not the electricity that we apply that actually gives the tone and strength received, but the application we make

changes the electrical forces of the system. It is therefore important that they be rightly made, that those changes may be favorable.

This is illustrated by the action of the *electro-magnet*. The galvanic current passed upon this, changes its relation to other matter for which it has an affinity, insomuch that it exerts upon it a strong force, and imparts to the mariner's needle its properties. By the single act of drawing that needle across the pole of the magnet, its relations to the surrounding elements are so changed, and that permanently too, that when suspended upon a pivot, it points north and south. Is it unreasonable, then, to suppose, that by proper means the same agent may be so employed as to change the relations of the vital functions to the surrounding elements, and that permanently?

But while, as an element, electricity is connected with the lower and grosser divisions, to which we have referred, and to a degree subject to their changes, it also forms a connecting medium between them and mind, and is to a greater degree under its control. We have alluded to this connection in speaking of the disturbances to which electricity is subject in its relations to the vital functions. As it is our desire to be more explicit upon this point, in our endeavors to present the rationale of curing diseases, and as we have already taken pretty extensive liberties in our classification of elements, we shall perhaps be excused if we here recognize mind as an element, and by classing it with those we have named, attempt to make the chain still more complete.

The reflective mind will discover a propriety in this. From solid matter we have noticed a continued progression. Each link has been perfect, and well united with the higher. The higher element has been more subtle, more active, nearer in its approximation to inherent power and voluntary motion, and each, in accordance with that power, when disturbed, affects the chain alike. The mind is but a continuation of this perfection—an element as much more incomprehensible than electricity as electricity is than air, or the air than water or solid matter. It controls it in the economy, and through it the fluids and solids of our bodies. It is not, therefore, as some are taught to view it, an assemblage of powers or ideas, but an *essence possessing powers*, an element subject to impressions through its connecting link, and capable, through the same medium, of conveying its impressions back to the most ponderable element.

When we contend, therefore, for the identity of electricity and vitality, we do not identify the mind or spirit with electricity, but recognize a wide difference—a difference alike honorable to science and consistent with Christianity.

While electricity constitutes the element of life, it becomes the servant of the mind, at least so far as voluntary action is concerned. As we have said, a part of the functions of life are voluntary, but those upon which it chiefly depends are not. Had we the same control over the heart and lungs that we have over the tongue or other members of the body, we could, by a single volition of mind, separate the thread of life. Against this, nature has been more provident. But it has rendered our minds subject to impressions, and these are carried with us from the moment they are made to the verge of the grave, if not through eternity. And they are felt; yea, and their marks are made visible, not only on the mind, but on the grosser elements of our systems, where they become the index of disease. An important branch of medical practice is that which enables the physician to read that index—to determine by the disfigured condition of the system, the expression of the eye, the changes of the countenance, if the disease commenced in a disturbance of the mind, in the electrical element, or the grosser.

To how great an extent do the prevailing diseases of the age have their origin in unfavorable impressions made upon the mind! How often do the grosser elements in the economy feel the shock of disturbances there! And how many sufferers are there to whom no relief will be afforded, because the mind is still disturbed, and the practitioner has yet to learn through what element it is to be approached! If the element of life has been disturbed by the action of the mind, and that action be continued, it must be evident that the disturbance will also be continued, as much so as if it took place from any other cause, and that cause were not to be removed.

This is well illustrated by the action of the stomach. Certain substances administered as emetics cause vomiting, and if their use be continued, the vomiting will not cease till the system be exhausted. The same effects are produced by mental impressions. Impress upon a sensitive person's mind the idea that he has swallowed something particularly offensive, perhaps a worm, and how soon is he nauseated and made to vomit! Continue that impression, and the vomiting is continued! And why? Because the same effect is experienced

by the stomach in the one case as the other. It is well known that vomiting is the result of a collapse of the stomach. This is induced by its congestion with the gastric and other fluids which act upon it, and this by concentrating upon it the vital forces. Now, in the case of an emetic, this force is excited to it by chemical irritation, and as it controls the fluids of the body, they are conveyed with it, and the person vomits. Through mental impressions the electrical force is directed there by the action of the mind, and with the same result. How clearly does this show the power of the mind in controlling the vital forces! The bowels have been operated upon with equal success by purgatives when taken, and when not taken only in imagination. The circulation has been equally affected, the pulse increased or diminished by corresponding impressions on the mind. Is it not possible that many suffer from cholera and other epidemics induced upon the same principle? Are not many nervous diseases induced in this way? And will not impressions made upon many that they are to die, and that, perhaps, soon, with consumption, actually cause their death?

It is unphilosophical, as well as uncharitable, to say of those laboring under diseases thus induced, they are not sick; it is only imagination. They are sick; and a better knowledge of the electrical relations of the system will not only protect the sufferer against implications so unkind, but instruct those whose business it is to care for the sick and to cure them. If the mind be laboring under unfavorable impressions, or if from its abuses the functions of life are disturbed, it needs a medicine as much as the stomach, if the disturbance commenced there. And the time is not distant, at least we hope it is not, when in the society of friends and the social relations of life, the sufferer shall find that sweet relief through sympathy and correct impressions, that drugs and medicines can never yield. Physicians must learn to control the vital forces through the mind. Nurses must learn that the sick have minds, and that while their services are required the mind is connected with the body, and that through it they can do much for their recovery. Relatives and philanthropists must be taught, that the impressions they are making in the chamber of the afflicted, are doing much either to cut short the thread of life or to strengthen it. Reform in these particulars is needed; and science, as we are striving to present it, furnishes the foundation upon which it may be based.

Many instances are recorded, where the most astonishing results have been produced by mental impressions alone, both in causing diseases, and in effecting their cure; and in which the relative power of the mind, in controlling the vital functions, has exceeded that of the most active drugs. A medical friend upon the western coast, recently informed me—and the same case has been published in the journals of the day—that he saw a young man in San Francisco who, by a lucky turn of the wheels of fortune, in a gaming saloon, was suddenly made the possessor of a considerable fortune, upon which he was as suddenly seized with syncope, from which he was restored with difficulty, and during which, in twelve hours, *his hair, which by nature was a jet black, was changed to the most perfect whiteness!* Many have received the impression that their life would terminate on some particular day, and perhaps at a particular hour, which they have been enabled to foretel with precision, and which prediction has proved correct; for at the appointed time, without the least trace of disease in the system, life has become extinct! Perhaps this has not proved true in all cases where the mind has labored under such impressions, but this changes not the principle involved. The minds of all are not alike impressible, owing perhaps to temperament, or some other peculiarity in the organism.

Any strong emotion of the mind has an effect upon the vital forces. A man in California of great determination was laboring under what all considered a fatal disease. Upon interrogation as to the probability of his recovery, his physician informed him that there was not more than one chance in a hundred for him! "Then," said the sufferer, with an oath, "*I will take that!*" He did take it, and it drew the prize; for his determination cured him. The vital force is often thus raised, and life preserved, when medicines have lost their effect, thus illustrating the fact for which we have contended, that the higher elements control the lower with much more certainty than the lower can the higher. Unfavorable impressions made upon the mind have also more than counteracted the effect of medicines, however wisely administered, and often to the astonishment of the adviser. He who would attempt to regulate the functions of life, by agents upon which life or death depend, should also attend to other influences, which, perhaps, are exerting more power in disturbing those functions.

This effect upon the vital force, by impressions made upon the

mind, is not confined to animals whose privilege it is to boast of reason, but it is witnessed wherever mind exists, even in the lower animals. While I now write, a curious instance of the kind is going the rounds through the journals, and is well authenticated. A horse was loose in a field by the roadside, several elephants belonging to a menagerie were being driven past, they soon attracted his attention, and after gazing at them for a moment, he ran a few rods, and fell dead upon the earth! Fear actually so disturbed the vital force as to cause death, even in a horse! Birds which have long been domesticated as companions, have been known upon separation to pine away and die, apparently through grief. In the human family the separation of friends has often so disturbed the vital functions, that the death of one has proved fatal to others.

In establishing a correct system of practice, through which it is our desire to control the functions of life, and regulate them when disturbed, is it not important to avail ourselves of a medium through which they are so directly affected as the mind, and employ its healing power? How many medicines are indebted to this power for their apparent success, it is indeed difficult to determine. We can at least imagine that without faith many of them would have but little effect, while others act most powerfully without being taken at all. The usual preparations for administering an emetic will often cause the patient to vomit as freely as the emetic itself, and afford as great relief. There are remedies which depend wholly upon the action of the mind for their effect; and I am sorry to say, some of them are said to act upon electrical principles. This is the case with "Galvanic Rings, Bracelets," &c., which certain speculators have sent out with flaming bills, for their universal use. As they exert not the least electrical or galvanic influence, and as all minds are not alike impressible to such ornaments, but few ever realize the least advantage from wearing them. Still there are those who feel positive relief the moment they are applied. Such individuals never need take medicine in any case. They can be cured of the "nosebleed" by a red woollen string worn about the neck, while one of any other color would produce no effect. Mental impressions made upon them will "kill or cure" with as much certainty as drugs and medicines.

The effect of mental emotions upon the system, in controlling diseases, depends not so much upon the nature or character of the impression, as the susceptibility of the individual to impressions.

Through its connection with the mind, the electrical element is disturbed by such emotions, whether of joy or grief, hope or fear. That disturbance is felt through the whole nervous system, not only of sensation, but of organic action, and if continued, tends to the destruction of life. As expressed by the poet:—

“I know that each moment of pleasure or pain
But shortens the links in life’s mystical chain.”

By disturbing the element of life, it tends to its disorganization, as much so as a disturbance in the solids of earth, through volcanic eruptions, break up its former organization. This organization destroyed, the connecting link between mind and matter is broken. The mind returns to the great original of mind, while the body

“In ten thousand atoms meets the wind!”

This is death. The element of life, in its relations to the grosser elements below, and its connection with the element of mind above, may be thus instantly separated by powerful disturbances in its relations, or by lesser disturbances, but partly separated. The golden link may be at once broken, or by pleasures or pains, mental or physical abuses, shortened by degrees. In either case, death is *electrical disorganization*—the suspension of electrical action. Observations at the bedside of the dying confirm the truth of this assumption.

In cholera, and other diseases where the vital forces are being rapidly broken up, we often notice the visible appearance of electricity as it escapes from the body. T. C. Atkinson, Esq., M. P. C. S., &c., Westminster, England, declares that in numerous cases of cholera, in the collapse state of the disease, he has seen streams of electricity issuing from the body to the distance of an inch and a half, and that by directing the knuckle of the hand to any part of the body, it would be met by scintillations or sparks of electricity, accompanied with a crackling noise, and of the same appearance as those observed on touching the Leyden jar when charged! These currents appear more distinct if the patient has been insulated by being enveloped in dry blankets. As the work of death progresses, these currents of electricity become less distinct, and when the vital flame expires, they entirely cease. Is it not possible that, by remedies acting directly upon the principles of this element, its escape from the body, under such circumstances, might be arrested, and its proper action upon the grosser elements restored? We know not

what may be accomplished in such cases through this important medium, as the principle has been but little understood. It has been successful in restoring from suspended animation, when from poisoning by the use of opiates and narcotics, the action of which is directly opposite to that of electricity, and that, too, after every other effort has failed. Should we not be encouraged to try it in other cases still?

The practice of electrotherapy has been, and in many cases must still be, experimental. But for success, our experiments must be conducted upon the principles of that element recognized as the vitalizing force. Its relations, physiologically, must be understood. Judgment and discrimination must be exercised in its administration, and improvement made by observation. In the use of mechanical electricity, our object is to change the relations of this element in the system—to excite it from part to part as the case may require—and perhaps to supply its deficiency temporarily in different organs, until by this they are made to supply themselves. In all cases it should be our object, therefore, first to make a correct diagnosis—to determine the actual condition of this element in the system, and the causes of its disturbance in diseases. This is not so difficult as the observer may at first imagine.

In each of the lower elements, there are signs of disturbances—symptoms of disease. Derangements of the stomach, in its connection with the solids and fluids of the system, are easily detected, and so are those of the bowels or liver. The action of the heart or lungs give evidence if there is any disturbance between them and the element upon which they are respectively dependent. The skilful observer, by noticing the effects of such observances, detects the disease, and provides the remedy. By means within his reach, the experienced electrotherapist determines the condition of the electrical element in the system, its action upon each of the organs of the mechanism, and detects the least disturbance, with its probable cause, with as much precision. Besides the external indications, the circulation, temperature of the body, evacuations of the system, nervous susceptibility, and equilibrium of the mind, all of which he carefully notices as manifestations of the electrical condition of the economy, he employs the direct agency of electricity itself. With this the vital action of every part, and strength of every nerve, may be determined. Even the most deep-seated organ is probed by its

power, and he who has learned its relative capacity to bear it in health and disease, determines at once its true condition. This is one of the greatest advantages of mechanical electricity.

From the nature of the agent employed, and its immediate connection with and power over the vital functions, the necessity of a thorough knowledge of its use, both in our examinations of diseases, and our endeavors to cure them, must be apparent to all. The whole materia medica furnishes no agent more powerful than this, nor, as we have seen, one that exerts a more direct influence upon the functions of life. That influence depends quite entirely upon the *manner* in which it is employed.

It is not my object here to impart instruction in regard to our different methods of treating diseases—to speak of the different effects of electricity when differently employed, either by mechanical means, chemical action, or the influence of the various positive and negative remedies at our command. Neither time nor space would permit us the pleasure of so doing, had we the inclination. Much less shall we attempt to illustrate the best method of controlling the vital forces by mental impressions. To establish the more general principles of our practice, with something of the importance that attaches itself to it, is all that has been anticipated. And even this, if we succeeded but in part, may prove of incalculable value to many who would avail themselves of its advantages. There is a recklessness in the use of this agent which is surprising and unpardonable. Many who consider it unsafe to take or to administer many of the most simple nostrums without a thorough knowledge of their effects, and adaptedness to the case in question, will receive this most powerful agent at the hands of those who know nothing of its principles, and are without the least experience in its use, or with the utmost indifference administer it to those upon whom its application is to be life or death.

At the moment of my present writing, a highly intelligent and respectable lady of Boston mourns the loss of a sister by its improper application, and that, too, by an M. D. of much experience in the use of less active remedies. The lady suffered from a common nervous headache. She thought electricity would relieve her. Her family physician, rather than lose a patient, by sending her to one who understands its use in such cases, said he would apply it himself. He did so, by placing the conductors upon her head, with powerful

shocks through the brain, which instantly induced congestion, under which she lingered in agony for a few days, and died! Many instances of a similar kind have come to my knowledge, and hence I feel called upon, as one of experience in this system of practice, to admonish those who would employ an agent so active and immediate in its effects, to exercise care. The fact, that the physician understands the nature of disease and the use of other remedies, is no evidence that he can advise in the use of this, or much less employ it with success himself. It at present constitutes no part of a medical education, in those institutions where men are metamorphosed into physicians, and after they leave, of course, *they have no occasion to learn!*—and how should they know anything of its use?

Those who attempt the use of drugs and medicines, however well they may understand their administration, unless they are pleased to receive the same “honors” at some institution, and unite with them in common brotherhood, are denounced as *quacks!* If this be quackery in theory, quackery in practice is to attempt the use of any remedy in the treatment of disease while ignorant of its principles, and without understanding how to employ it. There may be many *quacks in practice* among those who apply the term in theory to others! But perhaps this is too severe. If so, it is but the severity of truth, and intended for the good of science, and the protection of the unfortunate.

Unless I am greatly deceived by the observation and experience of more than nine years devoted to the practice, in which it has been my only object to ascertain the true principles of applying electricity in the treatment of disease, its use should be made a distinct branch of practice, and only attempted by those well informed upon the general principles of disease, and capable of much discrimination. And even such, after obtaining all the information within their power from the best informed upon the subject, a duty they owe to those upon whom their labors are to be bestowed, will find a wide field for improvement beyond the ground upon which they have yet traveled.

The public should be guarded against impositions, which will be attempted in connection with this practice. Charlatans will spring up as “electricians,” without even pretending to a knowledge of disease, and attempt to cure them by just knowing enough to put a “galvanic battery” in operation! Others will make the afflicted

their own murderers, by putting into their hands instruments, perhaps said to be patented, and approved by the profession, and the only ones by which any cure was ever effected, with no other guide than a pamphlet written by one entirely ignorant of the principles of either electricity or disease! As an experienced and wise surgeon remarked to me upon the subject, (alluding to the sale of what is now advertised as a "patented battery!") "We might with as much propriety, so far as success is concerned, put a case of surgical instruments into the hands of the public indiscriminately, and advise their use."

No—until the use of electricity is made a part of a medical education, and the profession properly instructed as to its application, those who would employ it with advantage should seek its use at the hands of those who can use it understandingly. That time, we hope, is not distant. There is a reform taking place which, according to the signs of the times, will establish a new era in medical practice. The principle of vitality is being better understood—physicians are learning to control the vital forces by the aid of remedies mild and inoffensive—and there is an independent spirit of inquiry abroad which will lead to an independent system of practice. In this, men will be judged by their merits, and as all will desire favor, they will seek it not only in a name or title of honor, but in a thorough knowledge of their business. This, to the sufferer, will indeed be an "age of gold."