THE DISSECTOR.

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FALLACIES OF THE FACULTY.

Ague—Spasmodic and Paralytic Disease—Disorders of Sensation.

LECTURE II.

In our former Lecture, gentlemen, you will remember that, after a brief allusion to a few of the many errors which, from time to time, have prevailed in the schools, we took a more simple, though, at the same time, a much more bold and sweeping view of the subject of *Medicine* than would appear to have *hitherto* come within the grasp of teachers and professors. The nature of Health and Sleep, of Death and Disease, we in some measure explained;—and we proposed, as matter for future argumentation, that INTERMITTENT FEVER OR AGUE is the likeness or *type* of all the maladies to which man is liable,— referring, at the same time, to certain natural analogies in the world around us; and hazarding the statement, (which until we prove, we by no means wish you to take for granted) that the chrono-thermal or ague medicines are the most generally influential in the treatment of every kind of disease. Let it not, however, be supposed that in our high estimate of this particular class of remedies, we reject, in practice, any earthly agent which God has given us; for there is no substance in nature which may not be turned to good account by the wise and judicious physician. Besides the chrono-thermal remedies, which we chiefly use as remedies of *prevention*, we possess a multitude of powers which have all more or less influence upon the human body, both in health and disease: and though few or no substances can act upon any part of the frame without implicating every other part, yet do we find that certain medicines have relations of affinity to particular organs of the body greater than to others—some affecting one organ, some another. Of this class, Vomits and Purgatives, as (their names import,) Mercury, Creosote, Cantharides, and the various Gums and Balsams, are the principal: Iodine, Lead, the Earths and Acids are also examples.—But while, in the more simple cases of disease, the chrono-thermal medicines, singly, will answer every purpose,—particular cases of disorder will be more efficiently treated with alternations and combinations of both classes, than by the exhibition of either simply. Of the action of remedies of every kind, we shall speak more particularly when we come to treat of individual substances.—For the present, we shall content ourselves with repeating what we stated in our former lecture, in connexion with this subject, that the action of REMEDY and CAUSE, in every case, comes at last to the common principle of their capacity *Electrically* or *Galvanically* to affect temperature or motion—change in one never taking place without change in the other. It will be a subject of gratification to pursue DISEASE through all its modifiations and varieties, step by step, and to show you the source and the extent of our influence over it,—for which purpose we shall call our different witnesses before you in the shape of Cases,—taking these, as often as possible, from the experience of others, and when this fails us, from the results of our own practice; leaving *to you*, of course, to compare and cross-examine these last at your leisure, with such facts and cases of a similar description, as may come before you during your attendance at the various hospitals with which you are respectively connected. Of this we feel assured, that whether or not you individually pronounce a verdict in our favour upon all counts, you will at least collectively admit that we have compelled you to alter your sentiments most materially upon many measures which you previously supposed to be as unquestionable in practice as they were orthodox in precept. But if, according to Lord Bacon, "disciples do owe unto masters only a *temporary* belief, and a *suspension* of their own judgment *until they be fully instructed*, and not an absolute resignation or perpetual captivity," you will not be

sorry to escape from the thraldom of men who, when asked for bread, gave you a substance which, in the darkness of your ignorance, you could not by any possibility tell was a stone! No longer mocked by mystic gibberish, you will now take your places as judges of the very doctrines you formerly, as pupils, implicitly and without examination believed; and according to the evidence which I shall bring before you, you will pronounce between your teachers and me—whether the infinity of distinctions and differences, upon which they so pride themselves, be founded in nature and reason,—or whether, in the words of the same great philosopher "all things do by *scale* ascend to UNITY, so then, always that knowledge is worthiest which is charged with least multiplicity."

Gentlemen, there was a time when the greater number of people imagined that the only thing worth acquiring in this life, was a knowledge of the dead languages. A new era has since sprung up, and mankind have begun to appreciate the advantages to be obtained from an acquaintance with the chemical and physical sciences. They now prefer the study of the natural bodies around them, to pedantic discussions about Greek articles and Latin verbs. It is only in the cloisters of Oxford and Cambridge, that men sneer at "utilitarianism," or in that antiquated off-shoot of these monkish institutions —*the College of Physicians*. Railroads, steam-boats, galvanism, and gas, have all come to light within the last half century. A revolution in thought and action has been the result; petty objects have given way to comprehensive views, and petty interests have been destroyed by the general improvement that has already been accomplished. Is Medicine the only branch of human knowledge destined to stand still, while all around it is in motion? Is the march of intellect to sweep on and on, and leave behind it this so-called science, untouched and unimproved in its progress? When the monarchs who have successively wielded the medical sceptre—who each in their day were looked upon as demigods in physic, have in turn declared that all that they knew of it was that "they nothing knew," shall blame be attached to him who would attempt to rescue his profession from this worse than darkness visible? If, by their own confession, the Knightons and Baillies were ignorant of the first principles of correct practice, surely it were but charitable to suppose that men so intelligent and sagacious on most other matters may, in this instance at least, have pursued a deceptive mode of investigation? Like the racer on the wrong road, how could they in that case get to the end of their journey? Pursuing their professional studies chiefly in the dead house, these physicians forgot that medicine has no power over a corpse. Gentlemen, the reflections which I shall have the honor to submit for your consideration, were the result of observations made on the ever-shifting motions of the living. Who will tell me that this kind of study is only proper for medical persons? Who shall say that this description of knowledge may not be made interesting to the world at large? Greek, Latin, High Dutch, and Hebrew,—are these repetitions of the same *signs* more important than an enlarged knowledge of the *sense*—more instructive to those who pursue them as a study, than a consideration of the revolutions and constantly changing relations of the matter of their own bodies? Without a proper knowledge of the laws of your own organization, how can you possibly put in practice the Greek maxim, "Know yourselves?"

Having premised this much, I now come to consider in detail the phenomena of

INTERMITTENT FEVER OR AGUE;

for ague being the type of every other modification of disease, it is necessary you should be well acquainted with its principal symptoms. I have already told you there can be no disease, no morbid *motion* without change of *temperature*. The subject of ague, then, among other sensations and changes, successively experiences a CHILL and HEAT, followed by a profuse PERSPIRATION. These three stages, commonly called the Cold, Hot, and Sweating stages, constitute the PAROXYSM or FIT. The patient, during each stage, is consequently in a different condition of body from either of the others; his sensations, moreover, differ during each of them. To the state of Perspiration, which terminates the fit, an INTERMISSION, or interval of comparative health, succeeds; and this interval of immunity from suffering usually lasts one, two, or more days, (giving rise to the terms *tertian*, *quartan*, and other agues, according to the interval of duration), before the recurrence of another similar fit;—such fit generally making its invasion with a wonderful degree of exactness at the same hour of the clock as the former, and lasting about the same time,—when it is again followed by a similar periodic intermission of the symptoms as before. In all the stages of the fit, every function of the body is disturbed—some more, some less. During the cold stage, the face becomes pale, the features shrink, and the muscles are tremulous or even spasmodic: the patient, in other words, shivers, has cramp, and his strength

is prostrate. The breathing and circulation are variously altered,—his urine, if he passes any, is generally pale and plentiful, and his other secretions are similarly changed in quantity and quality. The senses and mental powers are for the most part depressed, or even curiously vitiated, though sometimes they are preternaturally exalted. A gentleman, who was recently my patient, informed me, that during the cold stage his intellectual powers were more than usually clear, and his sensations throughout highly pleasurable; he felt as if under the pleasurable feeling produced in some people by opium; but this kind of feeling is more frequently an accompaniment of the hot stage. The patient has nausea and loss of appetite, sometimes sickness; less frequently looseness of bowels,—or he has hunger amounting to voracity,—and sometimes thirst. A reaction now comes on. The patient gradually becomes warmer and warmer—the face changes from pale to red—his cheek is now flushed—his eyes are suffused, and he suffers from headache, more or less agonising. This is the *Hot* stage.

The thirst, whether it existed before or not, is now a most prominent symptom; the appetite is thoroughly lost; the patient having, in most instances, a repugnancy to the very name of food. If you inspect the tongue, you will find it comparatively dry and loaded, and of a brown colour; and though the skin feel to your hand like a burning coal, so to speak, the patient himself may complain of such excessive coldness, as to induce the attendants to cover him with numerous blankets;—more generally, however, he has a sensation of heat equally severe. Every muscle of his body in this stage is more or less painful and enfeebled; though in some instances, he may appear to have a greater command over them than in health; and if delirium supervene, which it may do, his strength will appear almost superhuman. During the excitement of this stage, individuals have been known to become musical, poetical, oratorical, and have exercised other talents which they never were known to manifest in health. The heart now beats violently, and the pulse is full and bounding; the urine, instead of being pale, as in the preceding stage, is scanty and high coloured. The secretions generally are sluggish, and in some instances they are altogether suppressed. A long *sweat* succeeds, during which the greater number of the suppressed secretions gradually reappear. —As with a feeling of languor, lassitude and a disposition to yawn and stretch the various members of the body, the fit is usually preceded; so with the same symptoms does it usually end. Then comes the state of comparative health, which may either again pass into the Fever-fit, or continue for an indefinite period, so as eventually to become Health.

As every individual has, from birth, some part of his body less strongly constructed than the other parts, it would be wonderful indeed, if, during this tempest of body, termed an *Ague*-fit, that weak point were not very often discovered, but discovered more or less, in every instance it usually is. Is the Brain the least strongly constructed point? Then, according to the part of the organ most implicated, and the degree of implication, will you have Epilepsy, Apoplexy, Insanity, Imbecility of Mind, or Palsy, superadded. Is the original weakness of conformation seated in the lungs? Look, then, for spitting of blood, asthma, or consumption.—In the heart? how it palpitates or remits in its beats!—it may even stand still *for ever;* and more than once in my life have I known it to do this during the ague-fit. But the joints may be the weak points of the patient's body?—then, as a matter of course, the joints swell and become more or less hot and painful. And if just at this epoch, some wiseacre of the profession chance to drop in,—with the usual scholastic sagacity, he discovers the disease is not Fever, but *Rheumatism.* The lancet, of course, is immediately bared—the leech and the blister are ordered;—from this moment, the entire treatment is directed, not to the beginning, but to the end—not to the Fever, but to its termination! The state of the joints is the sole subject of thought and action; the Brain—that Pandora's box of the whole—that organ upon which every motion of the body, wrong or right, depends —never once enters into the wonderfully wise man's head;—he never once dreams of influencing this key to all the corporeal actions, in any manner whatever. And what is the result of this treatment? Daily promises, and daily disappointments—hope deferred and the heart made sick—the health, the happiness, and the home of the patient too often made desolate forever.

Thus far, Gentlemen, I have detailed to you the beginning, the progress, and some of the more important terminations of what is usually called a perfect ague-fit. I must now tell you that all agues are not equally perfect; the stages of the fit in particular cases may vary in duration—the bolder features or symptoms be all more or less subdued—the intermission, or immunity from suffering, instead of extending to a day or days, may be only an hour or two in duration. The disease is now no longer Ague; Physicians change its name to *Remittent* Fever. Remit-

tent fever may be either the primary disease, or the Fever may, in the commencement, be a veritable ague,—recurring and re-recurring, in the first instance, at perfectly periodic intervals of a day or more; yet slide by degrees into a fever of the Remittent form. And this Remittent Fever again, whether it be the original or secondary disease, from its periods of access and interval becoming still less obviously marked, may assume the shape and shade of disease incorrectly termed *Continued* Fever; which last, from long duration and other circumstances, may terminate in that most terrible state of mental and corporeal prostration, by the schools denominated *Typhus* Fever,—from a Greek word signifying stupor or unconsciousness, that being one of the most common symptoms.

What, then, are all these Fevers, but varieties or shades of each other? During the course of all or any of these so-called different fevers, every organic affection, every possible local change you can name or imagine, may, with more or less quickness, be developed,—giving occasion, of course, to the attending practitioner to baptise the disease anew; and this he may either do, according to the locality of such organic change, or according to the locality in which the symptoms may induce him to suspect its existence. Should a new doctor chance at this particular time to be asked to see the patient, what a fine opportunity for a very pretty quarrel! And the practitioner who attended from the beginning, though he may have practised the right, shall very likely be dismissed, while the other for advising the wrong may as certainly be retained, and be esteemed, at the same time, as an angel, or an oracle at least. You are doubtless curious to know the *wherefore* of this. But there is nothing so very curious in the matter after all. For if you only reflect how few people in this world can get further than the surface of things,—how few can see beyond present signs and present symptoms, you will not be astonished that the new doctor who shall place his finger on the organ for the time most implicated, and wrongly set that down not as the *end* but as the *beginning*—not as the consequence or effect, but as the origin and cause of the totality of disturbance, will be preferred to him whose experience of the whole case led him rightly to look upon the local disease as the gradual development of repeated febrile attacks. But the new practitioner will seldom be content with merely seizing upon the local termination as the cause or beginning of the mischief, and proceed to treat it accordingly; for he will very often drop a hint, at the same time, that but for neglect of this the case might have ended far more favorably. Suppose, for example, Pulmonary *Consumption* to be the after result of the original fever. "What a pity," the learned man will say, "I was not called in at first, for *then* I should have at once attacked the SEAT of the disease—the chest." *Then*, Gentlemen, when no consumptive symptom existed,—*then*, when the *weak point* of the patient, for all you, I, or any other doctor knew, or could know, might have been the liver, stomach, or any thing else! And by that pretty speech of his, nine times out of ten, such new doctor will succeed in securing the esteem of the persons who employ him. Now this is a hard case for the honest and more able practitioner; but so the world wags!

Until the publication of my Work, the *Fallacy of the Art of Physic as taught in the Schools*, and long after, it was the almost universal belief of medical professors that Ague could only be caused by emanations from the fens; the complaint being very common in fenny countries; and I am not sure that this belief is not even now one of the numerous fallacies still taught in our schools and universities. But, Gentlemen, there is no agent in nature which may not cause ague, from a blow to a passion. Lord Byron's mother, according to Mr. Moore, died of a "fit of ague brought on by rage or vexation, caused by reading her upholsterer's bill." The close analogy subsisting between ague and the passions has not escaped the observation of the poets, Shakspeare, as I shall afterwards show you, often alludes to it; and Coleridge in his usual playful manner, gives us to understand,

There's no philosopher but sees,
That Rage and Fear are ONE disease,
Though this may *burn* and that may *freeze*,
They're both alike the AGUE.

You see, then, there can be no corporeal agitation, no constitutional revolution, without a change of temperature of some kind.—Butler in his *Hudibras*, tells us,

LOVE's but an ague fit reversed,
The *hot* fit takes the patient first.

Seriously, you will do well to ponder on the relations which the effects of the various passions bear to ague. Throughout them all you may observe the same tremor and thermal changes; and in many cases the disease which they may cause becomes equally periodic and recurrent. A young lady was to have been married on a particular day; but on the very morning of that day the bridegroom was accidentally killed. The grief of the lady ended in insanity. The *fit* in this

case, came on every day at the same time; but during the remainder of the twenty-four hours, she had, in scholastic phrase, a "lucid interval." She was then perfectly sane.—Gentlemen, may I ask what are the lucid *intervals* of mania but *intermissions*? Prolong them to an indefinite period and you produce sanity! Prolong the intermission of any disease to an indefinite period, and you have *Health*. Your own common sense will tell you that.

What are the constitutional effects of a fall or a severe blow? Do we not perceive the same tremor in the first instance—the same pallor and loss of strength so remarkable in the cold fit of ague? Have we not the same hot or febrile fit succeeding? "The fevers," says Abernethy, "produced by local disease [local injury,] are the very *identical* fevers which physicians meet with when there is no external injury." How can they be otherwise, since it is only by the matter of the body changing its motive ralations and consequent thermal conditions in an identical manner in both cases, that we obtain the group of symptoms included by physicians under the abstract word "FEVER?" The agents which cure fever from a blow, are the *same* agents which cure fever from a *passion*, a poison or a viewless and unknown cause. When a man is hot, and his skin dry all over, no matter what the cause be, you may bring his condition to the state of health by throwing cold water over him. You may do the same by an emetic. Oh! an emetic has a wonderful power in the case of fever; and the old physicians treated all fevers in the first instance by emetics.—They did not trouble themselves much about the cause. The *state* of the patient was what they cared most about. When he was cold, they warmed him, sometimes with one thing, sometimes with another. When hot they cooled him—not in the Sangrado fashion of these days, by draining him of his life's blood; but by the employment of an emetic, or by sponging him over with cold water! By bleeding a man in the hot stage of fever, you may cool him certainly; but unless you cool him to death, you cannot thereby keep the fit from returning. When it does return, you may bleed him again, it is true; but how often may you do this safely? So far as my experience of medical matters goes, few people in these times are *permitted* to die of disease. The orthodox fashion is to die of the doctor! Gentlemen, we daily hear of the terms *constant* and *continued* fever, but there never was, nor can there be a fever without a *remission*, without a *period of comparative immunity* from suffering, more or less marked Every writer of name from Cullen downwards admits this, but what does it signify whether they admit it or not? use your own eyes, and you will find it to be the truth. You have only then to prolong that period of immunity to an indefinite time, and you have health. By bark, opium, and the various chrono-thermal medicines, you may in most cases succeed. But instead of trying to prevent recurrence, practitioners now-a-days only temporize during the fit; and this is the most *profitable* practice; for a long sickness makes many fees! The *honest* physician will do his best to keep the fit from returning. Now if blood-letting were certain to do that, how could we possibly hear of people being bled more than once for fever? Do we not hear of repeated application of the lancet, and of the patient dying notwithstanding? When I come to speak of Inflammation, you shall find how little that instrument is to be relied on in fever, or rather you shall find that its employment at all, is one of the greatest and most terribly fatal of medical mistakes! How then is it, that this practice has so long maintained its ground? By the same influence that for thirty centuries determined the Indian widow to perish on the funeral pile of her husband—the influence of authority and custom simply. In physic, gentlemen, as in other things, men are "bred to think as well as speak by rote, they furnish their minds as they furnish their houses, or clothe their bodies, with the fancies of other men, and according to the age and country. They pick up their ideas and notions in common conversations or in their schools. The first are always superficial, and both are commonly *false*"—[Bolingbroke.] The first step that I myself made in rational medicine, was to unlearn all I had been taught; and that at the beginning was difficult. How I ever came to believe one half the rubbish propounded by medical teachers, I cannot now understand; for the whole doctrines of the schools are a tissue of the most glaring and self-evident absurdities At a future period of this course I shall prove my assertion, but before you can detect error, you must first know truth, and this it shall be my endeavor to point out to you. To return then to Fever. From the facts and observations already stated, you at once perceive that during the whole of the paroxysmal stages of an ague the entire economy is more or less altered and revolutionized. It matters very little upon what part of the body the exciting cause or causes of this corporeal disturbance shall first fall—whether directly upon the brain in the shape of a *Passion*, a poison, or a blow on the head—or more remotely, as in the case of a sudden chill, or the mechanical injury of a joint or

other external part—to the consequent derangement of the Brain and Nervous System, we still refer the whole paroxmysmal symptoms. Why, after these symptoms have once completely passed away, and the economy has been comparatively restored to its usual healthy motive condition, periodical repetitions of the diseased motions should yet recur, is a thing not more inexplicable than that the various habits of Health should in certain instances with our knowledge, and in certain other instances without it, all have a tendency periodically to repeat themselves: Upon this subject I will touch more at large at an after period of the course. Meantime as the symptoms of an uncomplicated *Ague* fit stand out boldly in relief—and as in every other form of disease, however named or by whatever caused, these symptoms or shades of symptom may readily be traced; you at once see the reason why I have taken Ague as the *type* of the whole. But while with this explanation I assume every disease to be in the first instance an ague—do not suppose for a moment that I employ the term in any confined sense. Call the symptoms ague, fever, or what you please, CONSTITUTIONAL DISTURBANCE is the prelude to every disease—the *precursor* of every kind of local mischief—though in numerous cases if not in all—more especially after *repeated* paroxysmal recurrence, SUPERADDED PHENOMENA appear, and these last may be either FUNCTIONAL or ORGANIC—and in some instances they are of a kind so grave and important, as to throw the constitutional symptoms for a time altogether into shade. Some part of the system, in a word, may be so much more prominently implicated than another, as to become the chief feature of the case—*functionally* if the *motions* be only *atomically* altered—organically, if the part in question be threatened with a change in its structure tending in any way to its destruction or decay. Of the first you have an example in the spasm or palsy of a muscle, or the suspension or too great flow of a secretion. Of the second I can give you no better instances than that disorganizing disease of the knee joint termed "white-swelling," and that too common termination of chest disease in this country—*Phthisis* as it is termed by medical men—*Consumption* or *decline* by the vulgar.

The propriety of adopting any remedial measure has in every case more or less relation to time and temperature. But the beneficial influence of the Peruvian BARK, and its preparation *Quinine*, would appear, more than any other agent, to depend upon the period in which we administer it. The proper period for its exhibition is during the remission. With the exception of opium, it is more strictly a *preventive* than any other known agent. So generally, indeed, has it been found to answer this purpose in the treatment of Ague, that many teachers of medicine have vaunted it as a *Specific* for this distemper; but as we stated to you in our former lecture, there is no such thing as a specific in nature for any disease whatever. Had there been a specific for ague, do you think the court doctors would have permitted Oliver Cromwell to die of it? Whatever be the agency by which this or any other disease has been cured, you shall find in the course of these lectures, ample evidence that its influence relates in every case to change of temperature. Major-General Sir R— A— while serving in Portugal, became the subject of severe ague, which resisted a host of remedies prescribed for him by numerous medical friends—Bark among the number. One day when riding out he was seized with a paroxysm. The inmate of a little shop where he dismounted till the fit should be over, suggested to him to try the barber-surgeon of his neighbourhood. Willing to be cured by any body or by any thing, Sir R. at once agreed. The ambidexter man of medicine came, ordered him a large plaster to his back, and the ague was forthwith cured! Gentlemen, to what, but to the improvement of the *temperature* of the spine must we attribute the success of that plaster? The general good effect of *Quinine* in keeping off the ague-fit, when it proceeds from viewless causes, is sufficiently well known to every member of the profession; but it is not so generally understood that the same agent may be equally serviceable in cases produced by local injury. Of this, however, I will give you a proof. A gentleman shortly after having had a bougie passed, was seized with ague of the most perfect kind; two days after, at the same hour, he had a return, and every alternate day it recurred, till he had experienced about twelve paroxysms; then for the first time he took quinine, and he had no repetition. He never had ague before that occasion, nor ever afterwards, unless when compelled to use the bougie.

I do not know that I could better commence my proof of the intermittent nature of Disease generally, than by entering into a short consideration of what are termed

SPASMODIC COMPLAINTS.

Such complaints being unattended with any structural change, are termed by the profession FUNCTIONAL; a word, as we have seen, expressive of their simplicity. What is the meaning of the term *Spasm?* It means an irregular or unnatural contraction of some

muscle of the body, and in the case of the voluntary muscles, you cannot by any effort of the will control or counteract it. By rubbing and *warming* the part, you may some times succeed, and there are a great many medicines by which, when taken internally, the same effect may be produced; but what will answer in one case may not answer in another. The disease is sometimes termed *Convulsion*, and *Cramp* also, more especially if the spasm be painful. The difference of locality in which spasm takes place in different persons has afforded professors an excellent opportunity of mystifying the whole subject. When it happens in the membranous lining of the lachrymal duct, you shall see the tears accumulating at the inner angle of the eye, the passage to the nose being closed up by the contracting spasm. This disease is called *Epiphora*, and sometimes, though not quite correctly, *Fistula, Lachrymalis. Sneeze, Hiccough*, and *Yawn*, are also effects of spasmodic action. Occurring in the muscular apparatus of the windpipe, or its divisions, spasm is familiar to you all in the word *Asthma*; and it is also termed *Dyspnœa*, from the difficult breathing which it certainly occasions. When this spasmodic action affects the muscles about the jaws and throat, and the patient at the same time has convulsions of the face and limbs, there is usually loss of consciousness, with a sudden loss of power in all his members, which causes him to fall. This is the *Epilepsy* or "falling sickness." The subject of the disease termed *Jaundice*, in ninety-nine cases out of a hundred, owes the yellow colour of his skin to spasm—spasm of the gall-ducts—though any other obstruction of these passages—a gall-stone for example, may give rise to the same effect. Taking place in the illium or small intestine, spasm is termed the *Iliac Passions*; in the colon or great intestine, *Colic*; in the urethra, *Spasmodic Stricture*. The *Lockjaw* affords yet another example of spasm. That all these various diseases are merely effects of the same action in different parts is proved by each and all of them having been known to assume the most perfectly *periodic type* in individual cases, and by all being more or less amenable to the same class of remedies most generally influential in keeping off the ague-fit.

Like every other Force in nature, Remedial Powers act by *attraction* or *repulsion*, and for a reason to be afterwards given, every remedy can act both ways in different individuals. They are all capable of producing inverse motion,—in one case *curing* or alleviating, in another *causing* or aggravating disease. Opium, for example, will set one man to sleep, and keep another wakeful. Arsenic has cured the tremor and heat of ague, and set up both in a previously healthy person. Opium, Bark, Copper have done the same. Moreover, all four have produced diseases with fits and remissions.

A girl took a large dose of arsenic (sixty-four grains) for the purpose of suicide; her design was discovered in sufficient time to prevent her death; but a periodic epilepsy ushered in by chills and heats was the result. A man of the 30th foot, after a course of hard drinking, became epileptic; his disease came on every second day at the same hour. Quinine, silver, and calomel, were tried without success. I then gave him arsenic, after which he never had another fit. In these two cases then, arsenic produced inverse motions, causing epilepsy in the first, and curing it in the second. When I come to treat particularly of the Passions, I shall show you that the same passion which has caused an ague or an epilepsy may cure either. In truth, I scarcely know a disease which the passions *Rage* and *Fear* have not cured and caused, according to their *attractive* or *repulsive* mode of action in particular cases.

I have said that Asthma is an intermittent disease. "The fits of convulsive Asthma," according to Darwin, "return at *periods*, and so far resemble the access of an *intermittent fever*." Had this physician's knowledge of the symptoms of Asthma been sufficiently complete, he would have added that in almost every instance the subject of it shakes or shivers, and in all complains of a chilly feeling followed by heat of skin. Then doubtless he would have found that between ague and asthma there is something more than a resemblance—that Asthma, in fact, is an ague, with the further development of spasm of some of the muscles of the windpipe.—But call the disease what you like, I have generally cured it with one or other of the chrono-thermal remedies; and with two or more in combination I can most truly say I have seldom been compelled to complain of ill-success in its treatment. In one case, however,—that of a gentleman who had the disease every second night,—I had the greatest difficulty in effecting a cure, for it was not till I had nearly exhausted all my best resources that I succeeded to my heart's content by applying a warm plaster all along his spine. Here you again see, in the most direct manner, the advantage of attention to temperature; the spine, in this case, was always chilly, but became warm and comfortable under the use of the plaister. Many medical writers have detected the analogy which subsists betwixt *Spasm* and *Tremor*, without being at all able to explain in what it consists. Analyze tremor, or as it is more commonly cal-

led, "shivering" "shaking," or "trembling." and you will find it to be merely a rapid succession of incomplete spasms. In *St. Vitus' dance*, or as it is sometimes termed, "the leaping AGUE," which is also a periodic disease, you may see every variety of spasmodic and tremulous action a muscle can take. It is a disease which I am very often consulted for in children, and in most cases I speedily succeed with minute doses of one or more of the chrono-thermal remedies; one remedy of course answering better in one case, another in another.

With the same agents, prescribed upon the same principle, I have been equally fortunate in the treatment of Urethral Stricture—a disease for which the bougie, in general practice, is far too indiscriminately employed. You all know the beneficial influence of *warm baths* in this affection, and some of you have heard of the advantages to be obtained from the internal use of *Iron*. But the influence of *Quinine* over stricture is not so generally known. It is unnecessary for me to give any instances of my own in evidence of this, Sir Benjamin Brodie having published at length the case of a gentleman affected with spasmodic stricture of the tertian type—that is to say, which came on every alternate night about the same hour, and which yielded, in his hands, to quinine. The marked *periodicity* of this case doubtless pointed out the proper treatment; but in cases where this is less striking, you have only to ask the patient if there are times when he passes his water better than at others; and if he answers in the affirmative, you may be sure the stricture depends less on a permanent thickening of the mucous membrane of the urethra, than upon a remittent spasmodic action of its muscular apparatus. Such a patient on coming out of a warm room into a *cold* one, will find himself, all in a moment unable to pass a drop of water. See then the effect of *thermal* change—of change of *temperature*—in producing spasm,—and hence too the benefit to be derived from the warm bath in the treatment of spasm generally. In the great majority of stricture-cases, the surgeon may save himself the trouble, and his patient the torture, of passing the bougie at all, by treating the disease chrono-thermally;—that is, if he prefers the interest of the public to his own; but this mode of preventing the return of disease is obviously less lucrative than that which enables him to give a temporary relief at the expense of long attendance.

We now come to that form of disease termed

PALSY OR PARALYSIS.

An affection in which there is a still greater loss of muscular power than in any of those we have hitherto considered. From the suddenness with which the patient is in most instances affected or "struck," this disease is known to every body under the name of "Paralytic Stroke," or more familiarly still, "a Stroke." It consist either in a partial or complete inability to use the affected muscles—for there are degrees of Palsy as of every other disease—inability to control their actions in any manner whatever by the will. Now it is a common error of the schools to teach that such disorder is *always* dependent on some PRESSURE on the Brain or Spine.—But, gentlemen, Paralytic disease has often been produced by a *purge*, and oftener still by *loss* of Blood;* and many weakly persons on suddenly rising from their chair, have all at once lost the use of a leg or arm. Most cases of Paralytic diseases if properly sifted, will be found to be only the *termination* of previous constitutional disturbance; previous threatenings of such loss of power having been more or less frequently felt by the subjects of every case. Moreover, in a number of cases, palsy is an *intermittent* disease throughout its whole course, being preceded by chills and heats, and going off with a return of the *proper* temperature of the body. How can you reconcile the idea of permanent pressure with such phenomena?

I now hold in my hand the *Dublin Journal*, in which I find a case of paralysis of some of the muscles necessary for the proper performance of the functions of speech—*Aphonia*, as it is called by professional men. This case will show you that Palsy, like every other form of disorder, may exhibit the most perfect periodic intermissions. It is taken from a foreign journal. [*Hecker's*] "A peasant girl was attacked in the following manner:—Speechlessness came on every day at four o'clock, P. M. accompanied by a feeling of weight about the tongue, which remained a quarter of an hour. The patient, while it lasted, could not utter any sound, but occasionally made an indistinct hissing noise.—Consciousness did not seem impaired during the fit. She ascribed her inability to speak to a feeling of weight in the tongue. The paroxysm went off with a large evacuation of watery urine, accompanied with *perspiration* and sleep. Ten such attacks had occurred, when Dr. Richter of Wiesbaden was called to see her; he ordered her considerable doses of sulphate of Quinine with immediate good effect from the first day. The attack returned, but in a mitigated form, and on the second day

* The recent case of Sir Wm. Geary must be still fresh in every body's mind. That Gentleman met with a sudden loss of blood from an accidental wound of the carotid artery. Palsy of the left side ensued.

no trace of it was visible except a certain degree of debility and fatigue felt at the usual hour of its coming on."

I am sorry the corporeal temperature is not stated by the reporter of this case, but the periodic manner in which it came on and went off, together with the mode of its cure, sufficiently illustrate its nature. Not long ago, I was consulted in a similar case, which was moreover complicated with palsy of one side. Sarah Warner, aged 25, married, had suffered periodically from loss of speech, and also from an inability to move the leg and arm of one side. Various remedies had been ineffectually prescribed by her medical attendants, who all looked upon her disease as APOPLECTIC—in other words they supposed it to be caused by *pressure* on the Brain. One of them, indeed, proposed to bleed her, but she would not consent. When she applied to me I ordered her a combination of Quinine and Iron, after which, she never had another fit.

I shall now give you the details of a case of palsy which I treated successfully after it had been long considered hopeless:—

Mrs. Sargent, aged 40, a married woman, and the mother of several children, had kept her bed for eight years, on account of paralysis of the lower extremities; during which period she had been under the treatment of eight or nine different physicians and surgeons of the Cheltenham Dispensary, Dr. Cannon and Mr. C. T. Cooke among others. Such at least was the woman's own statement, confirmed to me by many people of respectability, who had visited her from the commencement of her illness. When I first saw her, she could not move either leg; her voice was an almost inaudible whisper; she was liable to frequent retchings and she complained of spasms with much pain of the loins and limbs. Her last dispensary medicine, mercury, which she believed had been given her by mistake, had produced salivation, but with decided aggravation of her symptoms. In this case I prescribed a combination of remedies, the principal of which were hydrocyanic acid and tincture of cantharides. Under this treatment her voice returned in about a week: her recovery from every symptom was complete in six weeks, and she had no return in three years after she was under my care.

Charles Overbury, aged 10, had been in a curious state for some months previous to my first visit. I found him lying upon a couch, every muscle of his face in such complete repose, that his countenance seemed quite idiotic; his arms and legs were perfectly powerless, and if you held him up, his limbs doubled under him like those of a drunken person. Upon which ever side you placed his head, he was unable to remove it to the other. It was with difficulty he swallowed his food, but the heart and respiratory muscles performed their respective offices with tolerable correctness. The patient labored under complete loss of speech the entire night, and nearly the whole day. About the same time daily—noon—he could utter the monosyllables *yes* and *no*, but this power remained with him for half an hour only. The remedies to which I resorted in this case were minute doses of calomel, quinine, and hydrocyanic acid,—all of which improved him, but the last proved the most effectual. In less than three weeks he was running about, well in every respect, and the change in his countenance, from apparent idiocy to intelligence, was as perfect a transformation as it is possible to imagine You marked, I hope, the periodic, though imperfect, remissions which this case exhibited.

The case of the celebrated Madame Malibran may still be fresh in some of your minds. It was completely the converse of this boy's disease, for at particular times every muscle of that actress became stiff and rigid throughout the entire body. When taken together, these cases show the analogy which subsists between paralytic and spasmodic affections; indeed, in many cases, both affections co-exist at the same time in different muscles of the same person,—sometimes they are complicated with imbecility of mind or insanity.

A young girl was lately carried into my room by two of my servants. Her mother brought her to me, at the request of the Rev. Edward Murray, brother of the Bishop of Rochester. Not only had this girl lost the use of one side, but her reason was gone; in fact, her appearance was quite idiotic, and she was utterly helpless in every way. She had, moreover, an *Epileptic fit* every night when she was put to bed. In this case, I prescribed a combination of copper, silver, strychnia, and quinine. What a medley! I hear some of you say; but don't be too quick, for mark the result. About six weeks afterwards, a young person walked into my room with a letter "from the Rev. Edward Murray." It was the same girl, looking quite intelligent, and speaking and walking as well as she had ever done in her life.—Her epileptic fits had become faint, few, and far between, and she was then the monitor of her class! Now this girl, Mr. Murray informed me, had been ill *four* years, and had been dismissed the Middlesex Hospital "incurable."

I was suddenly called to see Mrs. T—— of Clarges-Street, whom I found with complete loss of the use of one side, and partial palsy of the muscles on the same side of the face. She had been nervous and ill for some

time, and the night before, she had been suffering from domestic affliction. The next morning, while entering her own door, she fell as if she had been shot. When I saw her, her face was pallid, and her feet were cold. The people about her were urgent that she should be *bled*, but I ordered her warm brandy and water instead. A gentleman who was formerly her medical attendant, was sent for, and agreed with me that she should not be bled. Under the use of quinine and strychnia, continued for about six weeks, with country air, she recovered the use of her side so far as to be able to walk without a stick; the use of her arm has also since returned. Had this lady been bled or leeched, she would now in all probability be in her coffin.

I will now give you a case or two exemplifying the cure of palsy of a single limb.

Case 1.—Mary Boddy, 18 years old, from the age of *eleven*, had weakness of the back and loins, and she gradually lost the use of the right leg. In this state she remained for *three* years; sixteen months of this period she was an in-patient of the Gloucester Infirmary, in which establishment her mother held the situation of nurse. But cupping, bleeding, leeching, blistering, were all ineffectual. The patient complained of having suffered from shivering fits, followed by heats, and sometimes perspirations. The same mode of treatment as in Mrs. Sargent's case, with the addition of a galbanum plaster to the loins in which she complained of coldness, was adopted, and followed with like success. She had scarcely been a fortnight under my care, before she completely recovered the use of her paralytic limb, and she has had no relapse during the last four or five years.

Case 2.—Esther Turner, aged 30, when in the service of Mr. Ward, the master of a respectable Boarding School, at Painswick, fell down stairs, and from that moment, lost the use of her left leg. After a period of *eleven* years, during which she had been ineffectually under treatment in various hospitals and infirmaries, she came on crutches to my house. She explained that she was subject to severe shivering, with occasional convulsions. Her leg, she said, had more feeling on certain days than others. After trying her for some time with a combination of hydrocyanic acid and tincture of cantharides, without any improvement, I prescribed a pill, containing a combination of quinine, silver, and colchicum, night and morning. She progressed from that day; and in about six weeks I had the satisfaction to see her in possession of the complete use of her limb; nay, she returned to her service at Mr. Ward's, which she only left to get married.

Case 3.—Miss M——, aged 25, had lost the use of both limbs for *seven* years; all that time she had been confined to her bed, and though she had the advice and attendance of the late Sir Charles Bell, who was a friend of her family, she never once could stand up during the whole of that period. She was brought up to town from Yorkshire, a distance of 260 miles, on a sofa-bed, to be placed under my care. I immediately put her on a course of chrono-thermal treatment, and we had not long to wait for improvement, for in five days this young lady could walk round the table with the partial support of her hands. At the end of two months, without any assistance whatever, without even the support of the bannisters, she could run up and down stairs nearly as well as myself.

Should this case be considered to require better confirmation than my word, I am permitted *privately* to give Miss M——'s name and address to any party who may take an interest in the case, the particulars of which she will readily communicate. Miss M—— is the daughter of an accomplished English clergyman, and is niece of one of the judges of the supreme court of Scotland, who being in town all the time she was under my care, saw her the day after she arrived, and had the satisfaction to witness the whole progress of her cure.

If a knowledge of anatomy could confer a knowledge of Physic, why did Sir C. Bell fail in this case? No man knew anatomy better; few knew the *nervous system* so well. But to know the anatomy of the *dead* is one thing, and to know how to influence the motions of the *living* is another. Sir C. Bell was a profound anatomist, and an admirable operative Surgeon; he excelled in Mechanics, but not in Medicine.

I could here give you numerous other cases, all more or less explanatory of the manner in which palsy of almost every muscle of the body may be developed and cured. For the present, I shall content myself with recording my experience of a disease, which until I explained its nature in 1836, was never supposed to depend on Palsy, namely the *Curved* or *Cooked Spine*.* By most authors, this disorder had been supposed to be under all circumstances, an affection of the bones. Some vaguely referred it to be peculiarity of nervous action; while others hy-

* When I first published my views of the nature of Curved Spine, their correctness was called in question. When Stromeyer and others, without noticing my labours, *afterwards* adopted them as their own, they were admitted by the whole profession to be true.—What a reward to the real cultivators of science.—first to have their discoveries denied, then pilfered! The reader will find as he proceeds that this is not the only instance of plagiarism I have to complain of.

pothetically traced it to looseness of the ligaments. When the late Mr. Abernethy said it was owing to a "*rancour* in the muscles," he only used an unmeaning phrase to conceal his ignorance of the entire matter; for what meaning can there in reality be in the word "rancour," when applied to a subject like this? *Rancour* is an old English word for malignity or ill temper; but how can that apply to a state of muscular *repose*,—to a palsy! Nevertheless, to Mr. Abernethy's surgical care, almost every case of spinal curvature, among the higher ranks, was at one time entrusted. What the disease really is, I shall now proceed to demonstrate.

The mast of a ship is kept erect by the *stays* and *shrouds*—if you divide or loosen these on one side, the mast falls more or less in an opposite direction. The human spine is kept upright by a similar apparatus—the *muscles*. If any of these muscles from bad health become weakened or paralyzed on any side, the spine, from the want of its usual supporting power, must necessarily, at that particular place, drop to the other side. But being composed of many small jointed bones, —the *vertebræ*—the Spinal column cannot, like the *mast*, preserve its upright form, but when unsupported, must double more or less *down in the* shape of a curve or obtuse angle; and the degree and situation of this curvature will depend upon the number and particular locality of the muscles so weakened or paralyzed. This disease or "deformity," (for Mr. Abernethy would not allow it to be anything else,) under all its uncomplicated variations of external and lateral curvature, is the result of muscular weakness or palsy; which palsy, for the most part, is a feature or termination of long remittent febrile disorder. It is often a more or less rapid development of the usual diseases of children,—Scarlet fever, Chicken-pox, Measles, and so forth; all of which, as I shall afterwards show you, are purely remittent fevers; but whether complicated with vertebral disease or not, curved spine is no more to be influenced by issues, setons, moxas, &c, except in so far as these horrible measures almost invariably confirm it by further deteriorating the general health of the patient.

In the commencement of most cases of this kind, the patient is taller one day than another,—a proof that it depends upon the state of health of the hour; and never do I remember to have had such a patient who did not confess to chills and heats or *vice versa*. I will give you two cases in which these phenomena were observed.

Case 1.—A young lady, aged 16 had a *lateral* curvature of the vertebræ of the upper part of the back, (that is a curvature to one *side*) causing the inferior angle of the shoulder blade to protrude. I prescribed calomel and quinine, in small doses, and directed her to have her spine rubbed night and morning with soap liniment. In less than a month the patient had gained three inches in height, and in two months more, she was erect.

Case 2.—A lady, 45 years of age, the mother of children, had her spine so much curved at the lower part of the loins, that, to use the phrase, her "hip grew out." This case came on suddenly. I ordered a warm plaster to be applied to the spine, and prescribed hydrocyanic acid and quinine. In three weeks she stood upright. Four years afterwards she had a return, when the same means were again successfully put in practice. These two cases, gentlemen, were cases of simple, uncomplicated palsy of the muscles of the back. There are yet other ways in which curved spine may take place, though these still depend on a *loss of Health* of the general system. The mere weight of the body will in some cases produce *waste*, or, professionally to speak, interstitial *absorption* of particular *vertebræ*, or of their parts. A curve of course must follow; but curvature of the spine is not unfrequently the effect of a *consumptive* disease of the substance of the vertebræ—a process by which one or more of these small bones fall into a state of ulcerative decay. Still, even in these cases there is at the same time a greater or less loss of power in particular muscles—for the same general bad health that weakens the bones must weaken them also.

I will give you two cases illustrative of this last complication.

Case 1.—Mrs Craddock, aged 25, had, for upwards of eighteen months, great weakness in the upper third of the back, where a swelling made its appearance, gradually increasing in size. According to the statement of this woman, she had been an in-patient of the Gloucester Infirmary for seven months; during which time she had been treated by issues and other local measures, but with no good effect. When I first saw her, she could not walk without assistance. Upon examination, I found a considerable *ex*curvature, involving the third, fourth, and fifth vertebræ of the back,—which vertebræ were also painful and enlarged, and the skin which covered them was red and shining. The patient was extremely dispirited, shed tears upon the most trifling occasion, and was subject to *tremblings* and spasms. She was generally chilly, and suffered much from coldness of feet. She also complained of *flushes*. Some days she thought the "swelling" in her back was not so great as upon others; and upon these particular days, she also remarked

her spirits were not so low. I directed the issues to be discontinued, and ordered a combination of hydrocyanic acid and tincture of cantharides, to be taken three times a-day. These medicines she had scarcely continued a fortnight, when the improvement in her general appearance was most decided; the protuberant part of her spine had in that period considerably diminished—her health daily became better, and, in less than a month, her cure was accomplished. A permanent curve, slight when compared with her former state, still remains.

Case 2. A young gentleman, 9 years of age, had external curvature of the upper vertebræ of the back; one or more of which were in a diseased and even ulcerated state, as was obvious, from the discharge which proceeded from an opening connected with the spine. His mother observed that he stood more erect some days than others. When I was first consulted, he had an issue on each side of the spine; but these, as in the former case, having been productive of no good, I ordered to be discontinued. Keeping in view the remittent and constitutional nature of the disease, I prescribed small doses of calomel and quinine. The very next day the discharge was much diminished and a cure was obtained in about six weeks. The ulcer in that time completely healed up, but a permanent *angular* curve of course, remained—trifling, however, when compared with the state in which I first found him. I might give you many other such cases, but my object is to illustrate a principle, not to confuse you with too much detail. These two cases, gentlemen, are sufficient to show you the nature and best mode of treating, what you may call, if you please, *Vertebral Consumption*;—though I am not so sure the schools will agree with you in the designation. The one case was in its incipient state, the other fully developed.

It occasionally happens that the matter proceeding from a diseased *vertebræ*, instead of making its way out by the back, proceeds down the loins *internally*, till it reaches the groin, where it forms a tumour; this tumour is called by the profession *lumbar*, or psoas abscess. With the exception of opening the tumour to allow the collection of purulent or other matter to escape, this disease, like the cases just detailed, should be treated almost entirely *by constitutional* measures—by such measures as tend to the improvement of the health generally. It has been for some time the fashion to confine all patients with spinal disease to a horizontal posture; and a rich harvest makers of all kinds of beds and machines have derived from the practice. In the greater number of cases this treatment is erroneous from beginning to end. Constant confinement to one posture is sufficient of itself to keep the patient nervous and ill; while his own feelings and wishes are, for the most part, the best guide as to whether he should rise, walk, sit, or lie down. In this *he* has no theory—the doctor too often has nothing else.*

Equally effectual have I found the chrono-thermal principle of treatment in that particular palsy of one or more muscles of the eyeball, which gives rise to *Squint*, or *Strabismus*, as the Faculty phrase it. Parents who have children thus affected will tell you that the little patient some days scarcely squint at all. You see then that this affection, at the commencement at least, is in most instances an *intermittent* disease. Can the intermission here, like that of the ague, be prolonged to an indefinite period by bark, opium, &c.? Oh, I could give you half-a-hundred instances where I have prolonged it to a cure by these remedies. In a case lately under my care, the squint came on regularly every alternate day at the same hour, and lasted an hour. The subject of it, a boy of eleven, after taking a few minute doses of quinine, never squinted more. In another case, as nearly as possible the same, I ran through almost all the chrono-thermal medicines ineffectually; but succeeded at last with musk. I was lately consulted in the case of a young gentleman affected with squint, who had also a tendency to curved spine. A few doses of calomel and quinine cured him of both. The subject of all these cases had corporeal chills and heats,—showing clearly that the local affections were merely developments of remittent fever. Were medical men only to attend a little more to constitutional signs, they would not, I am sure, leech, blister, and cup away at localities, as they are in general too fond of doing. If properly treated at the commencement, squint is very generally curable by internal remedies; but when, from long neglect or ill-treatment, it has become permanent, the position and appearance of the eye may be made all but natural by a surgical division of the opposite muscle. If the squint be *partial* only, a surgical operation will make the patient squint worse than ever—and even in the case of complete squint, should the paralytic

* Among the numerous causes of spinal disease named in books, much stress is laid on the improper use of *Stays*, and other articles of female dress—but what is Heaven's name is the use of reasoning with the English people on such a subject—a people who imitate every body, fear every body, and in all things attempt to rival every body—not so much as regards truth and excellence, but as regards the stark, staring abandonment of both! The doctors at least have reason to thank them. We laugh at the Chinese for diminishing the size of the female *foot*, which is not a vital part. The chest is, if you take its contents into account: but see how we diminish it by stays! &c.

muscle upon which it depends recover its power after the operation, a new squint would follow of course.

There is yet another paralytic affection of the eye which I must explain to you. I allude to what is called *Amaurosis* or Nervous Blindness. In this case, a non-medical person could not tell the patient was blind at all, the eye being to all appearance as perfect as the healthy organ. Now, this affection, in the beginning, unless when caused by a sudden blow or shock, is almost always a remittent disease. Some patients are blind all day, and others all night only. Such cases, by the profession, are termed *hemeralopia* and *nyctalopia*, or day and night blindness. These, then are examples of intermittent amaurosis; and they have been cured and caused, *like* the ague, by almost every thing you can name. You will find them frequent in long voyages,—not produced in that case by exhalations from the fens or marshes, as many of the profession still believe all intermittent diseases to be,—but by depraved and defective food, with exposure to wet, cold, and hard work, perhaps, besides. In the *Lancet*, [8th Dec. 1827,] you will find the case of a girl, twelve years of age who had *intermittent* blindness of both eyes, palsy of *the limbs*, phrenzy, and epilepsy, from all of *which* she recovered under the use of ammoniated *Copper*— a chrono-thermal remedy.— This case fully establishes the relations which these various symptoms all maintain to each other; and their remittent character, together with the mode of cure, explains the still greater affinity they bear to ague.

The remedies which I have found most efficient in *permanent* nervous blindness have been the chrono-thermal, or ague medicines, occasionally combined with mercury, or creosote. I will give you a case which I treated successfully by an internal remedy.— Charles Emms, aged 25, stated to me that he had been completely blind of both eyes for upwards of *nine* years, four of which he passed *in the* Bristol Asylum, where, after having been under the care of the medical officer of that establishment, he was taught basket making, as the only means of earning his subsistence. He had been previously an in-patient in the Worcester Infirmary, under Mr. Pierrepoint, but left it without any benefit. Some days he perceived flashes of light, but could not even then discern the shape or shade of external objects. Before he became completely blind, he saw better and worse upon particular days. When he first consulted me, his general appearance was very unhealthy, his face pale and emaciated, his tongue clouded, appetite defective and capricious, and he described himself as being very nervous, subject to heats and chills, palpitations and tremblings; his spirits were depressed. My first prescription, quinine, disagreed; my second, silver, was equally unsuccessful; with my third, *hydrocyanic acid*, he gradually regained his vision —being, after an attendance of four months, sufficiently restored to be able to read large print with facility. Such has been his state for upwards of two years. I need not say his general health has materially improved— his appetite, according to him, having become too good for his circumstances. In confirmation of the value of hydrocyanic acid in *nervous* blindness, I may mention that many years after I first published this case, Dr. Turnbull detailed as a great *discovery* some cures which he made in similar cases by applying the vapour of this acid to the Eye.

If patients who are subject to DEAFNESS, be asked whether they hear better upon some days than others, the great majority will reply in the affirmative;—so that deafness is also for the most part a remittent disease.— That it is a feature or development of general constitutional disorder is equally certain, from the chills and heats to which the great body of patients affected with it, acknowledge they are subject. Deafness from organic change of the ear is infinitely less frequent than that which arises from nervous or functional disorder. Hence the improvement to be obtained in the great majority of diseases of this organ, by simply attending to the patient's general health. By keeping in view the chrono-thermal principle, I have been enabled to improve the hearing in hundreds of cases. One old gentleman, upwards of 70 years of age, after having been all but quite deaf for years, lately consulted me for his case; he recovered completely by a short course of hydrocyanic acid. The like good effects may also be obtained by chrono-thermal treatment in ringing of the ears, &c. Indeed, very few people get much out of health without suffering more or less from noise in the ears; sometimes so great as to cause partial deafness.

Cases of loss of the sense of TOUCH, and also those of partial or general numbness, will, in the greater number of instances, be found to exhibit remissions in their course.— So also will almost every instance of that exalted degree of sensibility known by the various names of *Tic doulloureux*, *Sciatica*, &c., according to the locality of the various nerves supposed to be its seat. Look at the history of these diseases. What have your surgical tricks done for their relief,—your moxas, your blisters, your division of nerves! The only measures to which these diseases have yielded, have been the chrono-thermal

remedies, bark, arsenic, iron, prussic acid &c., the remedies, in a word, of acknowledged efficacy in ague. I shall here present you with a case from the *London Medical and Surgical Journal*, illustrative of the nature of *Tic* when involving the nerves of the face. The pain first supervened after a fright; it returned every day at two o'colck, commencing at the origin of the suborbital nerve, extending along its course, and lasted from half an hour to an hour. Two grains of sulphate of quinine given every two hours for three days produced in so short a period a complete cure. The same prompt and favourable effects were observed in another case of frontal tic that appeared without any known cause.—Now this *frontal tic* is commonly known by the name of brow-*ague*. Why then mystify us with *neuropathy*, *neuralgia*, and a host of other jaw-breaking terms, that, so far from enlightening the student upon the subject of medicine, do nothing but lead him into darkness and confusion. All these are mere varietes of Ague; the place of pain making the only difference.

Loss of the sense of TASTE is an occasional effect of constitutional disturbance, and so is Depraved Appetite. An example of what is called *Bulimia* or *excessive* appetite, occurs in the lectures of Mr. Abernethy: "There was a woman in this hospital, who was eternally eating; they gave her food enough, you would have thought, to have disgusted anybody, but she crammed it all down; she never ceased but when her jaws were fatigued.—She found out that when she put her feet into *cold water*, she ceased to be hungry." What could be this woman's inducement to put her feet in cold water, in the first instance? What but their high temperature—the Fever under which she labored? A gentleman, who was fond of play, told me, that when he lost much money he was always sure to become *ravenously hungry*; but that when he won, this did not happen. The temperature of his body, as well as the condition of his brain, must have been different at these different times.

To the state of corporeal temperature, we must also refer the various degrees of THIRST, from which so many invalids suffer. This like HUNGER, when extreme, is a depraved sensation. If we have intermittent fever, so also must we have intermittent hunger and thirst among the number of morbid phenomena. Colonel Shaw, in his *personal memoirs* and *correspondence* has this remark; "I had learned, from my walking experience, that to *thirsty* men, drinking water only gives a momentary relief; but if the *legs* be wetted, the relief, though not at first apparent, positively destroys the pain of thirst."

We have, hitherto Gentlemen, confined ourselves, as much as possible, to simple or "functional" diseases,—those forms of disorder in which there does not appear any tendency to local disorganization or decay. In our next Lecture, we shall enter into a consideration of those disorders which manifest more or less *change of structure* in their course. Such diseases are termed "organic," by medical writers, and to a certain extent they are more complicated than those we have just left. To a certain extent, too, they admit modification of treatment. In most cases of this kind, though not in all, it is my custom to prescribe one or more powers, having a general chrono-thermal influence, with one or more having a special local bearing.—I have necessarily, on occasion, combined remedies which may partially decompose each other. In continuing still to do so I am justified by *successful results*, the only test of medical truth—the ultimate end and aim of all medical treatment. A charge of unchemical knowledge has been occasionally urged against me for this, by chemists and drug compounders. But what says Mr. Locke?—"Were it my business to understand physic, would not the surer way be to consult nature itself in the history of diseases and their cures, than to espouse the principles of the dogmatists, methodists, or *chemists*?" This charge, then, I am willing to share, with numerous medical men, whom the world has already recognised as eminent in their art. By such, the answer has been often given, that the human stomach is not a chemist's alembic, but a living organ, capable of modifying the action of every substance submitted to it. And here I may mention, that the late Sir Astley Cooper, when I sent him my work, entitled "The Unity of Disease," with that candour and gentleman-like feeling by which he was not less distinguished, than by his high eminence as a surgeon, wrote to me as follows:

"Dear Sir, I thank you most sincerely for your valuable work. I have not the least objection to being *unchemical*, if I can be *useful*; and I agree with you, that the living stomach is not a Wedgewood mortar.

Yours truly,

ASTLEY COOPER."

"Dr. DICKSON, Clarges-street, Piccadilly."

Intermittent Fever, following local injury, cured by Quinine.—Mr. Stafford narrates the case of a gentleman, who dislocated the tarsal bones. Reduction was effected, but the injury was followed by excessive pain, which after a time, became intermittent, coming on every evening about eight, lasting five or six hours, and then gradually abating. It was cured by quinine.—*London Lancet.*

A LECTURE
On the Magnetism of the Human Body.
(Continued from page 67.)

It was attempted to be shown by Matteucci, that the nerves were electric, but no effect on the galvanometer has been detected, even when the current of a galvanic battery is passed through them—hence, even if there were electric currents in the nerves, they would not be detected by the galvanometre, unless the direct influence of the denuded nerves could be experienced. I do not think this has been attempted, and I propose, when at leisure, to examine into it. Within a few days, I have received in the London Lancet, the notice of a report by M. Shuster, to the French Academy of Sciences, to prove that electricity is not serviceable in medicine, unless it be applied through acupuncture needles. Administered in this way, he asserts it may be employed with success in many diseases, chronic rheumatism, paralysis, amaurosis, &c. He says it acts by directly stimulating the sensibility, contractility and absorbent function.

It is a well known fact also, that needles used in acupuncture, become magnetic—this aids his idea, of forming a direct communication with the nerves.

In cases of serous effusions, the eminent *Le Roy* D'Etiolles has also been successful with the above mode of application.

My experiments showing magnetic influence on the needle only during motion of the muscles, derive additional support from the fact of their being no action developed by electric currents passed through the nerves when quiescent, and the latter experiment renders it probable that human electricity is modified by vital power, or perhaps the influence of the mind, until muscular action, under the control of the latter, is commenced.

It would occupy too much time to quote the multitude of curious experiments which go to show a similarity in effects of the nervous power with electricity, galvanism and magnetism. I would not, in the present state of our knowledge, give a fixed opinion as to their identity—effects attributable to all these fluids, supposing them distinct, and all possessed by the body, have been exhibited. Farther experience may show us that whether one fluid in different states, or several, some vital principle or mind, modifies their action in the body. We know that our motive power is under the control of our *will*, and that sensation involves consciousness, and without consciousness, there is no *will*. If the nervous power is weak, the will can only make it act feebly, and without a strong will, great effects of nervous power are not shown. The will controls the nervous system of animal life, while it does not influence that of organic life. This is worth noticing in relation to mesmeric or magnetic influence, where the operator controls the will of the subject, and what his will controls, but does not affect the organic functions. Insanity or mental disorder deprives us of the power of will, and thus of the control of animal life, but organic actions are not necessarily impeded. When the mind is sane, muscular motion is mostly under the control of will, if the organs are sound. Bichat has clearly shown a difference between *the nervous* system of animal life which ministers to the mind, and is under the *will*, and carries on the functions indispensable to the continuance of life, and the nervous system of organic life which is not subservient to the will, and does not transmit sensations, except when the sensibility of a part is highly exalted by irritation, and then we perceive its action. The natural stimulous of these separate nerves is in like manner developed. That we derive sensation and perception from the external world, through nervous communication, no one doubts, because if you divide or compress the nerve, the sensations are not communicated to the brain—an influence developed on the nerves and communicated to the brain, give us perception. If the power of sensation was in the nerves (which are only vehicles of it) the brain would not be of so much importance—it has no sensibility when irritated—the nerves receive impressions and then convey them to the brain, the organ of *mind*, which power notices and appreciates them.

Experiments to indicate that the motive and sensorial power of the body is galvanic or electro-magnetic, are very numerous. Among the most singular are those of Weinhold, related in the Journal des Progres, vol. x, 1828.

"He beheaded a cat, and after pulsation and muscular action had completely ceased, he removed the spinal marrow, and filled the vertebral canal with an amalgam of mercury, zinc and silver. Immediately the throbbing of the arteries re-commenced, and the muscular actions were renewed, which it was impossible to distinguish from those which are produced by the influence of the spinal marrow; the animal made many leaps. When the irritability appeared exhausted, Weinhold, by means of a metallic arc, placed the heart and voluntary muscles gradually in contact with the artificial medullary substance, and he revived again general but feeble contractions."

"He filled with the same amalgam, the

cranial and vertebral canal of another cat which did not give any sign of life; the animal became, during about twenty minutes, in such a state of vital tension, that it raised its head, opened its eyes, looked steadily, attempted to walk, and endeavored to rise after falling down frequently. During all this time the circulation and pulsation were very active, and continued for a quarter of an hour after the chest and abdomen were opened. The secretion of gastric juice was evidently more abundant than ordinary, and the animal heat was perfectly re-established."

"He filled also the cranium only of a dog with the same amalgam, he examined then the principal functions of the senses, and observed that the pupil still contracted, that the animal manifested still a desire to avoid the light when a lighted candle was placed near it, and that it listened when a person struck with a key on the table."

In support of this very singular experiment, we have a paragraph from Muller's late work.

"In the eye, a feeble galvanic current excites the special sensation of the optic nerve, namely, the sensation of light. In the auditory nerves, electricity produces the sensation of sound."

Volta states that when the poles of a battery of forty pairs of plates were applied to his ears, he felt a shock in his head, and a few moments afterwards, perceived a hissing and pulsatory sound like that of a viscid substance boiling, which continued as long as the circle was closed,"

It is a generally received opinion, that *nervous power* produces sensation and motion—what this is, we have not settled. Sir Charles Bell has demonstrated, however, that the posterior roots of the spinal nerves, are the origin of nerves of sensation, while the anterior roots are for those of motion.—Majendie has shown that "the spinal marrow is composed of two distinct cords in juxta position, the one endowed with exquisite *sensibility*, whilst the other almost completely unconnected with this property, seems to be reserved for *motion*." Upon this, a theory has been based, that an ascending current of electricity by one cord causes *sensation*, and a descending current by the other causes *motion*—or perhaps there is a negative and positive portion of the cord, the one constituting the agent of sensation, and the other that of motion.

The experiments of Muller have proved that "the application of galvanism to the anterior roots of the spinal nerves, after their connection with the cord is divided, excites violent muscular twitchings; the same stimulous applied to the posterior roots is attended with no such effects." These galvanic experiments support the facts determined by C. Bell.

The late discoveries of electro-magnetism strongly incline to the opinion that motion and sensation are produced in the body by it.

The convulsive and violent muscular action produced on the bodies of criminals immediately after death by galvanic action, clearly makes it appear that it can cause motion in animal bodies, and acts on nerves and thus through the organs of motion. Liebig says, "By means of *nerves*, all parts of the body, all the limbs, receive the moving force which is indispensable to their functions—to the production of mechanical effects.—Where nerves are not found motion does not occur. The will certainly has an influence over motive power, while the organ to be moved has its nerves sound—*how* it acts we know not. The will directed to our vocal apparatus causes any sound which we can utter to be given forth—*how* it is effected, and why the sound is acute or grave, we can only explain as the result of will.

If Electricity, Galvanism and Magnetism be separate powers, their peculiar combination or supply in different proportions by the pile or chemical action which produces them, may account for varied susceptibility, and idiosyncracy, according to the predominance of one or other.

There are objections to their identity which I have not time to enumerate; the permanence of the needle pointing in the same direction, unless mechanically obstructed; magnetism is not impeded by glass, and electricity is—you can insulate the latter and not the former—touching with the hand removes nothing from the magnet, and deprives an electrified body of its electricity instantly, &c. With 200 feet of copper wire, and 200 feet more interposed in the turns of the spiral, and 120 pairs of plates 4 inches square, the current made *magnetized* needles, but did not affect the galvanometer. Faraday.

That magnetism produces motion in inanimate matter, is shown by the polarity of the needle, which if placed E. and W., and left to itself, turns to the N. and S. Call this attraction or what you will, oscillation and motion result. The magnet will hold up by its inherent power a weight heavier than itself. Connect with it a galvanic armature and it will lift forty times its own weight. The human strength is capable of raising four or five times the weight of the body. I know an individual weighing less than 300 lbs. who has lifted from the ground 1300 lbs.

The following case illustrative of electro-

magnetic action on the human system, is reported in the London Lancet.

At the Middlesex Hospital a man was admitted about six hours after having taken an ounce of laudanum. At this time he was apparently lifeless, the surface of the body was cold, countenance pale and livid, lips purple, pupils contracted to a mere point, respiration was scarcely perceptible, pulse hardly to be felt. The laudanum was removed by the stomach pump, but in spite of every exertion the pulse became more unfrequent, and was at times imperceptible; when recourse was had to electro-magnetism, which was applied by means of a small battery with coil and contact breaker. One wire was applied to the neck, and the other to the region of the heart, or epigastrium, and by these a succession of very powerful shocks was given. The good effects were very apparent. The muscles of respiration were set in motion, and the diaphragm contracted powerfully; the chest was more fully expanded, respiration was more powerfully carried on, and a corresponding improvement was observed in the countenance. The pulse improved and became more powerful, becoming steady when the current was interrupted for a few minutes. The application was continued for several hours, and was finally successful and the patient restored.

In the last (April) number of the American Medical Journal, is a similar case reported with the same results. It occurred in March, 1842, at Valparaiso. A gentleman was poisoned by a powder which was given to him at Cubebs; after the most violent symptoms, and continued unavailing efforts to relieve him, "he now appeared to be sinking. The surface was cold and covered with a clammy sweat. The face was palid, with a purplish tinge, the jaw and eyelids were fallen. The pulse was hardly perceptible at the wrist, if at times it was at all to be felt. Stimulants were continued. There were no signs of reaction, and the features wore the aspect of death. Worn out with fruitless efforts, the medical attendants desisted from further exertion. Dr. Page thought of the electro-magnetic battery, and proposed its application, as they felt justified by the desponding circumstances to make the experiment." He says,

"It was immediately tried, and with the happiest results. With an assistant rapidly rotating the wheel, I applied the balls at first to each side of the neck, and ran them down behind the clavicles. The arms and body now moved convulsively, but the patient lay as unconscious as before. I now passed one ball over the region of the heart, and the other to a corresponding point on the right side. In an instant his eyes opened widely, and with a ghastly expression of countenance, his head and body were thrown convulsively toward me, and he groaned. He now sank back in his reclining posture and was again asleep. The balls were reapplied in the same situation, with similar results, a third and fourth time, and he cried, 'no more.' Reaction was now positively established. The heart had received a strong impulse. The pulse was becoming rapidly developed, and the whole surface warm."—Reaction continued satisfactorily, and there was no farther occasion for the battery.

"When he recovered his consciousness, he says all had been blank, until he felt as if a gun had been fired off within him, which thrilled through and shook him to the very extremities." This was the application and effects of the electro-magnetic battery.

This case is reported by Dr. T. S. Page, and was witnessed by Dr. Houston, of the Royal Navy, and Dr. Barrabino, of the United States Navy, attached to the schooner Shark. A few weeks previously, a French gentleman, who took the same medicine from the same shop, lost his life. Upon an analysis of an equal quantity of the powder, 30 per cent. of opium, (75 grains) were found in it, which accounts for its melancholy effects.

The results of the experiments in these two two cases, fully warrant us in the belief that *post hoc propter hoc* may fairly be presumed here, and that electro-magnetic action supplied the place of nervous power in the human body. In vol. 4, p. 482, of Sturgeon's Annals of Electricity, are some interesting experiments with galvanism on dogs. Three puppies were drowned, and left in cold water fifteen minutes. All vitality had apparently ceased—no motion being perceptible. They were taken out? one was submitted to successive shocks from a voltaic battery, and *restored to life*—the other two were left as they were—they remained so. Three others were drowned in warm water, and left immersed forty minutes—two of them were restored in the same manner. In the "Discourse on the Study of Natural Philosophy," the philosophical Herschel says:

"The principle once established, that there exists in the animal economy a power of determining the development of the electrical excitement, (speaking of the torpedo,) capable of being transmitted along the nerves, and it being ascertained, by numerous and decisive experiments, that the transmission of voltaic electricity along the nerves of even a dead animal, is sufficient to produce the most violent muscular action, it becomes an easy step to refer the origin of muscular motion in

the living frame to a similar cause; and to look to the brain, a wonderfully constituted organ, for which no mode of action possessing the least plausibility had ever been devised, as the source of the required electrical power. If the brain be an electric pile constantly in action, it may be conceived to discharge itself at regular intervals, when the tension of the electricity developed reaches a certain point, along the nerves which communicate with the heart, and thus to excite the pulsations of that organ. This idea is forcibly suggested by a view of that elegant apparatus, the dry pile of Deluc, in which the successive accumulations of electricity are carried off by a suspended ball, which is kept by the discharges in a state of regular pulsation for any length of time." This same idea of the cause of the pulsation of the heart appears to have occurred to Dr. Arnott. The stronger pulsations of the brain during high excitement, favour this hypothesis.

Many more experiments might be offered in support of the identity of the nervous power with electric, galvanic and magnetic influence, both as to the production of motion and sensation.

I have not noticed the evolution of *light* during decomposition or chemical change, of which some curious cases are recorded, arising in the human body.

"Sir Henry Marsh observed in a patient, dying of consumption, about ten days before her death, a very extraordinary light which seemed darting about the face and illuminating all around her head, flashing very much like an Aurora Borealis. She had been that day seized with suffocation, and was extremely nervous. At night this luminous appearance suddenly commenced. The maid said she had seen it before, and it had dazzled her eyes, but that she was afraid to speak of it, as she would be called superstitious. It continued for an hour and disappeared. Three nights after he saw it again. The evening before she died, he saw it again, but fainter, and it lasted about twenty minutes. The state of the body was that of extreme exhaustion. Her breath had a peculiar smell, which led him to suppose some decomposition was going on. Sir H. Marsh has collected, in all, four cases similar to the above. He considers it as resulting from decomposition, as seen in dissecting rooms—from chemical action, in peculiar conditions, evolving light through electrical phenomena." We know the decomposition of animal matter, especially fish, produces phosphorescence, or electric light.

The influence of light on animal development is strikingly pointed out by the experiments of Dr. M. Edwards. He has shown that if tadpoles be nourished with proper food, and are restored to the constantly renewed contact of water, (so that their branchial respiration be maintained,) but are entirely deprived of light, their growth continues, but their metamorphosis into breathing animals is arrested, and they remain in the form of large tadpoles!

Here is a fact which we are forced to believe, which we cannot explain.

When the queen bee in a hive dies, or is removed, do we understand how the bees have the power of converting into queens the neuter eggs? and yet do we not believe this? Do we not see a different animal in the general form of the body, the proportionate length of the wings, the shape of the tongue, jaw and sting, and in many other respects, than would otherwise have been produced—yet can we explain how this is effected?

I might relate cases of spontaneous combustion, under circumstances strongly inducing a belief in the agency of electricity in its production.

The direct influence of the magnet on the human body, has been a subject of frequent experience among medical men. I have, myself, witnessed cases where positive effects were felt. A lady of cultivated intellect and much intelligence had neuralgia of the arm for several months, with intense sufferings—the N. pole of a magnet applied to it, relieved her pain temporarily, while the south pole increased it violently. This same effect I have seen in cases of rheumatic joints.—These influences are not perceived by all, but only by those of highly sensitive nervous systems. All who are susceptible of mesmeric induction, feel the effects of the magnet when applied to the head; in some it produces giddiness, headache, and even convulsions.

The editor of "The Magnet" mentions that he held a magnetized steel ring over the head of one of his subjects, while awake; "in a few minutes she drooped into a state resembling sleep." On removing the ring, he found it impossible to wake her up, or to control her at all. "The entire system seemed to be paralyzed, the breathing was much increased, and difficult, and she continued in spasms about twenty minutes, when she was relieved, and came out "in a shudder," like the lad described in the article below.

The following letter "from an intelligent minister of the gospel, well and extensively known," published in "The Magnet," presents singular facts.

"Rev. and Dear Sir:—Agreeably to your

request, I herewith transmit the facts respecting the influence of the *magnet*, in producing the magnetic sleep in the case of my little son. I first magnetized him about the 20th of February, 1842. His age is 15. For some days he was put to sleep each day, for about half or three-quarters of an hour. After that, each alternate day, for about three or four weeks.

"About ten days since, he was playing with a small horse-shoe magnet, capable of sustaining about 12 or 14 ounces. In a short time, I perceived that he was asleep, and exhibited the usual symptoms of the magnetic state. I attempted to arouse him, and he immediately opened his eyes, but said "I am in the magnetic state, I can see every thing just as when I am magnetized." I attempted by the usual passes to remove it, but found I could not. He said, "it is the magnet that has produced this state, and you cannot take it off." I then took the magnet in my hand, and tried the effect of making the several passes with that; but it only increased the difficulty. I then proposed to send the magnet away to a distant place, but he objected with great earnestness, and even with tears. I then persuaded him to go with me into another room, 20 or 30 feet distant from the magnet; and after staying there a short time, he consented to have the magnet removed.

"I again tried, by the usual passes, to remove the influence from him, but could not. He remarked that nothing I could do would remove it, but that it would pass off, of itself, in about an hour, and that he should "*come out of it with a shudder.*" During all this time *his eyes were open.* He could hear and converse with me and with persons *who were very near him*, after they had been near him for a few minutes, but with no others.

"He was playful, and apparently happy. In about an hour, he started suddenly, and with a violent spasmodic shudder, and appeared to be restored to his natural state. Of nothing that had passed, had he any recollection, and the only difference that I could discover between this and the state in which he had usually been when magnetized, was that in *this, his eyes* were open; he had none of the usual attachment for me, all seemed transferred to the magnet, and I had no power to remove it. The magnet had been removed to a distant chamber. But he expressed a strong desire to go to it. I then took the magnet away, *unknown to him*, and passing out of doors, carried *by a circuitous route*, and placed it in a pile of lumber, distant about 70 or 80 feet. It was past 9 o'clock at night, and very dark, and he had no means of knowing, by the ordinary senses, that it had been removed. He said, however, that it had been removed, and went on to tell me which way he would take to find it, and said he would not go directly to it, but would find it by a circuitous route—that he would go out round the house, in about the same course that I had taken in conveying the magnet there! But he said the magnet was wrapped up in a paper, and put in a pile of lumber, which was the fact.

"I then went and removed it to a still greater distance, where I left it till the next morning. He said he had *a strong impression on his mind*, that it had been removed to a more distant place, as I have described it, and that from that time he lost all interest in it. This was more than an hour from the time that he came out of the magnetic state with a shudder, as above described. Since then, he has manifested no desire for the magnet, but when it was afterwards brought near him, even within several feet, he said, after a few minutes, that he felt the same influence coming over him, and immediately caused it to be removed.

"I might add, that the application of living magnetism in his case, was in a course of medical treatment for a spinal disease, and was generally applied under the direction of experienced physicians, and apparently with very happy results.

Respectfully yours,

Philadelphia, April 17, 1842.

When Casper Hauser, who had been isolated from the ordinary influences of the external world for eighteen years, had the N. pole of a small magnet held towards him, he described a *drawing* sensation produced outwards from the epigastrium, and *as if a current of air went from him.* The S. pole affected him less, and he said *it blew upon him.**

Professors Daumer and Herman made several experiments of the kind, and calculated to deceive him, and even though the magnet was held at a considerable distance from him, his feelings always told him very correctly. These experiments always occasioned perspiration, and a feeling of indisposition. He could detect metals placed under oil cloths, paper, &c., by the sensations they occasioned. He described these as a drawing, accompanied with a chill, which ascended according to the metal, more or less, up the arm—the veins of the hand exposed being visibly swollen.

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* Millengen.

The influences felt by him from the magnet are precisely such as it produces in the cases of my experiments—and the paralysis of the arm of a susceptible individual, by making him grasp a rod of soft iron or copper, is effected with the same feelings on the arm, described by Hauser from his touching a metal.

The sensitiveness of this boy to the impression of metals is well explained, when we reflect that the eye, when kept from light, increases in its susceptibility to its influence; and its sudden application to this organ, will destroy its vision, while slowly accustomed to its influence it is its essential stimulus.

A gentleman of high respectability informed me lately, that he knew from personal experience, that the body is magnetic. He was a surveyor, and had observed frequently, that in dry weather, at midday, his needle would vary whenever he approached it.*

The conducting power of the body varies with different individuals, some shewing electrical influences, and others none—Now in terrestrial magnetism, Mrs. Somerville says, "The effects of induction depend upon the facility with which the equilibrium of the neutral state of the body can be overcome; a facility which is proportioned to the conducting power of the body; consequently, the attractive power exerted by an electrified substance upon another substance previously neutral, will be much more energetic, if the latter be a conductor, than if it be a non-conductor."

This may also be applied to organized bodies, as well as inorganic.

Dry animal matter, as bone, or horn, or leather, are non-conductors of electricity—moistened, they become conductors. It is not improbable, that at a future time we may refer the phenomena of *fever* to the free electricity of the body accumulated on the surface, when the perspiratory function is impeded—carried off as it usually is, by the restoration of the latter. The calorification of the body is still unsettled, and is open for examination.

The sources of magnetism would give us an interesting subject for investigation, for we know that the sun's rays are magnetic. Milton beautifully describes the constellations, as governed by the magnetism of the sun.

> ——————"as they move
> Their starry dance, in numbers that compute
> Days, months and years, towards his all-cheering lamp
> Turn swift their various motions, or are turn'd
> By his magnetic beam that gently warms
> The universe, and to each inward part
> With gentle penetration, though unseen,
> Shoots inviable virtue ev'n to the deep."

Liebig attributes to "the unequal degree of conducting power in the nerves, those conditions which are termed paralysis, syncope and spasm." This eminent chemist also says, "As an immediate effect of the manifestation of mechanical force, we see that a part of the muscular substance loses its vital powers, its characters of life; that this portion separates from the living part, and loses its capacity of growth and its power of resistance. We find that this change of properties is accompanied by the entrance of a foreign body (oxygen) into the composition of the muscular fibre, (just as the acid loses its chemical characters by combining with zinc,) and all experience proves that this conversion of living muscular fibre into compounds, destitute of vitality, is accelerated or retarded according to the amount of force employed to produce motion. This is corroborative of the identity of nervous power with electro-magnetic influence." He goes on to say, "the moving force certainly proceeds from living parts." "It is obvious that the ultimate cause, the vital force, &c., has served for the production of mechanical force; that it has been expended in the shape of motion."

That the nervous power is derived from a source within the body is certain, as it varies with its healthful or disordered action—it becomes exhausted by muscular action, and excited by stimulants, which act on our material structure; it is lost by continued wakefulness—and intense pain debilitates it excessively. Steady application of the mind also fatigues the brain and weakens nervous power, and rest alone restores it. While the brain and nerves are sound, our nervous power of motion, (and to some extent that of sensation) is under the control of the will, the existence of which involves consciousness in our ordinary state. In *somnambulism*, in which consciousness is absent, some modification of reason, allied to what we call instinct, seems to control them. This is for the inquiries of the metaphysician as well as the physiologist, and deserves our study.—It is well known that in *somnambulism*, the intellectual functions are not only active, but frequently more developed than when the individuals are awake, and in their actions and locomotion they are more cautious.

Whether the nervous power extends without our bodies, and how far, we are yet to learn. The phenomena of Mesmerism would

* Since this lecture was written, I have succeeded in magnetizing needles, by the same effort of the arm and hand over them. The fact of rendering needles magnetic by the *passes* continued for a long time over them, is mentioned in the "Magnet." I succeeded in a short time by my process—which I have repeated five times successfully. Whether this can be effected only in certain electrical conditions of the body, is to be learned.

seem to indicate that it does, and produces effects on other living organization. Dr. Holland observes:

"We cannot assert this to be impossible; and one or two high authorities have affirmed its probability."

The emanations from animal bodies, by which dogs scent them in the chase, and which the Hindoos, living on vegetables, perceive in Europeans, feeding on animal substances, show perceptible influences extending around us.

The curious phenomena of what is called *sympathy*, are physical results yet to be explained. We know that mind acts upon matter, but the *quo modo* is as yet inexplicable to us. Can we explain that mysterious influence by which a nervous disease affects the minds, and finds its way to a diseased structure, as an electric shock is communicated from body to body by contact? Can we explain how, when this occurs, a loss of will is the result, similar to the fascination of a serpent over its prey? Yet, do we deny the well authenticated facts, relating to the convulsionaires of France—the *jerks* of our own country, and the 4000 cases of St. Vitus's dance in England?

Can *these* be the results of imagination alone? Is the imitation of the wise and *good*, prompting us to simulate and rival *them* merely, "such stuff as dreams are made of?"

If nervous power originated from mental action, it would be less variable—but we see the mind as strong and active when the body is weak—and the strength of the latter depends on nervous power. Coleridge, who thought as much as most men, says, "illness never in the smallest degree affects my intellectual powers I can *think* with all my ordinary vigor in the midst of pain; but I am beset with the most wretched and unmanning reluctance and shrinking from *action*. I could not, upon such occasions, take the pen in hand to write down my thoughts for all the wide world." It is not mind, for we conceive that to be indestructible, eternal, therefore, not liable to disease and decay; the bodily organs through which it developes its influence on matter, may be disordered and communicate its powers imperfectly, hence we become familiar with what is called *mental* disease, which is strictly paradoxical. A man drinks liquor, his brain becomes oppressed with blood—as this increases mental confusion comes on, and then a loss of mind takes place—if the blood be thrown out and apoplexy result, it is permanently gone. Intense mental action produces fulness in the vessels of the brain, which frequently is followed by similar effects. The melancholy example of this lately exhibited in the condition of the poet Southey, will readily present itself to the mind.

If the electricity of the body varies, (which experiments prove,) this will enable us to understand how sensitive nervous persons experience so readily atmospheric changes, electric influences. In the animal economy, solids are constantly passing to fluids, and fluids into solids and gases, and changes into electrical conditions, and as to temperature, are always going on. When the bodily health varies, and the nutritive function is impeded, as well as other vital actions, we must expect this to be the case.

Pfaf and Ahrens have shown, that in health the electricity of the body is positive, yet sometimes it is negative, and much oftener so with women. In the 5th volume of Tilloch's Magazine, there is an article on animal electricity, with original experiments, by a Mr. Hemmer, of the Electoral Academy at Manheim. From 2,422 experiments, he came to the following conclusion:—That electricity is common to all men; that it is sometimes negative, oftener positive, and sometimes wanting; that it is produced without friction with the clothes, and is evolved from the naked body; that its quality is altered by certain circumstances, and changed from the one to the other kind by sudden violent motion—from positive to negative by cold, or lessened in amount by it; that continued mental exertion increased the positive electricity, &c. This latter fact is very important, if verified. When Casper Hauser held a cat by the tail, he was seized by a shivering as if he held a metal, and felt as if he had received a blow. If mesmerism depends upon magnetism or electricity, the power of the magnetizer may be derived from his capacity to communicate his nervous power of motion and sensation to his subject—if so, he should control both his motions and sensations; *this he does*, while his influence over him lasts.

Sensative persons are most easily affected by mesmeric induction—weak and sensative persons experience electrical and atmospheric changes more readily—they also part with nervous power more quickly than strong and healthy persons. The touch of metals produces painful sensations in some persons, and paralyses the muscles of others.

The variation of the electrical state of the bodily organs, may enable us to appreciate varied susceptibility to disease in different persons—and may also account for susceptibility, as to magnetic induction. The predominance or deficiency of the magnetic or electric conditions, may, perhaps, assist us, with more advanced knowledge, in investi-

gating temperaments, sympathy, special fancies and antipathies.

Dr. Elliotson, of the Royal Medical Society of London, says, "I am not aware that one *temperament* is more susceptible of *mesmeric* influence than another. The same person may be susceptible at one time, and not at another. I have had a patient insusceptible for four weeks, and then become highly susceptible."

I have, myself, had a case of an intelligent lady, in delicate health, whom I tried seven different times without effect, for an hour at each sitting—on the eighth, she was fully influenced in fifteen minutes, and continued in the magnetic state until I waked her.

I cannot here avoid a quotation from an eminent author, Dr. Holland, who says of the *origin* of nervous power, "Physiological science, on the matter in question, seems at this moment to be on the verge of some great discovery; resembling in this respect, the actual state of other physical sciences—those of light, heat, electricity, chemical forces, and perchance of gravitation—which the course of modern inquiry is ever tending to reduce to certain common laws. It is a question of deep interest already referred to, whether the relation here, is not closer than that of mere analogy; and whether future research may not associate some of the functions of the nervous system, with the more general elements of force and action in the physical world. Vital laws, and what we term physical laws, stand precisely in the same relation to our knowledge. They are continually approximating as this knowledge advances; and may not impossibly in the end be submitted, even in human comprehension, to some common principle embracing the whole series of phenomena, however remote and dissimilar they now appear All science tends to prove the unity of creation, through the evidence it affords of mutual and universal relation of parts."

Dr. Carpenter expresses a similar idea.

"That the rapid progress of generalization in physical sciences renders it probable that ere long, a similar formula shall comprehend all the phenomena of the inorganic world; and it is not, perhaps, too much to hope for a corresponding simplification in the laws of the organized creation."

Did time allow me to consider sympathy, cases might be presented to you, as interesting and extraordinary as the apparent miracles of *animal* magnetism.

Having trespassed long on your attention, I will hasten to a few deductions from the experiments on the needle which I have mentioned; while I add that the "FACTS OF NATURE, NOT THE THEORIES OF MAN, ARE THE ONLY INFALLIBLE TESTS OF THE VERITY OF ALLEGED DISCOVERIES."

1. The human body is magnetic, and possesses polarity. May I be allowed here to allude to the beautiful analogy, which the innate principle of our being, pointing to the Great First Cause, has to the mysterious tendency of the needle to the pole? Our benevolent and wise Creator may have intended the same power, with which he regulates the terrestrial movements of our planet, to be the instrument of communication between matter and mind, and mind and his Divine influence.

When we see an influence imparted by one man's mind to that of another, communicating thought and impulse, is it mere imagination to suppose that this view may be consistent with the mechanism of our moral government? Can we not better appreciate the Divine influence over our own minds, when we have personal experience of the influence of our own finite power over that of others? Surely we can.

"Man, the servant and interpreter of nature, understands, and reduces to practice, just so much as he has actually experienced of nature's laws; more he can neither know nor achieve."

2. Individuals of stronger magnetic power, can charge weaker with their magnetism, which gives them a control over the will and actions of the latter, while the charge or communication lasts. Persons of equal magnetic power, do not produce any perceptible influence on each other.

Perhaps future experiments may indicate that the polarity of individuals varies, and susceptibility to induction may depend on one reversing the polarity of another.

3. The *will* controls and puts in motion the magnetic force, perhaps analogously to the supposed influence of the sun giving motion to vibrations producing light.

4. As iron is charged, and parts with its magnetism if the inducing power is removed, so human bodies become more so by the influence of others, and lose the additional force when the cause is removed. This accords with experience.

5. As magnets once charged, when they lose their magnetism, are more easily charged again; so the susceptibility to induction increases with individuals.* Once affected they become more easily influenced at each subsequent experiment.

6. As the capacity of iron or steel for magnetism varies, when soft or hardened, so

*This fact in relation to magnets is stated by many, but is not settled.

does peculiarity of temperament, constitution and circumstances, modify the influences of human magnetism.

The laws of human magnetism are yet to be learned, but we are now fairly started in their investigation.

In the 19th century, it is remarkable that man's pride should exceed his ignorance, and that the study of natural causes of physical phenomena, reported by credible winesses, should be deemed beneath the notice of scientific men. Or, as Sir William Temple remarks:

"When man has looked about him as far as he can, he concludes there is no more to be seen; when he is at the end of his line, he thinks he is at the bottom of the ocean; when he has shot his best, he is sure none ever did or ever can shoot better or beyond it;—his own reason he holds to be the measure of truth, and his own knowledge, of what is possible in nature."

In this age of philosophy, the discoveries of science are daily becoming productive of facts, which ought to humble the pride of arrogant man, and teach him with how much more reverence he should

"Look through nature up to nature's God."

May I be allowed to hope that the time will arrive, when——

"A decent respect for the opinions of mankind" will protect students of science from the discouraging and illiberal course pursued towards them, by those whose position in in communities, gives them the opportunity of a ridicule, which too often destroys their ability to add to the common stock of human knowledge.

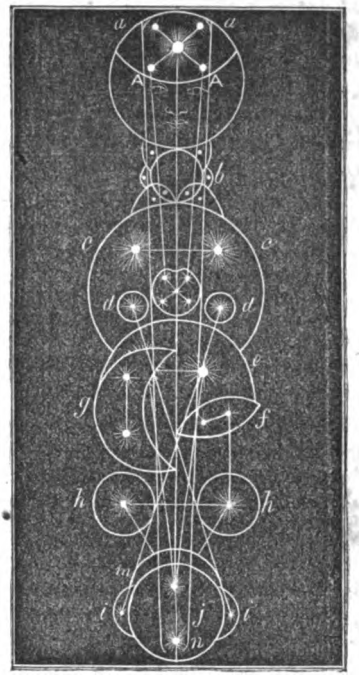
It is ungenerous, it is unjust, it is unwise, to heap unmerited censure and charges of insanity, or collusion with imposture, upon those, whose interest is in the common advancement of science, and whose enthusiasm is necessary in the mechanism of scientific enquiry, to supply the place of self interest, which is the great impelling power in the ordinary pursuits of life.

To such as are engaged in the study of truth, I would say, in conclusion, in the language of one whose intellect has had a powerful influence on the world,

"Crafty men contemn studies, simple men admire, and wise men use them"—and to those who oppose them, "read not to contradict and confute, nor to believe and take for granted, but to weigh and consider."

Magnetic Organization of the Organs of the Human Body, as traced by the Rotary Magnetic Machine.

Continued from our last Number.



A.A.—Poles in the organs of causality. *a.a.*—Poles in the organs of amativeness.—Arbor vitæ. *b*—Cervical glands. *c.c.*—Lungs. *d.d.*—Mammæ or breasts, and heart. *e*—Stomach. *f*—Spleen. *g*—Liver. *h.h.*—Kidneys. *i.i.*—Ovaria. *j*—Uterus. *m*—Cystis. *n*—Arbor vitæ. *a.n*—Axis between these poles.

The importance of a knowledge of the magnetic organization of the human system, is greatly increased by the introduction of the Rotary Magnetic Machine into practice, as it is on that organization which the instrument acts. In magnetising the organs, it is necessary, in most cases, to place one of the buttons on the posterior spinal nerves connected with them, while the other is moved over the organs. In some cases, however, one button should be placed directly over one pole of an organ, while the other is over the spinal nerve connected with it. There are other cases, in which one button

should be placed over the pole of one organ, and the other over the pole of another organ; and again, there are cases in which one button should be placed over one pole, of one organ, and the other over an organ of the brain. There are also many cases, in which the buttons must be placed over different phrenological organs, and hence the necessity of a knowledge of their relative situations. The engraving in the first number of this journal, page 49, giving a view of these organs, and the preceding diagram, intended to give the outlines of the magnetic organization of the principal organs of the body, will be of great service to magnetisers, who have little or no knowledge on these subjects.

We have traced these poles through the spinal nerves, under a very moderate power of the instrument, and also direct magnetic axes, between poles of the same, and of different and distant organs, as seen in the above figure, which accounts for the direct sympathies that are known to exist between distant organs, in the most satisfactory manner. The direct magnetic connection between the stomach and spleen, and the spleen and left kidney, accounts also, in the most satisfactory manner, for the introduction of some fluid into the kidneys, through a medium, other than that of the general circulation.

There are other large poles in the abdomen, besides those represented in the above figure—there are two in the solar plexuses, and two in the mesentary surrounded with satellites. There are also two poles in each joint, including those of the spinal column, with axes connecting *antagonist* muscles, a knowledge of which, and of these muscles, is indispensable to a scientific and successful application of the buttons, in magnetising for lateral, anterior, and posterior, curvatures of the spine, acute and chronic rheumatism, paralysis, &c.

Motions of the Magnetic Forces, and of the Earth and Planets.

To men of that cast of mind which impels them to search out truths for themselves, and can practice the patience necessary in working out demonstrations, Sir Isaac Newton's theory of gravitation has ever been far from satisfactory. At the same time, to endeavour to controvert a theory, which has been received as settled, by all, or nearly all, the devotees to science for a century and a half, is a labor sufficient to deter the boldest. To raise a question as to the truth of what men have, from their youth upwards, been accustomed to believe, strikes the world as something that even the charitable pronounce preposterous, and others will regard as rank heresy. The innovator may reason, though never so logically, yet if he succeeds in exciting wonder only, he may esteem himself happy—nay, if he do not call down the spirit of persecution he may regard himself fortunate. Human nature is so constituted—self-love is so pervading—that men do not like to be found in error. Envy makes the individual, who happens to have struck on the right path in advance of his fellows, her favorite mark. In short, although we admit that the age in which we live is more liberal than any that has preceded it, since the christian era, we must also acknowledge, and every day's experience strengthens the testimony on which the conviction is founded, that truth is the most unwelcome visitor that can knock for admittance at the doors of the hearts of men. Furthermore, it is much less laborious to adopt a venerable, and venerated error, than to make those toilsome researches which are necessary to establish a new truth. The very labor of thinking is itself painful, so much so, in fact, that very few men take the trouble to think *ab initio* for themselves. There is something so very respectable in the cloak of error, that no matter how threadbare it may have become, it is most frequently adopted as the most fashionable garb, and worn with a kind of triumphant, *petit maitre*, jauntiness. To its assumers it never seems ungraceful, and it is but seldom that the popular voice pronounces it out of character.

Notwithstanding, however, that we, of all men, need be most deeply impressed with the correctness of all this—it is the result of some forty year's experience—we lay before our readers the following dialogue. We

adopt this style of composition from believing that it is most simple, and least capable of being misunderstood; it also, in our view, admits of greater certainty of expression, an object which it is desirous to gain, inasmuch as we would avoid ambiguity.

A. Do you know that motion is produced by the action of two forces, one of which repels and expands, and the other attracts and contracts?

B. No, I don't know any such thing.

A. You don't, therefore, teach any such thing in your college?

B. No, indeed! There is only one force that produces motion; namely, that of gravity or attraction.

A. How were the earth and planets first placed at certain distances from the sun, and how are they maintained at those distances without a repulsive force?

B. When God made the earth and planets, he gave each of them an impulsion in a right line, in which they would have always moved, but for the force of gravity in the sun, which constantly draws, or attracts them out of that line into curved lines or orbits.

A. Each of these bodies had then a repulsive force to start with, by the aid of a miracle in each case, and, as the attractive force from the sun has been in action an immense period of time, these impulsions must have been tremendous, or those bodies would have long since gone into the sun, and the author of this theory has established his claims to provident discretion in imputing these impulsions to an *all*-powerful source.

B. The theory to which you allude supposes a primitive projectile force in a right line, and the force of attraction, and that from a combination of these forces, results the curvilineal motion of the planetary bodies. It is true, these bodies would have long since fallen into the sun, if the projectile force were not increased by the increase of the force of attraction, in certain portions of their orbits.

A. So the force of attraction is so accommodating as to manufacture a projectile or repulsive force, whenever and wherever it may be necessary to suit the theory, and prevent these bodies from falling into the sun. According to the theory, therefore, they were first put in motion by a succession of miracles, and are still prevented from falling into the sun by a perpetuation of those miracles.

B. The projectile force, according to the theory, is increased in the falling of a body through half of the radius of a circle, to an amount which would be equal to what it would have acquired by gravity alone; and in this way overcome the force of attraction, and thus prevent the plannets falling into the sun, "while in the other part of the orbit the solar attraction is *exercised in an opposite direction.*"

A. I know that such is the theory, but it is remarkable, that since it tells about the planets acquiring projectile force in *falling* in one part of the orbit, it says nothing about its losing projectile force in *rising* in the other. But here it seems the solar *attraction* is exercised in an *opposite* direction. And such are the absurdities, and resources of this miraculous theory, so characteristic of the age in which it was formed, and so congenial to a mind redolent of superstition and witchcraft.

B. I know that men of science have never been satisfied with Newton's Theory, but they agree in the necessity of teaching it, notwithstanding its complexity, in the absence of any other that is not subject to the same objection; for we can determine the place of a planet at any time, and account for the variations in the motions of the planets, however minute, with the most perfect exactness.

A. I know that such are the pretensions of the advocates of this theory, and that these pretensions increase *pari passu* with their absurdity. There is, however, an exception, in a distinguished mathematician, who acknowledges that "the planet is not in the place represented by the figures, but then it is not far from it."* That is, not more than 10, 20, 30 or 40 thousand miles from it, (and we know that it is frequently at these distances,) and this is an example of their perfect exactness.

You call the precession of the equinoxes, or retrograde motion of the earth in its orbit, "the effect of the solar attraction, that acts

* See Ens. Metropolitana.

with more intensity upon the increased quantity of matter at the equator, which it tends to draw into the plane of the ecliptic, but which maintains its inclination by the effects of its motion of rotation;" or, in other words, the earth staggers back from this cause, and barely maintains its inclination by the momentum of its motion of rotation; and this is a fair sample of the manner in which you account for the variations in the motions of the earth and planets. Now, the intensity of the attractive force from the sun, instead of being so very great at the equator, as is here assumed, is 66 1-2 times greater at the *poles* than it is at the *equator*, and this difference is increasing, and will go on increasing, until it amounts to 90; for the intensity of the action of the forces of the sun upon those of the earth, is in direct proportion to the intensity of the forces of the earth, and this intensity is minimum at the equator, and increases inversely as the squares of the distances to the magnetic poles in the arctic and antarctic circles, where it is maximum, as is shown by magnetic observations on the earth, and as is demonstrated by the magnetized ring. Besides the heat upon the earth, which lessens the force of attraction, is maximum at the equator, and minimum at the poles, and yet you talk of the greater intensity of the solar attraction on the equator, in the presence of facts which are fatal to such an assumption.

B. I am aware that the facts are as you state them—that the planets are not perhaps, *exactly* in the places represented by the figures; and the manner of accounting for the precession of the equinoxes may be erroneous. But you do not, I hope, seriously intend to deny the truth of the theory of *universal* gravitation, or attraction.

A. Yes, I do; for a theory of *universal* repulsion would be just as true as that of *universal* attraction. The absurdities involved in each, it could be easily shown, would be exactly equal.

B. Well, I am astonished!

A. So am I, that any man of common sense, should have ever believed so absurd a theory.

B. Newton's theory of universal gravitation was opposed more than thirty years, by men of the best talents in Europe, and the opposition was at last given up, and the theory acknowledged to be true; and do you, at this late period, believe you can show it to be a false theory? Does not the apple as well as other bodies, fall to the earth by the influence of the force of gravity alone?

A. I do, and can, not only show the theory to be false, but also, that that *apple*, as well as other bodies, have a repulsive force constantly acting upon them, from the atmosphere alone, of 15 pounds to the square inch, which is abundantly sufficient to make them fall with great velocity, without the aid of the attractive force.

B. But these bodies *fall* in a vacuum.

A. Yes, and so does that *feather* as fast, and mark the difference in time.

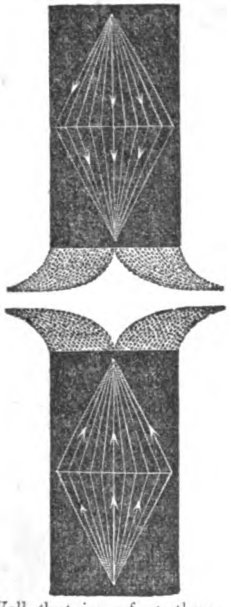
B. Well, we will see if you can show the theory to be false; and now, to prevent any misunderstanding in regard to it, I will state the theory as it is, viz. "That all particles of matter mutually attract each other, in the direct ratio of their masses, and reciprocally, as the squares of their distances."

A. That I acknowledge is the assumption on which the theory is founded, and you I presume will acknowledge, that the forces which produce motion in the particles of matter are magnetic?

B. Yes, I acknowledge the attractive force is magnetic, and if there is any other force in the particles of matter, I suppose it must be magnetic also, but I dont want to hear anything about motion being produced by heat and cold—about the expansive force of heat and the contractive force of cold—we understand all about that. There have been a great many theories introduced by visionary men, but they have all been found untenable when compared with the theory of unaversal gravitation. You must show that the assumption on which the theory is founded, as you please to call it, is false, before you can disturb the theory.

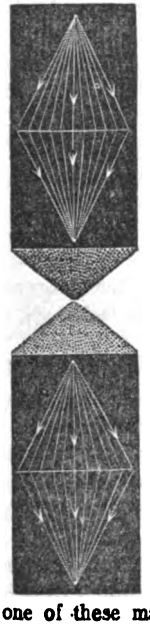
A. Very well, there can now be no mistake in regard to your position or mine; and now here are some square magnets, and I will dip the positive end of each into iron

filings, and you will now see that on placing these ends near to each other, the forces in these ends of the magnets repel and expand.



B. Well, that is a fact, there is an impulsion, or projectile force which expands.

A. I will now dip the opposite, or negative end of one of these magnets in iron filings, and place it near the positive end of the other.



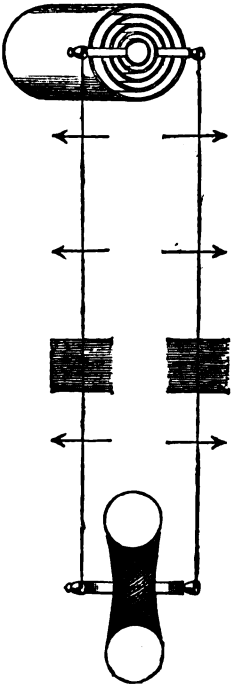
And here, you now see the forces attract and contract.

B. That is true. How beautiful and how perfect the illustration!

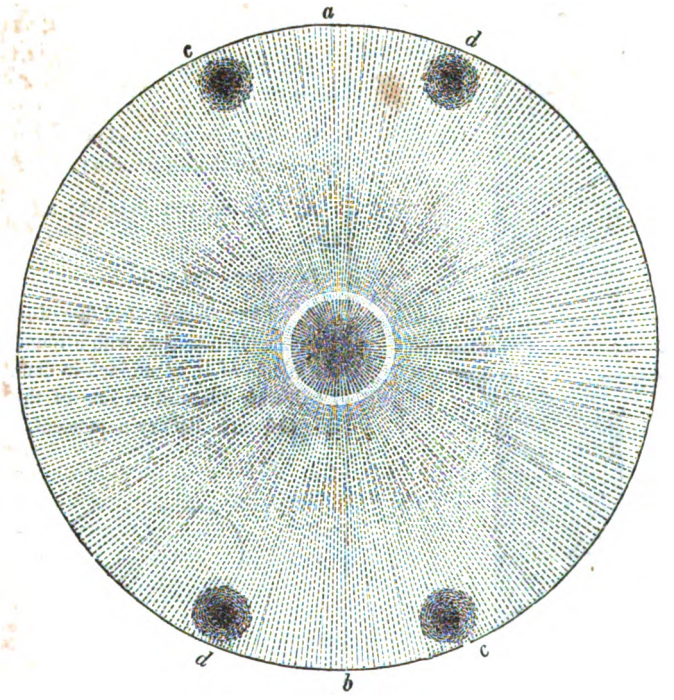
A. Sir, did you ever see a magnetized disc?

B. Pray what is it?

A. I have here a steel disc of saw plate, 15 inches in diameter, with a round hole in the middle of it, of an inch in diameter, and I will now place it on one of the poles of this Galvanic Battery a moment, and then



first adjust and then remove the connecting copper wires, and raise it from the pole. I will now lay it on the table—place a sheet of white paper over it, and strew the paper with iron filings, as you see.



B. That is astonishing! what makes the iron filings work into lines?

A. They are magnetized by the disc with two poles, and the forces form the pole in the space in the centre of it; repel one end of each iron filing and attract the other, and consequently compel them to lie in a line with the forces which radiate from the centre.

B. What makes that halo, or light circle, around the pole in the centre of the disc?

A. It is produced by the violent action of the forces upon the matter which surrounds it.

B. Is not that possibly the way in which the sun lights up its atmosphere.

A. To answer that question in the affirmative, it is only necessary to admit a power in the forces from the sun, proportioned to what we obtain with the magnetic battery; for by bringing the poles in contact with each other, in *our* atmosphere, they produce the most intense light and heat, and the direction of the attractive force from the surface, and of the repulsive force from the centre of the sun, bring them (as can be shown) in contact in his atmosphere.

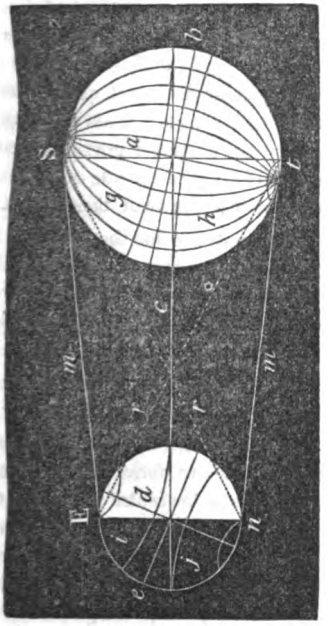
B. I see four circular spots in the circumference of this disc, where some of the iron filings stand up on end, and others are turned half round. What does that mean?

A. They are the offsprings of the large pole in the centre. It has made four poles and pushed them into the circumference of the disc, and it is the action of the forces from the small poles that makes some of the iron filings stand on their ends, and others turn around them.

B. Well, the sun, it has been said, may have formed the earth and planets by its action upon matter in space, and you have here, it appears, a miniature solar system, produced by the action of these forces, and showing at least, a possibility of their production in that manner.

A. There are other and more important facts in confirmation of that supposition in the correspondence of these two innate

forces, with the two great divisions of matter; for there *are* two great divisions of matter, one of which, as alkalies, repel and expand, while the other, as acids, attract and contract. Again, it is well known that the earth is equally divided in the same order, or that the southern hemisphere is in a positive, while the nothern hemisphere is in a negative state; and moreover, that they consequently attract each other, at the same time that the southern hemisphere repels positive, and the northern negative matter. The sun and planets being constituted, and organized in the same manner as the earth, their respective hemispheres, of the same denomination, must repel, while the hemispheres of opposite denominations, must attract each other, when *within* repelling and attracting distances, as seen in this figure.



S, the sun; *a*, the axis of rotaion; *b*, equator; S *t*, magnetic axis; *c*, plane of the ecliptic; E, earth; *d*, axis of rotation; *e*, equator; E *n*, magnetic axis; *m m*, continuous lines representing the direction of the attractive forces; *r r*, dotted lines representing the direction of the repulsive forces; *g*, the positive, and *h*, the negative hemisphere of the sun; *i*, the negative, and *j*, the positive hemisphere of the earth. It is now only necessary to apply the simple and universally acknowledged laws of the magnetic forces, to show that the sun S, must compel the earth E, to revolve on its axis; for the positive hemisphere of the sun *g*, would attract the negative hemisphere of the earth *i*, at the same time the negative hemisphere of the sun *h*, was attracting the positive hemisphere of the earth *j*; while the hemispheres of opposite denominations, *g j* and *h i*, would repel each other in the direction of the dotted lines *r r*.

The earth being a round body, and having two forces thus acting upon it in opposite directions, would necessarily revolve on its axis with a velocity proportioned to the intensity of the forces, in the same manner as a ball revolves on its axis, when we pull it with one hand on one side, and push it on the opposite side with the other.*

The earth like the ball, it will be seen, must revolve as it does, in the direction of the attracting or pulling forces.

When the earth would be thus revolving on its axis, it would be compelled to revolve round the sun at the same time and in the same direction, for the simple reason that it would be constantly attracted on the west and repelled on the east side, and would perform a revolution in its orbit in a time proportioned to the intensity of the forces and its distance from the sun.

The true cause of the motion of the earth on its axis and in its orbit, is thus shown by the action of the magnetic forces, and in a manner so plain as to make it easily understood by persons of the most common education and capacity, notwithstanding the great difficulties in which the subject has been heretofore involved.

Newton, like the philosophers of the present day, knew nothing of the motion of the magnetic poles, but imputed the cause of the motion of the earth on its axis and in its orbit, to the immediate agency of the Supreme Being, as may be seen in his ninth proposition, in which he says, "That as no me-

*The forces act simultaneously on the opposite sides of bodies as is demonstrated on the magnetised ring.

chanical cause can be assigned for the projectile force, none for the gravitating force, and none for the rotation of planets on their axes; so all those phenomena must be referred to the immediate agency of the Supreme Being."

Sir Richard Philips has promulgated a gaseous system of astronomy, founded on the assumption of the equal densities of the sun, earth and planets, and their momenta among one another in an elastic medium, which is equally subject to the necessity of the same marvellous interposition besides that of enchantment or witchcraft.

Newton supposed that when God made the earth he gave it a push, and that from that impulse it would have always moved in a straight line, but for the gravitating or attracting force of the sun, which compelled the earth to change its course; but as it was in constant danger of falling into the sun by the long continued action of this force, notwithstanding the first prodigious impulse, he in his eagerness to prevent it, founded a theory of a projectile or repulsive force, for keeping the earth at a respectful distance from it, on the ridiculous assumption of a fall of the moon sixteen feet in a minute, which he applied to the earth, and in this way demonstrated most minutely in his own mind, as well as in that of most of his readers, the stability of the earth in its orbit.

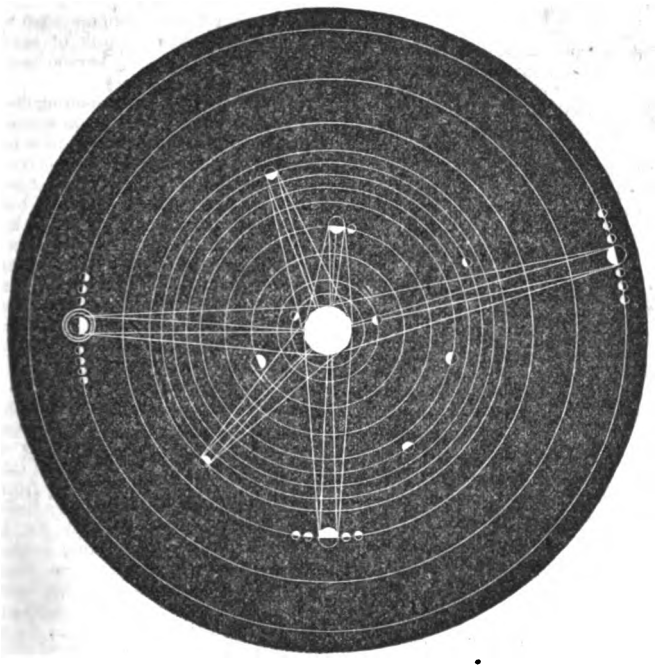
Sir Richard Philips has, however, had the presumption to deny the accuracy of Newton's calculations, in regard to the distance the moon falls in a minute which according to his theory is 128,814 feet instead of 16; and he applies it to the earth, and in this way obtains a tremendous projectile force, and accounts for the stability of the earth in its orbit, by the assistance of this new moon story, with the same minuteness that Newton did, with 16 feet fall of the moon in a minute, and with all the gravity and solemn emphasis due to such a subject, notwithstanding the glaring absurdity of the attempt to obtain an increase of the projectile out of the gravitating force, whenever and wherever it might be necessary to suit his theory.

B. I see that the facts you have adduced are perfectly fatal to the theory that all particles of matter mutually attract each other in the direct ratio of their masses; for as you say it might be as truly said that all bodies mutually repel each other in the same ratio of their masses. There is, however, another fact connected with the Newtonian theory that may help us out of this difficulty, and as I presume you do not intend or wish to demolish the whole fabric on which this system is founded, I will mention it. It is this, "A double projectile force, balances a quadruple attractive one."

A. Yes, at short distances from the bodies from which the forces emanate, but as the projectile force decreases in direct proportion, and the attraction only as the cubes of the distances, they are consequently balanced at a certain distance, and also at uncertain distances, according to the density of bodies with which they come in contact, as in the case of the earth and planets. That appendage to the theory of universal gravitation cannot therefore save it from the fate of every other not founded on the laws of these forces.

B. I can now see that the projectile force, which as in the case of the iron filings, expands, must necessarily lose power in some proportion, and I should be pleased to see an example, if you can conveniently give one, which shows it to be direct.

A. I Can readily do so, and will illustrate it in this drawing of the solar system, in which the repulsive force is represented in lines drawn from the centre of the sun to the surface of the planets, and the attractive force by lines drawn from the surface of the sun to the planets. Now there is always a magnetic axis or principal magnetic meridian between poles of opposite denominations, whether they are of the same body, or poles of different bodies, when they are within attracting and repelling distances, and the line drawn here from the *centre of the sun, to the centre of the earth*, represents the principal meridian between them, and corresponds with the principal meridian or *line of no variation* of the earth.



The sun moves on its axis from west to east, and consequently moves the earth and planets on their axis, and in their orbits, by the action of his attractive force in the same direction, while the repulsive force maintains them at their respective distances from him, and at the same time moves their lines of no variation from east to west, or in a direction opposite to that in which the earth and planets are moved by the attractive force; for this economy is a necessary consequence of the action of these forces in opposite directions. Now the distance which the line of no variation of the earth is moved by the repulsive force, in one year, or in the time the earth performs one revolution in its orbit is 32',26", as is ascertained by numerous observations, and this corresponds very nearly with the mean diameter of the sun (32',03") as found by observations at its greatest and least distances from the earth; and as the visual angles of bodies decrease in direct proportion to distance, it necessarily follows that the repulsive force from the sun decreases in the same proportion.*

B. Barlow, I recollect, calculated the annual rate of motion of the magnetic poles, and of course the line of no variation at 25' and the line of revolution at about 860.

A. I know he did, but his calculations were founded on assumptions which were eroneous.

The time of revolution is 666 years, and this number has a very important relation to our system; for the magnetic poles and line of no variation of the sun, earth and planets, perform a revolution around these bodies in 666 of their years; and it is easy to determine by this and their distance from the sun, their annual rate of motion, but it is getting late, and we must defer any further conversation upon this interesting subject to a future period.

*32',26" is the true mean diameter of the Sun, as seen from the earth—it does not vary from it one second, and astronomers will please correct their observations.

The "Water-Cure" Analysed.

From the London Lancet.

As we stated in our last number, on examining the various elements of which the hydropathic treatment is composed, we find that they may be reduced to the following.—The temporary application of cold to the skin after copious perspiration has been produced without artificial heat, total abstinence from all stimulating fluids; simple diet; early hours for rising; and regular bodily exercise.

With the exception of the first, the one, it is true, on which the greatest stress is laid, all these means of treatment can only be considered as hygienic agents; and if we analyse carefully the sweating and bathng processes, we find that they are merely the application to disease generally of agencies, the use of which has been, from the earliest times, familiar, not only to the profession, but to the public at large. To appreciate correctly the influence of the hydropathic medication we must recall to mind the physiological action of cold water on the human frame. Immersion in cold water produces a sudden shock on the nervous system, and is immediately followed by contraction of the cutaneous capillaries and retrocession of the blood from the external to the internal regions, the nervous system, however, soon rallies, and the heart impelling the blood with renewed vigour, it is returned to the periphery of the body, distending the capillary vessels which it had previously abandoned, and giving rise to an universal glow or sensation of warmth. The intensity of this *re-action*, as it is called, depends on various causes, one of the most important of which is the state of the skin previous to immersion. If its circulation is active and vigorous, and if, consequently, the surface of the body is warm, the re-action is certain, prompt, and vigorous. If, on the contrary, the circulation of the skin is sluggish, deficient in energy, the reaction is incomplete, or may be absent entirely. In this case the person who has been immersed, on getting out of the water, shivers, feels an universal sensation of cold, pain in the chest, cephalagia, and may not experience reaction for some minutes, or even hours.

The above principle, that the intensity of reaction after the application of cold depends chiefly on the previous vigour of the cutaneous circulation, has scarcely been sufficiently appreciated by hygienists. It is this principle which explains the inocuity of the cold-bath as used by hydropathists in some diseases.—By wrapping their patients up in a blanket, or in a wet sheet first and then in a blanket, as soon as they awake in the morning, when they are warm, and the circulation of the skin is active, perspiration is easily produced; and it is whilst they are in this state, whilst the cutaneous circulation is the most vigorous, that they are plunged into cold water.—As might physiologically be expected, the reaction is generally prompt and energetic, and thus the tonifying effects of the cold-bath are often obtained with patients who would not have had sufficient warmth of skin or vital energy to react against the cold-bath, as usually employed.

But this mode of administering the cold-bath and the physiological data on which it is justifiable, are not new to the profession. With the exception that before PRIESSNITZ the sweating stage was produced by artificial heat, which, in our opinion modifies but little its physiological action, it has been known and put in practice from the remotest antiquity up to the present day. The Romans of old were in the habit of sweating in the *sudatorium*, and of then throwing themselves into cold water. The Russians and Finlanders of the present day remain for many minutes exposed to vapour heated to 150° Fahr. and then throw themselves into water just above the freezing-point, or roll themselves in the snow. Even in our own country, where such practices are not in use, it is generally understood that a person may throw himself into cold water when warm or perspiring from exercise without the slightest danger. Indeed, if ladies catch colds, pneumonias, &c., by coming out of ball-rooms, and heated localities, a circumstance which is much less frequent than is generally supposed, it is not because they come out of a very warm locality into a cold one, for the warmer the skin is the more able is the economy to resist the action of the cold, but because small portions only of the cutaneous surface, the neck and shoulders, for instance, are exposed for a considerable length of time to the action of the cold air. How seldom do we hear of men, whose clothing is such as to place the entire economy under the same hygienic condition, experiencing any inflammatory attack from such a cause. In northern climates, where the houses are heated in their totality, attacks of bronchitis, laryngitis, &c., are, we believe, much less common among the higher classes than in our own country, although the cold out of doors is much more severe. The reason is that the skin being thoroughly warmed when they leave their dwellings the system is much better able to resist the action of the cold, to react against it.

If the view we have taken of the action of cold water on the skin is correct, and it is the one entertained by all the first physiologists and hygienists of the day, the sweating and bathing processes of the hydropathists are reduced to little more than a novel mode of applying the cold-bath and of ensuring its efficiency in delicate constitutions. It is merely the exaggeration of the cold sponging in the morning, or rising warm from bed, which medical men so often recommend to their patients.

As to the abundant perspiration, respecting which so much is said, and which is stated to be so extremely efficacious, it is, in reality, of very little importance whether it be produced

by rolling a person up in blankets, and thus arresting the natural evolution of heat from the skin until that organ relieves itself by abundant perspiration, or whether it be produced by the direct application of moisture and heat combined in the shape of heated vapour. The effect, as regards the elimination of a certain proportion of the animal fluids through the medium of the skin, is the same.—And yet these are the novelties brought forward by the hydropathists,—novelties, the nature and action of which every medical man has learned as part of his professional education.

The means of treatment which constitute hydropathy, considered as a portion of our therapeutical arsenal, are powerful medical and hygienic agents, but can only be adopted as a panacea for all diseases by the ignorant public, or by such medical men as wish to raise their own fortunes on the credulity of others, or are destitute of that valuable faculty which we alluded to in a former number—*common sense*. By attention to diet, by moderation in the use of stimulants (or in some cases, by abstaining from them entirely,) by exercise, by early rising, by cold ablutions, we preserve health; and in a long series of dyspeptic and nervous disorders, occasioned by town life, in which the stomach is often overloaded with food, stimuli are taken in excess, exercise is neglected, late hours are kept, and the mind is continually on the stretch, attention to these points is equally successful in restoring lost health. Cures are, indeed, every day effected by all medical men who practice extensively our profession, through the action of the above means, and that without their demanding of their patients the sacrifice of their residence or occupations, and, without anything more than a placebo in the shape of medicine being administered. Is it then extraordinary, that when we add to their agency freedom from the harass of business, the novelty of a picturesque highland residence and a military-like regularity in the execution of the plan laid down, that many thus affected should rapidly recover at Graefenberg, Marienberg, Malvern,, or other similar places.—We must not also forget that the hydropathists have many advantages in the application of their hygienic rules over regular practitioners. They *make* their patients get up at five, abstain from stimuli, take long walks, &c., whilst members of the faculty in general can only *advise* those who place themselves under their care to follow such a course, for they have not the halo which public opinion gives to novelty and more especially to all panacea-mongers.—PRIESSNITZ, the peasant, is said to rule over lords and ladies, at Graefenberg with a rod of iron. His very nod is obeyed by his patients; whom he never deigns to acquaint with the motive of his prescriptions. What would a West end fine lady say of her physician, if he *insisted* on her getting up at five o'clock, taking a cold-bath, and then walking round Hyde Park a couple of times before breakfast? He would be called a fool and dismissed.—But the same lady will submit to this, or anything else, if it comes from a MORISON or PRIESSNITZ. or even from one of their more humble followers.

No doubt, in cases such as those we have just mentioned, the cold-bath, which Dr. Forbes justly calls the most powerful tonic of the Pharmacopæi, is a valuable adjuvant, but we much doubt whether its efficacy is much increased by the immoderate sweating that precedes it. It appears that in a great number of cases, after a certain time, numerous boils and abscesses appear on the skin, and in the subcutaneous cellular tissue. These are appealed to as indicating that the pecant humours of the blood have made their way to the surface of the economy; but every rational medical man must give a very different interpretation to the manifestation of such phenomena. They can in reality, only be considered as the result of repeated and long-continued irritation of the skin, and must do harm by their reaction on the system generally.

There is another class of diseases in which the hydropathic treatment is calculated to be beneficial, viz, in rheumatic and gouty engorgements of the fibrous tissues of the joints. In these cases, it is more especially the sweating and bathing that act on the engorged tissues, gradually promoting a healthier action of the absorbents, and favouring the resorption of the effused lymph. In gouty constitutions, the hygienic treatment resorted to is also precisely the one calculated to modify the constitutional diathesis. If we could always persuade a patient who consults us for the first fit of the gout, to drink water for the rest of his life, to take exercise, and to diminish by half the amount of animal food he is in the habit of taking, there would be but little chance of a rectum of the attack. But although we think hydropathy harmless, or even beneficial, when directed against the sequelæ of gout and rheumatism, we are very far indeed from admitting this to be the case during an acute attack of gout or rheumatic fever. The experience of ages tells us that in such cases there is a general inflammatory diathesis which explodes in the local inflammation and that if re-percussion of that local inflammation takes place, there is danger of the inflammatory action settling on some vital organ, and terminating the life of the patient. It is generally acknowledged to be of such extreme importance to prevent this translation of the disease from the extremities, that no physician in his senses would ever dream of preventing, by cold local applications, the manifestation of an incipient attack of gout, and would even be very careful how he applied cold to a person subject to gout in the interval of the attacks.—This remark applies more especially to persons advanced in life, as they with difficulty resist even common inflammatory attacks of the more important viscera. There can be no doubt that Sir F. BURDETT's death is to be attributed to the neglect of this pathological

principle. In nearly all acute diseases we should be inclined to consider hydropathy a most dangerous practice.

The practice followed by most of the professed hydropathists, as compared with their pretensions, stamps them as impostors. They profess to be able to treat and to cure all diseases by means of "the water cure," and at the same time it is notorious that they select their cases, principally choosing the forms of disease we have enumerated as likely to be benefitted by the plan of treatment which they follow. It is a general remark among those who have written on the subject that the persons who sit down to the "table d'hote" of the hydropathic establishments on the continent, are, generally speaking, as healthy and cheerful a set of people as you could wish to meet with. Dr. EHRENBERG, the hydropathist who was refused a license to practice by the French Academy, states in one part of his work,—"I expected to find at Graefenberg a reunion of the most varied and severe maladies, and on every side I only saw robust bodies, and fresh countenances. It was only several months afterwards that I perceived some who presented external traces of a deep-seated vital affection." PRIESSNITZ exercises great discrimination in the choice of his patients, refusing those who appear to present traces of deep-seated disease. We believe his example is followed by his English disciples; indeed, there cannot be a greater proof of the fact than the printed assertion made by one of them, that out of five hundred patients he has not lost one.

Hydropathy which is now in the zenith of its fame, will have the fate of all other medical impostures. In the course of a few years it will be abandoned by the public for some other novelty, and this will continue to be the case until the Legislature steps in to shield the public and the profession from the inroads of quackery.

We think we cannot better close our remarks on hydropathy than by quoting the conclusion to which the French Academy came on the government referring to it as to the propriety of allowing a hydropathic establishment to be formed in Paris.

1. That hydrotherapy is a dangerous therapeutical method which does not rest on facts.
2. That its theory is chimerical.
3. That it is in disaccord with our chemical and pathological doctrines.
4. That the Academy cannot in any way approve of it.
5. That the use of cold water has been long in the domain of medicine, and submitted to known rules.

Digitalis in Epilepsy—Dr. Scott, of Liverpool, describes some cases of sthenic epilepsy which seem to have been successfully treated by tincture of digitalis administered during the premonitory stage, in full doses, and continued until it produce some effect. This remedy deserves attention, as calculated to subdue the increased vascular action which in many cases precedes the epileptic convulsion. Dr. Scott, judiciously remarks, "In the sthenic species of epilepsy the premonitory symptoms which have come under my observation, have usually been those of nervous and vascular excitement, gradually increasing until the cerebro-spinal congestion has been sufficient to produce the paroxysm; and it seemed reasonable to suppose that if the excitement could be allayed, the paroxysm might be arrested, and by continued prevention the disease might be eventually removed, provided it was not dependent upon organic causes. This has been effected in so many instances, by the instrumentality of digitalis, without detriment to the powers of the constitution, that I cannot but think that it presents a valuable resource, and is deserving of a more extended trial in similar cases."

Incontinence of Urine and Enuresis Cured by Electricity. — Incontinence of urine frequently comes on after severe rheumatic and gouty affections. In many cases these affections have been referred to affections of the spinal marrow; but M. Froriep denies this, as any affection of the lower portion of the cord, which would cause paralysis of the bladder, would at the same time produce some paralytic symptoms in the voluntary muscles of the lower extremities. He refers it, therefore, to a local affection of the bladder itself, to an affection of the nerves, or the muscular fibre, or of both. Taking this view of the question, he resolved to try the effect of the application of the local application of electricity. A metallic stilet, terminating in a button-point, is introduced into the bladder, with the aid of a gum catheter, which envelopes the whole but the button-point. The handle of the stilet is then connected with one of the wires of the electro-galvanic battery, while the extremity of the other wire is pressed against the pubes. The electric current is passed through the bladder for a quarter of an hour each day. The bladder in general retains the urine better the very first day after the application; but the application requires to be renewed at intervals, till the bladder recovers its full power. Several cases are related of this affection, in people from thirty to forty years of age, in whom the affection was completely removed by the electricity. M. Froriep has found this agent equally powerful in removing the weakness on which the enuresis of children depends. In some cases, he found one ap-

plication of the electricity remove the disease; in others, it required to be repeated at intervals. He found that, in weekly children, a few doses of iron confirmed the cure. —*Idem.*

Human Magnetism.

Amputation performed during the Magnetic Sleep.

The *Wolverhampton Chronicle* contains the following extraordinary statement; for the accuracy of which it vouches:—John Marrion, aged forty-five, residing in Canlane, Sedgley, received an extensive injury of the middle finger in January last, and became a patient of Messrs. Thompson and Dunn. It has since been treated by those gentlemen in the usual manner, but the nature of the injury rendered amputation necessary. With a view to test mesmeric sleep, Marrion consented to the proposal to place himself under the treatment of Dr. Owens, and on Sunday week, for the first time, he was magnetized. The patient was afterwards daily magnetized, and the case created intense interest in the public mind, more particularly among medical men, who attended in numbers every day to mark Dr. Owen's progress. On Saturday the operation was performed, and Mr. Dunn's room was thronged with medical and other gentlemen, to witness the event. The patient, on being brought into the room, appeared rather flushed, but Dr. Owens addressed him in a lively and friendly manner, and he took his seat evidently quite composed. In two minutes and a half deep sleep was produced, but the doctor kept his position some time longer. Dr. Mannix then felt the patient's pulse, which beat one hundred per minute. Some questions were put to him while in this state by Dr. Owens, and language being excited, he said he felt very comfortable. "Proceed with the operation," said the doctor; and in one minute Mr. Dunn had performed it very neatly. The cutting the flap and the dividing of the bone by the nippers was watched with breathless scrutiny by all present, but not a muscle quivered nor did a sigh escape, nor did any single thing occur to betray the slightest sensation. During the dressing of the arm the hand was suspended over the table in a cataleptic state, without any further support. Two minutes after the operation Dr. Mannix felt the man's pulse—it was still 100. Dr. Owens then excited laughter, and the patient laughed happily, evidently quite unconscious of the relief he had undergone. Some time elapsed during which he continued sleeping, and on being questioned in that state he was not at all aware of what had been done. Being awoke (which was done instantaneously by Dr. Owens touching the organ of firmness, which seemed to act almost miraculously,) and finding his arm in a sling, he ejaculated—"Thank the Lord for that." In reply to questions, he said he had not felt it. Every gentleman signed the minutes, which were noted by Mr. Gatis, during the operation, when a liberal subscription was raised for the man, and Dr. Owens was warmly congratulated.

There is no reason to doubt the truth of this statement, as it is gravely put forth. It deserves the timeliest and most careful consideration of the many surgeons and scientific men, who doubt the efficacy of magnetism in this application. If the most fearful operations of surgery can be performed without any pain, almost without inconvenience to the patient, many a pang will be saved to humanity. An agent that has such wonderful power over the human frame as this has, should at once attract the careful and unprejudiced study of the natural philosopher and practical physician.—*Ed. Magnet, June*, 1844.

Period of Incubation in Syphilis.—Ricord says, when indurated chancre exists, a true syphilitic diathesis is established, and accidental circumstances alone are necessary to bring about its manifestation. The interval, which separates indurated chancre from secondary symptoms, may truly be considered as an incubation, during which a ferment mixed with the blood (syphilis larvee, Baglivi), and circulating with it, modifies its composition in such a manner, as to render it, in some measure, unfit for proper nutrition on the one hand, and on the other—under the influence of circumstances which have no action on the healthy individual—to give rise to a series of symptoms which have received the collective name of secondary syphilis. This interval of incubation is shorter in the child and female than in the male adult. It lasts from three to four weeks to as many months in general, the average being six weeks. A sudden change in the external temperature, the excitement caused by alcoholic stimulants, or even local causes, or warm or cold baths, the action of a short pipe on the lips, neglect of cleanliness, diet of an exciting nature, the exercise of riding—such are the most frequent determining causes of the first outbreak of secondary symptoms.

The Effects of Mercury on Cattle.—"A cow had been very much infested with large black lice, to destroy which the unguentum hydrargyri had been freely used. She was salivated, being well supported, however, with decoction of linseed; in a few days the effects of the mercury began to subside; but the result was, that the hair of her ears sloughed off close to the head, and likewise the points of both the ossa calcis, and to such an extent that one of the tarsal joints was left open, which caused no little trouble to stop the escape of synovia. Her tail, likewise, became almost denuded of hair; nevertheless, she ultimately rallied, and milked well in the following summer."—*Veterinarian.*

Tapping the Chest is usually performed in front between the sixth and seventh ribs, where the serratus magnus and obliquus externus muscles digitate. On this subject Mr. Colles remarks, "The place to operate on in empyema is in my opinion, referable to the inferior angle of the scapula. Place your patient on the side opposite to where the matter is; place his arm of the affected side on a line with the body, the elbow being just over the highest part of the crest of the illium; you then have the scapula fixed; then measure four fingers' breadth downwards from the angle of the scapula, and four fingers' breadth transversely from the spinous process of the vertebræ (to get clear of the thick mass of muscles near the spine) until it meets the perpendicular line, where they decussate, there you should puncture. You are first to make an incision three or four inches long in the transverse direction through the skin, next through the latissimus dorsi, and next through the intercostal muscles, and then you get upon the pleura. Now some advise you to tear through the pleura; but in many of these cases the membrane is thickened by disease, so as to be several inches thick, and you might be tearing until you were tired before you could get through. I once operated for empyema until the whole knife was in the wound."—*Dublin Medical Press.*

Prophylactic virtues of Belladonna against Scarlatina.—"A curious fact is mentioned, under the head of the solanaceous narcotics, in support of the supposed efficacy of belladonna as a preventive of scarlatina. A child was brought home from school ill with this fever, and M. de Lens caused all the family to take belladonna as a preventive, except one the grandmother and she was the only person who received the infection. The form and dose in which it is given, for this purpose, are as follows:—Fifteen centigrammes of the extract are dissolved in thirty grammes* of distilled water, and of this two or three drops are given night and morning to infants one year old or under, three or four drops to children of two years, and so on progressively, so that the dose for an adult is fifteen drops. It appears that the reputation of this prophylactic course of treatment is pretty firmly established in France, and so much so in Germany that it has been frequently recommended by authority during violent epidemics. We doubt whether it is much in favour with English practitioners; but yet as M. Bouchardat justly observes, it is attended with little trouble, and no possible harm, so that it would be well worth while to take the chance of its being useful. It may do good too, as a *medicine morale.*" *Provincial Journal.*

Paralysis.

Mrs. Pollock 500 Greenwich-Street, had a paralytic shock about 6 months since, which palsied entirely the left half of her body and limbs, the common remedies were applied without benefit. On the 23d of May last, Mr. D. B. Crist commenced mesmerising her daily, and on the 4th sitting she raised her hand to her head, and after the 7th sitting she was able to walk without assistance, and on the 8th of June inst. she was apparently entirely well, when the sittings were concluded.

Tests for Arsenic. In the *Provincial Journal* (which by the way now issues from its rural retirement, pale, sickly, and attenuated) we find a paper by Dr. Sherman on the tests for arsenic. He particularly alludes to those of Marsh and Reinsch, and their modification recommended in *The Lancet* by Mr. Ellis. The only objection to those tests is the difficulty of procuring zinc free from arsenical contamination. The author is then led to remark that "there is another test which deserves more attention than it has yet met with, viz. the *decomposition of distilled water by galvanism, to which the suspected solution is added, with pure sulphuric acid,*

*It may be as well to bring to the recollection of our readers that a gramme is 15.444 grains by weight; a centigramme, the 100th part of a gramme.

collecting the hydrogen from the negative pole or zincode of Smee's battery, igniting it and examining the stain left in a glass tube open at both ends. If there is the smallest particle of arsenic, the hydrogen will combine with it, and you then have a stain of *metallic arsenic*, with *rhomboidal crystals;* which you may *oxidise, collect, and dissolve in water; go through the fluid tests, reduce the sulphuret in a tube, and sublime it into arsenious acid again.* This is the most delicate test known, and is *perfectly free from the charge of using any substance in which arsenic can exist.*" It should be remembered that sulphuric acid is not always free from arsenic. The only satisfactory means of ascertaining the purity of the materials made use of is to put the apparatus in action previously to the addition of the suspected substance. If found then to be pure, the experiment can, of course, be relied on.

The Influence of Factory Labour on Growth.

Dr White, in a communication to the Medical Gazette, makes the following remarks, which will not at the present moment be lost on some of our readers:—"It is by no means an unfrequent occurrence in this neighbourhood (Preston) to find newborn infants weigh twelve, thirteen, and fourteen pounds; and the average weight seems to be from ten to eleven pounds. Notwithstanding the more than ordinary weight of infants at the time of birth, it is worthy of remark that the generality of adults never reach above the middle size, and by far the greatest number are much below it. It is very probable that this may arise from the early age at which children are sent to work in the factories; and that, although the parent plant be impaired from want of proper culture, it preserves within itself the power of propagating a race which, by due and timely training, might become one of the finest in the kingdom."

Treatment of the Erectile Tumours of the Eyelids.

By M. Carron du Villards.

A little girl, fourteen years of age, had presented, since her birth, on the upper eyelid, an erectile tumour, about the size of a grain of coffee. The tumour was of a livid red colour, increased daily, and was excessively tense when the child cried. M. Carron du Villards inoculated the tumour and its circumference with vacine virus, traversing it with a thread impregnated with the vacine matter On the fifth day, the symptoms of inoculation manifested themselves. Five pustules appeared around the tumour, which itself became inflamed. On the tenth day it was covered by a black crust, which came off on the twentieth, leaving a healthy, rosy surface underneath. All traces of the erectile tumour had disappeared.

A child nine years of age, had borne, since its infancy, an erectile tumour in the external angle of the eye. The tumour had never increased in size until the child was attacked with scarlatina. Its increase from that time was so rapid as to alarm the parents, who applied to M. Carron du Villards. Three entomological pins were fixed in the tumour, and their extremities having been bound together with a little silver wire, were exposed to the flame of a wax candle. The tumour became swollen, cracked, and then sank. On withdrawing the pins they brought away a portion of its parenchyma. Eight days afterwards the child was cured.

A pretty young woman, of Versailles, had an erectile tumour, of the size of a pea, on the superior eyelid. After an attack of scarlatina, it became endowed with increased vitality, and appeared ready to burst every time she coughed. In six weeks it acquired the size of an olive. M. Carron du Villards having been then consulted by her family, determined to operate by the coagulating method The tumour was injected by means of Anel's syringe, with a styptic solution. It became black, and then faded. On the fourth day, it was surrounded by an inflammatory circle, and covered by small phlyctenæ. The fifth day a portion of it separated, and the rest dried up. On the eighth day the entire crust fell off, leaving underneath a rosy, new skin, similar to that of a cicatrised blister, without loss of substance or deformity.—*Annales d' Oculistique.*

Case of Large Ovarian Tumour Removed by Operation.

By Frederick Bird, M. D., &c.

[*Read before the* Medical Society of London. *March* 4, 1844.]

The subject of the case was a lady, on whome he had lately operated for the extirpation of a large ovarian tumour. The operation, although attended by unusual difficulties, had been completely successful. He had been induced to bring the case before the notice of the society, partly on account of the peculiar features it presented, and partly because it afforded a marked illustration of the imperfect state of the means of diagnosis of certain forms of ovarian disease. The subject of the case was thirty-five years of

age, married, but without children, and, with the exception of dysmenorrhæa, had enjoyed previous good health. During the last two years the abdomen had been increasing in size, the enlargement having taken place equally on either side, and had been, until within the last six months, quite unaccompanied by disturbance of the general health. Pregnancy was for some time supposed to exist, and, under that impression, no recourse was had, until lately, to remedial measures. The abdomen had, within the preceding four or five months, enlarged much more rapidly than before, frequent vomiting and protracted diarrhœa then occured, and general emaciation succeeded. Two months ago, Dr. Frederick Bird saw the patient, in consulation with Mr. Hale Thompson and other gentlemen, at which period the abdomen had a circumference of forty inches; fluctution appeared very distinct in every direction; the thoracic cavity was much encroached upon by the large size of the tumour, she was greatly emaciated, and it was evident that the constitutional powers were fast sinking beneath the disease. Dr. Locock, Dr. Hamilton Roe, Dr. Hodgkin, Mr. B Phillips, and others, subsequently saw the patient, and the operation for extirpation was finally determined upon.

The same preliminary treatment adopted in his former operations have been employed. Dr. F. Bird commenced by making a small incision in the linea alba, and a little below the umbilicus, and on exposing the peritoneum, the cyst was found to be adherent; the adhesions were then examined, and Dr. Locock concuring in the operation that they would admit of separation without any great difficulty, the incision was enlarged to about five inches, so as to readily admit of the passage of the hand, which was next cautiously introduced between the surface of the tumour and the parietes of the adbomen; the adhesions were found to exist in every direction anteriorly, but, excepting in some few parts, gave way readily to the presence of the fingers; all the adhesions having been thus detached, and it having been previously found that the contents of the cyst were not fluid, an incision was made into it, and its bulk considerably reduced by the withdrawl of several pounds of the firm gelatinous mass by which it was filled, and as soon as the tumour began to protrude from the wound, it was firmly grasped by the forceps, the incision carried upwards to about three inches, and the remaining part of the morbid growth removed from the cavity of the abdomen; the wound was then closed, and secured by sutures, the vessels of the pedicle having been previously tied and divided, and the ligatures fixed at the lower end of the incision. But little hæmorrhage occurred and the operation was borne remarkably well by the patient, her pulse, at its conclusion, exceeding but by two beats the frequency observed during several days prior to its performance.

No pain, or other local symptom, was felt after the operation; reaction soon appeared, and as quickly subsided; the patient passed a good night, and at the end of a few days had quitted her bed; the wound rapidly healed, and all the ligatures were removed before the end of the fourth week after the operation. The patient's convalescense had not been retarded by any subsequent symptoms, and she is now in complete health.

The tumour weighed thirty-five pounds. It consisted of the right ovarium, enlarged by the development of one large primary and several secondary cysts. The parent cyst was filled by a firm gelatinous secretion, varying in color and in density, the difference in color being apparently due to the amount of blood sent to its several parts, the deepest color being observed at the lowest portion of the mass. In some parts was opake and striated. There were several vessels of large size traversing the interior of the tumour. The pedicle contained three arteries, of which one was large; the contents of the secondary cysts did not essentially differ from that contained in the primary one. The external surface of the tumour was irregularly covered by false membrane, which, in some parts, was of considerable density and firmness.

In making some remarks upon the preceding case, Dr. F. Bird said, the attendant circumstances of the operation, in the present instance, had confirmed him in his opinion of the advantages to be gained by the employment of an incision of mediate size; the separation of the adhesions had, in this case, been found neither a tedious or difficult proceeding, for the tense condition of the abdominal walls not having being destroyed by the large abdominal section, the hand was no sooner introduced laterally between the parietes of the abdomen and the contained tumour, than the adhesions were put upon the stretch, and, in that state, readily gave way before the presence of the fingers Had the abdominal walls been more extensively divided, the detachment of the adhesions would have been a more difficult, and probably a more dangerous proceeding. Although the tumour was of large size, and did not contain any fluid, yet it was removed without having recourse to the very large incision.—The history of the case had afforded no reason for believing that inflammation had occurred at any former period, and the adhesions were neither detected nor suspected. It was difficult to determine the period for which

the peritioneal adhesions had existed; but the thickened, and in some parts well organised form of the false membrane, scattered over the surface of the tumour, seemed to indicate that they were not of very recent date. It was worthy of remark that, since the operation, the menstrual function had been twice performed, and on neither occasion had the patent experienced any of the severe pain from which she formerly suffered.

On the true Character of Idiopathic Erysipelas.

By James Arthur Wilson, M. D.,

Physician to St. George's Hospital.

There is a short severe fever, at all times sporadic in this country, and occasionally prevailing with epidemic frequency,—a fever which, though uniform in any given number of cases, as that of measles, small pox, or scarlatina, is not yet associated by nosologists or practitioners with its proper class of acute eruptive disorders, but is known only by a name common to it, with various other affections of the skin, some of which are not febrile, and are comparatively of trivial importance. The idiopathic erysipelas of the head and face is a disorder essentially constitutional, specially determined to certain structures—pervading every one—engaged from the first in limiting its own action—and fulfilling within a given period of time, in its operation on the skin, as generally in the system, every condition of the regular eruptive fever.

In one of the last instances of idiopathic erysipelas that fell under my care, the patient, aged 53, formerly an officer in the British army, was admitted with every symptom of the disease into St. George's Hospital on December 20, 1843. He was taken ill, ten days before, while on his way to London, having been previously exposed to wet and cold, and suffering much from anxiety of mind. When I first saw him, on December 21st, he was under the full influence of the fever, exhausted, prostrate, and nearly blind. His face, universally swollen, was rough on the left side, with extensive desquamation, and disfigured about the lower part by thin black crusts of lymph and cuticle. On the right cheek vesication was still in active progress. The pulse was full and frequent, the tongue much coated. On December 23rd the inflammation had extended to the right ear, where it ceased to spread. Two days afterwards, the symptoms, both local and general, had entirely subsided. The attack, in this case, began on December 11th, with a sense of general illness, and pain over the left side of the face. It was not until two days afterwards, on December 13th, that the local inflammation declared itself by heat, swelling, and redness, in the upper part of the left cheek. This is a fair sample of the fever in its usual form and average degree of intensity.

One of the first cases that compelled my attention to the regularity of period in idiopathic erysipelas was that of a young gentleman, whom I attended under a severe attack of this fever, in July, 1829. The local inflammation, which was exceedingly severe, occupied both sides of the face, the forehead, and anterior scalp. There was high fever, with delirium, at times loud and maniacle; the breathing was much disturbed; the tongue remarkably black and dry. When I first saw him he had been three days ill. In five days more all the urgent symptoms had subsided.

In another case, which occurred at the close of the autum of 1830, and which afforded me an opportunity of studying the disease by personal experience of its effects, the first symptoms observed were general weakness and uneasiness, with a sense of coldness, especially in the legs, and of shrinking in the bulk of the limb. They felt "like cold thin sticks." To this evidence of general illness succeeded, on the same evening, December 2, a cough of the most harassing kind, which entirely prevented sleep, was not relieved by expectoration, and was accompanied by severe shooting pain in the right groin. On the following day there was swelling, with heat and redness in the lobe of the right ear and under the angle of the jaw, which, in the course of a week, had extended over the entire face, and hairy scalp of both sides of the head. The febrile symptoms already mentioned were not alleviated on the appearance of the eruption, but continued to increase, with slight intermission, until December 8, on which day (the seventh from the invasion of the fever,) and during the two following days, the disorder seemed to have reached its maximum of intensity. The tongue was at this time thickly loaded; there was an abhorrence of food, with nausea and occasional vomiting; the bowels were constipated, and the motions obtained by medicine were of a black pitchy appearance. There was exceeding hurry, with perplexity of mind and occasional delirium. The vesications were large and numerous. discharging an acrid matter. During their formation a very copious viscid exupation took place from the inflamed scalp, by which the hair was matted into thick folds.—the inflammation extended from the face backwards, through the nostrils, to the upper pharynx, so that these surfaces remained for

a long time sore and disposed to bleed. After eight days of fever the symptoms, both local and general, gradually subsided, leaving a great effect of waste by emaciation of the entire frame, with extreme muscular debility.

The kidneys continued to act very largely during the early period of convalescence; the appetite was greater than it had ever been before or since; but it was long before the function of sleep was recovered. The hair separated entirely from the head, and several small abscesses subsequently formed, one beneath the lower eyelid, two under the chin, and another behind the ear. They were opened in due time by the lancet, and healed kindly.

Two of my medical friends, whom I attended when ill with erysipelas of the head and face, in the years 1832 and 1833, might be instanced in further evidence of the regularity under which the symptoms of this fever proceed and are determined. If they kept notes, as I did, of their own cases, during convalescence, they will find that their sufferings from fever and inflammation were terminated in less than ten days.

Mr. J. G., of Clarges street, complained to me, in the afternoon of April 11, 1832, of chills, heat, violent headach, sickness, and a feeling of general distress. The tongue was very white, but not furred. On the following day black scybala had been voided from the bowels, succeeded by bilious motions; and the headache was relieved. There was, however, a sense of great oppression, with constant nausea, and he had vomited much green and yellow fluid, which was intensely sour to the taste, and instantly reddened blue litmus-paper. On the following day erysipelas declared itself by swelling and redness of the ears and cheek, which in twenty-four hours more, had extended to the forehead and hairy scalp of the same side, and, subsequently, across the nose, chin, and forehead, to the other side of the face. The local inflammation had reached its greatest degree of intensity on April 17th, being the fifth day from the commencement of the eruption and the seventh from that of the first symptoms of the fever. On April 18th the face was paler and less tumid; on the 20th there was general desquamation of the cuticle; and on April 22nd all symptoms of the disorder had subsided.

In the case of Mr. J. P., of Eaton-square, after two days of much constitutional disturbance by chills, heats, and other symptoms of fever, the dusky redness and swelling of erysipelas were first observed behind the right ear on August 7, 1843. The inflammation subsequently extended over the entire face, forehead, and hairy scalp; the vesications were extensive, and there was much fever. On August 15, (the ninth day from the invasion of the local symptoms,) the swelling of the face was fast subsiding, the natural complexion had begun to return, the skin was moist, the pulse natural, and convalescence in all respects fairly established. In this case the erysipelas fever had supervened on the removal of an encysted tumour from the back of the neck. From intimate acquaintance with the patient, and with a full knowledge of the causes in previous operation on his general health, I had every reason to believe that, had he not been attacked by erysipelas, he would have been laid up before the close of the autumn with some other form of fever. Thus it would appear, that a severe constitutional disorder was specially determined in its character by the accident of a local injury.

From these selected instances of idiopathic erysipelas, as from the large majority of a much more numerous record, extending at intervals over a period of sixteen years, the disorder may be described as a severe depressing fever, lasting from eight to twelve days, and determined, by a special effect of inflammation, to that peculiar organic structure, the integuments of the head and face. Like other fevers, it often supervenes on local injuries, or on any of the various causes that induce a bad state of the general health. It attaches specially to certain temperaments, and to particular states of constitution; affecting the limited range of persons liable to it, under circumstances which, in others, would induce the more common varieties of fever. It prevails most in particular districts, and at certain seasons of the year. The late Dr. Warren, in the course of his long metropolitan practice, observed that it was most frequent during the months of spring and autumn, and when the wind blew from the south-west. Idiopathic erysipelas is not so frequent as is generally supposed. On looking over my hospital case-books, from 1839 to the present time, I have been surprised at not finding more instances of this disease. From the information afforded to us in the admirable medical reports lately issued from the War-office, it does not appear to be a frequent complaint among the troops of the British army. Its effects upon structure are so frightfully obtrusive, that they exact an undue share of attention from the clinical observer, and are thus remembered, to the exclusion of cases less prominent in their interest.

A further analogy might be assumed between the erysipelas and common eruptive fever, from the contagious properties which, it is supposed, are inherent to both. With this much-disputed question I do not at pre-

sent propose to interfere. That during certain states of atmosphere, and of other local influences, erysipelas may, and does, attack many individuals simultaneously, is beyond doubt. That, in some instances, it has been "caught" by one person from another, there is much reason to believe. The eminent physician to whose opinions respecting the disease I have already alluded, did not consider erysipelas as contagious. The president of the College of Physicians, fourteen years back, held an opposite opinion.

When erysipelas of the head and face proves fatal, which seldom happens unless in sequel of some other disease, it is generally found, on examination after death, that the lungs, the serous and the mucous membranes, are the structures in which there is most evidence of organic injury. Like the other eruptive fevers of this country, erysipelas in bad cases, always becomes typhoid towards its close. Its pathology, by dissection, is that of scarlet fever, which, in its several stages, it very much resembles.

On the examination post mortem of a middle aged man, who died with this disease in St. George's Hospital, on June 1, 1837, there was universal thickening of the peritoneum, with an effusion of sero-purulent fluid into its cavity. Recent effects of its same kind were likewise observed in both sides of the chest. The heart was much enlarged by dilatation and thickening of its left ventricle; the aorta was atheromatous, the liver unusually hard, and the kidneys small, mottled, and granular. Thus, according to the routine practice of the day, in this case of mixed acute and chronic disease, bleeding, blistering and other antiphlogistic measures would have been indicated by the symtoms of pleurisy and peritonitis, while bark and wine would have been in demand as specifics for the erysipelas. Can stronger argument be adduced for the revision of much that is dogmatical in our modern practical medicine?

Here, then, is the true character of the disease, with a practical inference for its treatment. Thus, regarding its symptoms, whether local or general, as a train of actions tending of necessity to their own relief, we should, in most cases, be content to watch over their safe development, and to wait patiently for the result; which, in this fever, soon arrives. Idiopathic erysipelas, within ten days from its invasion, seldom fails to cure itself. Like the other eruptive fevers, it occasionally presents itself in a complicated and irregular form, and must then, of course, be treated by means that are special to the case. I have known the erysipelas fever supervene on laryngitis and pharingitis, on jaundice, on phrenitis, hemiplegia, and various local inflammations of the vital or other organs; on the scarlet, rheumatic, and epidemic typhoid fevers.

In a case which I attended in February 1837, the patient, an athletic farmer, past the middle age, was bled five times from the arm before he got well, and the blood taken was in every instance buffy. The inflammation of the skin began in the face, and subsequently extended over the entire surface of the body, not excepting the palms of the hands of the soles of the feet, from which, at the close of the disease, there was desquamation.

In the early days of ordinary erysipelas fever the physician's rule of treatment should be neither specific nor exclusive. The patient is nauseated by the lightest food, his tongue is foul, and his bowels loaded. You would purge him in other fevers; do the same in this. Just exception is taken against the use of purgative medicines, from their supposed weakening effect, in this disease, by those who make no distinction between it and the partial erysipelatous inflammations of the skin. Aperients may, however, be administered with much advantage at the commencement of the fever, and, indeed, during its continuance, with a proper limitation as to their quality and frequency.

Like other epidemic fevers, erysipelas is often first developed from influences that disturb the digestive functions. The tongue is remarkably foul in many cases of this disease, and the motions of a peculiarly dark appearance and pitchy consistence There is every reason to believe that its attacks might occasionally be prevented by the timely administration of brisk aperient medicines. In the first onset of this severe fever, when digestion is arrested, when secretion and general nutrition are suspended; in those days and nights of the hurried pulse, the hot skin, and perplexed head,—of incessant cough it may be, and constant sickness; at this time to cram the patient with bark is to obey a rule by the abuse of its principle.—Salines, rennet-whey, and fresh water are all that the patient needs during the early symptoms of this inflammatory fever.

In our application, by treatment, of these principles to the local effects of the disease, while we are careful to protect from lasting injury the structures in which its action is most declared, we should continually remember, that in the progress of the eruption is the advancement of the cure. It is under an imposed task of swelling, vesication, and excretion, that the skin, which bears the strain of this fever, is enabled to relieve the other vital organs, and in the end to maintain its own integrity. How rash and mischievous the

interference that would seek to mislead the actions thus determined to the surface, by the introduction of belladona to the system already charged with morbid poison in the blood; that would prescribe, in all cases of the disease, an exact limit to its erruptive action, by pencilling the inflamed face and scalp with designs in lunar caustic! The mask, which in erysipelas the patient is compelled to wear, should never be adapted by his physician.

There is seldom occasion for external applications of any kind. Even were it possible, by such means, at once to arrest the local inflammation, we should be wrong to employ them. It is essential, for the safe development of this fever to its close, that in the skin, as elsewhere, certain special actions should be suffered for a time. The excessive pungent heat of the inflammation, in its early stage, may be relieved by frequent lotions with the Liquor of acetate of ammonia, diluted with equal parts of tepid water. The continual application of cold is repellent and unsafe. When the vesication has commenced, or is in progress, tepid washes of of soft water, or of thin, smooth gruel are the best. The watery solution of acetate of ammonia may be again used at this time, diluted with hot, well-strained poppy decoction.

It is better not to sprinkle flour upon the excoriated surfaces. While absorbing the acrid discharge, it concretes into a stiff, uncomfortable scab which a little gentle sponging would entirely obviate. To bathe the head and face, according to ordinary practice, incessantly with spirit-lotion is to surround the patient, helpless, fevered, and comatose, with an atmosphere of intoxicating vapour, which at every inspiration, he is compelled to drink. From this most objectionable process of cooling by evaporation there is often a great aggravation of the delirium at all times incidental to the fever.

Idiopathic erysipelas of the head and face is actually treated on this principle of respect for its symptoms by many who have not as yet been taught to consider it as a regular eruptive fever. Its wide constitutional character being thus practically known, there is the more reason to regret that it has not been distinguished by a name less productive of error and false analogies in the management of disease. Under this one designation of "erysipelas," the severe fever in question is confused not only with partial erratic inflammations of the skin, supervening on local injuries, but with frets, rashes, pimples, and scaly eruptions, in all their variety of eczema, urticaria, lichen, or psoriasis. When a patient declares that he has "the erysipelas," no precise idea is given to his medical attendant of the nature of the illness, or of its particular effects on the skin. The extreme and acknowledged vagueness of this term when used by persons not of the profession, prevents error by obliging closer inquiry; but it is very necessary that medical men, in their discussions on erysipelas, should know what they are talking about. The bark, wine, and porter, which, in certain diffuse inflammation of the skin, so rapidly alter its nature and limit its extent, would be utterly condemned in the early stages of idiopathic erysipelas by all physicians conversant with the disease as it really exists. Yet by too many,—especially, be it observed, by the doctors in surgery,—let the case be once named erysipelas, and Peruvian bark is a specific for its cure In the conventional allotment of disease, idiopathic erysipelas, being a fever, belongs of right to the physician. From the limited views that prevail respecting its constitutional character, and from the undue importance attached, in ordinary practice, to the symptoms which it presents in the skin, it is, in many instances treated exclusively by the surgeon, who would hesitate to undertake the undivided responsibility of small-pox, measles, scarlatina or rheumatic fever. This last named fever, regular in its course, and determined, like the others very much to the skin, suggests a good distinctive name for the idiopathic erysipelas of the head and face. For many years past I have proposed to those studying with me in the physicians' wards of St. George's Hospital that we should consent to know the disorder in question under the designation of Erysipelas Fever. We thus merely add to the name by which the disease is already known, a term that vindicates the importance of its constitutional character over the partial and comparatively trifling affections of the skin with which it is now confounded.

This law of regularity in the succession of symptoms, that finds within a given time its completion in their cure, receives a much wider application than is generally assigned to it in the limitations of rational medicine. In many cases of chorea, and in some few of jaundice, that have fallen under my observation, I have seen reason to consider the spasms of the one disease, and the yellow suffusion of the other, merely as symptoms of disturbed genera health, working by train and in sequel for a good and wholesome result. The practical application of this principle in the treatment of disease is a continual rebuke to the vanity that would in all cases attribute the interruption or alteration of symptoms to the efficacy of the last prescription.

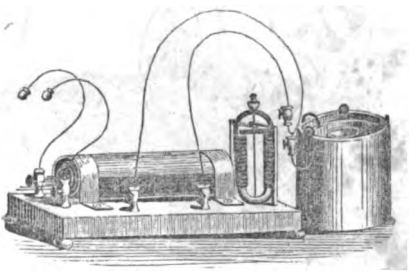
There is no better test of the physician's professional character than is afforded by his practice in erysipelas. From the rapidity with which its symptoms are developed (generally to a good end) most of the treatment in this fever is superfluous, yet much affects to be specific. And thus the boaster triumphs in a cure where the true physician is content with acknowledging a result. The only explanation of this great regulating agency, under which, as by a clock within us, the effects of fever are determined in a given time, is, from what we notice in the blood, in the stir of its elementary particles, and in the constancy and uniformity of its moving forces.

Idiopathic erysipelas, being a fever, is, of necessity a disorder of the entire blood; and here is the explanation of its wide range of symptoms and pathological effects. If the general material of the body be prejudiced in its elementary arrangement, or in any of its essential functional properties, the business of all structure, and of all parts of every structure, must suffer; and this it may be, to the extent of entire interruption or death. Thus, by a spoiling or a wasting of the general blood in the erysipelas, as in other fevers, assimilation, secretion, and muscular action, are sometimes hastened to their end. With those accustomed to this, the true view of the disease, the partial alterations resulting from its agency in structure are regarded but as so many expressions of a disturbing influence general through the system, as effects and symptoms far removed from the beginning of the fever, giving rise, in their turn, to other symptoms; but seldom of sufficient urgency to be received as the immediate cause of death. It appears by the direct observations of M. Andral, that the blood of a person labouring under an attack of erysipelas contains much more than its healthy proportion of fibrin. M. Andral attaches much importance to this excess of the coagulable principle, and seeks to establish from it an essential pathological difference between fever and local inflammation, which few practical physicians would be disposed to admit.

However questionable the claims of modern physic to much of the superiority which it asserts over that of times past, it is certain that in our practical intercourse with small-pox, measles, and scarlatina, we do not derogate from the wisdom of our later ancestors. Of the few principles which physician-s-now a days care to profess, the best are made available for the treatment of the febrile actions which are determined by eruption to the skin. There is among us, generally, a comprehensive and well-considered view of such action in all its varieties, a nice knowledge of it in detail, a respect for the symptoms by which it is made evident to the senses—a belief in the benevolence of its purpose—and a reliance on the steadiness of its operation towards a speedy and wholesome end. Thus it is good service done to physic, when an unclassed eruptive fever is placed where it of right belongs.

Idiopathic erysipelas has, I am told, been recently classed with the eruptive fevers by M. Rayer, of Paris; but in the various medical reports lately published in this country, it is distinctly separated from fevers of every kind, and is designated in their tabular arrangments as a disease *sui generis*.

THE ROTARY MAGNETIC MACHINE.



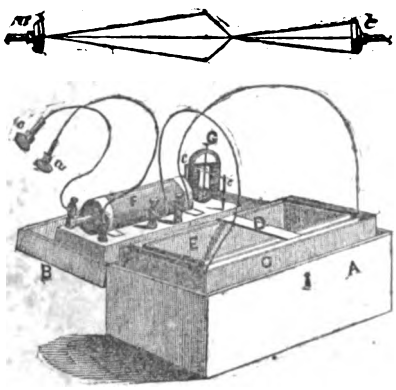
In the April number of this Journal, we gave an engraving of a Rotary Magnetic Machine. The instrument then exhibited is worked by hand. Above we present a drawing of a similar machine, but which differs so far as to be put in operation by magnetic power. The length of that now displayed, including the battery, is 16 inches Its width 4—height 5 inches, and the weight of the whole, the case and buttons, for magnetising, about eight pounds. It is very durable, and is put in motion by a solution of sulphate of copper, the expense of which is very trifling.

The price of the instrument accompanied by the necessary buttons, (6 in number) and case, is $14 50 cents, cash in hand.

The size and weight of the Machine, together with its liability to get out of order, and the complaints frequently made of diffi-

culty in running it, has given us great inquietude, and we consequently determined to obviate these objections if possible, and have at last succeeded in our object, by employing a Jeweller extensively known in the Union, as having no superior in this city, to make the machine under our direction. It has a new and convenient arrangement as represented in the following engraving, and to distinguish it from other machines we have named it the

SAVAGE ROTARY MAGNETIC MACHINE.



The instrument is fitted into a neat Mahogany case (with lock and key) 8 inches long, 4 wide, and 3 deep.

A, case; B, the cover; C, sheet copper vessel; E, sheet copper, the lower edge of which is soldered on the bottom of the copper vessel C; D, copper piece connected with the zinc between the copper surfaces, containing a solution of sulphate of copper; F, cylinder of copper wire; G, magnet and armature; e, e, conductors to the armature; c, negative, and a, positive button for magnetising.

The cylinder, magnet, and armature, with the block of wood on which they rest are very light, and are set on the cover of the case in magnetising; after which it may be placed in the open space in the centre of the case, and the buttons and conducting wires laid over it, and the cover turned over the whole and locked.

The armature is jeweled, and in running is estimated to make more than 10,000 revolutions in a minute. The instrument runs much better, and apparently as well as it is possible to make one run; its power is fully equal to any we have seen, and has besides great advantages in size, weight, and neatness, and will be found very convenient for physicians and private families, and to posses other advantages than those we have noticed.

Mr. Savage is making a machine much smaller and lighter on the same plan, a pocket instrument, which has a power that will be sufficient for ordinary purposes.—He also makes a larger machine, precisely like these, in a neat mahogany case 10 inches long, 5 wide, and 3 deep, more especially for office use which is jewelled and runs in the same manner as that first described.

The price of the Savage instrument first described is $15, including 6 buttons of a form we have found necessary and most convenient, with full directions for running the machine, and directions for magnetising, in a great variety of cases, illustrated with engravings, &c.

The price of the pocket instrument in a neat mahogany case 6½ inches long, 3 wide and 2 deep, is $15, including 2 buttons.

The price of the machine last described for office use is $18, including 8 buttons and directions for running, and using it as above. These instruments are very light neat and portable, will run without difficulty, and will last a life time. They will be found indispensible to every physician, and also in many private families, as well as for ships and other vessels.

The figure drawn above the engraving is intended to represent the direction of the forces as they proceed from the buttons in magnetising. *a*, the negative button repels and expands, while the positive button attracts and contracts. Besides one of these forces exerts an alkaline, and the other an

acid influence upon the fluids and solids of the body.

We cannot however enter further into this subject at present, and it is not necessary to do so, if the magnetizer observes the directions we have given for magnetizing.

The effects of these instruments are of a character so extraordinary, in both acute and chronic diseases, as to leave no doubt it will produce an entire revolution in the practice of both physic and surgery. It will become indispensible to every physician, and also in many private families, and they are both availing themselves of its benefits as fast as it can be manufactured.

We have been magnetising with these machines for the last six months, and they have thus far realized our anticipations as described in our last number. Since that publication we have tested it in a great variety and number of cases, with results that have been highly satisfactory.*

Among these cases there have been 35 of lateral curvature of the spine; 11 of distortion of the spine; 5 of distortion and lumbar abscess, and disease of the hip joint; 51 of tubercular consumption; 13 of chronic bronchitis; 5 of chronic bronchitis, complicated in its last stage with tubercular disease of the lungs; 11 of tic-douloureux; 2 of tubercular disease of the antrum and nose, 5 amourosis; 8 opacity of the cornea; 2 tumours of the eyelids; 28 sick head ache from tubercular disease of the brain; 1 tubercular disease of the organ of approbativeness, *connected* with tubercula (white swelling,) of the right side and back part of the first cervical vertebræ, involving the upper attachment of the sterno-cleido-mastoid muscle, and producing an impediment in the motion of the right leg; 2 cases of tubercular disease of the organ of firmness *connected* with tubercular disease of the same muscle; 6 tubercula of the cerebellum, connected with tubercula of the uterus, and uterus and stomach; 8 tubercular disease of the ear; 2 paralysis of auditory nerves; 1 hypertrophy of the mucous surfaces of the organs and limbs; 1 acute rheumatism; 18 chronic rheumatism; 7 paralysis; 26 tubercular disease of the throat; 13 secondary syphilis; 5 amenorrhoea; 5 corea—St. Vitus' dance, or tubercular disease of the cerebellum; 2 catalepsy.

A great majority of these cases were complicated with tubercular disease of other organs, as the heart, stomach, liver, kidneys, &c. All the cases of consumption were thus complicated, excepting two, in which the disease had commenced in the stomach, liver, arteries, throat, or brain, before it attacked the lungs. This, we may here remark, we have long observed to be the uniform course of the disease in 9 cases out of 10, showing the importance of attacking it in its transit to that organ.

In the notice of the effects of the Rotary Magnetic Machine, in the April number of the Dissector, we suggested the probability of its great importance in the incipient stage of tubercular consumption, from the results obtained in the few cases, in which we had then used it. Further trials, in more than 50 cases, have not only confirmed that opinion but have shewn it to be very useful in the last stage, especially in promptly reducing the pleuro-peripheumony that often attends tubercular disease of the lungs. In many cases it lessens the cough and expectoration, by reducing the mucous disease of the bronchial tubes that traverse the tuberculations.

In magnetising the lungs, the button conveying the weakest, or positive force, is placed over the posterior spinal nerves connected with them, in the intervertebral spaces, between the 7th or last cervical, and first dorsal vertebræ, while the other, or negative button, conveying the strongest force, is moved slowly over the entire surface of the chest, with the instrument graduated to a moderate power. This practice is adopted in

* We have had with the assistance of Students, three machines running, almost constantly from morning till night.

consumption or pneumonia, for the purpose of first exploring the lungs to find the place most diseased, as the action of the instrument will be much more sensibly felt when the button passes over it, and it will require more magnetising than other parts of the lungs.

In exploring the chest, and in magnetising, whether for disease of the lungs, heart, or pleu a, the positive button should be placed over the left intervertebral space in magnetising the left side of the chest, and over the same space on the other side in magnetising the right side of the chest. In such cases the process is continued only from 5 to 10 minutes, and once a day is generally sufficient.

Turbercula of the heart—hypertrophy. In this case the negative button should be placed below the lower apex of the heart, where it may remain 10 or 15 minutes, under a very moderate power of the instrument.

Pleurisy, Acute or Chronic. In these cases the negative button should be placed over the seat of the disease, or place where the pain is felt, under a very moderate power of the instrument.

Tubercula of the Stomach—Dyspepsia.—The positive button should be placed over the intervertebral spaces, between the first and second, and second and third dorsal verterbræ, and the other button over the stomach. In magnetising the left side of the stomach, the positive button should be placed over the left side of the spine, and the other about two inches to the left of the medium line.—In magnetising the right side, the button should be placed over the right side of the spine and stomach.

Tubercula of the liver—acute or chronic diseases of the liver. The positive button should be placed over the intervertebral spaces of the right side, between the 7th and 8th, and 8th and 9th dorsal vertebræ, while the other is moved slowly around one half of the body, from the pit of the stomach below the short ribs to the spine, and then over the short ribs.

Tubercula of the spleen—acute or chronic. The positve button should be placed on the opposite side of the spine, to that in the case of the liver, and the other button over the left side as in the case of the liver.

Tubercula of the large intestines.—The positive button must be placed over the intervertebral space, between the 5th and 6th and 6th and 7th dorsal vertebræ, and the other over the intestines on the right or left side, as indicated by the seat of the disease.

Tubercula of the small intestines. The positive button should be placed over the intervertebral space, between the 11th and 12 dorsal vertebræ, and the other over the front part of the abdomen, right or left of the medium line, as indicated by the seat of the disease.

Mesenteric Diseases. In these cases the buttons should be placed over the spine and abdomen, as in the instances of the large and small intestines.

Kidneys. In tubercular diseases of the kidneys—acute or chronic, the *negative* button should be placed over the intervertebral space between the 12th dorsal and first lumbar vertebræ, and the other on the opposite side of the abdomen.

Cystis. The positive button should be placed over the same intervertebral spaces as incases of the kidneys, and the other over and above the pubis.

Prostate Gland. In these cases the positive button should be placed over the intervertebral space, between the last lumbar vertebræ and the os-coxgex, and the other over and above the pubis.

Uterus. In magnetising this organ, the positive button should be placed over the intervertebral spaces, between the first and second and second and third lumbar vertebræ, and the other over and above the pubis.

Ovaria. In tubercular disease of the ovary, the breasts or mammæ are not of the same size—that on the same side of the diseased ovaria being larger than that on the opposite side, in consequence of atrophia of the latter from direct sympathy with the diseased ovaria. The positive button should

therefore be placed over the atrophied breast, and the other over the ovaria of the opposite side.—The same course should be pursued in *chlorosis, ammorrhoæ, &c.*

Leucorrhœa. The positive button in these cases should be placed over the intervertebral space, between the last lumbar vertebræ and os-coxgix, if tenderness is elicited by pressure there, otherwise it will be found in the lumbar vertebræ, over which this button must be placed. In the first case the negative button should be placed over the front part of the perineum, and in the last over the pubis.

Prolapsus-uteri. In these cases the button may be placed on each side of the pubis, or one button may be placed over a lumbar vertebræ, and the other on the side of the pubis, when the broad dilated ligaments that sustain the uterus will contract with great force.

In tubercular disease of the stomach and uterus—the positive button should be placed over the intervertebral space, between the first and second dorsal, and the other over the pubis, in consequence of the direct sympathy between these organs.

In tubercular disease of the cerebellum and uterus—the negative button is placed over the organ of amativeness, on one side, and the other on the opposite side of the pubis, and we should here observe that females can and should magnetise themselves, in cases of disease of the uterus, and vagina, &c., and should *never* allow a physician to do so, while they have strength to do it themselves, or can procure the assistance of a female.

Brain. Tubercular disease of the brain is distinguished in an instant, by the pain produced by the pressure on the sub-occipital nerves, on the sides of the space between the head and first cervical vertebræ, or joint of the neck, *in the abscence of tubercular disease of the throat.* It may also be distinguished by the pain darting into the brain, when the disease is in its active state, or by severe pain in the head, in the absence of an injury. In magnetising this organ, we should always observe the greatest caution, and always commence with the weakest power of the instrument.

Sick head ache.—The positive button is placed over the organ of amativeness, and the negative over the organ of causality or the opposite side of the head, and moved quickly over that side of the forehead, when the positive button is placed over the opposite organ of amativeness, and the negative over the opposite organ of causality, and moved over that side of the forehead as before. The sitting is thus concluded generally in less than one minute.

In head aches—other than those that are periodical, and called sick head ache, we place the negative button over various organs as indicated by the pain, or seat of disease, while the positive button is moved around the neck.

Tic-Dolroaux.—The positive button is placed over the plexus of nerves, in front of the ear, while the other is passed over the side of the face, and the sitting concluded in a few seconds.

Strabismus—Squinting. The positive button is placed over and pressed in to the corner of the eyelid over the paralyzed muscle, and the other over the opposite corner of the eye, and the sitting concluded in one minute.

Eye.—Diseases of the eye, acute and chronic.—The negative button is placed over the eyelids in these cases, and the other over the back part of the neck, excepting amourosis, in which case the buttons are reversed.

Nose.—Diseases of the nose, acute or chronic. The negative button is placed over the nose in these cases, excepting polypus, in which case the buttons are reversed.

Antrum.—In case of disease of the antrum the negative button is placed over the antrum, and the other over the neck.

Tooth-ache.—The negative button is placed over the diseased tooth, and the other in front of the ear.

Throat—In diseases of the throat, acute or chronic, the buttons are placed on the opposite sides of the neck, under the ear, and moved slowly towards the chin, or the positive over the sub-occipital nerves, and the other on the side of the throat.

Muscles.—Tubercular disease of the muscles —Rheumatism, acute or chronic. Pain is

produced by pressure on the intervertebral spaces of the cervical vertebrae, which increases with the intensity of the disease; and in magnetising for rheumatism the positive button should be placed over the back part of the neck, at the commencement, and at intervals during this process—no matter whether the disease is in the arm, finger, leg or toe, The buttons should also be placed, and moved slowly over, and around, and between, the joints. The positive button being sometimes on one joint, and the negative on another.—When the disease is affecting the arms, shoulder or neck, one button may be held a few minutes in each hand.

Paralysis.—In cases of paralysis, patients should be magnetised in the same manner as in rheumatism.

Chorea.—St. Vitus' dance—Tubercular disease of the cerebellum. The negative button should be placed over the organ of amativeness, while the other should be placed on the affected limb, or limbs, of the opposite side.

Epilepsy.—Tubercular disease of the cerebellum. The negative button should be placed over the cerebellum, and the positive on the neck or ear of the opposite side.

Catalepsy.—Tubercular disease of the vermiform process, in the medium line of the cerebellum, (organ of motion.) In these cases the positive button should be placed over the first cervical vertebrae, and the other over the organ of individuality.

Deafness.—Tubercular disease of the eustation tube. In these cases, the positive button should be placed on the tongue and the other on the ear.

Joints and Limbs.—Tubercular disease of the joints and limbs—*white swellings.* In these cases both buttons are moved over and around these swellings, whether in a sound or ulcerated state.

Spine.—Tubercular disease of the spine—distortion of the spine—distortion of the spine and lumbar abscess. The buttons are applied around and over the distortions, and abscesses, as in the case of white swellings.

Spine.—Lateral curvatures of the spine—(See description of the manner of magnetising, with an engraving, in the April number of this Journal.)

Aphonia. — Loss of Voice. Dr. L. D. Fleming, of Newark, N. J., who recovered his voice rapidly under the action of this instrument, thinks it is better to apply one of the buttons—the negative—over the organ of imitation, instead of both on the neck, under the angle of the lower jaw, from the effects produced in his case.

Tubercular disease of the organs is invariably distinguished, in all these cases, by pain more or less severe (in proportion to the intensity of the disease) produced by pressure on the ganglions of the spinal nerves, in the intervertebral spaces along each side of the spine—no matter what name may have been given to the disease by physicians, nosologists, or other medical writers.* It is a disease of the secreting or lymphatic system in the serous surfaces, in which the posterior spinal nerves terminate, and is propagated from the skin to the limbs, and from the limbs to the organs, and from one organ to another. The seat of the disease in the skin, limbs, and spine, is easily seen, and its precise situation in the organs is in general easily determined, by exploring them under a very moderate power of the instrument.

Patients affected with tubercular disease, will bear only a moderate power of the machine, and among these there is a great difference in susceptibility to its action, as in the cases of mesmeric influence. Generally they will bear very comfortably, one half of the power of the instrument, but there are a few that will go into a fainting fit,† or into the mesmeric state, under its weakest power. The greatest caution should, therefore, be exercised in graduating the instrument, especially at the first sitting. In fact, children and weak-minded people should never be allowed to use it. The time occupied in magnetising varies in the different cases—generally

* These symptoms are magnetic; for, when we press upon these ganglions in the active state of the disease, the pain will dart into the diseased organ, with a force which increases with the intensity of the disease.

† We have had only two cases of this kind—one, a lady, in magnetising the brain, and the other, a gentleman, in magnetising the chest. They were both very subject to fainting fits from trifling causes.

from five to fifteen minutes, when the magnetic organisation of the system becomes so tense as to give violent shocks to the magnetiser, and sometimes headache to the patient if the process is continued too long.

In nearly all the cases of tubercular disease, other remedies are required to keep up a steady magnetic action. Magnetising restores lost motion in the tuberlucated portions of the organs, limbs, and other structures—sometimes permanently, but generally temporarily, making it necessary for such patients to use other remedies at the same time. With these, in conjunction with the action of the instrument, they recover very *rapidly*—even cases so far advanced as to preclude any hope of their recovery by any other means. Magnetic or magnetized remedies are the only ones that are of any value in tubercular disease of the organs and limbs. We continue to use the magnetised gold pills in these cases with a success in conjunction with the action of the machine that precludes the necessity of any other, and we should *here remark*, that the daily effects of the action of this instrument affords the most conclusive and overwhelming proof of the correctness of the magnetic treatment we have long pursued in tubercular disease, and gives us a most extraordinary and glorious triumph over our opponents.

HYPERTROPHY OF MUCOUS SURFACES.

Bronchitis—(Chronic.)—The action of the rotary magnetic machine, alone, will cure all the cases in the first stage of this disease of the membrane that lives inside of the air tubes. The disease is distinguished by cough and expectoration, and the abscence of the magnetic symptoms of tubercular disease of the lungs.

The *negative* button should be placed first over the intervertebral spaces, between the seventh cervical and first dorsal vertebræ while the other is passed slowly over the whole surface of the chest, including the back part of it, as in the case of tubercula of the lungs, or consumption. The *positive* button is then placed on the tongue, and the other moved quickly over the whole surface of the chest, and the sitting concluded in ten minutes.

In the last stage of the disease the action of the instrument should be aided by the nitrate of silver, which should be ground one hour in a glass mortar, with loaf sugar, in the proportion of 5 grains of the nitrate of silver to 100 of sugar. About a drachm of this powder should then be put into a perfectly dry phial, holding not less than half-a-pint, and then shaken and instantly applied to the mouth, making at the same time a full inspiration in such a manner as to inhale the particles of powder suspended in the air contained in the phial.

Mucous disease of the throat.—This disease is distinguished by hawking and expectoration, and the abscence of the magnetic symptoms of the tubercular disease of the throat.

The negative and positive buttons are applied alternately over the upper part of the neck, or on each side of the throat in these cases. Every case in the first stage of the disease is cured in this way. In its last stage the throat should be gargled with a weak solution of nitrate of silver, once in two or three days.

In diseases of the mucous surfaces of the the organs and limbs, patients will bear fully double the power of the machine, that they will in diseases of the serous surfaces; in fact the greatest power that is borne in diseases of the serous surfaces, whether acute or chronic, will have little or no effect in acute or chronic diseases of the mucoue surfaces, and this fact in a doubtful case is sufficient to determine the true character of the disease, whether in thebrain or any other part of the body.

ACUTE DISEASES—INFLAMMATION OF THE SEROUS SURFACES,—ACUTE TUBERCULA.

The action of the rotary magnetic machine reduce inflammations of the organs and limbs with great rapidity. We have used it in cases of inflammation of the liver, and inflammatory rheumatism, &c. It cured the first in from two to three minutes, and in cases of paralyzed limbs in the last, the progress of the disease from one limb to another has ceased on the first application of the instrument, and the inflammation in the paralyzed

limb or limbs soon reduced by a few more applications of the instrument, without the use of any other means whatever. In a letter from Dr. L. D. Fleming of Newark, N. J. he says, "A few weeks since my wife had a most violent attack of pleurisy of the left side. I applied the buttons of the instrument, from one to two minutes. It produced a sensation of faintness, which subsided in about fifteen minutes—since which time there have been no symptoms of the disease. I could add a great many cases of the extraordinary effects of the machine, but time presses hard upon me, and this must suffice."

Inflammation or acute tubercular disease of the serous surfaces of the organs and limbs, is distinguished by the magnetic symptoms, in the same manner as chronic tubercula of these surfaces, and in magnetising in these cases of disease of the organs the positive button should be placed over the ganglions of the spinal nerves, in the intervertebral spaces, and the negative over the seat of the disease in the organs, in the same manner as described in cases of chronic disease of these surfaces. In pleurisy *pleuritis costalis* or *pleuro-peripneumony*, the positive button should be placed over the intervertebral spaces between the 7th or last cervical and first dorsal vertebræ, as in the case of peripneumony or inflammation of the lungs.

The posterior cervical nerves, or those between the first and last cervical vertebræ of the neck, are connected with and terminate in the serous or external surfaces of the muscles (*the fasciæ*) and the internal cervical motor nerves, or nerves of motion with the mucous or inner surfaces of the muscles * In magnetising for rheumatism, acute or chronic, the positive button should therefore, be placed over some one of the cervical intervertebral spaces of the affected side while the negative is moved slowly over the affected muscles or limbs. We have frequently first applied both buttons to a limb in these cases without effect, and have at last been obliged to resort to the manner of magnetising above described, as in the case mentioned of a gentleman with impediment in the motion of his right leg.

Palsy—shaking. In these cases the positive button should be applied to the neck as in the case of rheumatism, and the other to the extremities of the affected side.

Bronchitis—acute.—The buttons should be applied in these cases in the same manner as in chronic bronchitis.

Diseases of the Skin.

The buttons should be both applied and moved over the diseased surface in diseases of the skin, with a few exceptions, as in the case of the face when the positive button should be placed on the ear, or over the plexus of nerves in front of it, while the other is passed over the diseased surface.

We have used the instrument in only a few cases of disease of the skin, and these mostly cases of erysipelas, lepra, *salt-rheum* and herpes. It reduces the most inveterate cases of erysipelas with great rapidity, and the effects in the others have been such as to warrant a belief, that there are very few diseases of the skin, that can long exist under the action of the machine.

Fevers.—From the very favorable effects of the action of the machine in sympathetic, hectic, or irregular fevers, great hopes are entertained of its future success in those that are idiopathic, as intermittent, remittent, nervous, congestive, and yellow fever.

The spine should always be examined in these cases to determine the true character of the disease, whether of the serous or mucous surfaces, and the number of organs implicated in it; and this can always be done with perfect ease and certainty by the presence or absence of the magnetic symptoms. When these are present, the positive button should be placed over the intervertebral spaces, and the negative moved slowly over the diseased organ under a very moderate power of the instrument to find the seat of the disease in the organ, and determine the amount of the power that can be borne with ease to the patient.

* We long since discovered those connections of the spinal nerves with the different surfaces of the muscles and of the organs, by the magnetic symptoms, and its correctness and importance is now every day demonstrated by the action of the machine.

In the absence of these symptoms, the negative button should be applied to the intervertebral spaces, connected with the stomach and intestines, while the positive is moved slowly, first, over the surface of the stomach, and then over the intestines—observing the rule to have a button over the spinal nerve connected with the organ which we wish to magnetise.

Effects of Magnetising upon the Magnetiser.

We have probably received on an average 50 shocks a day in magnetising our patients, during the last six months, either from accidently touching the unprotected parts of both buttons, or from touching the patient with one finger and a button with the other, and was at first much alarmed at the consequences that might result from it. We have been however not only happily disappointed in our expectations of injury, but have found it a great benefit to us. It has removed it appears every vestige of chronic rheumatism with which we have been much affected during the last 14 years.

We never had so much elasticity in our body and limbs, and never had so much strength, we never walked with so much ease as we now do, and besides, we frequently, even after having gone through a great labor during the day, feel so much elasticity and buoyancy that it is rather difficult to sit or stand still, from a strong inclination to be moving, jumping, or dancing; these sensations are in fact sometimes so strong as to require strong efforts to repress them.

Magnetic Sleep.—A much greater number of persons can be put into the magnetic or mesmeric sleep under the combined influence of the rotary magnetic machine and the magnetiser, than by the common method, or that of the magnetiser alone. We have put persons into that state by the influence of the machine alone.

In the combined operation we place the positive button in the left hand of the person to be magnetised, and take the negative button in our left hand, and then take with the other hand the right hand of the same person, under the most moderate power of the instrument.

When persons have passed into the magnetic state in this way, or through the influence of the instrument alone, they represent themselves as being surrounded with an intense light. They also represent the brain as beaming every where with intense light which gradually disappears, and in 10 or 15 minutes is no longer noticed.

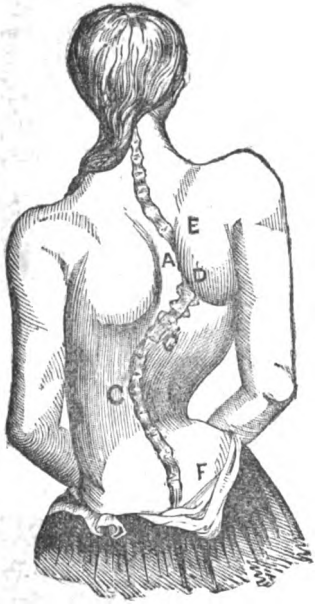
We have not given a concise history of the effects of the machine in each case mentioned, as in the few cases noticed in the last number of this Journal; because such descriptions, with very few exceptions would have been little more than mere repetitions of the triumphant action of the instrument. It may however be of some importance to notice more particularly its effects in lateral curvatures of the spine, as we have only referred to them in the last number. In the 35 cases we have had since that time, there was a great variety in the form of the curves, and a great difference in the time since they commenced as well as of their ages. The time of their existence was from 1 to 16 years, and their ages from 8 to 32 years.

The time required to straighten a spine, or make it resume its natural position depends so much upon the circumstances attending each individual case, as the form of the curve, the time of its existence, and the health of the patient, &c., as to make it necessarily very uncertain.

The first object to be obtained is to lessen the action of the tuberculated muscles on the posterior side of the curves, and increaee it in the paralyzed muscles on the other, to enable us to make the spine pass the centre and curve in the opposite direction, *under the action of the buttons.*

When this object is attained and we can make it pass the centre at each sitting, the muscles will soon maintain it in its natural position. In eight cases in which the curvatures had existed from one to two years, they passed the centre the first sitting, while it has required more than two months to effect this object in three cases of long continuance.—

The muscles are always swelled, thickened, or tuberculated on the posterior side of the curve, (as seen in the following engraving;)



and emaciated or atrophied and paralyzed on the other. In magnetising these cases the positive button is placed over the paralyzed muscles at B, while the negative button is passed over the tuberculated muscles in the right shoulder and hip, at intervals from 5 to 15 minutes; in the mean time the *negative* button is placed over the tuberculated muscles at C, while the positive button is moved over and around the left shoulder along the inside of the curve at A, under a power of the instrument that can be easily borne.—Some of these bear only a moderate, while others will bear its full power. We commence with a moderate power at each sitting and then gradually increase it to the full power that can be borne, bringing the spine up as straight as possible at the close of each sitting. In some bad cases assistance is required to raise the atrophied shoulder and keep the paralyzed muscles distended under the action of the buttons, much however will depend on the tact, perseverance and experience of the magnetiser.

In magnetising in these cases, as well as every other, the passes with the buttons should be downwards, or in a direction from the head to the feet, and this is a rule that should not be departed from, and to avoid mistakes in the use of the different buttons, magnetisers should attain a habit of taking the negative button in the right hand, and the positive in the left.

Classification of Diseases.—The magnetic symptoms to which we long since directed the attention of physicians, make a natural division of disease, into four classes, viz:—

I. Acute diseases of the serous surfaces of the body, including the skin.

II. Chronic disease of the serous surfaces.

III. Acute disease of the mucous surfaces of the body, including the alimentary canal.

IV. Chronic disease of the mucous surfaces.

The action of the magnetic machine on these different surfaces, confirms the correctness of this classification, which simplifies the practice of physic and surgery in the most extraordinary manner, and elevates the study and practice of medicine from a very uncertain, and consequently ever-changing art, to the character, dignity and rank of a science.

In running the machine, an ounce or a table spoonful of sulphate of copper (blue vitriol) is put into the space in which the zinc is placed, when water is poured on it, until the space is about half full. The vitriol will be dissolved in three minutes, when the zinc is placed in the solution in a position in which it does not touch anything but the cross piece which suspends it in the solution. The wires are then connected with the battery, machine and buttons, in the manner seen in the figure. The arm of the armature is then pushed slightly with the finger, so as to turn it in a direction from east to west, or in the apparent course of the sun, when it moves with great rapidity and the process of magnetising is commenced. As soon as we are through with the operation, the zinc is raised out of the solution and placed on the projections, attached to the different surfaces

of copper, to prevent the further action of the solution upon the zinc. The solution does not act on the copper surface, and may therefore remain in it, or it may be poured into a phial or bottle and used many times, or until it becomes too weak to make the machine run well, when a little more blue vitriol may be added or a new solution made as before.

Depositions accumulate constantly upon the zinc, and sometimes to such an extent as to prevent the solution from acting upon it, when it must be washed off, and again placed in the solution, and the armature started as before.

The silver conductors of the forces to the armature, sometimes press too hard upon it, and at other times not so hard as it should do to make it run very fast or at its greatest speed. A very little attention to these conductors, and to keeping the zinc clean, will enable any person to run the machine in the best manner.

The power of the instrument is regulated by moving the piston in the cylinder. It increases from its minimum to its maximum, with the distance of the piston in the cylinder.

Animal and Vegetable Electricity.

Electricity the principal agent of animal life—of the vegetable life and growth—its action a direct stimulus—deficiency of its density or elasticity subversive of animal health, and induces diseases of debility—intense and long continued heat reduces its density or elasticity.

T. GALE, M. D., *Troy, N. Y.* 1802.

The electrical effluvia is far more subtile than air, is diffused through all space, surrounds the earth, and pervades every part of it; and such is the extreme fineness, velocity and expansiveness of this active principle, that all other matter seems to be only the body, and this the soul of the universe. This element exists in all places and in all bodies; and its action is sufficient not only to be (under the First Cause) the secondary cause of motion, but to produce and support life throughout all nature, as well in animals as vegetables. Now as the heat of every animal is the engine which circulates the blood through the whole body; so the sun, as the heat of the world, circulates or rarifies, condenses, vibrates, stimulates, and by continually changing the state and density of this elementary fire, not only gives motion and gravitation to surrounding worlds, but doth, on principles occult, impart life, vigour and growth to all animals and vegetables. It is a species of itself, and totally distinct from all other bodies.

This elementary fire not only exists in animal bodies on an equilibrium with those substances with which they are constantly connected, but the common air, especially when cool, imbibes a large proportion of this elastic fire. The lungs inspire this air, the fire mingled with it is dispersed through the pulmonary vessels into the blood: the whole mass of fluids are, in a degree, fermented and enlivened, and the vessels being at the same time more filled and distended, their tone is quickened, and the circulation accelerated; all the animal functions are, in part, put in, and preserved in motion, and the whole system is invigorated by this single agent.

If it is granted, that totally non-conductors become such by their imbibing, in some fixed form, a large quantity of this elementary fire, which it is supposed so far constitutes these bodies, that they are incapable of conveying an electric shock, then it will follow that cold air, which any one may easily know is a non-conductor, imbibes, as was before suggested, an immense quantity of this electrical fluid. The consequence then is, that the lungs serve as an electrical machine to all animals, keeping up a constant insolation, by which the system is invigorated, as was before described; this insolation is subject to continual waste, partly by perspiration, partly by internal heat which subdues its elasticity, and partly by those less electrified bodies with which they are necessarily connected.

These operations may be called natural insolation; but as I am hereafter to describe the effect of the artificial insolation, the peculiar effects of the natural will be rendered more obvious and certain.

Electric fire promotes the vegetable life, &c.

That this effluvia promotes the vegetable life and growth will not be questioned by those who are made to believe that it produceth that effect on the animal. The most that hath been said of its effects on the animal, will apply to the vegetable, except the action of the lungs, and by their action, a higher life obtains a higher and greater supply as is necessary for its support. But a single experiment will put it beyond all doubt, that what I have ventured to call a natural insolation, doth exist, and produceth the described effects, and this will appear by adding a little of the artificial thereto, which may be done thus: Prepare, at the proper season, a box of earth sufficiently moist, place it on an insolating stool or stand, sow in it lettuce seed: at the same time sow the same kind of

seed in a garden bed; this being done, immediately electrify the box of earth on the stool, and keep it continually insolated, and it will bring the lettuce to perfection in one half the time of the former. This circumstance alone is sufficient, in my opinion, to put the matter beyond all doubt, that this elementary fire is the principal agent in promoting the growth and life of vegetables.

And it will be shewn, in its proper place, that the artificial insolation of the human body is as conspicuous an evidence of the same element being the main cause of life, motion and vigor in the animal creation.

The action a direct stimulus.

That this elementary fire, electricity, or by whatever name it is distinguished, is a stimulus, is obvious from all that hath been observed of its efects on animal and vegetable life. The fluids of animals and vegetables contain more, in proportion to their bulk, of this elementary fire, than the solids of either: and it is the peculiar propensity of this effluvia, to put in agitation any bodies capable of moving or of being acted upon by this agent. Thus the heart of every animal gives the first motion to the blood; this perpetuated by the dilation and contraction of the arteries, at the same time each particle of the fluids has attached to it a globular atmosphere; this atmosphere buoys up, enlivens and facilitates the flow of blood thro' every part of the system; and being contained chiefly in the fluids, doth, in some degree, fill and distend the vessels, and thus excite their action. It is my opinion that could this element be extracted from an animal or vegetable, there would be an instantaneous decay, which would soon terminate in the death of either.

In supporting the diminished life of the vegetable, a diminished action is allotted to this effluvia; its globular atmospheres always tend to propel, buoy up and diffuse to every the most extreme part of every flower and branch of the spreading tree: And it is on this principle only we can account for, the juices ascending and diffusing themselves throughout the vegetable growth

Deficiency of ethereal fire subversive of health.*

Life and health being so much suspended on a full supply of this quickening principle, it follows that any deficiency thereof must tend directly to diminish life and health either in the animal or vegetable creation; as it respects the animal life, the deficiency is in the air, the lungs are not sufficiently vitrated; as it respects the vegetable, the soil is deficient in containing it..

Deficiency of ethereal fire causes diseases of debility.

A continued deficiency of existing powers, tend to induce diseases of debility, and inasmuch as they arise from deficiency of stimulus, are denominated direct, or diseases of direct debility; as this respects the animal life, the remedy is the artificial insolation, opium—brandy, and the more durable stimulus of diets &c. As it respects the vegetable life, the remedy is water, and such manure as contain, a greater quantity of this elementary fire.—It was contended before that there is a vast disproportion in the quantity contained in solids, (metallic substance excepted) compared with that which is contained in fluids; hence there is not only a deficiency of this element in the circumambient air, by reason of heat; but through the inability of the soil to contain this element, there is also a deficiency—dry loam, sand, &c., contain but a scanty portion of this elementary fire.

There is reason to believe that the plaster of Paris is highly impregnanted with this fire, for it is a non-conductor, as also lime; but this is said to be imparted by culinary fire, in burning the stone; after the same manner it is imparted into the ashes of wood, which renders them so valuable a manure. Some suppose it is imparted into iron, to render it steel; and is contained in great quantities in a fluid form, as in spirits of distillation.

Intense heat causes a deficiency of this quickening effluvia.

Notwithstanding what hath been said above by imparting elementary fire by the culinary, which is but a different modification of the same element: yet the instant these bodies, or others similar, undergo this heat, they appear to be divested of that which is peculiar to them in their cool state: glass, in particular, when heat to a certain degree, will receive and convey the electric shock as freely as brass or steel; but as soon as it is cool again, will make the same resistance as

* I must own, that I am staggered in determining whether this deficiency, as I call it, doth consist in the reduction of the elasticity of ethereal fire only, or whether, by some means not yet understood, elementary fire is absolutely dissipated and diminished in quantity—its elasticity must be reduced to promote the vegetable growth, for the vegetable life subsides, in the winter season. When this element becomes very dense and elastic, their fluids cannot flow in consequence of this resistance to motion. I am most apt to think that the reduction of elasticity is a diminution of the existing quantity of ethereal fire, but perhaps some future experiment may convince me of a mistake—This element assumes such a variety of appearances, and produces effects as various and as unaccountable as the phenomena of its appearances, that perhaps it will be the business of ages fully to comprehend them all. But one thing I am certain of, and that is, as this elasticity in air subsides, animal life languishes; and that the artificial insolation directly invigorates the system.

before: this resistance is supposed to be made by the vast quantity imparted into the substance of the glass in the furnace; but however that may be, it is certain that whenever it is again rarified by heat, the resistance is lost, the imparted element subsides, and the properties of the glass appear to be essentially changed. However, as to the truth of this element's being imparted in any form, I am not anxious to maintain it; it is not much to my purpose, it is rather the opinion of others: but it is to my present purpose to shew, that the rarification of heat, causes a deficiency of this electric effluvia, which is so necessary to life and health. It being so far evident, that some bodies contain so much of this ethereal element, as their natural aquntity, in a cool state, that they resist the approach of an additional quantity, made by art, as glass, bees-wax, tallow and some other bodies; yet when these bodies are rarified by heat, they become divested of this natural quantity, or at least of its elasticity, and will as freely receive an additional quantity as iron or water, which quantity is supplied to them by the artificial machinery. If we apply these reasonings to the element of air, which in a cold state is as much a non-conductor as glass, bees-wax, &c, and undoubtedly from the same cause, viz:—its own excessive natural quantity; it will follow, that heat, in proportion to its degree, divests common air of this ethereal element, or of its elasticity; the consequence is, that in proportion as the air is divested of this essential property, the animal life must suffer in respiration; the lungs receive and supply less of this animating and quickening power, and the animal functions grow more and more languid, and impaired; and if continued long, must terminate in diseases of debility.—It would be superfluous for me to observe, that diseases of debility are peculiarly frequent in hot countries and climates; I mean rather to trace the cause to its source; and if it should appear to be a deficient supply of this ethereal fire, I shall lay a foundation for what I shall hereafter recommend in diseases of *debility* as an excellent remedy, viz:—the artificial insolation, with some light shocks to accompany the insolation.

The relative merits of Mercury and Iodine in the treatment of Syphilis.

Dr. Hocken, at the close of a lengthened and elaborate essay, arrives at the following conclusion on this subject:—

"That a modified use of mercury is adapted to nearly all the forms, but especially the indurated, of primary syphilis:—that in constitutional syphilis a modified use of mercury is almost a *sine qua non* in the great majority of secondary symptoms, but is either hurtful or useless in the tertiary;—that iodine is inert in almost all the symptoms of primary syphilis with the exception of some forms of phagedena, attended with great debility and derangement of the health;—that in constitutional syphilis it is less valuable a remedy in the majority of secondary symptoms than mercury, with the exception of some severe cases of pustular eruption, phagedemic throat, rupia, and secondary ulcerations, of bad character, all of them marked by a cachectic and debilitated constitution; whilst in tertiary symptoms iodine is far more valuable than mercury, and its effects more decided and certain than in any other set of symptoms:—that mercury and iodine are most advantageously combined in cases presenting both secondary and tertiary symptoms:—that many forms of mercury having local or constitutional actions, are applicable to the various symptoms of syphilis, but that the mildest constitutional effect, capable of overcoming the disease, is always to be preferred:—that the only form of iodine safely applicable to the treatment of syphilis is the iodide of potassium, which should never be carried beyond moderate doses:—hence, however valuable the iodide of potassium may be in some forms of syphilis, it cannot be substituted with advantage for mercury in the great majority." —*Edinburgh Journal.*

On the treatment of obstinate cases of Stricture of the Urethra.

Professor Syme read a paper on the treatment of stricture of the urethra, in cases where the ordinary means prove inefficient. He described the characters of the disease when it possesses an obstinate disposition, and endeavored to show that, in such instances, an attempt to effect dilatation by bougies was no less dangerous than useless. Division of the stricture, either by subcutaneous puncture when it is seated in the pendulous part of the canal, or by free incision upon a grooved director, when it lies behind the scrotum, was recommended; as having proved completely successful in cases that had resisted every form of dilatation.—*Cormack's Journal of Medical Science.*

Effects of Tartar Emetic on Infants.

Mr. Noble, whose experience on this point corresponds with that of the late Mr. Goodlad of Manchester, remarks that tartar emetic acts occasionally as a poison, even *in small doses*, in the cases of young children. He gives some illustrations of his opinion, and points out the necessity of great caution in the administration of this remedy.—*Provincial Journal.*

Academie de Medicine, Paris.

M. Malgaigne on Dorsal Myotomy.

Lateral Curvatures of the Spine.—M. Malgaigne read a memoir on dorsal myotomy, invented a few years ago by M. Guerin.—M. Malgaigne's memoir was divided into two parts. The first contained an analysis of twenty-four of the cases treated by M. Guerin, between 1839 and 1843, the remainder was devoted to a critical examination of the operation and its results.

During the period mentioned, 57 cases were thus treated at the Hopital des Enfans, of whom it is stated that 24 were completely cured, and 28 much improved, 4 remaining without amelioration, and 1 dying. M. Malgaigne asserts that he has been able to obtain information respecting 24 of these patients, either by personal inquiry and examination, or from authentic data. He adds, that twenty of these patients had undergone section of the dorsal muscles from one to nine times. They had remained at the hospital from two to eleven months, the treatment however, having often been continued at their own residence. M. Malgaigne states that he has not seen one complete cure, and that even the instances of amelioration are problematical. From his examination of the patients, he even doubts whether the retracted muscles were really divided, and whether the operation is not one which addresses itself hazardously to overcome imaginary evils. The greatest difficulty in orthopedy is not to raise the vertebral column, but to give it the solidity which it wants by reinforcing its ligaments and its muscles. The weakness of these two classes of organs is so marked, so constant, in lateral deviations of the spine, that they may be considered as one oftheir principal causes. Six years ago, having to judge between different orthopedic systems, he condemned all apparatus for extension as only tending to increase the weakness of the ligaments and muscles.—Dorsal myotomy was not then invented, but the principles by which he was then guided apply equally to the new operation. It was a bad plan to divide a muscle in order to strengthen it.

A committee was named by the academy to report on M. Malgaigne's communication, the nomination of which gave rise to a very stormy debate, M. Guerin having refused M. Velpau as one of the committee. The academy, however, persisted in retaining him.

Academy des Science, Paris.

Structure and diseases of the Eustachian Tube.—In a paper on the general and pathological anatomy and on the diseases of the Eustachian tube, M. Bonnafort states that he has found with the microscope numerous mucous follicles on the mucous membrane of the Eustachian tube, but none on that of the cavity of the tympanum. He believes that surdity is more frequently caused by thickening of the mucous surface, and subsequently stricture of the passage, than by mucous obstruction. Consequently, instead of merely injecting air into the Eustachian tube, as most surgeons do, he dilates it as he would the urethra, with small gum elastic bougies, which he introduces into the tube by means of a small silver sound. He has not yet met with a case of stricture which has necessitated cauterisation.

Copaiva Sugar-plums.

Take of balsam of copaiva, 460 grains; calcined magnesia, 18 grains. Intimately mix these ingredients, and in about twenty-four hours the mass may be divided into seventy-two parts, which are to be rolled out between the fingers. These are to be covered with gum and sugar, prepared in the following manner:—

First. A solution of gum arabic, containing a third of its weight of gum.

Second. White sugar, in powder.

Put the copaiva pills into a tinned basin, of an hemispherical form; pour in a little of the solution of gum, to moisten them; then add some of the powdered sugar, and turn the basin so as to get the pills covered all over; repeat this operation three times and afterwards place the sugar-plums on a horse-hair sive, in a stove heated to 77° Fahrenheit. The temperature of the basin, during the covering of the pills, should not be above 60° Fahrenheit.—*Pharmaceutical Journal.*

Original seat of Cancer of the Eyelids.

Most frequently the original seat is in the palpebral conjunctiva, and from thence it attacks the skin, on the other side of the palpebral edge. Sometimes the skin is affected first. The affection may be considered as a glandular schirrhus when it commences in the lachrymal caruncle. The frequency of cancerous ulcerations at the internal angle of the eye is very remarkable. This fact is explained by the use of this angle, which serves as a receptacle for the different secretions of the conjunctiva and of the glands of the lids.—*Northern Journal of Medicine.*