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LECTURE VIII.

THE SENSES.

Animal Magnetism, The Passions, Baths, Exercise, Homœopathy.

GENTLEMEN,

The Causes of Disease, we have already said and shown, can only affect the body through one or more of the various modifications of nervous perception. No disease can arise independent of this—no disease can be cured without it. Who ever heard of a corpse taking the Small-pox? or of a tumor or a sore being healed in a dead body? A dreamer or a German novelist might imagine such things. Even in the living subject, when nerves have been accidentally paralysed, the most potent agents have not their usual influence over the parts which such nerves supply. If you divide the pneumo-gastric nerves of a living dog—nerves which, as their name imports, connect the Brain with the Lungs and Stomach—arsenic will not produce its accustomed effect on either of these organs. Is not this one of many proofs that an external agent can only influence internal parts banefully, at least, by means of its electric power over the nerves leading to them? Through the same medium, and in the same manner, do the greater number of our remedial forces exert their salutary influence on the human frame. But whether applied for good or for evil, all the forces of nature act simply by attraction or repulsion. The Brain and Spinal Column—the latter a prolongation of the former—are the grand centres upon which every medicine sooner or later tells, and many are the avenues by which these centres may be approached. Through each of

THE FIVE SENSES,

the Brain may be either beneficially or banefully influenced. Indeed, take away these, where would be the joys, sorrows, and more than half the diseases of mankind?

We shall first speak of Sight. The view of a varied and pleasant country may, of itself, improve the condition of many invalids—while a gloomy situation has too often had the reverse effect. There are cases, nevertheless, in which pleasant objects only pain and distract the patient by their multiplicity or brightness. Night and darkness, in such circumstances, have afforded both mental and bodily tranquility. The presence of a strong light affects certain people with headache; and there are persons to whom the first burst of sunshine is troublesome, on account of the fit of sneezing it excites. A flash of lightning has caused and cured the palsy. Laennec mentions the case of a gentleman who, when pursuing a journey on horseback suddenly arrived at an extensive plain. The view of this apparently interminable waste affected him with such a sense of suffocation that he was forced to turn back. Finding himself relieved, he again attempted to proceed; but the return of the suffocative feeling forced him to abandon his journey. The common effects of gazing from a great height are giddiness, dimness of sight, with a sense of sickness and terror; yet there are individuals who experience a gloomy joy upon such occasions; and some become seized with a feeling like what we suppose inspiration to be—a prophetic feeling, that leads them to the utterance and prediction of extravagant and impossible things. Others again, under such circumstances, have an involuntary disposition to hurl themselves from the precipice upon which they stand. Sir Walter Scott, in his Count Robert of Paris, makes Ursel say, "Guard me, then, from myself, and save me from the reeling and insane desire which I feel to plunge myself in the abyss, to the edge of which you have guided me." Every kind of motion

upon the body may affect the brain for good or for evil; and through the medium of the eye, novel motion acts upon it sometimes very curiously. You have all experienced giddiness from a few rapid gyrations. Every thing, in the room then appears to the eye, to turn around. If you look from the window of a coach in rapid motion for any length of time, you will become dizzy. The same thing produces sickness with some. Many people become giddy, and even epileptic, from looking for a length of time on a running stream; with others, this very stream gazing induces a pleasurable reverie, or a disposition to sleep. Apply these facts to Animal Magnetism—compare them with the effects of the manipulations so called, and you will have little difficulty in arriving at a just estimate of their nature and mode of action. What is animal magnetism? It consists in passing the hands up and down before the eyes of another slowly, and with a certain air of pomp and mystery; now moving them this way, now that. You must, of course, assume a very imperturbable gravity, and keep your eye firmly fixed upon the patient, in order to maintain your mental ascendancy. On no account must you allow your features to relax into a smile. If you perform your tricks slowly and silently in a dimly-lit chamber, you will be sure to make an impression. What impression?—Oh! as in the case of the stream gazer, one person will become dreamy and entranced; another, sleepy; a third, fidgetty or convulsed. Who are the persons that, for the most part, submit themselves to this mummery?—Dyspeptic men, and hysteric women—weak, curious, credulous persons, whom you may move at any time by a straw or a feather. Hold up your finger to them and they will laugh; depress it, and they will cry! So far from being astonished at anything I hear of these people, I only wonder it has not killed some of them outright—poor fragile things! A few years ago I took it into my head to try this kind of pawing in a case of epilepsy. It certainly had the effect of keeping off the fit; but what hocus-pocus has not done that? I have often done the same thing with a stamp of my foot. In a case of cancer upon which I tried the "passes," as these manipulations are called, the lady got so fidgetty, I verily believe, if I had continued them longer, she would have become hysterical or convulsed! That effects remedial and the reverse, however, may be obtained from them, I am perfectly satisfied. Nor do I mean to deny that in a few—a very few instances, these, or any other monotonous motions, may produce some extraordinary effects—effects which, however, are the rare exception instead of the general rule. Whatever any other cause of Disease may produce on the human body, these manipulations may by possibility occasion— Somnambulism, Catalepsy, or what you please. There is no more difficulty in believing this than there is difficulty in believing that the odor of a rose, or the sight of a cat will make certain people swoon away. This much then I am disposed to admit.—But when the animal magnetiezrs assert that the senses may be transposed,—that the stomach may take the office of the eye, and render that beautiful organ with all the perfect but complex machinery by which it conveys light and shadow to the Brain, a work of supererogation on the part of the Creator, I turn from the subject with feelings of invincible disgust. If it be objected that the magnetizers have produced persons of both sexes who with their eyes closed and bandaged read a book placed upon their stomach by means of that organ, through waistcoat, boddice, and heaven knows what all!—I reply, that the charlatans of all countries every day perform their tricks with a swiftness that altogether eludes the unpractised eye. Thousands of persons have seen the Indian juggler plant a a mango-stone in the ground, and in the course of a few minutes do what nature can only do in the course of years, make it successively produce a plant with leaves, blossoms, and lastly fruit! How this trick is done, the witnesses who describe it know no more than I how the magnetizers perform their juggleries; but few who have seen the Indian trick believe in the reality of any one of the various transformations with which their eyes have been cheated. Gentlemen, the transposition of the senses, is only an old whimsy, newly dressed up under the name of "clairvoyance." We read in Hudibras of

> ———Rosicrucian virtuosis
> Who see with Ears and hear with Noses!

The greater part of the influence of external impressions upon the eye, as upon other organs, depends upon novelty solely, for pomp and pageantry affect the actors and the spectators in exactly opposite ways. With what different feelings, for example, the courtier approaches his Sovereign, from a person "newly presented." The one, all coolness, looks only for an opportunity of improving his advantages, while the other's only care is not to make a fool of himself. How different the effect of a punishment parade upon the raw recruit and the old soldier! In a regiment of veterans, a thousand strong, not a man will move from his place—not a countenance shall change its cast or hue,

while lash follows lash, and the blood flows in streams from the back of the culprit. The same scene enacted before a body of newly enlisted lads of equal numerical strength, will alter the expression of every face; nay, a dozen or more will drop, some fainting, some vomiting, some convulsed and epileptic. A medical student of my acquaintance, the first time he saw an amputation, not only fainted, but lost his sight for nearly half-an-hour; yet the same student afterwards became celebrated for his manual dexterity, and the coolness and steadiness with which he performed his amputations. To use a vulgar phrase—familiarity breeds contempt. How awkward most persons feel when, for the first time, they experience a ship's motion at sea. The young sailor, like the young surgeon, soon gets cured of his squeamishness; for the disposition to be seasick vanishes after a voyage or two. Now all this ought to convince you of the necessity of changing your remedies in disease; for what will produce a particular effect one day will not always do it another With the body, as with the mind, novelty and surprise work wonders.

Do you require to be told that you can influence the whole corporeal motions through the organ of Hearing? I have stopped the commencing epileptic fit by simply vociferating in the ear of the patient. The atoms of the brain, like the atoms of other parts, cannot do two things at once; they cannot, at one and the same moment of time, maintain the state of arrest which constitutes attention and the state of motion on which the epileptic convulsions depend. Produce cerebral attention in any way you please, and there can be no epilepsy, In this way a word may be as efficacious as a medicine. Certain sounds, on the contrary, set the teeth on edge.

The influence of melody upon the diseases of mankind was so fully believed by the ancients, that they made Apollo the god both of medicine and music; but sweet sounds, like other sweets, are not sweet to every body. Nicano, Hippocrates tells us, swooned at the sound of a flute; what would he have done had he been obliged to sit out an opera? Many people are melancholy when they hear a harp; yet the melancholy of Saul was assuaged by David's harping. Some persons become furious when a fiddle plays,

> And others when the bagpipe sings i' the nose,
> Cannot contain their urine,—for Affection,
> Mistress of Passion, sways it to the mood
> Of what it likes or loathes.—SHAKSPEARE.

Everybody has heard of the wonderful effects of the Ranz des Vaches—that air which, according to circumstances, may either rouse the Switzer to the combat, or stretch him hopeless and helpless upon the sick-bed from which he shall rise no more. Oh! these national airs have marvellous effects with many people! I have known them produce and cure almost every disease you can name; but their influence in this case greatly depends upon association. Captain Owen had more faith in an old song as a remedy for the tropical fever, from which his crew suffered, than in all the physic prescribed for them by the ship's surgeon. The singing of a long remembered stanza, he assures us, would, in a minute, completely change for the better the chances of the most desperate cases. Upon what apparently trifling things does not Life itself often turn!—

> ——————It may be a sound,
> A tone of music, summer's eve or spring—
> A flower, the wind, the ocean, which shall wound,
> Striking the Electric Chain with which we are darkly bound.—BYRON.

How strangely some people are affected by Smell. Who that had never seen or experienced it, would believe that the odor of the rose could produce Fainting? or that the heliotrope and the tuberose have made some men asthmatical? There are persons who cannot breathe the air of a room containing ipecacuan, without suffering from asthma. The smell of musk, so grateful to many people, sickens some. An odor in certain cases may be as good a cordial as wine: every old woman knows the virtue of hartshorn and burnt feathers.

I am almost afraid to speak of Taste, for, you know, de gustibus non est disputandum. Might not the Red Indian, when taunted for devouring vermin, retort upon the "Pale Face" for his mite-eating propensity? The Esquimaux, who rejects sugar with disgust, esteems train-oil a luxury; but though he prefers a tallow candle to butter, he has as perfect a taste for whiskey as any Irishman among us—that is, before Father Matthew and Temperance Societies became the rage. How you would stare if you saw a man in his senses, chewing quick-lime; yet I have seen some hundreds at a time doing that. I allude to the practice of the Asiatics, who first wrap up a little portion of lime in a betel-leaf, and chew both, as our sailors do tobacco. Now, that very tobacco chewing has always seemed to me an odd taste, and I do not wonder that fine ladies have sickened at the sight of a quid. Was there ever such a fancy as that of the Chinese, who eat soup made of birds nests! Morbid in the first instance, such tastes, like other diseases spread by imitation or contagion. In the

West Indies, the negro is liable to a peculiar fever, called from the avidity with which he devours clay, Mal d' Estomac. His whole sensations then are, doubtless, more or less deranged. What extraordinary likings and longings ladies in the family way occasionally take! Some will eat cinders, some have a fancy for rats and mice, and some, like Frenchmen, take to frog-eating! I remember reading of a lady who paid fifty pounds for a bite of a handsome baker's shoulder; the same lady went into hysterics because the poor fellow would not permit her to take another bite, at any price. If you smile, and look incredulous at this, how will you receive what I am now going to tell you? While I was myself studying at Paris, some fourteen or fifteen years ago, a woman was tried for decapitating a child. When asked her motive for a crime so horrible, she replied, "l'envie d'une femme grosse."

Well now, I think we have had quite enough of Tastes—we shall therefore say something of Touch. You will tell me, perhaps, not to trouble you on that subject; —no great good or ill can happen from a touch, you will say. But here you are mistaken: many curious and even dangerous affections may originate in touch simply, provided it be of a novel or unusual kind. Touch the white of the eye, however lightly with your finger, or a feather, and you shall have pain that may last an hour. The application of either the one or the other to the throat or fauces may vomit you as effectually as tartar emetic or ipecacuan; every nurse knows that. A bristle introduced, in the softest manner, into the nose or ear, has thrown some people into fits. Then what extraordinary effects may sometimes follow the most painless touch of the bladder by a catheter or a bougie. I do not know what other medical men have seen, but I have over aud over again witnessed ague, epilepsy, faint, vomit, and diarrhœa all from the mere introduction of the catheter or bougie; and I have even traced rheumatism and eruptions to the same operation. You all know the effect of tickling. Now what is tickling but a succession of short touches? And see how wonderfully it affects most people!—oh, you may drive some men mad by it. Though it has been carried so far, in some cases, as to have produced convulsions and even death itself, Mr. Wardrop actually found it efficacious in some convulsive affections. I have already given you instances where the mere application of a ligature to the arm or leg arrested the fit of mania, epilepsy, &c. Now the influence of that apparently trifling application depends upon the cerebral attention which it excites through the double influence of sight and touch. As I hinted to you before, the lancet has often got the credit for the good effects produced by the bandage. Fear of the operation may also, on some occasions, have aided its efficacy. How many virtues, were at one time attributed to a king's touch!—how many more are still believed to attach to the touch of relics—the bones, rags, and other rattletraps of saints! Priests and Princes, you have by turns governed mankind—justly and well, sometimes—more frequently you have deluded and deceived them. If the credulity and weakness of the masses have in most cases, been your strength, here at least the dupe has not always been a loser by the deceptions you practised. The emotions of Faith and Hope, which your mummery inspired, by exciting new revolutions in the matter of the brain, have assuredly alleviated and even cured the sufferings of the sick. Strange infatuation of mankind, —with whom, where truth fails, imposture may succeed! In what does the adult differ from the infant—gullible man, who gives his gold for an echo, from the child who caresses its nurse when telling lies to please it? Ignorance in degree makes the only difference. Gentlemen, let us now inquire into the manner in which the human frame may be influenced through the medium of

The Passions.

What are the passions? Grief, Fear and Joy—what are these?—are they entities or actions—the workings of demons within, or corporeal variations caused by impressions from without? Have not the Passions all something in common, some features or shades of feature so precisely the same as to form a bond of unity by which they may be all linked together? Are not the resemblances, in many instances, so very close that you could not tell one from another? A person is pale in the face, his lip quivers, his whole frame trembles or becomes convulsed. Is this fear, rage, love, or hate? May it not be the effect of a change of temperature simply? Bailly when on the scaffold, was taunted by the bystanders for trembling. Yes he replied, "but it is with Cold." "You are pale, Sir, your fears betray you." "If I am pale, it is with astonishment at being accused of such a crime?" "You blush, Madam, you are ashamed of yourself." "Pardon me, Sir, it is your audacity brings the redness of rage to my cheek." You see then, how like the passions are to each other, and how difficult it is to guess at the causes ot them from mere appearance.

Like the various diseases of which we

have had occasion to speak, the Mental Emotions, or rather the corporeal actions so called, have all been associated with particular organs and secretions. Their very names have changed with the changes in medical doctrine. Who among you would dream of placing grief in the liver? That the ancients did so, is evident by the name they gave it. Melancholy literally signifies "black bile." Envy or Spite we still call the "Spleen," and when a person is enraged we say "his Bile is up." Europeans place courage, benevolence and fear in the heart—the heart which has quite enough to do in the performance of its own proper office, namely, that of a vessel to circulate the blood through the system!—The Persians and Arabs associate fear, courage, and benevolence with the liver: "White-liver" is their term for a coward. Shakspeare uses the word lily-livered in the same sense.

People often speak of Temperament, and professors of philosophy tell us there are four kinds. If a man is hasty or violent, his temperament is said to be choleric or bilious; if mentally depressed, melancholic or black bilious; if of a joyful and happy turn of mind, he is of a sanguineous, or full-blooded temperament; if apathetic or listless, the temperament is phlegmatic—a word somewhat difficult to translate, inasmuch as it originated in a fanciful phantom, which the ancients believed to be an element of the body, and which they termed "phlegm." Some add another temperament which they call leuco-phlegmatic, or white phlegm. I wonder they never took the saliva to distinguish a temperament; surely the "salivous temperament" would be quite as rational as the "bilious." What then are all these temperaments—so far at least as their nomenclature goes, but pretty gibberish?—mere sounds, in fact, invented by ignorant knavery, to cheat still more ignorant folly; or in the words of Horne Tooke, "an exemplar of the subtle art of saving appearances and of discoursing deeply and learnedly on a subject with which we are perfectly unacquainted!" It never occurred to the sophists of the schools that man's mental dispositions, like his corporeal attributes, are every day altered by time and circumstance. Need I tell you, that disease has made the bravest man quake at his own shadow, and turned the most joyous person into a moody and moping wretch? When the doctrines of the Humoral School prevailed, the word temperament gave way to humor, and good and bad humor took the place of cheerful and sulky temper. We are in the daily habit of speaking of "the spirits." We say "low spirits," and "high spirits;" which forms of expression may be traced to the period when physicians were so ignorant as to suppose that the arteries, instead of carrying blood, contained air or "spirits," from Spiritus the Latin for breath or air. That was the reason why these blood-vessels were first called aer-teries. The confusion which pervades all language has materially impeded our knowledge both of the physical and moral man. Locke must have felt this when he said, "Vague and insignificant forms of speech, and abuse of language, have so long passed for mysteries of science, and hard or misapplied words, with little or no meaning, have, by prescription, such a right to be mistaken for deep learning and height of speculation, that it will not be easy to persuade either those who speak or those who hear them, that they are but the covers of ignorance and hindrances of true knowledge."

"We cannot entertain a doubt," says Sir H. Davy, "but that every change in our sensations and ideas must be accompanied with some corresponding change in the organic matter of the body. Through the medium of one or more of the five senses must some external circumstance first operate on that part of it called the Brain, so as to change the existing relations and revolutions of its atoms, before there can be what we term a Passion. Whatever shall alter the cerebral atoms must alter the actions of every part of the body—some more, some less. According to the prominence and locality of one set of actions or another, do we, for the most part name the passion. The jest that will make one man laugh may enrage another. What are the features common to all passions?—Tremor, change of temperature, change of secretion. Do not these constitute an ague-fit? Shakspeare, with his accustomed penetration, "speaks of this ague-fit of fear," and he stretched the analogy even to the world around him:—

"Some say the earth was fever'd and did shake."

Hate and Love are equally remarkable for their ague-like changes. You remember what Hudibras says of Love—that it is only an ague-fit "reversed." The same may be said of Hope, Joy, and Rage; for in all these passions the "hot fit takes the patient first." That at least is the general effect of them, but in particular instances, as in the real ague, coldness and pallor usher in every one of those passionate fits. I care not what be the nature of the Passion, joy, grief, or fear—the constitutional circle of actions is still the same; differing, where they do differ, in shade, place, and prominence solely—but in

no greater degree than one fever differs from another. Moreover, there is no constitutional affection which these passions may not excise or cure. In this respect, also, they resemble the Ague, that type of every disturbed state, whether of man the microcosm, or the globe he inhabits. We have already, to a certain extent, demonstrated the influence of particular passions in the production of certain diseases. We have further proved that the same morbid actions which we recognize under so many different names, when arising from a blow or a poison, may be equally the result of a mental impression: we have established their absolute identity by curing them with the same physical agents. The history of medicine, on the other hand, presents us with innumerable instances of the beneficial agency of these very passions in every kind of disorder, whatever may have been the nature of the primary cause. Faith, Confidence, Enthusiasm, Hope, or rather the causes of them, are as powerful agents in the cure of the sick, as any remedies we possess. Not only, like Bark or Wine, do they often produce a salutary excitement, or mild fever, sufficient to prevent the access of the most malignant diseases—but, like these agents, they have actually arrested and cured such diseases after they had fairly and fully commenced. A stone, or ring with a history real or supposed, a verse of the Koran or the Bible sewn in a piece of silk—these worn, now on one part of the body, now on another, have inspired a mental firmness and induced a corporeal steadiness which have enabled the wearer to defy the united influence of Epidemic and Contagion. If the Arabs have still their talismans, and the Indians their amulets, the Western nations have not ceased to vaunt the cures and other miracles effected by their relics, their holy wells and holy water. When we boast of the success of a particular measure, we say it acted like a Charm. What is a charm?—whence its origin? It is a corruption of the Latin word Carmen—song or verse. In all times and in all countries, there have been men who have found their advantage in playing upon the ignorance of their fellow-men; he that would appear wiser than another has always had recourse to some kind of imposture; and as priest, poet, prophet and physician were often united in one person, it was not wonderful that such person should clothe his mummery and mysticism in verse. To be able to read or spell was, at one time, a mark of superior wisdom, and he who could do so, had only to mutter his "spell" to cure or kill. From the earliest antiquity, we find charms a part of medical practice; Homer in his Odyssey, introduces the sons of Autolycus charming to stanch blood; the physicians of Egypt and India are to this day charmers; the Northmen composed Rhunic rhymes to charm away disease. Indeed, with the Norwegians and Icelanders verse or song was supposed to be all-powerful: one of their poets thus expresses the belief of his time and country in this respect. "I know a song by which I can soften and Enchant the arms of my enemies, and render their weapons harmless. I know a song which I need only to sing when men have loaded me with bonds; for the moment I sing it, my chains fall in pieces, and I walk forth at liberty. I know a song useful to all the children of men; for as soon as hatred inflames them I sing it, and their hate ceases. I know a song of such virtue, that I can hush the winds with it, and subdue the storm to a breath." Such, Gentlemen, was the origin of Enchantment, or Incantation, terms borrowed from the Latin verb, Canto, I sing. With the Jews, the simple enunciation of their mystical word Abracalan, was sufficient to inspire the confidence that baffled disease; nay, Quintus Severinus Simonicus vaunted his success in the cure of the hemitritic fever, by pronouncing mysteriously the word, Abracadabra, a phonic combination of his own invention! At this very hour, the Caffree rain-maker, the Cingalese devil-dancer, and the Copper Indian sorcerer, with their charms and chaunts, are enabled to work changes in the bodies of their several countrymen that put the boasted science of the schoolmen to shame. That these act by inspiring Confidence simply, may be seen from what took place in 1625, at the Siege of Breda. "That city, from a long siege, suffered all the miseries that fatigue, bad provisions, and distress of mind could bring upon its inhabitants. Among other misfortunes, the scurvy made its appearance, and carried off great numbers. This, added to other calamities, induced the garrison to incline towards a surrender of the place, when the Prince of Orange, anxious to prevent its loss, and unable to relieve the garrison, contrived, however, to introduce letters to the men, promising them the most speedy assistance. These were accompanied with medicines against the scurvy, said to be of great price, but of still greater efficacy; many more were to be sent them. The effects of the deceit were truly astonishing. Three small vials of medicine were given to each physician. It was publicly given out that three or four drops were sufficient to impart a healing virtue to a gallon of water [Mark this, Homœopathists!] We now displayed our wonder-working balsams Nor even were the commanders let into the secret of the cheat upon the soldiers. They flocked

in crowds about us, every one soliciting that part may be reserved for his use. Cheerfulness again appears in every countenance, and an universal faith prevails in the sovereign virtues of the remedies. The effect of this delusion was truly astonishing; for many were quickly and perfectly recovered. Such as had not moved their limbs for a month before, were seen walking the streets with their limbs sound, straight, and whole! They boasted of their cure by the Prince's remedy."—[Ives' Journal, 1744.] And what was this remedy?—a mere sham medicine, Gentlemen! After this, do I require to caution you, when you visit your patients, not to put on a lugubrious or desponding look before them. Such conduct, on the part of a medical man, is unpardonable; yet there are practitioners so base and sordid as to make it a part of their policy to represent the malady of every patient as dangerous. These find their profit in croaking; for it is a course of conduct that almost infallibly contributes to keep up disease. To God and their consciences I leave these men.

Such of you as might be disposed to question the depressing influence of a long face upon the sick, may read the history of Lord Anson's voyages with profit. There you will find it recorded, "that whatever discouraged the seamen, or at any time damped their hopes, never failed to add new vigor to the distemper, (the scurvy), for it usually killed those who were in the last stages of it, and confined those to their hammocks who were before capable of some kind of duty." And this is in perfect accordance with the observation of Solomon, that "a merry heart doeth good like medicine, but a broken spirit drieth the bones."

Let me, therefore, counsel you not only to assume a cheerful look in the presence of the sick, but endeavor at the same time in Byron's words,

> To render with your *Precepts* less
> The sum of human wretchedness,
> And STRENGTHEN man with HIS OWN MIND.

What are all your trumpery Pathology and Dissecting-Room knowledge compared with this? You may dissect dead bodies for twenty years and never be one whit the wiser on the mode of influencing the motions of the living. Now, this brings to my mind certain lines of a contemporary poet, the celebrated Beranger; but as some of you may not understand the French language, I shall offer no apology for giving you his sentiments in my own not over poetical English:

> Was ever such an ass as that
> Who hoped by slicing mutton-fat,
> And pulling candle wicks to pieces,
> To tell why *Light* should spring from *Greases*?
> Yes, one—that still more precious fool,
> Who in the anatomic school
> Expected with dissecting knife
> To learn from *Death* the laws of *Life!*
> Ha! ha! I'd rather beg some old
> Domestic nurse to cure my cold,
> Than trust to such pedantic brain
> To wake my lamp's low flame again!

But seriously, gentlemen, I have known a great many first-rate anatomists in my time; yet there are old women who never saw the inside of a dead body, whom I would sooner consult in my own case than any of these hair-splitting gentry. These men are mere geographers, who will point out rivers and towns, if I may say so,—corporeal hills, dales, and plains,—but who know nothing of the manners, customs, or mode of influencing the animated atoms constantly entering into and departing from them. If any such mechanical-minded creature presume hereafter to mystify you on this point, tell him to watch the wounded of contending armies, and ask him to explain to you why the same description of injuries which heal with rapidity when occurring in the persons of the victors, too often prove intractable, or even fatal, to the vanquished! He might dissect their dead *nerves* as clean as he pleased, and never find out that the living body of man may be either weakened or strengthened through the medium of his own mind.

The depressing power of GRIEF is familiar to every body; but there are cases where a reverse effect may take place from it—and Shakspeare, with his usual accuracy, explains the reason of this.

> "In Poison there is Physic—and these news,
> Having been WELL, that would have made me SICK,
> Being Sick, have in some measure made me Well;
> And as the wretch whose fever-weakened limbs,
> Like strengthless hinges buckle under life,
> Impatient of his fit, breaks like a fire
> Out of his keeper's arms, even so my limbs,
> *Weakened* with Grief, being now *Enraged* with Grief,
> Are THRICE THEMSELVES."

The strength imparted to the constitution in cases of this nature, has a relation to the novel atomic revolutions caused by DESPERATION; or that determination to act in an energetic manner, which so often comes upon a man in his extremity. Such reaction resembles the glow that succeeds the sudden shock of a cold shower-bath. There are persons whom a slow succession of petty misfortunes would worry to death; but who, on sudden and apparently overwhelming occasions, become heroes.

It will be readily admitted, by all who have profited by their experience of life, that one half the world live by taking advantage of the passions and prejudices of the other half. The parent of prejudice is Ignorance; yet there is no man so ignorant but who knows something which you or I may not know. The wisest judges have played the fool sometimes from ignorance; they have

allowed themselves to be gulled by individuals of a class they despise. Poor, decrepid, ill-educated females, calling themselves Witches, have imposed upon the ablest and most learned men of a nation. Lord Bacon and Sir Matthew Hale, for example, believed in witchcraft; nay, the latter judge went so far as to sentence to death wretches supposed to be convicted of it, and they were executed accordingly. Samuel Johnson was a believer in ghosts and the second-sight. Where, then, is the country so enlightened that, upon some points the wisest and best may not be mystified? If such a country exists, it must be England at the present moment; if there is a profession in which deception is never practised, it must be Medicine. Happy England! happy Medicine! where all is perfect and pure—where the public are neither cheated by an echo, nor led by a party for party interests. Here collegiate corruption is unknown, and corporate collusion a mere name; here we have no diplomas or certificates to buy—no reviewers to bribe—no humbug schools—no venal professors: here, having no mote in our medical eye, we can the better distinguish and pluck out that of our neighbors. Who will doubt our superiority in this respect over all the other nations of the earth? Or who will question me in what that excellence principally consists? Scapegrace, sceptic, read Dr. Hawkins—read Dr. Bisset Hawkins' Continental Travels—and you will there find it recorded, that the brightest feature of British medicine—the most distinguishing point of excellence in English treatment—is the copious blood-lettings we practise. "The neglect of copious blood-lettings," quoth Hawkins, "is the great error of the continental Hospitals!" Let us laugh, then, at the do-little "medecine expectante" of the French, ridicule the do-nothing homœopathy of the Germans, and turn up our lip in derision at the counter-stimulant doctrine of the Italians. What are the greatest medical professors of the Continent, in comparison with our own meanest apothecaries even—to say nothing of our leading surgeons and physicians—presidents and vice-presidents of learned societies; Only look at the number of scientific bodies to which these little great men belong—you will find their names enrolled in every (so called!) Literary and Scientific institution throughout the country—Astronomical—Botanical—Geological—Antiquarian—Royal! Amiable and respectable persons! worthy of the carriages in which you ride, and the arms you bear: you are gentlemen—friendly and disinterested gentlemen; you owe your elevation to your own industry; you preserve your position by your incorruptible honesty; you recommend yourselves, and each other, neither by letter nor affection, but upon the score of talent and integrity solely; you are all honorable men. Unlike the "honorable members" of a certain honorable place, who have been purchased, you, the members of an equally "honorable" profession, are unpurchaseable? This, your colleges and coteries declare—this, the discriminating world believes and echoes. Who but the reptiles—the few that never think, never reflect—would answer, "all is not gold that glitters!" Gentlemen, what is the difference betwixt a guinea and its counterfeit? Do not both sparkle with equal brightness? Have they not the same metallic impress, the same form, the same exterior color? Can the eye detect the imposture? No! it is only by a comparative trial of their respective weight and ring that you can make out the difference. Do you think mankind are to be judged in any other way than this? Is it not as necessary for a person to be a successful cheat, that he should borrow the exterior of worth and integrity, as it is for the counterfeit guinea to bear the name and livery of the coin it purposes to be, before it can pass for genuine. Be not, then, satisfied with fine names and appearances only; do not take men for what they pretend to be solely by their manner or title—because they are doctors of this college, or professors of that university. What is a professorship but a Place? "He who has the best talents for getting the office, has most commonly the least for filling it; and men are made moral, [medical] and mathematical teachers by the same trick and filthiness with which they are made tide-waiters and clerks of the kitchen."—*Sydney Smith.* Depend upon it, professors thus elected will always stand by each other—right or wrong, they will always support the same system. In this, they do no more than the members of the swell-mob, who work together by coterie and collusion Like these professors too, they are all very respectable in their appearance, some of them doing business in a carriage even!

Where is the individual that has not his moral as well as his physical weakness? Upon this point, at least, we are all liable to be overreached. Here we are every one of us imbecile as the infant; for we are placed as completely at the mercy of the Charlatan, as the child is at the disposal of the parent, whose mental ascendancy he acknowledges Speak to the prattler of the "haunted chamber," his countenance instantly falls. With the adult, assume an air of mystery, mutter darkly and indefinitely, and mark how his brain will reel. Is he sane? he becomes

your tool. Has he come to you in his sickness? you gull him and guide him at your pleasure. But how can you wonder at the effect of this kind of agency on individuals, when you have seen a whole nation similarly hood-winked by a coterie of doctors? I allude to what was done when the Cholera first appeared in England. The influence of Fear, in disposing to spread an epidemic, you know; the effect of Confidence in strengthening the body against its attacks, you also know. What was the conduct of the College of Physicians when the Cholera broke out? Did they try to allay the alarm of the masses? did they endeavor to inspire them with confidence and hope, that their bodies might be strengthened through their minds? No! they publicly, and by proclamation, declared the disease to be Contagious; without a particle of proof, or the shadow of a shade of evidence, they solemnly announced that, like the small pox, it was communicable from man to man! That was the signal to get up their Cholera Boards; and Cholera bulletins, forsooth, must be published. I had just then returned from India, where, though I had seen more cases of Cholera than all the Fellows of the College put together, I never heard of Cholera-Contagion; no, nor Cholera-Boards. In the barbaric East, the authorities, civil, military, and medical, acted with firmness; what they could not arrest they awaited with fortitude; they placed themselves and those committed to their care at the mercy of the great Disposer of events; while in England, enlightened England, the leading law-givers, under the influence of the leading medical men, introduced acts that disgrace the Statute Book, and permitted medical jobs to be got up that did any thing but honor to the medical profession. A new tax was actually levied to defray the salaries of their Cholera-Boards! The consequences of these measures might have been foreseen. Throughout the country universal panic was spread, and universal gloom prevailed. The rich shut themselves up in their houses, each in terror of his neighbor's touch; the middling classes suffered from the general stagnation which ensued in consequence, for every trade, but the drug-trade, languished or stood still; and the poor, when taken ill—for the disease was chiefly confined to that class—were, by act of Parliament, dragged from their homes, and conveyed to Cholera Hospitals,—where, if they did not perish of the prostration induced by their removal, they had *salt* and *water* injected into their *veins* by the medical madmen in charge! Debarred the society of their nearest and dearest relatives, and tortured in every possible way by their pedantic doctors, was it wonderful that few of these unfortunates should escape from the pest-houses in which they had been so inhumanly immured? All this, the leading men of the country, Peers, Judges, and Members of Parliament, saw and permitted, from a puerile dread of the phantom Contagion, which the ignorance or cupidity of the College of Physicians had conjured up. When acted upon by intimidation, to what miseries will not the feeble submit, if

> Even the wisest and the hardiest quail
> To any goblin hid behind a veil.

Is not this a subject for deep reflection! To some it may suggest a feeling like shame. Let me speak of SHAME. Generally speaking, this is a depressing passion, and under its influence men sometimes, and women daily, commit suicide. I will give you an instance where it had the reverse effect. The girls of Miletus, a town in Greece, were seized with a mania that led them to believe self-destruction an act of heroism; and many accordingly destroyed themselves. Physic and argument having been alike ineffectually tried, the authorities, to prevent the spread of this fatal rage, ordered the bodies of the suicides to be dragged naked through the streets of the city. From that moment the mania ceased. But everything depends upon a contingency, whether a particular passion act as a depressant or a tonic in disease. In the case of Shame, the past and the future make a great deal of difference.

Some of you may, perhaps, feel inclined to remind me of the efficacy of Fear in the Cure of diseases; but in this case the fear must neither be a dread of the disease nor its event, but a dread of some circumstance completely unconnected with it. Thus, Sir John Malcom, in his History of Persia, tells us of a certain Hukeem who cured ague by the bastinado. In this case the Persian doctor availed himself of the double influence of fear and pain, neither of which were contingent upon the disease. The effect of Terror in removing tooth-ache is familiar to many who have knocked at a dentist's door. The gout, too, has been cured and caused by every passion you can name. There does not pass a day but we hear of people being frightened into epileptic fits; yet Boerhaave terrified away an epilepsy from a school where it prevailed, by threatening to burn with a red-hot poker the first boy that should have another paroxysm. I have known asthma cured by Rage, and also by Grief; yet, if we may believe what we hear, people occasionally choke of both! Few medical men will dispute the influence of a passion in the cure of Ague. Mention any mental

impression, such as Faith, Fear, Rage, or Joy, as having succeeded in this affection, and they doubt it not; but superadd to the patient's state a palpable change of volume or structure, such as an enlarged gland or ulcer, and they smile in derision at the efficacy of a charm. Extremes in seepticism and credulity are equally diseases of the mind. The healthy brain is ever open to conviction, and he who can believe that the Obi-charm, or the magic of a monarch's touch, can so operate on the nervous system as to interrupt or avert the mutations of motion and temperature constituting an ague-fit, should pause before he denies their influence over an ulcer or a tumor, which can only be developed or removed by or with change of temperature. Indeed, from what we have already said, it is impossible for any individual to be the subject of any mental impression without experiencing a chill or a heat, a tremor or a spasm, with a greater or less change in the atomic relations of every organ and secretion. Baron Alibert gives the case of a Parisian lady, who had a large wen in the neck—a goitre—which, from its deformity, occasioned her much annoyance. That tumor, which had resisted every variety of medical treatment, disappeared during the Reign of Terror—a period when this lady, like many others of her rank, experienced the greatest mental agony and suspense. The agony and suspense in that case referred to a contingency altogether unconnected with her disease The mere act of dwelling upon sickness will keep it up; while whatever withdraws the mind from it is beneficial. In my own experience, abscesses of considerable magnitude have been cured both by fear and joy. Few surgeons in much practice have been without the opportunity of satisfying themselves that purulent swellings may recede under the influence of fear. They have assured themselves of the presence of matter—they propose to open the tumor—the frightened patient begs another day, but on the morrow it has vanished.

Akin to Terror is Disgust, or that feeling which a person naturally entertains when, for the first time, he handles a toad or an asp. This passion has worked wonders in disease, The older physicians took advantage of it in their prescriptions; for they were very particular in their directions how to make broth of the flesh of puppies, vipers, snails, and milipedes. The celebrated Mohawk Chief, Joseph Brandt, while on a march, cured himself of a tertain ague, by eating broth made from the flesh of a rattlesnake! Here the cure must have been altogether the effect of Disgust, for in reality, the flesh of a rattle-snake is as perfectly innocuous, and quite as nutritious as the flesh of an eel. Mr Catlin, in his Letters and Notes on the North American Indians, tells us that when properly broiled and dressed he found the rattle-snake to be "the most delicious food of the land." But when you come to think of the living reptile and the venom of his fang, who among you could at first feed upon such fare without shuddering, shivering, shaking—without in a word, experiencing the horrors and horripulations of ague! Spider-web, soot, moss from the dead man's skull, the touch of a dead malefactor's hand, are at this very hour remedies with the English vulgar for many diseases. With the Romans the yet warm blood of the newly slain gladiator was esteemed for its virtues in epilepsy. Even at this day, in some countries of Europe, the lower orders cure the same disorder by drinking the blood as it flows from the neck of the decapitated criminal. In the last century, a live toad hung round the neck was much esteemed, by the same class of people, for its efficacy in stopping bleeding at the nose. Now that the toad is known to be free from venom, it might not be so successful as it once was in this instance. Any temporary benefit, real or supposed, which has accrued from the employment of the Leech has appeared to me to be in many instances the effect of the Horror the patient very naturally entertained for the reptile.

A consideration of the power by which the Passions cure and cause diseases, affords at once the best refutation of medical error, and the most perfect test of medical truth. By this test, I am willing that my doctrines should stand or fall. Take the influence of Fear simply—what disease has not this passion caused?—what has it not cured? The mode of its action, then, establishes beyond cavil not only the unity of disease, but the unity of action of remedy and cause. What does the proper treatment of all diseases come to at last, but to the common principle of reversing the existing motion and temperature of various parts of the body? Do this in a diseased body, and you have health—do the same in health, and you reproduce disease. Whatever will alter motion will cure or cause disease. This, then, is the mode in which all our remedies act. Just observe the effect of

BATHS.

In what disease have not Baths been recommended?—and in what manner can they cure or ameliorate, but by change of temperature—by change of motion? Put your hand into ice-water—does it not shrink and become diminished in size? Place it in wa-

ter as hot as you can bear—how it swells and enlarges. You see, then, that change of temperature necessarily implies change of motion;—and that change of motion produces change of temperature, you have only to run a certain distance to be satisfied; or you may save yourself the trouble, by looking out of your window in a winter morning, when you will see the hackney coachmen striking their breasts with their arms to warm themselves. Depend upon it, they would not do that for nothing. Heat, then, so far from being itself a material substance, as Black, and other chemists assert, is a mere condition of matter in motion—it is no more a substance than colour, sound, or fluidity. Like all these, it is a motive condition merely, or an association of matter. What can be greater nonsense than an imponderable substance--as heat and light have been sometimes called? That only is matter or substance which can be weighed and measured—and this may be done with invisible as well as visible things,—in the case of a Gas for example.

I am often asked, what baths are safest, as if every thing by its fitness or unfitness is not safe, or the reverse. The value of all baths depends upon their fitness; and that, in many instances, can only be known by trial. It depends upon constitution, more than upon the name of a disease, whether particular patients shall be benefited by one bath or another. Generally speaking, when the skin is hot and dry, a cold bath will do good; and when chilly, a hot bath. But the reverse sometimes happens. For example, I have seen a shivering hypochondriac dash into the cold plunge bath, and come out, in a minute or two, perfectly cured of all his aches and whimsies. But in cases of this nature, every thing depnnds upon the glow or reaction, which the bath produces; and that has as much to do with surprise or shock as with the temperature of the bath. I have seen a person, with a hot dry skin, go into a warm bath, and come out just as refreshed as if he had taken a cold one. In in that case, the perspiration which it excited must have been the principal means of relief.

So far as my own experience goes, I prefer the cold and tepid shower-baths, and the cold plunge-bath to any other; but there are cases in which these disagree, and I, therefore, occasionally order the warm or vapor bath instead.

In diseases termed "inflammatory," what measure so ready or so efficacious as to dash a few pitchers of cold water over the patient—Cold Affusion, as it is called? When I served in the Army, I cut short, in this manner, hundreds of inflammatory fevers—fevers that, in the higher ranks of society, and under the bleeding and starving systems, would have kept an apothecary, and physician—to say nothing of nurses and cuppers—visiting the patient twice or thrice a-day for a month, if he happened to live so long.

Gentlemen, with the cold dash, you also may easily,

"While others meanly take whole months to slay,"
Produce a cure in half a summer's day."

That being the case, do you wonder that prejudices should still continue to be artfully fostered against so unprofitable a mode of practice? Why do not the gullible public examine for themselves? Why will they continue to bribe their medical men to keep them ill? In their shops and out of their shops, the people of this world generally enact two very different characters. There they take advantage of their customers in every possible way; but the moment they leave their counters, the same persons drop the knave, and become the dupe. The merchant and shop-keeper, who buy cheap and sell dear—the landowner and farmer, who keep up the corn-laws by every possiple sophistry,—the barrister and attorney, who rejoice and grow fat on the imperfections and mazes of the law—the clergyman and his clerk, whose gospel knowledge and psalm-singing, are generally in juxtaposition with tithes and burial fees—become all perfect lambs when they leave their respective vocations—each giving the others credit for a probity and disinterestedness in their particular line, which himself would laugh at as sheer weakness, were any body to practise in his own! With the most childish simplicity, people ask their doctor what he thinks of this practice, and what he thinks of the other—never for a moment dreaming that the man of medicines answer, like the answer of every other man in buisness, will be sure to square with his own interests. Instead of using the Eyes that God has given them, they shut them in the most determined manner, that their Ears may be the more surely abused. "What a delightful person Dr Such-a-one is," you will hear persons say; "he is so very kind, so very anxious about me." Just as if all that affected solicitude, and all that pretty manner of

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* I have stated in a former note that "Hydropathy," on a right principle, is an excellent Chrono-thermal remedy. But in spite of the wrong principle on which it is practised by Priessnitz, I am bound to declare that I think some of the modifications of his application of cold water, not only original and ingenious, but also exceedingly serviceable in many diseases Their is no question of their utility in particular cases.

his, were not part and parcel of the good doctor's stock in trade. Silly, simple John Bull! why will you pin your faith to fallible or fallacious Authority, when you may get the truth so easily by a little personal Examination!—To be able to discriminate in the choice of a physician, and to guard against medical imposture, would not cost you half the time, or any thing like the trouble, of mastering the inflections of verbero, or Amo, amare! Which kind of knowledge is of most use in life I leave to pedants and philosophers to settle between them. Meantime, I shall beg your attention to the subject of

Exercise.

The effects of mere motion upon the body are sometimes very surprising. Only think of Horse-exercise curing people of Consumption! A case of this kind, you remember, I gave you, on the authority of Darwin. I knew a gentleman who was affected with habitual asthma, but who breathed freely when in his gig. I know, at this moment, another, afflicted with giddiness, who is immediately "himself again," when on horseback. A dropsical female, who came many miles to consult me, not only felt corporeally better when she got into the coach, but her kidneys acted so powerfully as to be a source of much inconvenience to her during the journey. This corporeal change she experienced every time she came to see me. The motion of the circular swing has cured mania and epilepsy. But what, as we have repeatedly shown, is good for one patient is bad for another. You will not, therefore, be astonished to find cases of all these various diseases, where aggravation may have been the result of horse exercise, and the other motions we have mentioned.

Exercise of the muscles, in any manner calculated to occupy the patient's whole attention, will often greatly alleviate every kind of chronic disease. Dr. Cheyne was not above taking a useful hint on this point from an Irish charlatan. "This person," says Dr. Cheyne, "ordered his (epileptic) patients to walk, those who were not enfeebled, twelve, fifteen, or even twenty miles a-day. They were to begin walking a moderate distance, and they were gradually to extend their walks, according to their ability. In some of the patients, a great improvement took place, both with respect to digestion and muscular strength; and this was so apparent in a short time, that ever since this luminary shone upon the metropolis of Ireland, most of our patients affected with epilepsy, have been with our advice peripatatics." Exercise, then, is one of our best remedial means. Moreover, it may be turned to very great advantage in our common domestic matters. Were I to tell you all at once, that you might keep yourselves warm by a single log of wood all the winter over, you would think I was jesting, but really the thing may be done. I believe we owe the discovery to our friends across the water, the Americans; and I may as well give you the recipe:—"Take a log of wood of moderate size, carry it to the upper garret, and throw it from the window into the street, taking care, of course, not to knock any body on the head; this done, run down stairs as fast as you can; take it up again to the garret, and do as before. Repeat the process until you are sufficiently warm—when—you may lay by the log for another occasion!"

"One of our reverend bishops (who Syndenham tells us, was) famous for prudence and learning, having studied too hard a long while, fell at length into a Hypochondriacal disease; which afflicted him a long time, vitiated all the ferments of the body, and wholly subverted the concoctions. [Such, Gentlemen, was the jargon of the eminents of Syndenham's time.] He (the bishop) had passed through long steel courses more than once, and had tried almost all sorts of mineral waters, with often repeated purges and antiscorbutics of all kinds, and a great many testacious powders which are reckoned proper to sweeten the Blood (?) and so being in a manner worn out, partly by the disease, and partly by Physic used continually for so many years, he was at last seized with a colliquative looseness which is wont to be the forerunner of death in consumption and other chronical diseases when the digestions are wholly destroyed. At length he consulted me; I presently considered that there was no more room for medicine, he having taken so much already without any benefit: for which reason I advised him to ride on horseback, and that first he should take such a small journey as was agreeable to his weak condition. Had he not been a judicious man, and one that considered things well, he would not have been persuaded so much as to try such a kind of exercise. I entreated him to persist in it daily, till in his own opinion he was well, going daily farther and farther, till at length he went so many miles, as prudent and moderate travellers that go a long journey upon bnsiness, use to do, without any regard to meat or drink, or the weather, but that he should take everything as it happens like a traveller. To be short, he continued this method, increasing his journey by degrees, till at length he rode twenty or thirty

miles daily, and when he found he was much better in a few days, being encouraged by such a wonderful success, he followed this course for a pretty many months, in which, as he told me, he rode many thousand miles; so that at length he not only recovered, but also regained a strong and brisk habit of body. Nor is this kind of exercise more beneficial to hypochondriacal people than to those that are in a Consumption; whereof some of my relations have been cured by riding long journeys by my advice; for I knew I could not cure them better by medicines of what value soever, or by any other method. Nor is this remedy proper only in small indispositions, accompanied with a frequent cough and leanness, but also in consumptions that are almost deplorable when the looseness above mentioned accompanies the night sweats, which are wont to be the forerunners of death in those that die of a consumption. To be short, how deadly soever a consumption is, and is said to be—two-thirds of it dying who are spoiled by chronical diseases—yet I sincerely assert that mercury in the French pox, and the Jesuits bark in agues, are not more effectual than the exercise above mentioned in curing a consumption, if the patient be careful and the sheets well aired, and that his journeys are long enough. But this must be noted, that those who are past the flower of their age, must use this exercise much longer than those that have not yet arrived at it; and this I have learned by long experience which scarce ever failed me. And though riding on horseback is chiefly beneficial to people that have a consumption, yet riding journeys in a Coach is sometimes very beneficial."

The poet Coleridge, while at Malta, was in the habit of attending much to those about him, and particularly those who were sent there for pulmonary disease. "He frequently observed how much the invalid, at first landing, was relieved by the climate, and the stimulus of change, but when the novelty arising from that change had ceased the monotonous sameness of the blue sky, accompanied by the summer heat of the clime, acted powerfully as a sedative, ending in speedy dissolution." Is not this a proof of the correctness of my previous observation, that in chronic disorder remedies require to be frequently changed? The benefit to be derived from Travelling, often great in chronic disorders, is partly to be ascribed to the change of motion, and partly to change of air and scene. Like every mode of treatment presenting frequent novelty, travelling therefore offers many advantages to the invalid in every kind of chronic or habitual disease. How often, alas! do we find it recommended, as a last resource, under circumstances where it must inevitably hasten the fatal catastrophe. The breath that might otherwise have fanned the flame, now only contributes to its more rapid dissolution. How much the success of a measure depends upon time and season!

I must say a few words about

Plasters, Ointments, &c.

The beneficial influence obtained from all such local applications depends upon the change of temperature they are capable of producing. Their results will vary with constitutions. Most patients, who suffer from chronic disease, will point to a particular spot as the locality where they are most incommoded with "cold chills" This is the point for the application of the galbanum or other "warm plaster." A plaster of this kind to the loins has enabled me to cure a host of diseases that had previously resisted every other mode of treatment. The same application to the chest, when the patient complained of chilliness in that particular part, has materially aided me in the treatment of many cases of phthisis. In both instances, where heat was the more general complaint, cold sponging has been followed by an equally beneficial effect.

The ingredients of plasters, ointments, lotions, &c.—what are they but combinations of the agents with which we combat fever? Their beneficial influence depends upon the change of motion and temperature which they produce by their electrical action on the nerves of the part to which they are directed. Every one of the chrono-thermal agents may be locally employed in certain cases,—sometimes with more and sometimes with less advantage than when given internally.

Gentlemen, I shall employ what remains of our time to-day in a brief notice of the doctrines of Hahnemann, the founder of the Homœopathic School. His pamphlet, entitled, "The Spirit of the Homœopathic Doctrine," commences thus:—"To know the essence of Diseases, and the hidden changes which they effect in the body, is beyond the reach of the human understanding."—Which proposition he contradicts by the following paragraph: "It is necessary that our senses should be able clearly to discern what it is in each malady that must be removed in order to restore health, and that each medicine should express, in a distinct and appreciable manner, what it can cure with certainty, before we can be in a condition to employ it against any disease whatever." From this you perceive that Hahnemann,

like Dr. Holland and the humoral schoolmen, looks upon disease as a fanciful something to be "removed," instead of a state to change; and as he uses the phrase, to "expel disease" in another part of his work, it is evident he does not know in what Disorder consists. Again,—"The material substances of which the human organism is composed, no longer follow, in their living combination, the laws to which matter is subject in the state of non-life; and they acknowledge only the laws proper to vitality—they are then animated and living, as the whole is animated and living. In the organism reigns a fundamental power, indefinable yet every where dominant, which destroys every tendency in the constituent parts of the body to conform themselves to the laws of pressure, of concussion, of vis inertiæ, of fermentation, of putrefaction, &c., which subjects them exclusively to the wonderful laws of life, that is to say, maintains them in the state of sensibility and activity necessary to the conservation of the living whole—in a dynamic, almost spiritual state." Gentlemen, what is the sum of all this? Nothing more nor less than that if you press the soft parts of the body, they will not yield to a resisting substance—that you cannot be shaken by concussion, or have the bone of the leg or arm broken by external agency—that you are in a "dynamic state"—a state "almost spiritual!" What is the meaning of the word dynamic? It signifies "moving power." This you can understand; but when our author, apparently dissatisfied with his own term, would further explain it by the words "almost spiritual," a phrase perfectly indefinite, you see he has only a vague conception that the various parts of the body are in motion. But that the material atoms of the living frame do follow the laws to which all Matter is subject, under the particular circumstances in which the matter composing them is placed, is undoubted. A piece of amber or sealing wax when rubbed, first attracts silk and then repels it, producing alternate motion altogether independent of mechanics. Though not life, this phenomenon is at least, a type of it; for the organic and other motions of an organism termed life, even in the highest grade of animals, when analyzed, will be found to be only modifications of alternate attraction and repulsion. What are the successive conversion of the food into blood, of the blood into the matter of tissue and secretion, but so many instances illustrative of this proposition?—what the alternate inspiration and expiration of the lungs?—the equally alternate contraction and dilation of the heart—sleep and wakefulness, love and hate, ambition, and worldly disgust, but so many modifications or effects of attractive and repulsive influences! When the magnet attracts iron, it does that not contrary to the law of Gravitation, but in obedience to the more comprehensive law of which gravitation is a part—namely, Electricity or Galvanism. But Electricity, like Elective Attraction, is only a fragment of the great doctrine of LIFE. The word LIFE, when applied to animals in their healthy condition, is an abstract term expressive of the sum total of effects produced by the principal forces in nature, when acting together with a perfect harmony of movement in one body. Gentlemen, galvanism, or electricity, chemistry, magnetism, mechanics, play all periodically their respective parts in the happy combination of forces we call life. Life, then, is Electricity in its highest sense, even as the attraction of gravitation is electricity in its lowest sense. The attraction of the magnet is an electrical step in advance of gravitation,—chemical change one step more,—the alternate attraction and repulsion of amber is a still higher link in the electrical chain. Galvanism and Electricity, strictly so called, embrace all the subordinate links, while LIFE or VITAL ELECTRICITY, comprehends the whole. Mere mechanical motion, though it belongs to all animal life, in reality only grows out of it. There is no mechanical movement in the fœtal germ, nor is such movement necessary to the life of the plant. VITAL ELECTRICITY, then, produces changes in every way analogous to the changes that take place in organic bodies, but not the same changes,—for no electricity short of the highest or VITAL kind can produce the electrical and chemical changes constantly going on in a living body, no more than the power of gravitation or the magnet could produce the higher movements of common chemistry. The chemist who, like Liebig, expects by the destructive chemical analysis of dead organs in his laboratory, to be able to produce or explain the very opposite transformations that take place in the organs of the living, will no more improve medicine than the mere anatomist who separates them tissue by tissue with his scalpel. However similar his chemistry and his electricity may be to vital electricity and vital chemistry, however analogous the results of both be to the attractive and repulsive motions that constitute vitality, yet are the transformations not identical,—curiously resembling them certainly, but still so different that they never even approach to organism. The electricity and chemistry of man no more could produce a worm, or a leaf even, than the inferior intellectual power of the

dog or the elephant could produce the Iliad. The same harmony of motion that we behold in animal life we equally find in the life of the vegetable; but the forces employed are fewer in number, and more feeble in their action. The extremes of vegetable and animal life approach each other. In the zoophyte or plant-animal we have the connecting link of both. Both are made up of inorganic matter,—metals, minerals, air, earth, and every other material thing successively become anatomically organized and living in their turn. Man, who stands highest in the scale of animated beings, is a microcosm or little world in himself; yet what is he but a Parasite on the globe's surface—the globe itself but an Atom in the LIFE of the UNIVERSE! But listen to Hahnemann: "The Life of man, and its two conditions, health and sickness, cannot be explained by any of the principles which serve to explain other objects. Life cannot be COMPARED to any thing in the world except itself—no relation subsists between it and an hydraulic or other machine—a chemical operation—a decomposition and production of gas, or a galvanic battery. In a word, it resembles nothing which does not live. Human life, in no respect obeys laws which are purely physical, which are of force only with inorganic substances." We apprehend, gentlemen, that the whole, or nearly the whole, of this statement is assumption, and if there be truth in nature, that this assumption is a fallacy. If you COMPARE the ossification of the skull with mechanical inventions, you will find it to be an exemplification of the most perfect Carpentry. The joints of the body embrace every principle of the Hinge; —the muscles, tendons, and bones, are so many Ropes, Pulleys, and Levers; the lungs act in Bellows-fashion, alternately taking in and giving out Gas;—the intestinal canal is a containing Tube. Then, in regard to the vascular system, the heart and blood-vessels are to a great extent a Hydraulic apparatus, as you may prove, by tying an artery or compressing a vein; the blood, in the first instance, being arrested in its course from the left chamber of the heart; in the second, being stopped in its progress to the right side of it. What are assimilation, secretion, absorption, the change of the matter of one organ into another—of the fluids into the solids, and vice versa, but operations of vital Chemistry, and the Brain and Nervous System but the Vital Galvanic or Electric apparatus by which these operations are effected? That the human body obeys laws purely physical, is still further exemplified by the fracture of a bone or the rupture of a tendon —and the reunion of both is the result of secretion under the influence of this Electricity through the nerves supplying those parts. If, during childhood, the great nerve of a limb be paralyzed, the growth of that limb becomes arrested, not only in its breadth, but length. The nerves, then, are the moving powers, and if you cut or divide them, neither a broken bone nor a ruptured tendon can re-unite, so as to become useful. And do we not see analogous effects taking place in every kind of matter under the influence of the galvanic wire? By that we produce the decomposition and recomposition of bodies—various changes of motion and temperature—of attraction and repulsion of atoms —which, if we break the chain of the wire's continuity, immediately cease to take place, but which re-commence the moment the wires are again brought into contact. That a living man can in an oven defy a degree of heat that would broil a piece of dead flesh, is perfectly true; but to what is this owing, but to the greater power of attraction which the particles of his body maintain to themselves in their living than dead state. Nevertheless, the degree of heat may be so raised as to decompose portions even of the living body, and finally reduce the whole to a state incompatible with life. And may not the electric state of all bodies, gold and silver for example, be similarly influenced and altered? How, then, can the phenomena embraced by the term LIFE be said to "resemble nothing which does not live!" They resemble everything of which our senses can take cognizance—we can destroy but we cannot imitate them. "There is no agent or power in nature," says Hahnemann, "capable of morbidly affecting man in health, which does not, at the same time, possess the power of curing certain morbid states," But what is this but another mode of expressing Shakspeare's words: "In poison there is physic?" "Now," continues Hahnemann, "since the power of curing a disease and that of producing a morbid affection in persons in health, are inseparable from each other in all medicines, and that these two powers proceed manifestly from one and the same source, that is to say, from the property which medicines have of modifying dynamically the state of man; and that consequently also, these cannot act on the diseased after any other inherent natural law than that which presides over their action on individuals in health; it follows from this, that the power of the medicine which cures the disease in the sick is the same as that which causes it to excite morbid symptoms in the healthy." That the strictly Medicinal substances all kill and cure upon one and the same principle few will dispute who have

listened to these Lectures. But "the property which medicines have of modifying dynamically the "state of man" is merely a Greek expression, signifying that they possess a moving principle. In this there is nothing new, for Shakspeare, as we have seen, said the same thing in good English two centuries before Hahnemann was born. In the course of my next lecture, gentlemen, I shall have the pleasure of demonstrating to you that medicinal substances can only disturb the existing temperature and motion of any organ or atom of the body, by the electrical or galvanic force which they exert upon it through a nervous medium. Of this truth Shakspeare and Hahnemann were equally ignorant.

"As soon," proceeds Hahnemann, "as we have under our eyes the table of the particular morbid symptoms produced in a healthy man by different medicinal substances, it only remains to us to have recourse to pure experiments, which alone are capable of dtermining what are the medicinal symptoms (or the symptoms produced by the medicine in the healthy subject) which always arrest and cure certain morbid symptoms (i. e. diseases) in a rapid and durable manner, in order to know beforehand which of these medicines, the particular symptoms of which have been studied, is the surest method of of cure in each given case of disease."

So here we have only over again the exploded doctrine of SPECIFICS or remedies "which always arrest and cure" certain morbid symptoms! The whole sentence is somewhat confused and paranthetical, but from it and other passages you may nevertheless see that while Hahnemann obtained a glimpse and a glimpse only, of the principle of unity upon which remedies act, not only was he ignorant of the real nature of their power, but also of the utter impossibility of predicating in any one case of disease, what remedy would certainly achieve amelioration, far less a cure. This sentence he never could have written, had he known that every medicinal power being a repulsive force in one individual and an attractive force in another, may act inversely in any two cases of the same disease. If there be a truth more sure than another in physic, then, it is this, that until we have absolutely tried a medicinal agent in an individual case, we cannot possibly tell whether it be a remedy or an aggravant in that particular case. No, gentlemen, the ague-patient may come before you; but whether arsenic or bark, opium or prussic acid, shall arrest his disease, you can no more with certainty predicate than you can determine beforehand whether harsh or soft measures, or either, will reclaim a refractory child, or subdue an ungovernable steed. Trial and experience are your only guides. This much, however, you may, in the majority of cases of any given disease, predict, that such agents as have generally a definite power for good or for evil over definite parts of the body, are the class from which you are to expect most benefit in a disease of such parts—but which of them, the experience of that case itself can only tell you; for how can you know without such experience that opium will vomit, rhubarb excite epilepsy, or ipecacuan cause asthma in particular cases? all of which you are aware they sometimes do. When you order cold bathing, can you tell beforehand whether your patient shall come out all in a glow, happy and comfortable, or chilly and shivering, and not to be comforted? Till you can do this, you cannot with certainty tell by what given means you are to achieve a cure in any given case of disease. So far the art of physic is, and ever will, I fear, remain imperfect.

The principle, *Similia similibus curentur*, or *like* cures *like*, which Hahnemann assumes as his own discovery, was known not only to medical men long before he was born, but was acted upon by the vulgar time immemorial A passage which Shakspeare puts in the mouth of Benvolio in Romeo and Juliet, is a proof that it was practised in his days.

> Tut man! one fire burns out another's burning,
> One pain is lessened by another's anguish,
> Turn giddy, and be holped by backward turning,
> One desperate grief cures with another's languish;
> Take thou some new infection to thine Eye,
> And the rank poison of the old will die.

To the same purpose he says in Hamlet:—

> ——— Diseases desperate grown,
> By desperate appliances are relieved.

What is all this but similia similibus curentur? You see, then, that Hahnemann, instead of being a great discoverer, as he wishes to make out, is only at the most a Reviver of an old principle. Yet upon this principle, strange to say, neither he nor his followers act! They say one thing and do another; for while they declare their readiness to cure by powers having precisely the same action as the causes, how can they reconcile with that statement their practice of treating grave disease—disease proceeding from a grave agency, by the dissimilar agency of infinitesmal physic! What is infinitesmal physic? It is the division of a grain of opium, not into quarters, sixteens, or sixties—no, nor into hundreds nor thousands even,—but into millions and ten millions! And rules and regulations for its proper divisions into such parts are actually given in Homœopathic books! A grain of opium, or the common dose of this drug, is to be converted, forsooth, into medicine

enough for ten thousand men; and upon the same principle, doubtless, a loaf of bread may be made a dinner for an army! Gravely to argue the case—if grave disease could be caused by the millionth or decillionth part of a grain of our common medicinal substances, what apothecary's apprentice, who must be constantly rubbing, shaking, and inhaling medicines in this comminuted state, could possibly enjoy a day's health?—and yet it is by such doses—if opake matter reduced to invisible minuteness can be termed such—that diseases are to be cured! Where, then, is the Similarity of remedy to cause in the Homœopathic treatment?

In his "Organon," Hahnemann tells us, that almost all chronic diseases are the result of a morbific miasm, which he calls the Psoric, or the itch principle, and this, he says, and two other evil miasms, the Syphilitic and the Scrofulous, may be looked upon as the parents of all the diseases of man!—Mere phantoms, Gentlemen, of an excited imagination—mere crotchets of a mind clouded with the ghosts and goblins of those nurseries for grown-up children,—the German Universities. Of his utter ignorance of the true motions and changes of the organic matter of the body, whether in health or disease, and of the thousand morbific causes visible and invisible that daily occur in life, there could be no greater proof than this announcement;—you who are no longer in the dark have only to hold up the torch of truth to dash his day-dream to the dust.

When I first heard of the Homœopathic doctrine of infinitesimal physic, I felt tempted to believe that the whole was a weak invention of those enemies to medical truth, the medical reviewers,—knowing as I do the trickery and misrepresentation in which these gentry indulge when acting on behalf of the professional tradesmen, whose mercenaries they are. His own volume has, however, undeceived me; his own Organon developes the number of shakes and rubs by which the millionth part of a grain of quinine may become one of the deadliest poisons, and the ten millionth part of a grain of opium, a medicine to cause you to sleep your last sleep! But Hahnemann is a disciple of Mesmer—and he tells you to watch the miracles effected by Animal Magnetism. Do that, he says, and you will no longer doubt the cures which may be achieved by infinitesimal physic. Now, so perfectly ready am I to believe what he or his disciples may tell me upon this point, that it is a medical maxim of mine, "Any thing may do any thing," according to the ignorance and credulity of the patient, if it be a charm;—or according to the constitution and exigencies of the case, if it be a physical agent. In which light infinitesimal physic is to be viewed, you, Gentlemen, may decide at your leisure.

What but Faith or a Fancy to try could induce people to put themselves under the hands of a homœopathic practitioner? The influence which Confidence, simply, may produce on the body, we have proved by what took place at Breda in 1625. During the siege of that city, three or four drops of a hocuspocus medicine were said to be sufficiently powerful to impart a healing virtue to a gallon of water! The thing was believed, and the sick immediately took up their beds and walked. To tell the sensible part of mankind that you can cure any disease with the millionth or decillionth part of a grain of opium, bark, or aconite, would only excite their ridicule; but you know how little will influence the minds of the multitude, who, being ignorant, are naturally weak and credulous. You remember what I told you at my last lecture. The same reparative power of nature by which a cut finger is healed, will cure nineteen out of twenty cases of most diseases, without the assistance of any physic at all. Such cases, when treated homœopathically, that is, with hope and humbug, are of course set down as wonderful cures; and wonderful they are, indeed, when compared with the results of the apothecary-system,—a system by which every similar disorder, for the most part, is aggravated through the interference of the routinists, who, partly by playing on the fears of the patient, and partly by making his stomach an apothecary's shop, generally contrive to prolong the case so long as the subject of it will continue to act according to their rules. Here the homœopathic doctor may safely retort on the old practitioner. With the mass of mankind the homœpathic has only to affect a superior knowledge of the visible and invisible world, speak confidently of the cures, real or supposed, effected by his treatment, and talk mysteriously of the rubs and shakes by which he imparts a magical or magnetic virtue to his infinitesimal physic. Should a doubt remain, he may hint at the wonders of Electricity or Galvanism, for a litle mixture of truth will make his mummery go down better—just as a little apparent candour will make you more readily give credence to a calumny or a scandal. In both cases a complete want of principle is the chief element of success on the part of the impostor—and faith the weakness or strength of the dupe. If the former only get the latter to listen to him, he may inoculate him with a fancy to try—that of itself implies faith. However small at first, it will be sure to increase by thinking and talkin

about the new method. A little opposition is a good thing sometimes—the patient gets heated up by it. If he has a tendency to improve, he will improve the faster—if he finds himself deceived, he will conceal the fact, as he would be sorry that others should not be as great fools as himself. Patients of the class who consult Homœopathic practitioners, generally collect together, talk, discuss, and theorize till they work themselves into a kind of fever—such fever, or rage, by exciting and animating them, will, in many cases, be infinitely more beneficial to their constitution, than the draughts and mixtures inflicted, usually not so much on account of the necessities of the patient as the needy condition of the routine practitioner. Having once become partizans and disciples, they next find a pleasure in making converts. they have now what they had not previously—an object before them; and they work body and mind in the cause. Can you wonder they shou d, in many cases, get well by the new mode of life to which they have taken? This, Gentlemen, is the secret of any success obtained in the course of the Homœopathic treatment. Like the French "medicine expectante," it is a system of placebo. What is new in it is not true; what is true is not new. Savage Landor says rightly, "most disputants drive by truth or over it." In the case of similia similibus, Hahnemann has done both—he adopts it as his motto, but practises on a principle the reverse. What does it mean? Power opposes power. Did we require to be told this by Hahnemann? The doctrine, like cures like, was so obvious as to be a popular axiom in every age—but it is only the minor of a major proposition, or a fragment of the great Abstract Law—ANY GIVEN POWER APPLIED IN A PARTICULAR DEGREE AND AT PARTICULAR PERIODS, MAY CURE, AGGRAVATE, OR ALLEVIATE ANY GIVEN FORM OF DISEASE, ACCORDING TO THE CONSTITUTION OF THE PARTICULAR PATIENT.

[On the publication of the first edition of this work, the Homœopathists accused me of not understanding their principles. My answer to that was, that I had at least read their own books, and if I was such a fool as not to be able to understand their writings, they were greater fools not to write more intelligibly.

"Your true no-meaning puzzles more than sense!"

Since the publication of the second edition they have changed their tune, and say I have borrowed from Hahnemann—to which I reply—the rich seldom borrow, and I have never myself done so without acknowledgment. If the homœpathists will be so good as to put in print the instances in which I have neglected this, I will very much thank them for reminding me of what is right.]

The Late Epidemic of Puerperal Metritis in the Paris Hospitals.

The *Gazette Medicale* contains an interesting account, by M. M. BIDAULT and ARNOULT, internes, of a very fatal epidemic of peurperal fever, which reigned in the Paris hospitals in 1843 and 1844. The opportunities for observation, of these gentlemen, extended over three hospitals, those of Saint Louis, the Hotel Dieu, and the Hotel Dieu Annexe, in each of which there is a small ward devoted to midwifery Epidemics of peurperal fever have been common of late years in Paris, in the midwifery establishments, especially at the Maternite, the large obstetric hospital, at which it reigned with great violence at the time that it was observed by MM. BIDAULT and ARNOULT. At the Hotel Dieu, the epidemic reigned in January, February and March, 1843. There were eleven deaths in forty-five deliveries, in the three months, whereas there had not been one death in the hundred and forty deliveries which had occurred during the previous nine months of the preceding year; at the Hotel Dieu Annexe, out of sixty-seven women delivered, sixteen were attacked, and fourteen died. The epidemic occurred in the months of November and December of the same year, (1843.) The patients had been drafted from the Maternite, on account of the existence in that hospital of a very fatal epidemic The Saint Louis epidemic took place in the months of September, October and November 1844, Some isolated cases had occurred in the year, but it was only during the period mentioned, that the fever assumed the epidemic form. Out of forty-four deliveries, there were nine deaths.

Generally speaking, the morbid symptoms manifested themselves at the period of the milk fever, from the second to the third day. In one case, they appeared a few hours only after delivery; in some few, only four or five days after. Nearly always, the attack commenced by rigors, of greater or less duration, followed by febrile reaction. In some instances, the rigors were absent. febrile heat of the skin, frequency of pulse, restlessness, and abdominal pain, opening the scene. The pulse always became very frequent, its pulsations rising to 110 or 120, and its strength depending on the freedom of the general reaction after the rigors. At the same time, there was cephalalgia, redness and injection of the face, brilliancy of the eyes, anorexia, frequent and laborious breathing, a loaded state of the tongue, which rapidly became dry, bilious vomiting, diarrhœa, or constipation. At Saint Louis obstinate constipation was present in every case, and no intestinal lesions were found after death. At the Ho-

tel Dieu, diarrhœa was, on the contrary, equally universal, and the follicles of Brunner were constantly found hypertrophied. There was generally abdominal pain from the commencement; sometimes the pain was slight, sometimes very severe. The uterus remained voluminous, and there was more or less abdominal tympanitis, especially when the affection assumed at an early period the typhoid character. The lochial discharge was nearly always diminished, but seldom entirely suspended. The breasts became flaccid if the milk had previously appeared, if not,it was not secreted. The urinary secretion was diminished, and the excretion was somtimes difficult. Indeed, in some cases, the bladder had to be emptied occasionally by means of the catheter.

The second period of the disease was characterized by symptoms of still greater gravity. All reaction ceased. The face became deeply altered, the eyes were sunk in the orbits, and surrounded by a black circle, the lips livid, the nostrils dry, and filled with particles of dust. Extreme prostration of strength accompanied these symptoms, along with great anxiety of countenance. The abdominal pains disappeared, the tympanitis, at the same time, increasing considerably. The respiration was difficult and laborious, as many as forty-five or fifty respirations being made in a minute; pulse 140 or 150, small, irregular, depressible; alvine evacuations, involuntary; fluids rejected by ingurgitation; tongue dry, and covered with a dark fur; breath fœtid; extremities cyanosed. Death generally followed on the fifth or sixth day of the attack, the patients retaining their intellectual faculties to the last.

In some few cases, there was an apparent remission, which, however, lasted, generally speaking, for a short time only. In the course of a few hours, the disease resumed its fatal progression. With the small number of patients who recovered, the symptoms continued gradually to improve. The respiration became easier, the pulse fuller and slower, the thirst less intense, &c. The convalescence was tedious, and necessitated several months' residence in the hospital In some patients at the Hotel Dieu Annexe, and with all at Saint Louis, there was an intense bronchial catarrh.

The body of the uterus was always found more voluminous than it ought naturally to have been at the period of death. Its cavity contained grey, sanious, fœtid false membranes; on washing them away, the surface which they covered was, however, found white and apparently healthy. The Implantation of the placenta was marked by small coagula. The tissue of the uterus was firm and healthy. There was none of the gangrene or putrescence (*putrescentia uteri*) which has been described by German writers. There were not, either, any abcesses. The peritoneum covering the uterus was often inflamed and covered with false membranes. No uterine veins were ever found diseased, but the uterine lymphatics were inflamed and filled with pus, in a great proportion of the cases. At the Hotel Dieu Annexe, the inflammation did not extend beyond the lymphatics of the uterus. At the Hotel Dieu, in some cases, and at Saint Louis in all, a great number of inflamed lymphatics,filled with pus, were found in the lateral ligaments, and on the surface of the ovaries. These inflamnd lymphatics terminated in the pelvic ganglions, which were sometimes themselves softened and filled with pus; the efferent vessels, however, were never found diseased. The lateral ligaments were covered with false membranes; the ovaries, also, were enlarged, and infiltrated with pus; the Graafian vesicles on being incised were often found filled with pus. At the Hotel Dieu, and at the Hotel Dieu Annexe, where the symptoms of peritoneal inflammation were more marked from the onset than at Saint Louis, the peritoneum was also found more extensively inflamed. The peritoneal cavity contained a considerable quantity of purulent serosity, in which floated detached false membranes, and the intestinal folds and lateral ligaments were united by false membranes. In some cases, there was a sub-serous injeetion on the intestinal folds. At Saint Louis, where the typhoid symptoms predominated, the peritoneum merely contained a white lactescent effusion, without false membranes or adhesion of the intestines. The peritoneum was pale, without any inflammatory injection. In these cases, there was purulent infiltration of the sub-peritoneal cellular tissue of the pelvis, and suppuration of the lymphatics of the lumbar region. The stomach contained an enormous quantity of a greenish fluid, but presented neither inflammation nor softening. The follicles of Brunner, to the alteration of which, in pueperal fever, much attention has been paid of late, were only found diseased at the Hotel Dieu. They presented the appearance of a papular eruption, with a white apex. Whenever they were met with, diarrhœa had existed. At Saint Louis where the intestinal mucous membrane always appeared healthy, there was no diarrhœa, but, on the contrary, obstinate constipation. The liver was never diseased. The spleen was sometimes larger and softer than usual, but not otherwise affected. The parenchyma of the lungs was generally healthy; hypostatic engorgement

was sometimes met with, and appeared to be similar to that of typhus fever. There were no partial pneumoniæ or metastatic abcesses. At Saint Louis, the small bronchi were obstructed by mucus in some cases At the Hotel Dieu Annexe, pleuretic effusions, single or double, were common , No lesions were met with in the heart or pericardium In a few instances in which delirium had been present, the membranes of the brain were found slightly injected, as also the surface of some few cerebral convolutions; otherwise, there were no lesions of the nervous system.

These epidemics manifested themselves, as is usually the case, without any appreciable cause. It may be remarked, however, that they all three occurred during the cold months of the year. It would appear, that it is generally during the cold season that epidemics of puerperal fevers manifest themselves in Paris. The fever cannot have been occasioned by unusual crowding of the patients, as, at Saint Louis, the number delivered was smaller than usual, and at the Hotel Dieu, not greater. A circumstance worth noticing is, that of sixty-seven women delivered in the special midwifery ward at the Hotel Dieu Annexe, fourteen died; whereas, out of twenty-one women dispersed in the medical wards, and therein delivered, during the same interval of time, only one died. It must, however, be mentioned, that the sixty-seven females alluded to, had been drafted from the Maternite, where puerperal fever existed, and there they had resided for some time. They may therefore have brought with them a kind of predisposition. Various circumstances occurred during the epidemic which seem to favor the idea of contagion Thus, at Saint Louis, for some time, all the women placed into two small rooms were attacked. A woman operated upon for uterine polypus, and placed in one of the midwifery rooms, was seized two days after the operation with the same symptoms as the other women, and died. On examination, the only lesion found was the lactescent effusion into the peritoneum. The uterus, as also the veins and lymphatics, were perfectly healthy. Ancient authors—Van Swieten, for instance, considers non-lactation as a predisposing cause. Most of the women attacked during these epidemics were not suckling.

The principal means resorted to, were bleeding, general and local, mercury, administered internally and externally, the essential oil of turpentine, ipecacuanha, and the tincture of aconitum. General bleeding which was tried when the reaction was energetic, the pulse full and resisting, was not attended with beneficial results. The pulse soon fell, and extreme prostration followed. Local bleeding, by leeches applied to the parietes of the abdomen, always gave relief, but the amelioration was only momentary, the pains were returning. Calomel was administered internally twenty or thirty grains being given in six doses in the course of the day. It nearly always acted on the bowels, but did not occasion salivation As, however, it was seldom possible to continue it suse more than two or three days owing to the short duration of the disease, this is not surprising. At the same time, mercurial ointment was rubbed into the thigh in some cases. In two instances, two pounds were rubbed in within twenty-four hours without preventing a fatal termination. Turpentine was given to three patients without success. Ipecacuanha, which was administered, apparently with great success, by Douchet in an epidemic of puerperal fever at the Hotel Dieu, at the end of the last century, was also resorted to in the first stage. It appeared, in some few cases, to produce slight amelioration for a few hours, but the disease soon resumed its former intensity. In the only two cases that were saved at the Hotel Dieu Annexe, the treatment consisted, at the onset in antiphlogistic measures, and subsequently, in the use of mercury, internally and externally, and in the administration of the tincture of aconitum; at first, one drachm, and afterwards two, in a four ounce mixture during the twenty-four hours. *Lond. Lan.*

(For the Dissector.)

TRACTS ON CONSUMPTION.

NUMBER TWO.

On some New Pathological Views of Tubercular Phthisis.

By J—— G——, M. D.

The literary history of consumption, during the last thirty years, presents many important acquisitions to our knowledge of its pathology, which, whether of value or not to the sufferers from this destructive disease, have been highly interesting to the profession. If it be decided, as it must be, that their utility has not kept pace with the largeness of their promise, it must seem extraordinary that, notwithstanding their supposed perfection, the treatment of consumption could derive little more advantage from them than when its contributary aids were purely conjectural The reason for this unfortunate anomaly must either be, that these improvements are less perfect than they are commonly considered, or that they have not been properly connected with practical medicine. It is quite obvious that if there be error in either of these respects, it is impossible that the treatment of such a disease as Tubular Consumption can be successful; and it is

highly probable, indeed, it may be said to be certain, that both of them present phenomena that are not in accordance with a philosophical view of the injury, or the rational means of remedying it.

The progress of medical science begins clearly to indicate that the whole of the facts connected with it must, sooner or later, be included in some high and simple generalization in place of the complex hypotheses, by which they are at present grouped together. It points to the identity of the vital, chemical, electrical and general physical forces; and though it is not sufficiently clear and distinct to command the assent of all those who are competent to consider the subject, it is equal to the purpose of producing a general impression of its truth.

Influenced by this glimmering view of a fundamental truth, it has become fashionable, with hasty and ambitious generalizers, to form elaborate but crude hypotheses of life and disease, and to attempt to identify them with the fixed laws of physical science:

> "for ever striving to attain,
> By shadowing out the unattainable."

The temporary duration of the vast majority of these conjectures is sufficient evidence of the slender foundation on which they are constructed; while they authorize the inference that it will be many years before we shall be justified in dispensing with the props and supports by the assistance of which the fabric of medical science has been elevated to its present height and dimensions. Convinced of this truth, I have continued to apply the term tubercular phthisis to consumption; and though I consider the importance that has been attached to the existence of tubercles may have no real existence, I have endeavored to speak of them in conformity with the common theories regarding them, and as if they produced the phenomena which have proved so destructive in this disease. But it is impossible to resist or to avoid acting upon the belief, that in proportion as facts have accumulated in this disease, have we been able to diminish the number, and to simplify the explanation of its theories. Towards this simplification it has received much aid from the labors of Dr. Sherwood: and, thus, by comporting with our observations of facts in every science, it has been enabled to concur in advancing the prospect of connecting with one general origin all physiological and physical science, not excepting the vital functions and the universal force of gravity itself.

Consumption is generally recognized, at the present day, as having its origin in a morbid state of the whole animal system. Its external symptoms, though variously influenced by the age, temperament, texture of the skin, and other circumstances of the individual, are distinct and sufficiently recognizable by the experienced practitioner. But in what the internal diseased condition consists is not understood; and yet it exerts so important an influence over the disease, that accurate knowledge of it is indispensable to its treatment on sound principles. Whatever may be the light in which we may look at the character of its remote or predisposing cause, it may be safely alleged that its phenomena are explicable only by regarding them as dependent on general morbid changes of the whole animal economy. The universality of this peculiar condition, necessarily modifies the structure of every part, the nature of every fluid, and the qualities of every secretion; but it is reasonable to believe that one part is affected more than another. Of all the constituents of the human body the blood, from its quantity, from its complicated formation, and from its pervading and entering into the composition of every part of the frame must be considered not only most liable to morbid change, but as necessarily exerting the greatest reciprocating influence over the other tissues of the system. This important fluid has been subjected to many laborious chemical analyses with a view to ascertain the secondary and ultimate elements into which it may be divided; and enquired into pathologically to determine its quantity and composition as it exists in the different parts of the arterial and venous systems under various circumstances of disease. Examined according to these modes, it is stated by Andral to be redundant in serum, and deficient in fibrin and coloring matter, and to exist in a conjested state in tubercular phthisis. Other physiological chemists represent it as abounding in fibrin as well as in serum, and to be deficient in power to transfer nutriment to the tissues.

It is probably very difficult to fix on any state of the blood which is absolutely essential to the pathological condition constituting the phthisical diathesis; yet there is one point of view, both in its healthy and diseased state, from which it has hitherto escaped observation, from which it ought to be examined, and which is unquestionably of importance enough to demand our special attention. I allude to the different electrical states which venous and arterial blood invariably bear towards each other. That these fluids should stand in a negative and positive electrical relation to each other, is in conformity with the universal law, so far as examined, that all bodies possessing different qualities, bear this relation, and it is easily determinable by experiment. From the nature of the subject, as well as the disadvantage of

residence and otherwise under which the writer labors, he has been able to prove this fact, by direct experiment, only on healthy blood; but as the effect of remedies is an acknowledged criterion for aiding in ascertaining pathological conditions, it will be shown, hereafter, from this source, that the electrical relations of venous and arterial blood are more exalted in phthises than in health. Although I readily admit that this is an indirect, and may seem a far fetched mode of ascertaining a fact, yet it must be conceded, that the progress of physic as a science, as well as its advancement as a practical art, is materially dependant upon our knowledge of the effects of remedies.

To demonstrate this fact experimentally, I, in the presence of another physician, poured (in the absence of more appropriate apparatus) into two leyden jars, mounted as usual, equal quantities of fresh venous and arterial blood, obtained from the jugular vein and carotid artery of a lamb. Upon bringing the balls of the connecting rods in proximity to a galvanometer, it was found to be senisbly affected. When to each of the fluids an equal weight of common salt was added, so as to increase their energy without altering their relative properties, a much greater deflection of the needle took place. Which of these is the negative fluid, and which the positive, it would not be difficult, by a suitable modification of the apparatus, to determine; but which, from the inadequacy of means within my power, I am compelled for the present, to leave a subject of inference. If in resting on the conclusion I have drawn, I should seem to deviate from the strict path of demonstrable fact, I must repeat, what in a future communication will be more dwelt upon and explained, that I am borne out by a practical experience of the result of remedies. The experiment advances us one step in physiological science, and affords ground for the hope that by this, and other processes conjoined, we may be able to detect in the blood those changes which indicate the tubercular diathesis, and through them a certain remedy for consumption.

The most prominent phenomenon in phthisis pulmonalis is the production of the morbid growth termed tubercle. The pathology of this extraordinary substance has so often, of late years, been investigated and brought under notice that detailed enquiry into the subject, except so far as it may seem to require views different from those generally adopted, would be quite superfluous. But careful and minute as here been the researches into the morbid nature of tubucle, it is still a subject on which there appears to be a great diversity of opinion, and to offer much light for further elucidation. Notwithstanding the ambiguity, and, indeed, obscurity which involves their origin, I am of the opinion of a large number of pathologists from Sylvius de la Bœ to Broussais, that they commonly arise in phthisis, in a strumous degenerescence of the minute lymphatic glands of the lungs. Considered in a general point of view this origin is in conformity with analogy; for it is far more in accordance with morbid actions in the animal system to enlarge natural bodies than to create new growths. The opinion is supported by the character and state of the constitution in which tubercular consumption and scrofula occur; which seem to be not simply congenerous but identical. Like the strumous knots on the lymphatics, which may so frequently be felt on the side of the neck of scrofulous subjects, the tubercles of consumption do not, at commencement, necessarily produce any symptoms of disease; nor is their subsidence or removal a check to the course of either disease. The analogy of the morbid process in both maladies is likewise, in favour of the view that both diseases belong to one class. Finally, the position is strengthened by recurring to that process of reasoning deducible from the effects of remedies, and indispensable to a perfect knowledge of many departments of pathology; by which we find that the most successful treatment of scrofula is that which has been found to have the most salutary effect in controlling consumption.

Tubercles, though a disease of the glandular system, seem to arise in those of the serous membranes far more frequently than in those of any other tissue. They are sometimes found in mucous membranes; but in this case, it would seem that, in the majority of instances, their formation is connected with and dependent upon the serous envelopes of the lymphatic glands pervading the tissue. It is not intended to deny that the peculiar matter constituting tubercles may be poured out upon the free surfaces of both serous and mucous membranes; but we should say that its deposition on these membranes is always the result of some extraordinary exciting cause, such as bronchitis, pneumonia, pleurisy, rheumatism, or sometimes common inflammation. Under such circumstances, occurring in a tubercular diathesis, it is possible for either tissue to become the seat of the deposition. Its general prevalence in serous, and its occasional occurrence in mucous tissues may form a ground for a new division of phthisis into two kinds—the one with tubercles of serous tissues, the other with tubercles of mucous membranes—each with a different origin and requiring a differ-

ent mode of treatment. If as is probable the tubercular matter is separated from the blood, and deposited in the glands, as also in the free surfaces of serous and mucous membranes, may it not follow that its presence in one tissue, and its absence in another depends on the attraction induced by the electrical states of these tissues? That there should be a distinction in disease based upon this condition of these membranes is rendered probable from the curious researches of M. Donne, who states, as the result of experiment, that mucous membranes are decidedly electro-negative, and serous membranes electro-positive, and that these relations are sometimes changed by disease * According to this view the chemical nature of the secretions may alter in the same tissue, and in consequence must necessarily react on and modify the different functions of the system. In the tubercular diathesis when the one membrane, which is commonly the serous, is in the state most favorable for attracting from the blood tubercular matter it will be deposited upon it; when the other is in this state it will equally command the preference. Considered merely in this electrical point of view, it is not impossible that we may find the only explanation that the subject admits for the localization of the disease in one tissue, and its absence in the others. Certainly if M. Donne's experiments are correct there is unquestionable ground for supposing that foreign matter in the blood, may be more readily determined to and precipitated upon one membrane than another, while peculiar electrical states of the membrane or the blood may reverse the operation. Remote from ordinary apprehension as this explanation may seem, it is one of many phenomena in phthisis that can be made clear only on physical principles, while it will be seen hereafter, that this mode of explanation affords important practical indications.

In whatever organ tubercles originate, the serous tissue occupies, in our experience, the prevailing situation, both as regards the extent and the frequency of their deposition. I have dwelt upon this fact because it forms a circumstance which is of great value in a diagnostic and therapeutic point of view. It must not be overlooked that the minute ramifications and the frequent proximity of both serous and mucous membranes, may and do render it difficult to determine anatomically to which of the tissues the presence of tubercular matter belongs; or, if there are occasional complications, in which it preponderates. To be able to decide between them is of importance, because the influence of our peculiar therapeutic agents is limited to tubercles and the serous tissue, and the evidence of disease of these structures is the only indication for their employment. This decision, we have shown, in our preceding number, can be made with unerring accuracy by means of the diagnostic symptom afforded by painful sensibility to pressure in the spinal region when serous membranes are diseased, and its absence in all affections of the mucous membranes.

Tubercles, then, to which so much importance has been atrached that they have given name and character to Consumption, are but a secondary effect—the result of a cetain diseased, and, in all probability, fixed electrical condition of the system, in which a peculiar matter, forming them, is repelled from the extreme vessels, and attracted to the glands of the organs, the serous and sometimes mucous tissues of the body. Though their remote or predisposing cause is, manifestly, a diseasad state of the general system, their immediate production is as certainly dependent on some abnormal action of the vessels of the part in which they are deposited. The nature of this action, like the condition of the general system, can in the present state of our knowledge only be conjetcured, and yet they are both so important that the first steps towards treating the disease upon sound principles should be to ascertain their precise state. In a strictly pathological view, few or no diseases can be apparent without an evident implication of the capillary vessels; and it is, therefore, impossible without a knowledge of their condition to establish any principle on which ought to be based the application of therapeutic means. This knowledge is not easily attained in phthisis; but much that is accurate may be deduced from the appearances in morbid dissections contrasted with the phenomena connected with the functions of the parts in health.

In order to understand, with an approach to truth, a subject so remote from the illustrations of common experience, as the actions of a capillary vessel, whether in a healthy or diseased tissue, it is necessary to adopt some hypothesis with regard to the nature of its powers, or the subtle influence by which it manifests its vital properties. Nearly all physiologists, acting upon this necessity, have adopted, as a clue to guide them in an explanation of the phenomena of capillaries, the opinion that they are endowed with the power of contracting on and expelling their contents; and have as generally denied to them any opposing force, such as that of expansion, &c. The condition which enables them to be refilled with their natural fluid, is considered one of simple relaxation. Now,

* See Motive Power of the Human System. By H. H. Sherwood, M. D. Page 35, and Dissector, Vol. 1st, Page 164.

it is quite obvious that the latter condition as applied to capillary vessels, cannot exist: and if it could, it is highly probable that, even conjoined with contraction, it would not present us with the real process, or mechanism of capillary action.

In this instance, as in so many others of a similar nature, the human mind, in its effort after knowledge has overstepped the true point of wisdom, by attempting to refine too much on the supposed simplicity of nature. The physical axiom that in reasoning upon natural causes, we are to assign no more than are sufficient to explain the phenomena is undoubtedly true; but from its tendency to make us take too limited a view of causes, it has, in many instances, acted in retarding instead of advancing knowledge. Recent researches have rendered it highly probable that Newton himself was misled by the overweening propensity of human nature to simplify.* Though Brewster, in his life of this illustrious man, has furnished some evidence that he shrewdly suspected motion must be the result of two constantly acting forces—the attractive and repulsive—this error of our nature led him to a general explanation of its phenomena by the supposed laws of one. It is true, that in accounting for his centrifugal motion, it presented such difficulties, that he was compelled to call in the aid of a primary impulsion, and that of so wildly conjectural a character as scarcely to entitle it to be classed with the emanations of a philosophical mind. In an analogous department of physical science, Franklin was led aside from the true path of knowledge, by an over effort at simplicity in reducing the two forces of electricity to one—in a plus or minus state. The idea of a single fluid or force which, when accumulated in excess in bodies, tends constantly to escape, and seek a restoration of equilibrium, by communicating itself to any others where there may be a deficiency, is that which occurs most naturally to a mind charged with the notion that cause is necessarily a unit, and the natural condition of bodies a state of rest. But the phenomena accompanying the motion of electricity from body to body, and the state of equilibrium it affects under various circumstances appear to require the admission of two distinct forces antagonist to each other, each attracting the other and repelling itself. This view of electricity, it has been proved by M. M. Coulomb and Poisson, admits the application of strict mathematical reasoning to the conclusions we would draw from it—a character which must give superior value to every theory, and indispensable to the perfect proof of one in any department of physical science. On the other hand M. Prevosts' theory of the radiation of heat, which conceives that this effect of caloric goes on at all times, and from all substances, whether their temperature be the same or different from that of surrounding objects, has avoided the error of Newton and Franklin, while it affords a beautiful illustration of the constant operation of the two forces of repulsion and attraction. Though the peculiar actions which we are called upon to contemplate, by an examination of the above theories, may be referable to other powers inherent in matter, yet M. Prevost s theory furnishes a far better explanation of the action of attraction and repulsion on matter, as well as all the phenomena connected with the radiation of heat, than the supposition of a single force, whether attractive or repulsive.

If the most profound philosophers have been led into doubt or error in regard to the primary laws of a department of science which is considered so simple and comprehensive as that of natural philosophy, how much more difficult must it be to trace with accuracy the operation of those apparently subtle mysterious principles of motion which regulate the actions of animal life. Living matter exhibits all the physical properties which are found in inanimate substances, and pays implicit obedience to the same laws; but in addition to them, it is superadded, they are endowed with a set of properties too complicated and intangible to admit of the principles of inductive philosophy being applied to their investigation. To these properties have been applied the vague terms, vital principles, vital actions, powers, faculties or forces. In a simply philosophical point of view the chief difference between organized and inorganic bodies is, that the laws of the former have never been subjected to the rules of calculation—a process to which the latter have been, or are susceptible of being. Obscure and inexact as the subject unquestionably is, the philosophical mind cannot doubt but that, if it could be divested of the intricacy with whioh, from our confused method of looking at it, it appears endowed, it would be found as dependent on precise and comprehensive laws as those of gravitation, heat, electricity or galvanism. Indeed, the late rapid advance of phisiological science seems to countenance the opinion that our ability to take this simple view of the subject is fast approaching. In conformity with this view it is expected that vital laws will be found to be nothing more than a combination of those that give motion to matter in general. If we can once trace a connection betwen the vital principles and

* See Dissector. Vol. 1st, Page 136, et Sequelæ.

physical and chemical laws, we shall have attained data by which we may arrive at sufficiently accurate knowledge of circumstances to predict a result, subject the phenomena of the functions to calculation, and thus subvert the only important difference between the laws of organized and unorganized matter. It would be essential to the solution of the question this enquiry involves, to determine whether vital motion consists in the simple principle of contractility, or depends upon two forces—the centripetal and centrifugal, contraction and expansion, attraction and repulsion *quocunque nominibus gaudes.*

On the ground of mere probability it is certainly as reasonable to suppose that there is a vital expanding force as that there is a vital contracting one, while it receives as much support from every known fact connected with the motions of a living body. Nor am I aware that there are any in opposition to a function which afford an easier explanation of, and seems to be necessary for fulfiling the duties of the living state. If it be said that there are thus two theories by which physiologists may explain the facts connected with living phenomena with equal probability, and that consequently neither of them can be true, we must then direct our attention to the discovery of some other and probably more simple law, by which without the intervention of either media, the actions of the animal functions may be understood. But until this is discovered we must continue to employ the ideas and use the terms which constitute, at present, the science of physiology.

The evidence of the operation of a vital expanding force is perhaps most apparent in the motions of the heart. It is, indeed, so evident that the laws of expansion and contraction act upon this organ, that many physiologists, who are otherwise advocates for a unity in vital action, have been compelled to acknowledge their existence. A number of physiologists have shown, by direct experiment on living animals, that positive effort, and not simple relaxation, is exerted at the time of the dilitation of the cavities Who that has taken into his hands the heart of an ox, after removal from the body, and felt it dilate under his pressure, can doubt that it has an active power of expansion? In a case of monstrosity, reported by Dr Robinson, the evidence of this force was strikingly shown in the human system; for he found that the power exerted in the diastole of the heart was equal to if not greater than that of the systole.*

(*To be continued.*)

* Dunglison's Physiology, Vol. 2, Page 163.

(Communicated for the Dissector.)

Thomasville, Geo, Nov. 27th, 1845.

Dr. Sherwood,

In the October number of the N. Y. Dissector, a letter to the Editor was noticed from De Roy Sunderland, containing an assertion relative to the *alleged Revelations* of *Emanuel Swedenborg*, so entirely opposed to the real opinions of all receivers of his doctrines, that it would seem to require, that a fair statement should follow, containing some of the views of this class of christians on the subject, which are undoubtedly entitled to respect. W. H.

Swedenborg not a Clairvoyant.

That many even among the learned, should have considered the illustrious Swedenborg as a gifted *Clairvoyant*, is the natural consequence of imperfect knowledge or unjust appreciation of the real nature of his mission.

Hence it is, that the extraordinary claims of that great and good man have been so disregarded, and his wonderful relations of Heaven and Hell classed in the same category with the *dreaming delusions* of *French Prophets*, *Mormons* and other impostors of a like character.

But with those who are more deeply imbued with the spirit of his writings, who have felt the force of the truth of his "beautiful theories," among whom are to be found several of the profoundest thinkers of the age, a wide distinction between the state of his mind, and that of a mere *clairvoyant* or *somnambulist*, is clearly perceived. For, the duties of the station, which his followers from the evidences afforded, are induced to believe he was called to fulfil, as the herald of a new dispensation of Divine Truth, are seen to require a far more exalted state than it is possible for a mere *clairvoyant* ever to arrive at.

'Tis true, that a conviction of the truth of Swedenborg's statements, as to the *source* from which he claims to have derived his knowledge of Spiritual and Divine things, (the possibility of which disclosure will not here be touched upon,) requires to be rationally admitted, in order to obtain a full and perfect understanding of his doctrine. It being of importance that as correct an idea as possible, should be entertained of the psychological state into which Swedenborg was brought, in order to his reception of the disclosures vouchsafed him, a few extracts from his writings shall here be appended, containing his own statements on this head, which have never been disproved, and are undoubtedly entitled to attention.—"I am well aware that many who read the following pages, and the *Memorable Relations* annexed to the

chapters, will believe that they are fictions of the imagination: but I protest in truth that they are not fictions, but were truly done and seen; not seen in any state of the mind asleep, but in a state of full wakefulness; for it has pleased the Lord to manifest himself to me, and to send me to teach the things relating to the New Church, which is meant by the New Jerusalem in the Revelation; for which purpose he has opened the interiors or my mind and spirit; by virtue of which privilege it has been granted to me to be in the spiritual world with angels, and at the same time in the natural world with men, and this now for twenty-five years." Congugal Love, 1.

Again, in a letter to the King,—"The Lord our Saviour manifested himself to me in a sensible personal appearance, and has commanded me to write what has already been done, and what I have still to do; and he was afterwards graciously pleased to endow me with the privilege of conversing with spirits and angels, and to be in fellowship with them. It is not in my power to place others in the same state in which God has placed me, so as to be able to convince them, by their own eyes and ears, of the truth of those deeds and things I publicly have made known. I have no ability to capacitate them to converse with angels and spirits, neither to work miracles to dispose or force their understandings to comprehend what I say. When my writings are read with attention and cool reflection (in which many things are to be met with as hitherto unknown,) it is easy enough to conclude, that I could not come to such knowledge but by a real vision, and by conversing with those who are in the spiritual world. This knowledge is given to me from our Saviour, not from any particular merit of mine, but for the great concern of all christians' salvation and happiness."

One extract from the work on Heaven and Hell shall be given. "For the sake of illustrating the fact of man's being a spirit as to his interiors, I will relate a case from experience, as to the manner in which man is withdrawn from the body, while in the natural world. The case is this: Man is brought into a certain state, which is a middle state, between sleep and waking, and when he is in this state he cannot know any other than that he is altogether awake, all his senses being awake as in the highest wakefulness of the body, both the sight and hearing, and what is wonderful, the touch, which, on this occasion, is more exquisite than it is possible to be in the wakefulness of the body; in this state also spirits and angels are seen altogether as to the life; they are likewise heard, and, what is wonderful, touched, as in this case, scarcely any thing of the body intervenes: this is the state which is called being *withdrawn from the body*, and of which it is said by one who experienced it. *that he knew not whether he was in the body or out of the body.* Into this state I have been let only three or four times, that I might just know what was its quality, and at the same time that spirits and angels enjoy every sense, as doth man also as to his spirit when he is withdrawn from the body." H. & H. N. 439—'40.

Hence says a distinguished writer, "The state above described, is so strikingly analogous with that produced by Mesmerism, that it can scarcely be regarded otherwise than as an actual developement of the interior condition brought about by that mysterious agency. This, however, is merely o e of hundreds of intimations scattered throgh the writings of Swedenborg, going to show that he was well acquainted with the *phylosophy* of that remarkable class of phenomena, though the name was of course unknown to him. as he died several years before Mesmer went to Paris to divulge his discoveries. The coincidence referred to has led many to suppose that Swedenborg's own state was merely that of a gifted *Clairvoyant*, and thus implied nothing supernatural. But his own words assert a clear distinction, as this was a state into which he was only occasionally "*let*," that he might learn its nature, his ordinary state being altogether of a higher character. Such an imputation is a virtual disparagement of his claims, which his followers unanimously repudiate. At the same time they readily admit that the Mesmeric trance is a sufficiently near approximation to his to prove its possibility as a psychological fact, and they gratefully accept the evidence which the Lord's divine providence is thus unexpectedly affording, to the very senses of men, that neither they nor their illustrious teacher are merely *dreaming* of an impossible intercourse with the spiritual world. If multitudes are so staggered by the simple *facts* of Mesmerism, what will be their surprise should the truth finally turn out to be, that the *design* of these marvellous manifestations is no other than to pave the way for the universal admission of Swedenborg's claims?"

"In their structure, warts differ altogether from corns, as they arise directly from the true skin, and appear to be composed of an elongated bundle of its papillæ, enclosed in sheaths of cuticle, whereas corns are a disorder of the epidermis alone."

On the Coincidence of Tubercle and Cancer.

It has been stated that tubercle and cancer mutually exclude each other. LIBERT, however, has not only met with a certain number of cases where the two diseases existed together, but has convinced himself that one in no way arrests the march of the other. In proof of this he communicates the following facts:—

1 A child, aged four years had encephaloid tumours in the right kidney, and was also affected with cerebral and pulmonary tubercles.

2. A woman, sixty years of age, had schirrhous tumours in the mammary glands, in the liver, and in the lungs. At the same time she had softened tubercles at the summit of the left lung.

3. The lungs of a woman, aged sixty-two years, contained tumours in various stages, and even several cavities in the superior lobe of the right lung. In the peritoneum existed encephaloid masses, together with numerous tubercles. The cancer had all the form of encephaloma. The tubercle had, throughout, the form of the yellow or caseous infiltration. The microscope enabled him readily to distinguish the corpuscles of tubercle from those of the encephaloma, and to determine the evidence of their existence.—Muller's Archives, 1844, Hift. 2.

Dr. MARTIN, of Munich, has more recently related the following case:—A woman, aged fifty-four, died in the Poly-Clinic, of ascites. The summit of the right lung was occupied by a tubercular cavern. The apex of the left lung contained several calcareous tubercles, the size of peas and beans. The cavity of the abdomen was distended with a turbid flocculent serum; the omentum was thickened. Externally, it was covered with masses, of exudation; internally, it was yellowish, pultaceous, and, under the microscope, it presented the characteristic appearance of tubercle in its different stages. The intestines and walls of the abdomen were more or less united together; the greatest portion of the uterus was composed of a whitish mass, the size of a man's fist; some portions of it were of cartilaginous consistence, others soft and fungoid, and its centre was more or less diffluent. Under the microscope, it presented caudated cells, with nuclei and nucleoli, numerous oil globules, round cells with and without nuclei, and crystals of cholesterine.—Allgeimeine Zeitung fur Chirurgie, &c., 1844, No. 51.

These are examples of tuberculosis in which the disease of the lymphatic system has in some places, extended to the contiguous tissues and developed the cancerous degeneration.—*Ed. Dis.*

SWEDENBORG'S ANIMAL KINGDOM.

Introductory Remarks by the Translator,
JAMES JOHN GARTH WILKINSON,
Member of the Royal College of Surgeons of London.

[*Continued from page* 204.]

Thus in the living body sense and motion are universal, and mutually suppose each other, just as is the case in the mind with the will and the understanding. The deprivation of anyone of these, predicates in any part of its own sphere, amounts to the death of that part, and either involves its elimination, or the death of the whole system.

But as every part of the body is a free individual, dependent upon the whole, and yet independent in its own sphere, so the body itself, although sustained generally by the external universe, in its interiors is altogether exempt from the power and jurisdiction of the latter. It is so far under the mundane law of gravitation, that we are forced to make our dwelling-place, build up our abodes, and institute our communities, upon the soil of the earth: but intrinsically the microcosm dominates over the macrocosm. The substances and fluids in its interiors do in fact gravitate, although not to the centre of the planet, but to that of the particular motion in whose current they are involved. This centre of motion may be either upward or downward, speaking according to those relations as existing in the surrounding world; for in the body the centre of motion is always the upward; for the body itself is nothing but a stupendous series of motions, in whose everlasting currents its solids are ranged and its fluids are fluent. When any substance has attained one centre of motion, it is then at rest in the viscus or organ in whose sphere it was moving: but that very centre is only a point in the circumference of another sphere, to the centre of which the substance is now again drawn and impelled; and so forth. In short, all things in the bodily system are tending from centre to centre, and do not begin to tend to the centre of the planet, until they arrive in the last, lowest, and most general centre of motion of the microcosm, where a mixed action commences between it and the macrocosm, as is the case in the bladder and the rectum. In illustration of this multiple centripetency, the fluids in the gyrating intestines tend first to their parietes, and then into their cellular coat, which is their centre of motion: this centre of motion is the circumference of the mesentery, which now, by its attraction, draws the fluids to

its most quiet station or centre of motion, namely, to the receptaculum chyli. Here again, in reasoning from the external world to the internal, we may see the use of cultivating in the mind a principle of flexibility, which will enable us to modulate from the order of one sphere into that of another; for each individual subject has its own essence and peculiarities which must never be overlooked, and although formed on the model of the universe, derives its determinations from its own principles, as much as the universe does from its own principles. All things are under the law of gravitation, but the gravitation of one is not the gravitation of another, because the motion is not the same, nor the end for which the motion is instituted.

Thus in the body we have a perpetual illustration of the law, that fluids always tend from unquiet to more quiet stations; analogous to the rule in physics, that fluids always find their level; and to the principle in the spiritual world, that every man gravitates, "per varios casus, per tot discrimina rerum," to the final state of his ruling love.

This may give us some idea of the body as a machine of ends, in which there is not the least point but flows from a use, and tends to a use, and so through perpetual revolutions. For every part of the organism is a centre in itself, in that the whole body conspires to supply and maintain it; and a circumference, since being only a part, it yields its uses primarily to the whole, and only secondarily to itself. The external universe, in all its spheres, communicates with the body by a similar law. These centres, arranged according to the laws of forms, order, degrees, and series, constitute diameters and circumferences, in a word, make up the human frame, which therefore is a world of centres, or speaking generally, is the central work of creation. For there is nothing in nature but man, to which all things can minister a use.

The body is exempt not only from the gravitation but from the chemistry of the circumambient world. It has its own heat, of which there are various degrees, and which is as distinct from the heat that vivifies external nature, as its gravitation is distinct from the gravitation of nature. It has its own distinct imponderable fluids, its own atmospheric elements, its own fluids, and its own solids. It has its own complete organic chemistry, in which organization is the only end. No chemical changes that occur in the extremes of the system, (where a mixed action commences, of the microcosm and the macrocosm,) no chemical analysis of the excrements or the excretions, no experiments on the dead fluids or tissues, empowers us in the slightest degree to reason to similar chemical effects in the interiors of the body. The organs of the body themselves are the only workmen, appliances, and laboratories, by which and in which organic chemistry is performed; the contemplation of those organs and their products by the rational mind is the only path to the knowledge of such chemistry. In this chemistry there is indeed decomposition or decombination, but instead of a destruction of form and series, a purification from those elements that mar their harmony, and in the decombination, an evolution of higher forces, and an elevation into a more perfect order similar to that of the compound; and last of all, invaribly a recombination. But to take a part or product of an organic being, and subject it to destructive analysis,—such a procedure can only be termed disorganic chemistry, as expressing that it is the very reverse of what goes on in the body. For this process is analogous to putrefaction, and not to formation.

Throughout nature every general is made up of its own particulars. These particulars are its unities, and constitute the limits of its series. For instance, the pulmonary vesicles are the unities of the lungs, or the essential parts from which the pulmonary series commences: the vessels and nerves that construct these vesicles are not the unities of the lungs, because they are not peculiar to the lungs, but form the groundwork of the whole body. Men and women are the unities or atoms of human society, not that they are indivisible, but that they are the simplest forms of their own series. The unities of each organ in the body are so many little organs homogeneous with their compound: the unities of the tongue are little tongues; those of the stomach are little stomachs; those of the liver are little livers; and so forth. These leasts or unities are not necessarily identical with their compounds in form, but only in function; for in the field of leasts (in campo minimorum), similitude of use determines homogeneity, and similitude of shape is of no consequence. As every general is the sum of its particulars as a form, so it is also as a power, force or cause. The function represented by an organ is performed more freely, perfectly, and efficiently, by its unities or leasts, than by its common form. For the leasts are the subjects of higher influences, they are more proximately related to the series above them from which the power of the whole is derived, more easily exempted from the laws of gravity, and more gently and distinctly recipient of external forces. They are nearer to the substance of substances, and as it were more divine. They are the all in all of their own series; the essences of which the general is the

form; the actives of which the compound is the passive. In the expressive language of Swedenborg, "all power resides in the least things," and again," nature is greatest in what is least, and least in what is greatest." The field of leasts is the field of universality, where an action communicated pervades the entire sphere as though it were but a point of space; for the more internal the sphere, the more intense the association. The stream of creative influx enters the compound through the gate of its leasts. The difference between the latter and the former is as between the ideal and the real; the ideal being represented in the leasts; the real, with its complications, and subservience to secondary laws and external circumstances, in the compound. Let us recur for an example to the highest and simplest instance; to the case as existing between an individual man, and a society or a nation. In the individual, the body is the very manifestation of the mind; the servant is the obedient and accurate image of the master. The will, as the ground of activity, flows through a series of intellectual means evoked from itself, with the smallest diminution of force and efficiency into the bodily actions, there being no separate or self interest to absorb it either in the understanding or the body; and thus the monarchy of the first principle is pervading, absolute, and complete. But how different are the actions of a society or compound individual; its interests how divided; its instruments how insubordinate; how great the distance between its legislative and executive, its will and its actions; through what inept meditations the former must pass into the latter; what an absorption is there of the first force in the passage; what a refraction and dispersion of the intentions of the government before they can ultimately be applied to the governed. Now the same is true with the simples and compounds of every series in creation, as with the simples and compounds of humanity.

We come now to speak of the formation of the body, which takes place by a gradual descent from the higher to the lower forms, or by the perpetual derivation, composition, and convolution of simples. Speaking in generals, the spiral form may illustrate the progression. For this purpose let us assume the primary fibre of the brain, without going deeper, or to the spherules of which that first fibre is composed. This fibre, named by Swedenborg the fibre of the soul, involves the spiral form and force, and carries the animal spirit. By its evolution, or what amounts to the same thing, its circumvolution into a new spiral, it forms the nervous fibre, which carries the true purer blood, or nervous fluid; and this again (for it likewise is a spiral force), by its circumvolution generates the blood-vessel, which carries the fluid of the third degree or sphere, namely, the red blood. Hence every artery involves a triple series of circulations, wonderfully alternating with each other. For the nervous fibre, in its expansion and constriction, is precisely alternate with, or the inverse of, the primary fibre; and the same relation of harmonious discord subsists again between the blood-vessel and the nervous fibre. Thus the cause of expansion in the one sphere, is the cause of constriction in the sphere above it: to convert the expansion of the blood-vessels into constriction, the nerves are approached by an expansile agent adapted to their own subtle and active nature; for by the law of inversion, the expansion of the one—the constriction of the other. The play of this inversion, in its perfect form, is a condition of health; but in man's present state the equilibrium is too often lost, there being, in the words of Swedenborg, "a perpetual battle and collision between the three spheres of the body, namely, between the blood and the spirits, and between the spirits and the soul."

The last subject on which it will be necessary to say a few words in this department of our remarks, is the distinction between the life before birth, and the life after birth In the fœtus, nature, that is to say, the soul, as an end and formative power, alone rules, and all things proceed in natural order, from the highest or innermost sphere to the lowest or outermost, by the synthetic way, or a priori ad posteriora. But after birth, the will rules over nature, and drives her from her throne, and all operations proceed in inverse order, by the analytic way, or a posteriori ad priora. These opposite states require a medium to reconcile between them, which medium is supplied by the opening of the lungs; the animations of the brains being synchronous with the respirations after birth, but with the pulsations of the heart during uterine life. In the fœtus, the higher spheres act, and the lower react; whereas after birth the lower act, and the higher only react. In the former case all operations are universal and most individual, conspiring by intrinsic harmony, and in perfect freedom, and proceed outwards from the brains; in the latter they are in the first place general, and proceed inwards to the sphere of particulars through the coverings, membranes, or bonds, of the body and its organs. But the reader will not acquire a satisfactory understanding of this wonderful doctrine by anything short of an attentive study of Swedenborg himself.

There are certain organs in the body which have always been looked upon as the oppro-

bria of physiologists, who indeed appear to fail wherever nature does not speak by an ultimate fact; that is to say, wherever there is a clear field for the understanding as apart from and above the senses. The absence of an excretory duct is sufficient to consign an organ in perpetuity to the limbo of doubt. Surmise indeed respecting its functions is still allowed, but proof is considered impossible. We might as well pretend to know the nature of the world of spirits as to know the functions of the spleen. We should be as rank visionaries in the one case as in the other, since we should be placing an implicit dependence upon reason, in a matter where the bodily senses give no direct information. Swedenborg did pretend to know both, and ill he fared in consequence with the scientific world, and with the first reviewer of his "Animal Kingdom" in the "Acta Eruditorum Lipsiensia." They said he was "a happy fellow," and laughed outright. Without stopping to do more than direct the reader's particular attention to his doctrine of the spleen, the suprarenal capsules, and the thymus gland, as being satisfactory and irrefragable, it may be wondered why the physiologists should single out those organs as especial subjects whereon to make confession of ignorance. There is modesty in their confession, but it ought in justice to have embraced more. These organs are closely connected to others, and ignorance respecting them involves ignorance respecting the others also. Connexion of structures in the body is also connexion of functions, forces, modes, and accidents. If the function of the spleen be unknown, so precisely to the same extent are the functions of the pancreas, the stomach, the omentum, and the liver; if the functions of the succenturate kidneys be unknown, so are the functions of the diaphragm, the kidneys, the peritonæum, and indeed of the whole body; for the body is a continuous tissue, woven without a break in nature's loom. To be ignorant of a part, is to be ignorant of something that pervades the whole. The disease that affects the spleen, affects the whole, for the spleen is in all things, and all things are in the spleen. To recur to the liver: what is the amount of knowledge respecting its functions? Precisely this, that the hepatic duct proceeds from it, and carries bile into the duodenum. The bile and the duct are the sum and substance of the modern physiology of the liver; it is prorsus in occulto why either bile or duct should exist. The truth then is, that there is as much known about the liver as about the spleen, and no more; in the one case it is known that there is an excretory duct, in the other that there is none. Alas! the scientific mind is steeped in the senses, and is the drudge of their limited sphere.

Swedenborg's analysis is professedly supported upon the foundation of the old anatomists, who flourished in the Augustan age of the science. At his time nearly all the great and certain facts of anatomy were already known; such for example as the circulation of the blood, and the existence of the lymphatics and the lacteals. Anatomy, too, had long been cultivated distinctly in the human subject, and was to a great extent purified of the errors that crept into it at first from the habit of dissecting the lower animals. Many of the old anatomists were men of a philosophic spirit, who proposed to themselves the problem of the universe, and solved it in their own way, or tried to solve it. They were the first observers of nature's speaking marvels in the organic sphere, and described them with feelings of delight, which shewed that they were receptive of instruction from the great fountain of truth. They worked at once with the mind and the senses in the field of observation. There was a certain superior manner and artistic form in their treatises They believed instinctively in the doctrine of use. They expected nature to be wonderful, and supposed therefore that the human body involved much which it required the distinct exercise of the mind to discover. Hence their belief in the existence of the animal spirits; a belief which they based upon common sense, or what amounts to the same thing, upon the general experience of effects; at the same time that they recognized its object as beyond sensual experience, and not to be confirmed directly by sight.* They used the microscope to assist and fortify the eye, and not to substitute it, or dissipate its objective sphere. Even the greatest among them, who addicted himself to the bare study of structure and the making of illustrative preparations, expressed a noble hope that others would complete his labors, by making as distinct a study of uses.†

But the picture is not without its darker side. Although they had strong instincts and vivid glimpses of truth, yet when they attempted to carry their perceptions out, they degenerated into mere hypotheses, and systems of hypotheses. They did not ascend high enough before they again descended, nor did they explore nature by an integral method; and hence they had no means of pursuing analogies without destroying the everlasting distinctions of things. They stopped in that midway where scepticism easily overtook them, and where, when that

* See Hesther. † Ruysch.

enemy of the human intellect had once penetrated, there was no possibility of maintaining themselves, but the fall to the sensual sphere was inevitable. The reason of this was, that they had not conceived the laws of order, and therefore could not claim the support which nature gives to all her truths. Nay, it was so impossible that they should proceed further without the tincture of a universal method, that their minds came to a stand still; the truths already elicited were rendered unsatisfactory, and mere progress demanded their fall. They fell therefore, and a race which knows them not is dwelling now in tent and hut among their mighty ruins.

At the very crisis of their fate, Swedenborg took the field for the end that has been already mentioned, and at once declared, that unless matters were carried higher, experimental knowledge itself would perish, and the arts and sciences be carried to the tomb, adding that he was much mistaken if the world's dsstinies were not tending thitherwards. The task that he undertook was, to build the heaps of experience into a palace in which the human mind might dwell, and enjoy security from without, and spiritual prosperity from within. He brought to that task requisites, both external and internal, of an extraordinary kind. He was a naturalized subject in all the kingdom of human thought, and yet was born at the same time to another order and a better country. To the various classes of schoolmen he appears never to have attached himself, excepting for different purposes from theirs. He pursued mathematics for a distinctly extraneous end. As a student of physiology he belonged to no clique or school, and had no class prejudices to encounter. In theology he was almost as free mentally, as though not a single commentator had written, or system been formed, but as though his hands were the first in which the Word of God was placed in its virgin purity. Add to this that he by no means disregarded the works of others, but was learned in all useful learning. He had a sound practical education, and was employed daily in the actual business of life for a series of years He was thoroughly acquainted with mechanics, chemistry, mathematics, astronomy, and the other sciences known in his time, and had elicited universal truths in the sphere of each. From the beginning he perceived that there was an order in nature. This enabled him to pursue his own studies with a view to order. He ascended from the theory of earthy substances to the theory of the atmospheres and from both to the theory of cosmogony, and came gradually to man as the crowning object of nature. He brought the order of macrocosm to illustrate the order of the microcosm. His dominant end, which he never lost sight of for a moment, was spiritual and moral, which preserved his mind alive in a long course of physical studies, and empowered him to see life and substance in the otherwise dead machinery of the creation. He was a man of uncommon humbleness, and never once looked back, to gratify self-complacency, upon past achievements, but travelled onwards and still onwards, "without fatigue and without repose," to a home in the fruition of the infinite and eternal. Such was the competitor who now entered the arena of what had, until this time, been exclusively medical science; truly a man of whom it is not too much to say, that he possessed the kindliest, broadest, highest, most theoretical and most practical genius that it has yet pleased God to bestow on the weary ages of civilization.

Swedenborg perceived that the permanence of nature depends upon the excellence of its order; that all creation exists and subsists as one thing from God; that divine love is its end: divine wisdom, its cause; and divine order, in the theatre of use, the simultaneous, or ultimate form of that wisdom and love. He also perceived, that the permanence of any human system, whether a philosophy or a society, depends upon the coincidence between its order and the order of creation; and that when this coincidence exists, the perceptions of reason have a fixed place and habitation on the earth, from which it will be impossible to dislodg them by anything short of a crumbling down of all the faculties, both rational and sensual; a result which, if the human heart be imdroving, the belief in a God forbids us to anticipate. But Swedenborg did not rest, as the philosophers do, in a mere algebraical perception of the truth, or in recognizing a want without supplying it; but like a good and faithful servant he actually expounded a system of principles at one with nature herself, and which will attest their order and their real Author by standing for ages of ages.

But his still small voice commanded no attention, and what he predicted took place: the sciences were carried to the tomb, where they are now buried, with the mind their subject, in the small dust of modern experience. This brings us to say a few words of the physiology of the day

Facts are the grand quest of the present time, and these, particular facts: general facts are less recognized now than they were at the beginning of the last century; for short-sightedness has so increased upon us, that we must look close in order to see dis-

tinctly, and hence extended surfaces do not fall under our vision. The physiologist defers reasoning until the accumulation of facts is sufficiently great, to suggest reasons out of its own bosom. This is a step beyond ordinary materialism. The individual materialist considers that matter must be organized into the form of a brain before it can think and will; but that compound materialist, the scientific world, expects dead matter to open its mouth and utter wisdom, without any such previous process. It thinks that at present there is not matter enough, or this result would ensue; little dreaming that there is a fault in itself, and that the larger the stores it possesses, the more impossible it will be to evolve their principles, or to marshal them under a theory The common facts of the body having been pretty well explored, the physiologists go inwards, and gather further facts. Without waiting to ascertain the import of these, they submit them to the microscope, and again decompose them; and so on, to the limits prescribed by nature to the optician, and by the optician to the scientific enquirer. But this is the field of least more easy to discern than that of compounds; or if we cannot read nature's secret in her countenance, can we expect to divine it from her very brains? The truth is, that the modern state of physiology is a universal dispersion of even sensual knowledge: its pretended respect for facts is not real; otherwise it would enquire into their general significance before resolving them into further elements. It perpetually illustrates the principle that facts cannot be duly respected unless they are seen as agents of uses, and results of ends and causes; and that if they are not so regarded, they become mere playthings, to which novelty itself can lend scarcely a momentary charm.

But as every end progresses through more means than one, so science is undergoing dispersion in another direction also Not only are the generals of anatomy forgotten for its particulars, but the human frame itself is in a great measure deserted for comparative anatomy. The so called human physiologist pursues his diffuse circle from animal to animal, from insect to insect, and from plant to plant. Man is confounded with the lower and lowest things, as if all the spheres of creation were in one plane of order The consummation of this tendency is already more than indicated above the horizon, when the lowest range of existence will be the standard of all, and then the chaos of organic nature will become the legitimate property of the chemists, to be by them resolved into gases and dead materials of the earth.

Another characteristic of the times is the almost total breach of continuity between the present and the past. The terminology of science is so much altered that it is impossible to read the older works with benefit, unless after a course of study something like that requisite for learning a dead language. In consequence, the mere anatomical value of the fathers of anatomy is not at all understood; their rich mines of observation are no longer worked, and their forgotten discoveries are now and then again discovered, with all the pains of a first attempt, by their ill-informed successors. Can anything be less human than this,—that the parents should transmit so little to the children, or rather that the children should be willing to receive so little from the parents? It exchanges the high destiny of man for the fate that attends the races of animals, in which each generation lives for itself alone, and again and again repeats the same limited series, without improvement or the possibility of evolution.

In the midst of this humiliating condition, what loud sounds do we not hear of "march of intellect" and "progress of the species," —so many discharges from the impotent artillery of self-conceit. This indeed is the last and worst sign of a decadent science. The poor sick sufferer is delirious, and possesses for a moment superhuman strength in his own exhaustion.

The present cultivators of science boast themselves followers of Bacon in the inductive method, apparently grounding their claim on the fact, that they dwell in effects or in proximate causes to the exclusion of final causes. It is a remarkable circumstance, that each age since Bacon's time has considered itself especially as his follower, and that the present age, besides laying this unction to its soul, denies the genuineness of the Baconianism of all preceding ages. Meanwhile there can be no doubt, that if Bacon himself were to publish his works now for the first time, he would be ranked among the mesmerists, the phrenologists, and the other poor gentiles who are banished by common consent to the far islands of the scientific world, and would be exterminated from it altogether if they were not preserved in some mysterious way,—perhaps by having the truth on their side. Bacon himself would belong to these gentiles; but would their antagonists then lay an exclusive claim to his phylosophy? We apprehend not. The inductive method would be far from fashionable if its larger tendencies were seen, or if the scientific beliefs to which Bacon himself was led by it, could be currently reported.

Would it not freeze a Royal Society to the very marrow, to be identified in any way with a man who believed, as the great Lord Bacon did, in witchcraft, and the medicinal virtues of precious stones?

Notwithstanding the unpromising state of things in science, the natural theologians have adventured to deduce from it "the power, wisdom, and goodness of God as manifested in the creation." Truly the creation is an effluence and argument of divine wisdom. But in the present range of scientific insight, it is not seen to do more than approximate to the works human skill. The mechanics of the watch are more wonderful to man than the mechanics of the ear or eye; the arch is the antetype of which the convex skull is but the type. Natural theology based on such science, can attribute nothing to God which does not belong in a superior degree to man Its discoveries are not worth making, because they are so infinitely transcended by the perceptions of common sense in all nations and ages. Now Swedenborg, in his scientific works, was a natural theologian, but he began where human skill terminates, and by the application of guiding doctrines, followed the ever-expanding order of creation inwards to the point where mechanics and geometry are realized in more universal laws of wisdom and providence; and where at last the human mind itself recognizes the very source of life in its humiliaton before the throne of God.

But it would be far from the present line of argument, to maintain that the moderns are performing no useful function in the "progress of the species." Such a proposition would be incompatible with what we know of the divine economy, in which human degeneracy itself is converted into a new point in the circle of uses Nay, the moderns have their direct value; in the first place, they have enlarged the catena of observation in many departments. In the second, they have corrected innumerable minute errors in their predecessors, who were more intent upon general than particular accuracy. And thirdly and chiefly, although in this respect no credit attaches to them, they have gone so low in their enquiries, that as it is even physically impossible to go lower, so by the law of the contact of extremes a revolution may now take place, and the ascending passage be commenced, as it were from the skin to the brain, or from the lowest sphere to the highest.

It would be interesting to trace the successive stages by which the physiology of the ancients declined into that of the moderns, to review the grounds on which great doctrines were given up, and to test the sufficiency of the reasons which were adduced for the change. The state delineated in the well-known lines—

> "I do not like thee, Doctor Fell,
> The reason why, I cannot tell;
> But this alone I know full well,
> I do not like thee, Doctor Fell,"

—this state was the moving cause of it. In short, it was a change in the human will, and not primarily in the underatanding, which faculty appears to have been called upon subsequently, to confirm the new turn of the inclinations. Such at any rate we know to be the case with the doctrine of the animal spirits, which, as Glisson said, was in his time believed in "by nearly all physicians, and by all philosophers." It might have been supposed that the animal spirits were demonstrated out of existence by some beneficent genius who substituted something better in their place; at least that they fell honorably in a well fought field of argument. No such thing; they fell by the treachery of the human heart loving the sensual sphere more than the intellectual. Is such mere waywardness as this a part of the "progress of the species?" The ancients believed in the existence of the animal spirits without pretending that they could become objecs of sight. "Tam subtile sit concipiendum [fluidum hoc subtilissimum]," says Heister, ". . . ut instar lucis velocissime se diffudat; quod profecto non oculis, sed ex effectibus et phænomenis, . . . ope judicii sive mentis oculis cognoscendum . . . . Ita aerem, animam, et multa non videmus, quæ tamen ex effectibus, quemadmodum spiritus animales, esse et existere intelligimus."* But the moderns reject whatever they do not see, and will credit the existence of nothing that absolutely outlies, and must in its conditions for ever outlie, the senses. It is needless to say that a state like this is based upon neither reaons nor sensations, but is purely negative or sceptical, and must be referred to sheer will without any admixture of wisdom.

The Radical Cure of Hernia by Injection.

We find in the *British and Foreign Review*, as an extract from Dr. Pancoast's Operative Surgery, the following description of an operation, which, if not altogether new, is not practised in this country The results are such as to claim for it the attention of our operative surgeons:—

"The contents of the hernia must be completely returned into the cavity of the abdomen, for the process is only appropriate to cases of reducible hernia, and those which are not of large size. The apparatus re-

* Comp. Anat., n. 301, not. a.

quired is a minute trocar and canula, a small graduated syringe, capable of containing a drachm of fluid, well fitted to the end of the canula, and a good-fitting truss for the purpose of making compression. The patient is to be placed on his back; the viscera are then to be reduced, and the truss applied over the external ring for the purpose of keeping them up, as well as to prevent the possibility of the small quanity of fluid thrown in from getting into the cavity of the abdomen. The surgeon then presses with the finger at the external ring so as to displace the cord inwards and bring the pulpy end of the finger on the spine of the pubis. At the outer side of the finger he now enters with a drilling motion the trocar and canula till he feels the point strike the horizontal portion of the pubis just to the inner side of the spine of that bone. The point is then to be slightly retracted and turned upwards or downwards; the instrument is then to be further introduced till the point moves freely in all directions, showing it to be fairly lodged in the cavity of the sac. The point of the instrument should now be turned into the inguinal canal, for the purpose of scarifying freely the inner surface of the upper part of the sac, as well as that just below the internal ring. The trocar is now to be withdrawn, and the surgeon, again ascertaining that the canula has not been displaced from the cavity of the sac, throws in slowly and cautiously with the syringe, which should be held nearly vertical, half a drachm of Lugol's solution of iodine, or half a drachm of the tincture of cantharides, which should be lodged as nearly as may be at the orifice of the external ring. The canula is now to be removed, and the operation is completed. A compress should be laid above the upper margin of the external ring, pressed down firmly with the finger, and the truss slid down upon it. The patient is to be kept from changing his position during the application of the truss, and should be confined for a week or ten days to his bed, with his thighs and thorax flexed, keeping up steadily as much pressure with the truss as can be borne without increasing the pain, in order to prevent the viscera from descending and breaking up the new adhesions while they are yet in the forming state, or avoiding the risk of their becoming strangulated or being rendered irreducible by the lymph effused into the cavity of the sac.

"The author has practised this operation in thirteen different cases, in but one of which there was any peritoneal soreness developed that excited the slightest apprehension, and in this case it subsided under the application of leeches and fomentations. In several of these cases a single operation appeared to be perfectly successful. In others—where the sac was larger, or the patient was less careful in keeping the truss steadily applied during the first week, or from a cautiousness in introducing in the first cases a more limited amount of fluid—the effect was merely to narrow the sac, rendering a repetition of the process necessary for the cure. Of the permanency of the cure, during *several years after the operation*, the author is unable to speak, most of the patients operated on being temporary residents of the Philadelphia Hospital, and passing after a few months beyond the reach of enquiry. While under the cognisance of the author, they were employed without a truss as labourers on the farm attached to the institution, and in no one of the cases, during this period, had the hernial tumour recurred."

Phosphorus Paste for the Destruction of Rats and Mice.

By M. Simon, of Berlin

The Prussian government issued an ordonnance on the 27th of April, 1843, directing the following composition to be substituted for arsenic, for destroying rats and mice, enjoining the authorities of the different provinces to communicate, at the expiration of a year, the results of the trials made with it, with the view of framing a law on this subject.

The following is the formula for this paste, as published in the *Berliner Medicinische Zetung*:—

Take of phosphorus, eight parts, liquify it in 180 parts of luke-warm water, pour the whole into a mortar, and add immediately 180 parts of rye-meal; when cold, mix in 180 parts of butter melted, and 125 parts of sugar.

If the phosphorus is in a finely-divided state, the ingredients may be all mixed at once, without melting them.

This mixture will retain its efficacy for many years, for the phosphorus is preserved by the butter, and only becomes oxydized on the surface.

Rats and mice eat this mixture with avidity, after which they swell out and soon die.

M. Simon has employed this mixture for many years, with constant success, by placing it in places frequented by those animals. According to him, the phosphorus is less dangerous than arsenic, for supposing the mixture to be badly made, and the phosphorus imperfectly divided, the oxydation which would take place in a few days would render it nearly inactive; and it would be almost impossible to employ it for the intentional poisoning of human beings.—*Journal de Chimie Medicale.*

PUBLIC REWARDS FOR NEW MEDICINES.

To the Editor of THE LANCET.

SIR,—In connection with those portions of medical polity which require reform, there is one point yet unnoticed, which, though it may be considered of minor import, should not, I think, escape attention.

According to the present state of the law, any discovery, or special improvement in the arts, may be protected and secured for the advantage of the individual from whom it has emanated. It has been attempted to extend the same principle to medicines, but in a different, and erroneous, manner; pretended discoveries in the shape of medicinal compositions being at once protected and recommended by a government stamp, without regard to intrinsic merits. Thus the public is cursed with the monstrous evil of quack medicines, of varied denominations; and ignorant and unprincipled individuals fatten on the credulity and misery of their victims. But, on the other hand, if a new and useful simple remedy is to be introduced to the profession, or any important modification of an old one suggested, what will it avail the originator? A chemist may fairly retain his secret, though perchance he can turn it to little advantage; but odium and discredit will accrue to the professional man who attempts to retain the fruit of his mental labour to his own benefit. Philanthropy is compulsory on him, and he must give up the produce of his mind with but little chance of any return accruing to him, in the shape of emolument, or even of reputation, which may be filched from him by those whose position, or fictitious professional rank, enable them to turn the discovery to advantage, and who, themselves, possesing no original ideas, are apt to make free with those of others, and kindly adopt them as their own.

Should a Board of Health constitute an element in the future re-organization of the profession, might it not be empowered to recognise and reward such medicinal discoveries as should be deemed of sufficient value.

I am, Sir, Your obedient servant,

BUTLER LANE, Surgeon.

FROM A CORRESPONDENT.

Mr. Power, dentist, Stephen's Green, Dublin, has found it desirable, in the course of his professional duties, after the extraction of a tooth, that the gum should not be closed, as the natural spreading of the adjoinihe teeth on either side of the tooth which has been extracted is thereby prevented. When the jaw has received injury, in the course of a rude operation, it is judicious to bring the parts into contract.

PROF. MOTTS CLINIQUE.

At the Medical Department of the University of N. Y., Saturday, Sept 6th, 1845.

SPINAL IRRITATION.

1st CASE was a female, ætat 30, unmarried, said that about sixteen years ago, when walking very fast, she suddenly felt a severe pain in her back, (lumbar region,) down the thighs, and about the public region, which has continued ever since Her general health is pretty good most of the time. There appeared to be no uterine derangement. The case seemed to partake more of spinal irritation than any thing else, although the diagnosis was rather obscure. Recommended *counter irritants* to the spine.

ANGULAR PROJECTION OF THE SPINE.

II Boy, aetat 4, general health pretty good, has had disease of the spine about three years, angular projection, Maladie de Pott of the French. The Professor gave an interesting history of the disease, and of Dr. Potts' discovering the mode of treating it by issues, by mere accident, in observing a case in which there was a spontaneous issue formed by nature, whereby the patient recovered. He spoke very much against the practice which some physicians are in, of applying pressure on the angular projection, a disease totally different from curvature of the spine, and hence a different mode of treatment must be pursued. Spoke of the importance of explaining fully the nature of the disease to parents of such children, as are afflicted with this most tedious and troublesome disease; never promise too much.

In the present case he recommended a generous diet, and keeping the patient, as much as possible, lying on his abdomen, and a pea issue to be applied on one side of the projection at first, and in a little time, put one on both sides and keep them constantly discharging. All patients having this disease are of a scrofulous diathesis, which must always be kept in view in the treatment.

HIP JOINT DISEASE.

III. Little girl, aetat. 6, has incipient morbus coxalgia. She first complained of a pain in her right knee, some two or three weeks since, which has been so severe at times, that she could not stand or walk on that limb; she said nothing of any ailment of the hip, which is usual in such cases. The affected thigh appears longer at first, and by pressing on the anterior part of the capsular ligament, by raising up the limb, causes pain. Prognosis rather uncertain. Recommended three leeches to be applied just back of the trochanter major, and three near the groin. R. Mag. Sulph. Mag. Cal.

in small doses, and counter irritants hereafter about the hip joint.

Prof. Parker's Clinique.

At the College of Physicians and Surgeons, Monday, Sept. 8th, 1845.

Before commencing, the Doctor exhibited a truss, which he said possessed some advantages over most others, it having a ball and socket joint to hold the pad, which was convex. The truss was invented in New Orleans, quite recently, and has not got into general use yet.

SCROFULOUS ABSCESS.

II. Female, aetat. 23, married,—has an abscess in the calf of the leg, of one year's standing. Patient is of a scrofulous habit, general health delicate, has considerable irritation of the stomach, enlarged lymphatic glands, &c., with the usual symptoms of scrofula.

The sore presents something of a syphilitic taint,—indurated and ragged edges, and partakes a little of a cancerous appearance, but the Professor thought it was neither; it being merely a scrofulous abscess in the skin and cellular tissue, about the size of the top of a tea-cup. There was a similar one on the other leg, although it had never softened down like this. She has taken a great variety of medicine. The Professor recommended constitutional and alterative treatment, but if there was any tendency to disease of the lungs, avoid the use of mercurials; use Iod, potass, Iod. ferri., rumex. and taraxacum. He does not think there is much virtue in sarsaparilla. Use as a lotion either black or yellow wash. Exercise by riding, but avoid walking as much as possible,— use a generous diet. The prognosis was somewhat doubtful.

FISTULO INANO.

III. Boy. aet. 7,—has been troubled with it since he was two years old. The Professor made an examination, but could not detect any ulceration into the gut; concluded to defer an operation; and recommended keeping the bowels free. The Professor made some remarks about Sir Benj. Brodie's paper of a few years since, which says that such cases always commence from an ulcer on the inside of the gut.

ABSCESS OF THE RIGHT MAMMA.

IV. This was a very interesting case, in as much as such cases are exceedingly rare. The subject is nearly forty years of age, and is now in her sixth month of pregnancy. About two years since, she had an abscess in the axilla of that side, which she refers to having sawed wood; it opened of itself and discharged, after which, she says there came a "lump in her breast," which was opened and healed up. Now since there has been a new action excited in the parts by her present condition, the former difficulty returns Treatment; recommended poulticing for a few days and then open it, and after a little time, he thought best to draw in a seton. He thought that by careful treatment, she might be enabled to get along without further difficulty of the kind.

OSTEO. SARCOMA.

V. Patient, aet 28,—has been a man of intemperate habits, had the venerial disease two or three times, and has been troubled with pains in the different joints for two years, but for the last fifteen months the pain has settled down into his left knee. Patient has thought his disease rheumatic, and resorted to various kinds of treatment for it, none of which has done him any good. The pain has been so intense for a short time past, that he has been obliged to take large doses of laudanum. There is no discoloration of the skin about the knee, although there appears to be some little effusion about the joint. The line of demarkation could be distinctly felt about two inches from the knee joint on the femur; the bone being a little enlarged. The Professor advised the patient to have the limb amputated; but as he declined that, the doctor recommended the free application of Tinct. iodidi, daily, but gave it as his opinion, that the leg would have to be amputated sooner or later.

DOUBLE INGUINAL HERNIA.

VI. Double inguinal hernia in a child eight months old. Professor deferred the case for a while, on account of age.

There were several other cases, but as they were of so little importance, we will not give them. A large number of patients were in waiting to take their turns, but as the hour had expired, they were prescribed for in the back room.

Prof. Mott's Clinique.

Saturday, Sept. 27th, 1845.

HÆMOPTYSIS.

1st Case. Patient was born in Canada, aet. 22,—has had shooting pains through the chest, and some cough, for four or five years past, but quite recently he has had several attacks of bleeding from the lungs, followed by an increase of cough. His general health appears quite good. Professor recommended him to go south if he could make it advantageous, in a pecuniary way,— use a generous vegetable diet, to sustain the

general system, and have an issue applied to the chest. He spoke of the old American practice of using calomel, squill and opium, in such cases where there was much bronchial affection. The practice is peculiar to this country, although the English are beginning to adopt it. In this case, he advises small doses of calomel, to be given as an alterative, but not to go so far as to salivate him.

CONJUNCTIVITIS.

II. A little girl, aet. 8,—has had the disease for some weeks past. Ordered three leeches to be applied to each temple, and an effusion of poppy-heads to bathe the eyes daily Keep the bowels free by the use of Mag, Sulph.

STAMMERING.

III. A boy was brought from the country to be operated on for stammering, but after hearing an explanation of the operation, and not receiving much encouragement as to the result, he declined it.

It may be well for us to state that the Doctor does not perform the operation for stammering, as often as he did soon after his return from Paris. The operation does not prove as successful as was thought at first, although there have never been any bad results from it to our knowledge —Ed.

AN UNUSUAL ENLARGEMENT OF THE LYMPHATIC GLANDS.

IV. Patient, aet. 47, blacksmith by trade,—has been a very hard working man, but sometimes indulged in intemperate habits. The disease commenced about five years ago, and the glands of the neck, axilla, and groin, have continued to enlarge gradually up to the present time; they are now about the size of a hen's egg, on an average, but some are larger, particularly those of the axilla and groins.

There has been of late, a little tendency to anasarea, although the general health is pretty good. Patient said he had always been remarkably healthy, and his children also were very healthy. The Doctor thought it a scrofulous affection. Recommended the external use of Tinc, Iodi, and Iod, potass., to be taken internally, in a decoction of yellow dock. The disease was quite too extensive to think of operating.

SPONTANEOUS PARAPLEGIA.

V. Patient, aet. 57, born in Scotland,—in the early part of his life, followed mining. The disease came on about eight years ago, and has remained about the same ever since; he has no use of the legs: bowels costive, and the usual inconvenience, attendant on such cases. Recommended an issue in the lumbar region, electro-magnetism, and the use of the Rhus toxicodendron.

The use of this remedy seems lately to have been revived in the treatment of paralysis.—Ed.

ENLARGEMENT OF THE LYMPHATIC GLANDS

VI. Female, aet. 25, married,—has enlargement of the lymyhatic glands of the neck, which commenced about two years ago, during her accouchment, and have somewhat increased since. The disease is purely scrofulous. Recommended generous living, and a tonic course to be pursued.

℞. Tinct. cinchon. f. ℥ viij.
Hydrar. bichlorid. gr. iv.
Dose, a tea-spoon full three times a day.

℞. Hydrar. bichlorid, gr. vj.
Adipis, ℥ j.
M. ft. ung.

Rub the enlarged glands morning and evening, with the ung., and apply oiled silk.

STRABISMUS.

VII. Patient, female, aet. about 20,—she has had converging squint since she was a year and a half old. The Professor operated successfully.

Prof. Parker's Clinique.

Mooday, Sept., 29, 1845.

SPINA BIFIDA.

Ist Case. An infant, four weeks old, well formed and healthy; has a tumor about the size of a large hen's egg, situated in the upper part of the dorsal vertebrae. The base of the tumor is of the natural color of the skin, but the top has a diaphanous appearance. The Professor made some remarks about the disease in general. It is called, spina bifida, because the vertebrae are not able to unite on account of the watery tumor. We more frequently see them in the sacral or lumbar region, but they do occur at all parts of the spine, and sometimes in the whole length at once; but very seldom in the cervical region. The pathology of the disease is a hydropic condition of the parts, arising from congenital hydrocephalus. The water, descending from the brain, along the spinal canal, before the arches of the vertebrae are formed, accumulates, and thus a tumor is produced. The fœtus is subject to many other diseases in utero, among which may be mentioned convulsions which are probably the cause of congenital club foot.

Treatment: various kinds of treatment have been tried in the disease, but commonly they all fail; compression would cause convulsions and kill the patient; ligation has

been tried, and sometimes successfully, but there is a great objection to it on account of the bundle of nerves which is always present, and is liable to be involved in the ligature. Acupuncturation is another mode of treating them, which is the most approved of, now-a-days; it is done by taking a fine needle and puncturing the tumor thirty or forty times, and letting the water off, which causes inflammation and thickening of the walls The operation must be repeated several times, or as often as the water accumulates.

STRABISMUS.

II Patient, boy, æta. 7,—Professor operated successfully. He made some remarks about the operation having been brought into disrepute, by being done by those who do not understand it fully,—it is much more of an operation, than many suppose. The operation may fail, if done in the best manner, owing to the paralysis of the opposite recti muscle. The operation sometimes, has to be repeated several times before the eye is fully straightened.

TUBERCULATED TONSILS.

III. Patient, female, ætat. 28,—general health good. On first examining the tonsils, they presented the appearance of having had nitrate of silver applied to them, but upon a more close examination, they were found to contain hard cheesy matter. The Professor took away a portion of the matter with the forceps, and ordered the throat to be gargled with some of the mineral acids, either the nitric or muriatic diluted.

SECONDARY SYPHILIS.

IV. Patient, æt. 41,—been married nineteen years, has not had the primary disease since he was married. About two years ago, he had pains, which he thought were rheumatic, and have continued since they first begun, in the shafts of the bones instead of the joints, and across the forehead. There is an eruption about the nose, and ulcers about the ankles.

Syphilytic rheumatism may be distinguished from common rheumatism, by the pains coming on in the afternoon between three and five o'clock, and also, from its being in the shafts of the bones instead of the joints; whereas, in the latter disease, the pain generally comes on after the patient goes to bed, and is confined to the joints generally. Prescribed good full diet, keep the bowels free, and put him on the use of Hydriod. potass., cicuta, rumex and taraxicum.

DISLOCATION OF THE SHOULDER.

V. Patient, æt. 34,—is a carpenter by trade, and is a strong athletic man; says he has had it out of place an hundred times within a year past; it slips out frequently when he is at work at his trade. He very commonly secures the arm in his work vice, and puts the bone in the place. There is considerable soreness about the joint, which is owing to some inflammation; probably a portion of the lower part of the capsular ligament is torn away, and hence the head of the bone slips out of the socket so easily. The Professor put it out and in its place, two or three times, to fully satisfy himself as to its nature. Ordered: cupping over the joint, and bathing it in warm water for a few days, and then use the cold douche.

ENLARGEMENT OF THE TONSILS.

VI. Patient, æt. 12,—constitution delicate, has had enlargement of the tonsils for a year or more, without much diminution in size from the first. Enlarged tonsils in children should always be attended to early—the enlargement obstructs the breathing, and often gives rise to pulmonary disease. Such children frequently are "pigeon breasted," owing to their position in sleeping, throwing the thorax forward, head back, and mouth open. The Professor removed a part of the gland, with an instrument for that purpose. It is always better to use the tonsil instrument in children; but in an adult, a common bistoury and hook, will do equally as well.

NECROLIS AND SEPARATION OF THE LOWFR JAW.

VII. Patient, æt. 50,—had been in the Hospital in Montreal, Canada, three months, where he was profusely salivated, but did not seem to know for what purpose, or even why he went to the hospital at all,—appears to be a very worthless fellow. He came out of the Hospital in Montreal, about six weeks since, and is now suffering from the effects of ptyalism.

The inferior maxilla is divided at the symphysis, and one of the incisor teeth has been taken out at this point. The Professor recommended him to go to the hospital, as he had no home; but said he should merely have the fissure injected with some of the diluted mineral acids.

The New York Hospital.

Attendance of Dr. John H. Driscon.

VIOLENT CHOREA ST. VITI;—CURED BY STRICHNINE.

THE subject of the following history, presented the most violent case of St. Vitus' Dance we have ever seen. It will be recollected by many students, and others who witnessed it, as having been characterised by the peculiar jactitation of the extremities,

particularly the lower, when walking, from which it was called the " Polka case."

Eliza Holstappen, aged 19, born in Germany, single. Entered July 24, 1845. Is of large frame and robust appearance. Has had amenorrhœa four months, but otherwise has enjoyed good health, until about three weeks since her friends noticed a twitching of muscles. This increased until there was involuntary motion of all her limbs Upon admission, she was unable to remain in bed, so that she was obliged to be kept on the floor. Her bowels being opened, she was put upon Fowler's Solution, gtt. iv. ter in die. This was increased to every two hours by the fourth day, but her motions became more frequent and strong, so that she could not be restrained on the mattress, and tore her clothes from her body. Her nights were sleepless, and she constantly screamed, although perfectly sensible.

On the 2d of August, she was put upon Carb. Ferri, which was continued for three days, the patient being at the same time freely purged with Croton and Castor Oil. This did not produce much benefit. As soon as evening came on, her motions became more and more convulsive, and her screams loud and incessant. For several nights in succession, she was obliged to be tied hand and foot to the bedstead, perfectly naked, as no covering could be kept on her. During the day, she was more pacific.

On the 12th, we began the use of Pil. Strychnine, gr, 1-16, ter in die. The effect of this was almost immediate and very marked. It was continued four days, in the above quantity with evident improvement, her nights being more quiet, and some sleep obtained.

On the 16th, the pill was increased to 1-12 gr. This night she slept for an hour or more together, in a chair.

17th, Last night she slept in bed quietly for several hours, and this morning *was able to sew.* She walks about, although her motions are still violent. Has been on the use of the medicine just one week.

19th, The last two nights the patient has slept perfectly well during the whole night, without any noise; walks now tolerably straight; and visits the other wards. Her appetite is very great. During the whole of the attack, her mind has been entirely free from any delusion. She still continues the Strychnine 3 gr. ter in die, with progressive improvement. During the last two days she has occasionally complained of headache.

Sept. 1st. Our patient rapidly improved under this treatment, continued until within a few days, when she being apparently *well*, it was stopped, and no symptom of a relapse appearing, she was to day *discharged cured.*

The pathology of Chorea, is among the mysteries of the science. The arsenical and ferruginous preparations, and drastic purgatives, which have either one or the other, generally succeeded in relieving the symptoms, having in this case entirely failed, the determination to try the Strychnine was made on the supposition of the condition of the nerves in this disease being analogous to that in Paralysis. In the latter case, there is a total loss of power over the muscles, in the other a partial loss only. If the rapid and felicitous result of the use of Strychnine in this case should lead to its further administration in Chorea, some light may perhaps be thrown on the pathology of the disease.

Chorea St. Viti is tubercular disease of the Cerebellum as determined by the magnetic symptoms, in which the processus vermicularis or organ of motion in the median line of the cerebellum, and consequently the muscles are involved.

The above case is interesting from the fact that the disease was acute or inflammatory, or one that is rarely seen. If it had been one of chronic disease, the strichnine would have had little or no effect, as its power has been often tested in these cases.

PROF. PARKER'S CLINIQUE.

At the College of Physicians and Surgeons, Monday, Nov. 24th, 1845.

REPORTED BY GEO. A. PETERS.

On Thursday of last week, the Doctor removed two large polypi from the nasal fossæ of a young man who presented himself before the class. He remarked at the time, that nasal polypi, when they exist, will always be found attached to the turbinated bones and never to the vomer; this fact should be borne in mind, and a proper direction given to the forceps when introduced. The patient was much relieved by the operation.

Case I. This was the young man from whose neck a tumor was removed last Monday, before the class. Union by first intention had taken place to a considerable extent. The sutures were removed, and adhesive straps re-applied.

II. Male, æt. 35, (Ireland.) This patient has been suffering from a severe attack of gonorrhœal ophthalmia, from which he has but just recovered. The power of vision is not at all impaired in the left eye, but upon examining the right eye, we find that fibrin has been extravasated somewhat deeply into

the substance of the cornea, constituting that variety of opacity known as albugo. We often observe this condition, as a sequence of violent acute ophthalmia.

Gonorrhœal ophthalmia is one of the most violent forms of inflammation to which the eye is subject, often destroying it entirely in twenty-four or forty-eight hours. It requires the most active anti-phlogistic treatment.

Albugo is more difficult to cure in proportion to its duration and to the age of the individual; the activity of the absorbents being greater in youth.

As there seemed to be no inflammation existing in this case, the Doctor recommended the use of gentle stimulants to excite absorption. A solution of argent. nit. iv., to ℥ j, of water, or the insufflation into the eye, of calomel and loaf sugar finely levigated. If these should fail, he recommended that trial should be made of the solution of the sulphate of cadmium, in the quantity of a grain to two grains to an ounce of water,

III. Female, æt. 42, widow, (Ireland.)

This was a well marked case of carcinoma of the right mamma. Has had two children, the youngest is now fifteen years of age. Has been in this country thirteen years. Her husband died about two years since. Her courses are regular, and she says that she has never suffered from any disorder of the menstrual function. She is not aware that any of her relatives have ever suffered from cancer. Several years since she received a blow upon the breast from a rocking chair, which caused at the time a little pain and uneasiness in the part. About a year after this she first observed the tumor, the pain became more severe, accompanied by an occasional slight discharge of blood, from the nipple.

Upon examining the part you will feel a globular tumor, occupying the right mamma, of stony hardness, and irregular and unequal in its surface. It has now passed into the second stage of the disease, the superimposed integument has assumed a dusky or livid hue; the nipple is also retracted. The glands in the axilla are enlarged and hardened, thus showing that they have become involved in the disease.

Cancer of the breast is a disease more frequently occurring among women who have never borne children, than among mothers, who are more likely to suffer from that disease attacking the uterus.

The only hope of a radical cure in cancer, consists in extirpation with the knife, or by destroying the part by cauterization. The knife is by far the least painful of the two remedies. I can by no means promise a radical cure, even if the breast be extirpated, but as in this case the disease appears to be of local, and not constitutional origin, I should consider the prognosis favorable, if she would submit to an operation. At any rate, it would probably prolong her life for several years.

Patients frequently live several years after the operation, and then the disease returns in the cicatrix, or attacks some other organ. In one case in which I operated, the woman lived ten years, when the disease returned, attacked the liver and she died. The suffering attending its attack upon internal organs is not so severe as when it exists externally. The Doctor strongly urged upon the woman the importance of an operation, as her only hope of cure, and advised her by no means to resort to external applications. except those of the mildest kind. The patient was not prepared to submit to the operation today, but promised to come again.

IV. Male, æt. 40. Fistula in ano. This person is a mason by trade;—has at various times suffered much from constipation of the bowels. He suffered for three weeks in the month of July last, from dysentery, following which attack, he first observed a small abscess pointing a short distance to the left of the anus, this was opened with a lancet, its contenrs discharged, and the opening still remains fistulous. A probe was passed into it, and it was found to communicate with the rectum. Patient says thatgas from the bowel frequently passes through it. An operation is the only treatment which offers any prospect of success. The man is poor and does not reside in the city, and as it is important that it should be properly dressed at suitable intervals, after the operation, he was advised to apply for admission into the Hospital.

V. Girl, æt. 3. This was a case of scrofulous synovitis, affecting the left knee, which commenced about five months ago. The joint was not injured by external violence. Child evidently of a scrofulous diathesis, her mother is said to be affected with tubercles in the lungs.

Upon exposing the limb, the knee was found to be evidently increased in size, the muscles above and below the joint were atrophied, and the temperature was much higher than that of the other joint. Complained bitterly when motion of the part was attempted.

The child has been reared in an ill-ventilated apartment, situated in a crowded part of the city, its appetite for candies and other sweets, also for gravy, has been gratified, The Professor remarked, that so long as this course of life was foltowed, the child would never recover. He would allow the child

bread and milk for breakfast, meat, potatoes, and other vegetables for dinner, and bread and milk again at evening. Tea and coffee, also sweets of all kinds, should be interdicted. By furnishing the stomach with nutritious food, good healthy chyle would be elaborated, and thus the blood would be supplied with plenty of fibrin. The child ought also to be removed to the country. Ablution with salt water night and morning, followed by friction all over the surface of the body, should also be resorted to. Rhubarb, the bicarbonate of soda, and blue mass in small doses, should be administered occasionally at night, to be followed, if necessary, by castor oil in the morning. Decoct. sarsa. comp. will also be found of advantage. As there still exists considerable heat in the part, the scarificator should be applied freely, and the bleeding encouraged by warm poultices. After heat and pain has subsided, three or four issues should be established about the joint.

The joint should be kept perfectly at rest by means of the tin splint, which I have so often recommended to you in such cases.

VI. Boy. Enlargement of both tonsils of one year's standing.—The Doctor removed them by means of the forceps and bistoury.

VII. Child, æt 2. Talipes varus affecting both feet. Doctor P. divided the tendo-Achillis and the tendon of the tibialis anticus. The child is to wear Scarpa's shoe.

VIII. Boy æt. 9. The patient had strabismus convergens affecting the right eye. The internal rectus muscle was divided, and the eye came into good position; he was directed to apply cold water freely, and present himself for inspection next Monday. Dr. Parker operated for strabismus upon a sister of this boy two weeks ago;—she presented herself before the class to-day;—the operation has proved successful, her eye now being perfectly straight. A small fungus growth has appeared in the situation where the wound was made through the conjunctiva, this the Doctor snipped off with the scissors, and applied stick of nitrate of silver. It will probably give her no farther trouble.

IX. Female, æt. 17 This girl has been laboring under spinal irritation for several months, for which she has been blistered along the spine, and had a seton introduced, but without experiencing much relief. Upon questioning the mother of the girl, we learn that her daughter commenced to menstruate at the age of thirteen years and that her courses are now regular as to the period of their return, but are accompanied by great pain, and that there is a paucity of the discharge. For several years past she has reside ' in the country and been accustomed to hard work, during which time she never experienced any of this spinal irritation from which she now suffers. Last May she removed to the city, since which time she has been attending school and leading a sedentary life. Upon examination, you will observe that she complains when pressure is made over any point of the spinal column; indeed, by merely passing the fingers lightly along its course, you perceive how she shrinks from the touch. There is no curvature existing, neither is she at all emaciated. She suffers much from palpitation, and complains of cold hands and feet. The tongue is somewhat furred, and the papillæ are very long and prominent, indicating a high degree of nervous excitation.

From the history of the case, and from the examination which we have made, we must conclude that there is no disease existing in the spine, but that this irritation is merely sympathetic, depending upon disease existing in some other organ. The girl evidently affected with dysmenorrhœa, and this irritation is merely sympathetic with that disease. The connection between the uterus and spinal marrow, is established through the medium of those nerves which are of spinal origin, and indirectly through the filaments derived from the sacral ganglia which inosculate with the anterior branches of the sacral nerves.

In the treatmeut of this case, we find that she has experienced but little, if any relief, from the counter irritation which has been employed. *The true way is to treat the disease upon which the irritation depends, and when you have removed the cause the effect will cease. Several years ago it was much the fashion to treat all cases of spinal irritation, by friction along the spine with ung. ant. tart., but this practice is now pretty much abandoned.*

The cold bath, night and morning, would be found serviceable in this case, also the warm douche and friction to the spine. She should be warmly clothed with flannel. The bowels should be kept in a soluble state; leeches applied to the vulva or upon the inside of the thighs. In fact, she should be treated for dysmenorrhœa.

X. Female. This was a case of hard tuberculous swelling upon the calf of the right leg, involving the skin and cellular tissue beneath, which had existed about four years. She was advised to try the emp. hydrarg. ammon. with compress and roller bandage.

NEW METHOD OF FILLING TEETH.—Mix thirteen parts of finely powdered caustic lime, with twelve parts of anhydrous phosphorc acid. This powder is moist during the mixing, and while in that condition is to be introduced into the decayed tooth.

Dr. Motts Clinical Lecture.

Saturday, Dec. 6, 1845.

Dr. Mott remarked at the commencement of the Lecture, that unless more of his friends came in during its progress, than had yet made their appearance, he should be able to experience the delightful reflection that he had cured them almost all, if it was not the cold weather that had done it. Before the close of the usual hour, however, he had to acknowledge that neither himself nor the cold had cured all the ailing, for a sufficient number came in to supply the occasion with its usual interest.

The first case was that of a woman who has already been several times before the class, and has been meantime subjected to successful treatment for foul ulcers of the nose, and caries of the roof of the mouth from syphilitic disease. Dr. M. remarked that it was a case of never ceasing interest, from various circumstances; among them, from the frequently baffling obstinacy of this disease in its secondary forms, and the variety of treatment which it may require in the different stages of its progress, and for the different success which different practitioners of equal skill, or the same one at different times, will meet with. Thus, one may direct the remedies that are employed as specifics, and which are most relied upon for its cure, when from the action of those remedies, as causes of irritation upou an already debilitated system, the disease is rather aggravated than benefitted, and the general debility is increased. A second practitioner, of no greater skill or ability than the first, when consulted in such a case—and these cases are apt to pass through the hands of a variety of doctors—and learning the history of the case and its previous treatment, advises to omit the medicine that has been used—although it is the remedy of all others—the "Samson" of the Materia Medica—in the control of these diseases, and to resort to tonics; and this change in the course of treatment is followed by immediate amendment. In such a case, by no means an unfrequent one, though they may be equally worthy, the last doctor gets all the credit and the first all the blame; and from such we must learn to shift our course, when any particular one fails of its object, from specifics to tonics and perhaps anodynes, and from these back again to specifics, keeping up the strength and the patience, till time shall have wrought a cure.

II. Girl. Strumous disease of the Meibomian glands, causing the eye lashes to fall off, &c. Dr Mott prescribed an article which he said he would designate by its old familiar name without any chemical elucidation, viz: "tutty," to be applied to the edges of the lids in the form of an ointment, Let the "tutty" be finely pulverized and mixed with spermaceti ointment, two scruples to the half ounce.

III. Man, age 45: has the appearance of being much older. Has two or three abscesses, evidently containing a fluid, upon the chest, probably from the pouting, patulous aputum of an open ulcer there, connected with a portion of dead bone. It has exceedingly the appearance of syphilitic disease, but from his statement with the appearance of honesty that he never had the "disease of gentleman at large," it is concluded to be scrotulous: and it is certain that in some of their forms the fruits of these two *cachexiae* are wonderfully alike. As there is fluid here it should be early discharged by an artificial opening; for if retained it can do no good, and may do harm. He should be put upon a nutritious diet; for I do not believe that strumous disease was ever cured or even benefitted by depletion, or even by the antiphlogistic regimen. For medicine let him have the hydriodate of potass, and yellow dock root tea.

I have alluded to the similarity there is between *struma* and *syphilis;* there is also another disease which is intimately connected with the latter. I mean tne present terrific disease of the East, leprosy. If this is not identical with *lues venerea*, it certainly has a monstrous similarity to it. When travelling in those countries as an invalid, or rather as a convalescent, I was greatly interested in every thing pertaining to the profession, and therefore zealously availed myself of the abundant opportunities which I enjoyed of observing the Grecian leprosy and the Arabian leprosy on their own ground, in Greece and Egypt; and as the result of that observation I have to declare my full conviction of their complete identity. The leprous sore throat has the same character, the ulcers have the same thickened, hardened, and everted edges, as the syphilitic sore throat with which we have to deal, and I must declare myself utterly unable to distinguish between them. The pretended histories of *lues*, assigning to it a comparatively recent origin, are idle tales. I believe it has always existed, and every where, even since the human family peopled the earth. How soon it was introduced after our first parents were driven from their supposed residence in the Garden of Eden, I cannot tell; but I think it may be conclusively shown from the sacred volume itself, that some of the patriarchs, even good old Jacob, if they had not it, at least had something very bad. I look upon it as the great progenitor of all

these forms of disease. They have also in the East along with the leprosy, other and mild—and they are wonderfully mild—forms of syphilitic disease.

4. Little girl. Strumous Conjunctivitis of several months continuance. The obstinacy of the disease, and the extreme intolerance of light, which causes her to keep her eyes constantly covered, and pertinaciously to resist every attempt to examine them, indicate with sufficient distinctness the character of the disease. It will be the best combatted by remedies addressed to the constitution; for example, two grs. perchloride of mercury dissolved in three ounces tincture of Peruvian bark: dose, a teaspoonful twice or three times a day.

5. Man. Syphilitic *pericranitis:* remedy, hydriodate of potassa.

6. Young man, native of Ireland. Has strumous enlargement of the glands of the neck, which have been three years in progress. Complaints also of difficulty of breathing by turns about an hour every night, loss of appetite, night sweats, and pains in the lower part of his back. He may be considered as a fair candidate for consumption—for strumous disease of the lungs. The pains in the back however indicate a tendency of the disease to locate in that region, in which case it would assume the form of *psoas* or lumbar abscess. The difficulty of breathing, supposing it to be caused by the incipient disease in the psoas muscles, may be explained by the anatomy of relation. Those muscles lie directly upon the *crusa* of the diaphragm. When the latter through its proximity, partakes of the disorder of the former, the function of respiration which is dependant upon it, is necessarily impeded. This case has been treated by cupping and leeches, which were all wrong; he requires tonics, not depletion. Revulsion however, by issues, would be proper; and a course of the hydriodate of potassa, with a view rather to give tone to the system than to operate directly on the disease. As for the tumors on the neck, cover them with a piece of oil silk, and let them alone: it will do injury rather than good to attempt to disperse them; therefore put nothing on, unless you can find a seventh son; let him rub them as much as you please.

7. Girl. Hip-joint disease. Commenced with pain in the knee, which has abated since the hip began to swell, a good illustration of the truth that suppuration, which is now evident by fluctuation, is the most efficient means to relieve the prominent symptoms, and the same holds true whether the suppuration be natural or artificial. The case has been neglected, it is now in the second stage, and has not been medically treated at all. Revulsion would now do no good, for the suppuration which that measure is designed to divert from within outwards, has already taken place in the joint, and its progress cannot now be arrested. All that we can do at present is to support her strength, and let the process go on. Give her plenty of food and that which is good, and the following medicine: Super sulpbate of quinine one drachm, aromatic sulphuric acid two drachms, water or ginger syrup two ounces. Take a teaspoonful twice a day.

8. Young man. Palsey of the left wrist from lead. Has had lead cholic three times, and now exhibits the blue line on the gums—the recently discovered symptom of this disease. We will try Dr. Pemberton's plan of support by means of splints, and at the same time rub the palsied muscles with an ointment of strychnine ten grs. to the ounce, and administer the same remedy in doses of one twelfth of a grain internally.

9. Man. Syphilitic and varicose ulceration of the leg. Directed to be treated with the yellow wash externally, and the hydriodate of potassa internally, and to abstain from intoxicating liquors.

10. Girl. Tonsils very much enlarged. One of them was removed by the bistonry, which, Dr. M. remarked, was the quickest and best mode of operation in adults and in children who are large enough to hold still. In smaller children, an instrument devised for the purpose, and so contrived as not to inflict any wounds in consequence of their struggles, must be employed. Such an instrument—the invention of a surgical instrument maker of this city, in all respects very well got up—I now exhibit before you; but, I must say, that an operation performed with any instrument of this kind will be very likely to prove an unsatisfactory one. In operating with the bistonry, care must be taken not to cut too deep: the carotid artery lies close on the outer side of the gland, and I have heard of its having been cut. The gland must be well pulled out from the *pharynx* while it is cut.

12. Man. Lost one eye seven years ago, from a blow with a pound weight. The sight of the remaining eye began to fail about two years since, and is now lost for all valuable purposes. The peculiar features principally to be noticed are, that the pupil is small and irregular; the cornea is preternaturally convex, and he has a good deal of headache and dizziness. On the whole, it is a very unpromising case Insert an issue in the back of the neck.

13. Girl. Nebulosity of the cornea. She has been here before, and, as directed then,

has applied molasses to the eye, from which she has derived benefit. The direction is, to go on with the treatment—a very sweet case. Molasses, used in this way, in slight opacities of the cornea, is often attended with decided benefit. and I had rather trust to it than to the nitrate of silver. Let a single drop be put into the outer canthus of the eye, morning and evening.

14. Infant. *Pemphigus.* First appeared two weeks since. Make no external application whatever, but give internally one twenty-fourth of a grain of the perchloride of mercury in tincture of bark, twice a day.

15. Man. An anomalous state of the elbow joint, the result of injury, in which he is unable to rotate the hand, or to flex or extend the fore arm, except to a very limited extent As it was not ascertained what the precise difficulty was, no remedy was proposed but the using the arm actively, laboriously and perseveringly.

Dr. Parker's Clinical Lecture.

Monday, Dec. 8th, 1845.

1. Man. Age 26 years. Had a small abscess gather and break on the inside of the cheek six months ago, gradually extending downwards to the corner of the mouth, and involving the lips, particularly the upper one, which is much thickened and has several ulcers upon it, of a phagadunic character—The disease was preceded by no injury that he recollects, and his health was previously good. He has been treated with Sarsaparilla, and locally the caustic potash. The edges of the ulcers are hard, irregular, and everted; attended with no pain in the part itself but excessive pain in the region of the temple and side of the face, sympathetic, from the implication of some branches of the fifth pair of nerves in the disease. Now we have to determine the character of the disease, both with reference to the treatment and to the prognosis. The lip may be the seat of either of the following; cancer, lupus, scrofula, syphilis and *noli-me-tangere;* one of these it must be; let us see which. In cancer, the most dreaded and the most formidable of them, there is a burning, stinging pain, which he has not experienced; the lymphatic glands in the vicinity are enlarged, but here they are not; it makes its appearance at a more advanced period of life, at 40, 50, or 70 years, and seldom or never so early as thirty. The probability is then that it is not cancerous. It has not the scabby appearance of *lupus,* and moreover, parts that were destroyed by the caustic have been restored. He has not the slightest taint of syphilis, so far as can be discovered, nor have the ulcers the syphilitic character. In *holi-me-tangere,* as its name implies, there is very great sensibility, which is wanting here. The conclusion is forced upon us then that it must be scrofulous, for that alone remains. Why scrofula should fix upon this particular part, and develope itself in this manner, I confess myself unable to say; we have the fact before us. It is better to have this than cancer, and it is worthy of note that the two never co-exist; a person cannot have both; the patient who is suffering from either one of them is bullet-proof against the other. It should be treated with the wood decoctions and small doses of the puchloride of mercury or hydriodate of potash, and locally with superficial scarifications.

2. Man: here last week with inflammation of the wrist; has since been in the care of one of the class. The limb was scarified, and pouliticed; the patient himself subjected to the anti-phlogistic regimen, low diet, &c., and this treatment has been attended with very great improvement. It should now be showered with warm water morning and evening, and rubbed with a liniment of soap, opium, spirits of turpentine and origanum. It should also be kept at rest for a fortnight longer.

3. Boy—Enlarged tonsils removed.

4. A Man, aged 33 years—Complete amaurosis of the right eye, and obscuration of the left, proceeding from suppuration of the *anteum highmorianum,* states that he had bad cholic, from working in white lead mills two years: that he then took a good deal of medicine, had his mouth made sore, and his teeth loose. He recovered his health and continued well till last April, when he took a severe cold in the head, which settled principally in the right side. This was followed by a severe pain in his teeth and gums, and extending thence to all that side of the head, leaving the left side entirely free. It was a beating pain, and was particularly severe at night. In May he had two teeth extracted which were loose, but perfectly sound, without relief, since that time, two more. The eye began to be affected about three months since, with an obscurity of the vision which steadily increased till he became entirely blind. The left eye began to be affected in the same way six weeks since. Two weeks since an opening was made into the cavity by Dr. Wallace, and a large quantity of fetid purulent matter discharged, with immediate relief. Matter continues to be discharged through the opening which is maintained for that purpose, and through the adjoining nostril. He continues to have pain in the head and occasionally has had deep-seated pain in

the eye, and the visual sense of clouds floating before it. The treatment has been syringing the cavity daily with soap and water, and every other day with nitrate of silver: and the eye plied with aconitine. The treatment is judicious, let it be continued. There is some hope to be entertained of the restoration of the sight.

5. Young woman. Epiphorce. She received a blow upon the cheek bone last April, which is the only cause she can assign to the complaint. Probably the increased secretion of tears is the result of sympathy of those branches of the fifth nerve distributed upon the eye, with those upon the part which received the injury. There is no appearance of fistula lachrymalis, except the flow of tears upon the cheek, from which it would be very likely to be pronounced that disease. No operation is required. Electricity, or showering with cold water would probably benefit by strengthening the debilitated nerves. The veratime ointment would also be useful.

7. Woman. aged 70 years. Came here three weeks ago with two large wens upon the head, one of which had ulcerated, and wore the appearance of a large rose cancer, or bloody *fungus*—that has been removed by ligature. The other remains to be removed by the knife. It is to be especially remarked that the scalp will not yield, like the skin of other parts of the body, so as to supply the place of any that has been removed. Another consideration of general application and of great importance, is to be noted in regard to encysted tumours; that every portion of their sac must be removed, or the reputation of the operator will suffer.

THE DISSECTOR.

JANUARY 1, 1846.

MEDICAL SCIENCE IN NEW YORK.

We publish in this number of our Journal several of the recent Clinical Lectures of Professor Mott, at the University Medical College, and of Professor Parker, at the Old Medical College, because they afford as full and fair a view of the theory and practice taught in these schools, especially in chronic diseases, as can probably be presented within a compendious compass.

The first point in them that will strike a reader of this Journal, protrudes very prominently in the lecture of Professor Parker, delivered November 24th, commencing page 41, being the 9th case—that of a female aged 17. It is first gravely described as a case of "spinal irritation," with the latitudinarianism of which favorite and convenient but unmeaning phrase, our readers are too familiar not to be highly amused. But it appears very speedily, from the Professor's own showing and admissions, to have been an organic disease of which the tenderness along the spine was merely symptomatic and indicative. Nevertheless this poor girl had been blistered and cupped and setoned along the spine, as all others have been and still are, under the old practice and theory. What then led this astute and learned Professor to discover, in advance of the whole array of the profession, from the examination which he had made, and which merely consisted in detecting a general irritation along the spine, that "there is no disease existing along the spine, but that this irritation is merely sympathetic, and dependent upon disease existing in some other organ?" What led him to arrive at so novel a conclusion, and one not only palpably a *non sequitur* from the facts as stated, but flatly opposite to the whole theory and practice of his predecessors and contemporaries? We are somewhat curious to know what would be his honest answer to this plain question. Certainly he has afforded us no clue to it, in stating, as he subsequently does, that "the connection between the uterus and spinal marrow is established through the medium of those nerves which are of spinal origin, and indirectly through the filaments derived from the sacral ganglia which inosculate with the anterior branches of the sacral nerves:" for this single fact is not better known or received by the profession in general, than the foregone conclusion which this admission evidently involves, of the existence of a similar connection between *all* the organs, inclusive of the muscles, and the ganglia of the posterior spinal nerves. What then becomes of the present theory and practice? And again we ask how comes Professor Parker in possession of such an immensity of superior illumination? But for the modesty to be sacrificed in such a solution, we might, to be sure, explain the whole mystery by merely adverting to the

notorious fact that this is.the doctrine which we have published, and the one upon which we have practiced for the last thirty years—during the last ten of which, under the very noses of those professors, in this city.

Now we presume that Professor Parker, even under the zeal of a new convert, would scarcely claim a connection between the uterus and the gangha of the dorsal or cervical vertebræ, but would very properly rest content with the irritation of the ganglia of the lumbar, or what he is pleased to call the sacral vertebræ, as indicative of uterine disease. What then becomes of the irritation which he describes as existing, in this case, along the whole extent of the spinal column? What was the meaning of all this? If the irritation of the lumbar ganglia were indicative of uterine disease, of what was the irritation of the dorsal, and the cervical ganglia indicative? Taking the statement as strictly correct, that the patient "complained when pressure was made over any point of the spinal column;" indeed, that she shrunk from the touch even when the fingers were passed lightly along its course--we are forced to the conclusion that all the organs of this patient were more or less diseased, including the muscles. Making all allowance, however, for a probably hasty and imperfect examination of all the ganglia in regular and distinctive order, we may safely conclude, from this general account of the case, that organic disease prevailed extensively, and was by no means limited to the uterus, and dysmenorrhœa. Indeed, from the palpitation mentioned, and the coldness of the hands and feet, it is evident that the heart was affected as well as the muscles. In short, from the statement before us, it admits of no doubt that the case was one of *tuberculosis*, or tubercular disease, in which all the organs, as well as the muscles, were more or less involved.

Thus much for the theory, and now for the practice of Professor Parker, in cases of this kind. He says, "In the treatment of this case, we find that she has experienced but little if any relief from the counter irritation which has been employed." Of course not; but he ought to have added, from his own observation, that such cruel and barbarous applications invariably tend to prostrate the nervous energy of those on whom they are inflicted, and ultimately to aggravate the disease. He pithily proceeds to say, that "the true way is to treat the disease *upon which the irritation depends*, and when you have removed the cause the effect will cease." We refrain, for a moment, from adverting to the treatment by which he proposes to accomplish this most laudable object, to quote his very noticeable remark given in connection with the above oracular maxim.

It is this—"Several years ago it was much the *fashion* to treat all cases of spinal irritation by friction along the spine with *ung. ant. tart.* but this practice is now pretty much abandoned." Now, we must take the liberty to say that we consider this one of the severest thrusts at the profession in general, and at Professor Mott in particular, that could have been dealt by any hand, however hostile. Upon Dr. Mott it is like the poignard of Brutus, for in the lecture of this celebrated Professor, delivered at the Universisity September 6, which we give at page 35, there is a case exactly similar to the one which called forth Professor Parker's fratricidal steel, in which Dr. Mott directly recommends precisely the very treatment which Dr. Parker condemns—condemns! do wesay?—nay, worse than that pronounces *unfashionable!* What! is it come to this? Dr. Mott an *unfashionable* physician?

Amissa pudicitia, quid erit salvum mulieri!

Dr. Mott briefly describes the case as one "which seemed to partake more of spinal irritation than any thing else, although the diagnosis was rather obscure. Recommended *counter irritants* to the spine."

We leave these learned gentlemen to settle this dispute about the fashions between themselves; but we think it due to Professor Parker to say, that, whencesoever he may have derived his new light upon this important subject, and however ungenerous and disingenuous we may deem his neglect to acknowledge its true source, we think him entitled to great commendation and encouragement for the moral courage he has displayed

in promulgating so vitally momentous a doctrine, in the midst of so high and so highly prejudiced a medical school. It is at the same time equally due to others to state that he is not the first among the medical Professors of this country who have shown an exalted intrepidity in this matter; many distinguished medical men in this and other states having for some time past openly adopted both the doctrine and treatment which, for many years, was advocated and practiced exclusively by the conductor of this Journal. In fact the Professors have been driven rather than led into these reluctant admissions and avowals, by the numerous examples which have arisen around them, in an attitude bordering upon derision.

By way of an amusing conclusion to this too serious commentary, we must not omit to mention Professor Parker's proclaimed treatment of the case upon which we have remarked. The readers of the lecture will perceive that it is limited to bathing, friction, flannel, and the application of leeches! The habitual readers of this Journal, however, are too well instructed upon this subject not to know that such treatment of this or of any other of the cases of *tuberculosis* occurring in these lectures, must be utterly futile, and that the patients must inevitably go to their graves unless the appropriate remedies for tubercular disease are applied.

"BEHIND THE AGE."

The students of Medicine who come to this city, from all parts of the Union, to pursue their studies in our Medical Colleges, have an undoubted and reasonable right to expect from their Professors and Lecturers, such information concerning the progress of medical science and discovery as will at least enable them to keep pace, in the general march of intelligence, with unprofessional readers of medical literature. Otherwise, on their visits to home in vacation, they are very likely to find their fathers and brothers, and perchance even their mothers and sisters, much better informed on such matters than themselves. How far this is likely to be the case under the inveterately conservative system of instruction still predominant in our medical schools, may be judged from the following example, quoted from Professor Parker's Lecture at the Old Medical College, December 8th, which we publish at page 43. Speaking of a case of *tuberculosis*, manifesting itself in a scrofulous tumefaction of the upper lip, he reiterates the following venerable but decrepid dogma:

"It is better to have this than Cancer, and it is worthy of note that *the two never coexist*; a person cannot have both; the patient who is suffering from either one of these is bullet proof against the other."

It is unnecessary to say how perniciously delusive this maxim may become among medical students. in case it be falacious and contrary to fact; and it requires but a brief notice to prove that it is as erroneous as any one of the thousand other absolute *dicta* of medical authorities long since exploded.

In the course of our own practice, we have found scrofula and cancer to co-exist, in the same person, in a great number of palpable and unequivocal cases; and we challenge the projection of any rational theory why both may not exist at the same time. But besides our own repeated observations of the stubborn fact, we have that of LIBERT, in *Mullers Archives*, Nos. 2 and 3, 1844, as quoted in a late number of the *London Lancet*, in the April number of this Journal, (page 92,) and in various other works. LIBERT there says, "Tubercles and cancer *do not exclude one another*, or even interfere with their separate march. Both morbid processes can, at the same, run through their stages of development in the same person."

In further evidence of the vulnerability of Professor Parker's "bullet-proof" protection, we beg to refer the reader to the article "On the Coincidence of Tubercle and Cancer," page 27 of this number of the *Dissector*, which we quote from the *Allgeimeine Zeitung fur chirurgie*. No. 51, 1844.

In truth it has *long been* the doctrine of the ablest medical men of this country, if not of Europe, that scrofula and cancer may and do co-exist, as now asserted and proved by these eminent German authorities. In our work on the "Motive Power of the Human

System," 8th edition, page 87, (Wiley and Putnam, N. Y,) the reader will find a case, strictly similar to the one adduced by Professor Parker, which occurred in our own practice so early as the year 1817, and in which the knife was about to be applied. We shall be excused for republishing it here, because it is directly pertinent to the question which Professor Parker has revived, and calculated to be useful to patients similarly affected:—

Cancer of the Lip.

Miss M. H——, of ——, aged 17 years. Called early in the morning to see her, in April, 1817; and was requested to examine her under lip, which was swollen and ulcerated, and to give my opinion of its character, and after examining it and the lymphatic glands of the neck, which were tuberculated on both sides, I pronounced it a case of scrofulous cancer. I was then requested to say whether I "could cure it without cutting it out," and readily answered in the affirmative, and was then told by the female attendant, that, that was all they wanted of me, and that I was at liberty to return home as soon as I pleased. Accordingly I bade her good morning, and returned home, perfectly in the dark, however, as regarded what was meant by this quixotic adventure. The next day, I was called again, and informed, in explanation, that a celebrated surgeon had been attending the patient about two months, and as the lip continued to get worse, and had become very painful, he had advised them, a few days before, of the futility of all remedies, but the knife, and had set the time of ten o'clock of the day before to perform the operation; but they had dismissed him, and sent for me to perform the cure without it.

She was of the middling size, light and ruddy complexion, eyes rather large and prominent, and form of face approaching that of the Roman, and with perfect symmetry of body and limbs, was what may be called a scrofulous beauty, bating only this horrible lip. Prescribed, magnetic pills and plaster. In five weeks from this time the cure was perfect, and the tuberculated glands in the neck had gradually become smaller, and soon after disappeared.

This case, and the following one of the uterus, were apparently cases of scrofulous cancer. I have had a few other cases of the lip of the same character, and many of a similar nature, affecting the uterus, which were cured with these remedies, but which have apparently little or no effect on the disease in this form, when affecting any other part of the body. I have imputed their effects, in the cases of the lip and uterus, to the strong power of contraction which they possess, from the fact that the same results are obtained in cases where strong compression can be applied at the same time as in the case given of Mrs. H., of Union, Butler Co., Ohio.

The case here referred to is the following:

Tubercula of the Uterus, terminating in Cancer.

Menorhagia terminating in Cancer.

Miss P. F——, of ——, of full habit and light complexion, aged 22 years; called to see her, May 16, 1812. She has menorrhagia, which commenced four months ago. I prescribed the usual remedies for many months, during which time, as before, she had been constantly confined to her bed: but all to no purpose, and it now became necessary to abandon the patient or commence a new treatment.

She had from the first complained much of pain and weakness in the small of the back; which was attended with leucorrhœa I proposed now to examine her back, and applied pressure on and around the lumbar vertebræ, and this produced violent pain, which, on every repetition of the pressure, darted into the uterus, and they appeared to be the same darting pains we find in cancer of the breast.

I now prescribed the magnetic pills and plaster. The plaster over the small of the back, or lumbar vertebræ, with injections into the uterus of a strong solution of acetate of iron, by means of a catheter and small pointed syringe.

Her symptoms began to improve slowly from this time, and in about three months, a very thick membrane separated from the inside of the uterus, and was discharged from it, rolled up—round—half an inch in diameter, and two inches in length, which was presented to me in a paper, and on unrolling and spreading it out on a stand, it presented two tumors or bunches, of dark colored fungi near the middle or centre of it,—one of which was near the size and shape of a pea, and flattened on the sides that adhered to the membrane, and at a distance from each other of half an inch.

These fungi were on the outside of the membrane, or that next the uterus, and adhered to and sunk deeply into it; and there arose out of their tops and sides small white or light colored substances of the size and appearance of small threads, and from a line to a fourth of an inch in length. On examining the other side of this membrane, small holes or chinks were found opposite to these fungi.

In a few weeks after this, her health was restored. She married about a year after, but has had no children.

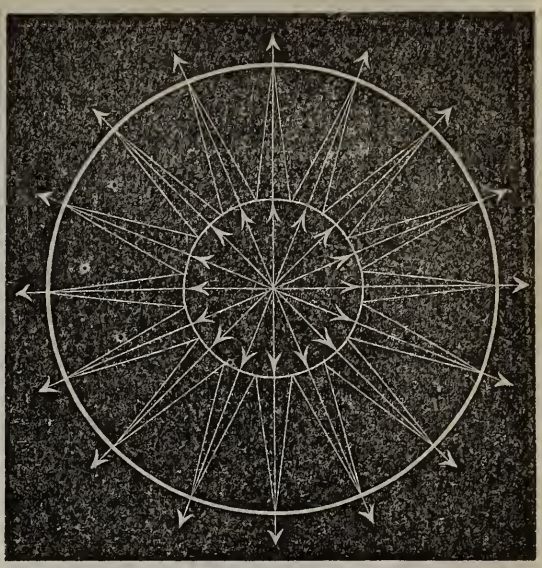
"MAGNETIC SLEEP."

Among the extraordinary phenomena of magnetic sleep, is the insensibility of the skin, or external surface of the body, and the establishment and exaltation of sensibility in the mucous or internal surfaces, in which the natural order of the magnetism of the human system is reversed.

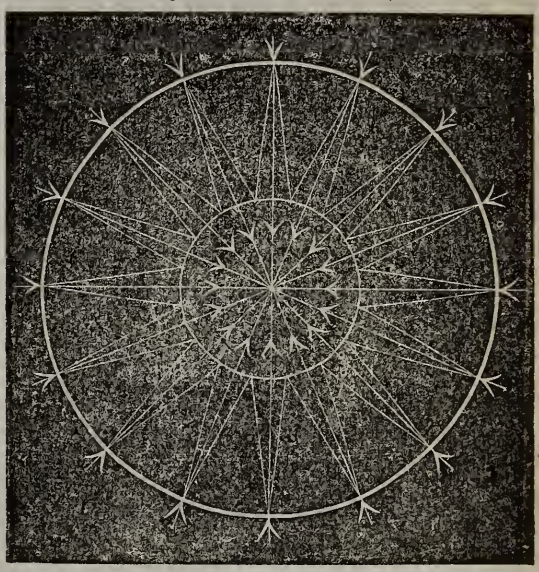
A solution of these phenomena is found in the fact, that, in the natural state, the skin or external surface of the body, as well as the external surfaces of the organs and facia of the muscles, excrete a serous or negative matter that gives out the positive force which attracts and contracts, and is consequently endowed with sensation; while the mucous or internal surfaces of these structures excrete a mucous or positive matter that gives out the negative force which repels and expands, and is consequently destitute of sensation.

Now the magnetiser reverses this order unconsciously, int he process of magnetising, by repelling the positive forces from the surface to the centre, and attracting the negative forces to the surface, and this reversal of the order of the magnetism of bodies is according to a law of these forces, and is therefore founded in nature and easily imitated.

If a round iron or steel plate, or disk, with a hole in the centre, representing a middle horizontal section of the body. is placed on the positive pole of a Galvanic Battery, under a moderate power, it presents the phenomena represented in the following figure



or a negative internal and a positive external surface; but if we now place the plate on the negative pole of the same battery, the order of the magnetism of the plate will be reversed as represented in this figure.



showing in the first figure the natural order of the magnetism of the body, and in the second, the induced order, in the magnetic sleep.

PARALYSIS IN MAGNETIC SLEEP.

On a Sunday evening in August last, a young woman, named Emma W——, about 24 years of age, who had long been a Clairvoyant, and who had at length acquired the power of putting herself into the magnetic sleep, without the aid of a magnetizer, was at the office of the Editor of this work, during his absence on professional duties, await-

ing his return. A friend of his who was also staying to see him, thinking this a good opportunity to elicit the phenomena of clairvoyance with less liability of interruption than might have been afforded on a business day, requested the lady to put herself into that state, and inform him concerning the nature of the luminous atmosphere, spots, and opaque body of the sun. She replied that she feared it was rather a dangerous experiment, and had heard of several clairvoyants who had suffered severely in attempting it. She nevertheless consented, saying that she would endeavor not to venture too far.

In the course of five or six minutes, she manifested all the usual symptoms of a complete magnetic sleep, and apprised her interrogator, with some slight degree of irresolution, that she was ready to attempt an inspection of the solar orb. Shortly afterwards, she evinced a highly nervous shrinking, as if from a sense of awe, and said, in answer to an enquiry, that she felt the solar influence to be too powerful for her to persist, and was afraid she would lose her senses—in her own words, she feared "that her whole mind would be consumed." She was accordingly requested to venture no farther, but remain if possible, in the position she had acquired, and describe what she saw. She then said that she had now a view of the dark body of the sun—that it was black, but highly lustrous, like "black shining melted metal;" she was confident it was highly metallic, though she could look at it no longer, as it was again closing up in a degree of brightness which she could not endure.

Whilst obtaining these answers, the gentleman in communication with her, perceived that her left arm was greatly paralyzed, and the hand became so tightly clinched that he could with difficulty rescue his fingers from the painful grasp. Speedily she announced that she was absolutely paralyzed on the whole of her left side, and was fearful that she would be convulsed all over. She added that "if she had continued so near the sun a minute longer, the influence would have killed her;" and, as it was, she knew not how she could recover from the convulsions she felt approaching, unless some powerful magnetizer could be obtained to awaken her. Shortly after this, her convulsions became so violent and alarming as to induce the gentleman who was with her to call for assistance to hold her in the chair. She became unable to speak or hear; she breathed only at long intervals and with great labor; her right hand was kept so forcibly on her heart that it could not be moved with the united strength of two or three persons; and the action of the heart itself seemed to be almost entirely suspended. The pulse were frightfully intermittent, and, for long intervals, wholly imperceptible; the eyes were open, with the pupils half buried beneath the lower lids, and greatly dilated.

In this state, varied only by convulsive paroxysms of greater or less intensity, she continued nearly four hours, when the writer, who had been detained much beyond his usual time, returned. He found her surrounded by his family and medical assistants, together with a magnetizer and a male clairvoyant who had been sent for to relieve her. Their efforts, however, had produced only slight and transient effects in mitigating her condition, and the writer judged it proper to attempt to establish a communication with her, as the only means of awakening her, and with this view commenced making the long magnetic passes, and then reversed them. The effect of these was very striking, even from the first: producing sudden starts, followed by greater freedom of respiration, and some degree of relaxation of the muscles. The male clairvoyant present being in a magnetic state, recommended that as soon as her arms became sufficiently relaxed, her hands should be kept in a basin of cold water, and the passes continued; adding that, under this process she would awake in twenty-five minutes, although it would require a much longer time for her to recover from what he described as her "rash attempt," the effects of which upon her brain and nervous system he minutely and lucidly described.

As soon as her hands could be placed in the water, several watches were observed, and the assigned twenty-five-minutes curiously awaited by the spectators. Precise-

ly at the end of this period, she awoke and spoke, her whole left side, however, which had first been attacked, still remaining perfectly paralyzed, not excepting even the left arm which had been so directed as to reach the basin of water. To remove this state of paralysis, the writer found it necessary to resort to the Magnetic Machine. It was used three times a day, and on the third day the paralysis disappeared, and she was able to return to her home.

We publish this case as a caution to magnetizers and clairvoyants against gratifying the curiosity, so frequently evinced by persons ignorant of the dangerous nature of the experiment, of instituting clairvoyant explorations of the sun. This is but one out of many well authenticated instances which we might report, in which the attempt has nearly proved fatal. The planets, however, may be, and frequently are examined by good clairvoyants, with perfect safety and success.

A Word on Magnetic Machines.

The Magnetic Machines first generally introduced among the medical profession in this country, accompanied with careful directions for their use in a scientific and effectual manner, were manufactured under the inspection of the editor of this Journal, and those directions were in accordance with personal observations and experiments, made in the course of an extensive and various practice. We were induced to commence the manufacture of them, not only because we saw that we could make those improvements in their construction and efficiency which we have introduced, and by which our instruments immediately became strikingly distinguished, but also because we deeply felt the importance of the consideration that those who might be induced to try this new curative influence, and, among these, medical men in particular, shou'd be in possession of an instrument upon which they could rely, and not become discouraged or prejudiced with regard to the influence itself, on account of the defectiveness or inadequacy of the machinery employed.

We soon had the happiness to observe that the improved machines of our own manufacture, accompanied by a Manual of Directions for Use, gave great satisfaction, and accomplished our highest expectations, both in professional and domestic practice.

Their superiority and efficiency, however, soon incited a host of merely mercenary imitators, and a multitude of miserable imitations, the distribution of which, unaccompanied by experienced and scientific instructions, has already caused great disappointment, and thus, to a certain extent, superinduced the very mischief which it was our first and strongest motive to prevent. We are thus compelled, in self-defence, as well as in defence of a source of human relief and health, demonstrably of inestimable value, to continue the manufacture of our own instruments, and to caution the public against the worthless imitations to which we have referred, and the unscrupulous quackery with which they are accompanied. One of the most barefaced (though not on that account the most pernicious) of these examples, is the following, which we copy from a Philadelphia paper:—

Professor Grant's Premium Electro Magnetic Machines.

These Machines have this year obtained the HIGHEST PREMIUM awarded to Electro Magnetic Machines, at the Fair of the Franklin Institute; and to show that this award is a test of the high merit of these Machines, it may be mentioned that there were placed in competition with them the First Premium Machines by Dr. Smith, recently from the Fair of the American Institute in New York, which there took the Premium over Sherwood's, Pike's, and others, and also Machines from the best manufacturers in Philadelphia.

The peculiar merit of these Machines, consists in the intensity of the Electro Magnetic current exhibited. That this intensity is a quality essential to the utility of the Machine, may be proved by the fact that more cures have been accomplished by these instruments, than by all other Machines conjointly.

More than four hundred references and certificates of cures performed within the past year, can be produced, where cures have been accomplished by these Machines, when all other medical appliances have utterly failed. All kinds of Chronic Diseases are removed by these applications, when persevering'y continued. Every Physician should be supplied with one. and also every Family. who wish to avail themselves of this invaluable specific for all the ills that flesh is heir to.

They are put up in neat mahogany boxes, at a price varying from $10 to $15. The $10 Machines are warranted to act as efficiently as those sold elsewhere at $15. They may be obtained at JOHN C. FARR'S Jewelry Establishment, No 112 Chesnut street, Philadelphia, and at the Manufactory of MR. BRIGHAM, fourth story of the same building. Sole Agents and Manufacturers for the United States.

☞ They will be sent for a cash order to any part of the World, neatly packed up, and accompanied by a pamphlet, with full directions for their use.

It is here most impudently asserted that "Sherwood's," meaning our Magnetic Machine, was placed in competition with those of Mr. (not Dr.) Smith, and Mr. Pike, at the late Fair of the American Institute of this city; and that as the said Mr. Smith's Machine took the First Premium over ours and Mr. Pike's, on that occasion, so this Professor Grant's Machine took the First Premium over all, at the subsequent Fair of the Franklin Institute, in Philadelphia. It is unfortunate for this arrant climax of pretension that it rests entirely upon an unscrupulous falsehood; the exposure of which, must throw the whole fabric to the ground. No machine of ours was at that Fair of the American Institute; and consequently no other took the Premium over it. We are content that it should continue to be considered as the best by the medical profession, who are the best judges, and have never sought to endow it with a factitious and mere clap-trap notoriety. We are thoroughly acquainted with the several machines of Messrs. Smith and Pike, and also with this boasted one of Grant's; and have not a moment's hesitation in saying that either of the two former is infinitely superior to the latter—although inferior to our own. It will be seen, that the above advertisement, claims it as the "peculiar merit" of Grant's Machine that it exhibits a greater intensity of power: and this merit will certainly appear to be "very peculiar" when we state that two of these self-same machines have been sent to *us*, direct from Philadelphia to *increase* their power, and to substitute our metallic buttons for the sponges with which the forces of this kind of machine are applied. One of these machines, in fact, is now in our office, and open for comparative inspection and trial.

And here we deem it proper to remark, in reference to this machine of Grant's, and to all others in which sponges are used instead of metallic buttons, that the sponge is highly objectionable on account of its evident liability to communicate disease from one patient to another, and from one part of the body to another. It is evident that a moist sponge, under any circumstances, after being used on a sore, or any diseased part, is well calculated to convey disease from part to part, or person to person; and that this liability is greatly enhanced by its connexion with a magnetic wire, and the forces which pass through it, is but too obvious It is well known that water is one of the best conductors of these forces, and that the sensible power of the machine is greatly increased by the medium of a wet sponge; hence the use of this material, and hence also the opportunity afforded of passing off machines of really inferior power and cost of manufacture as equal or superior to others of incomparably greater real force and substantial value. If a patient, under any peculiar fancy, should wish to try how much of the sensible force of a machine he can bear, he can readily be accommodated, if not exactly gratified, by wetting the metallic buttons, or the part to which they are applied, with pure water, and thus dispense with the offensive and very possibly dangerous use of the sponge; besides avoiding the imposition upon himself of a bad Magnetic Machine for a good one. ——

New Discovery in Medicine.

The newspapers have given, within the last few days, some eloquent descriptions of a new and wonderful medicine, invented or discovered by an Italian chemist, and called after his name. If all the accounts are correct which have been given of this new discovery, it is a perfect philosopher's stone—the long looked for elixir of life.

According to these accounts, this newly discovered medicine consists of a liquid extracted from vegetable products, which, being applied to wounds or cuts, even of the carotid artery, causes an immediate suspension of hemorrhage, and heals the parts in a few minutes. It is said to be a perfect cure for all sorts of disorders, from the beginning of the alphabet to the end. The accounts given of experiments made in Paris, before the whole circle of physicians and surgeons there, are of a remarkable character. These experiments were made upon certain innocent sheep, whose throats were inhumanly cut to test the efficacy of the medicine, and were probably afterwards eaten, as very good mutton, by those who made the experiments.

The first account of this extraordinary discovery in the art of healing, has been given to the world by a certain Chevalier attached to the French newspaper published in this city. Whether he is a lineal descendant of Baron Munchausen we do not know; but certainly the story looks very much like it. The famous Moon hoax was not more improbable than this story of the *Eau Brochieri.—New-York Herald, January* 6, 1846.

REVIEWS.

Animal Chemistry, or Organic Chemistry in its application to Physiology and Pathology. By JUSTUS LIEBIG, M.D. &c. London: Taylor and Watson, 1842, pp. 354.

The positionwhich Liebig now holds as a European chemist may certainly be said to be the highest; even Sir Humphrey Davy, lauded and caressed as he was on all sides, did not enjoy a greater share of popularity with scientific men in general, and more particularly with the public in this country, than does the present Professor of Chemistry in a hitherto obscure German university. Nor will this be wondered at, if we look back upon the history of this extraordinary man. Whilst yet a youth of nineteen years of age, he published his paper on the Cyanic and Fulminic Acids, a work which bore upon it the stamp of genius, and proved incontestably that the author was then not only a good practical chemist, but also endowed with great acumen and uncommon powers of analysis. From that time until the present, he has never ceased to pursue his researches with most praiseworthy zeal, and year after year, nay, month after month, has borne testimony to the successful research and patient industry of our author. His papers, several of them written in conjunction with Wohler, merit the highest praise We need only mention his celebrated one on the radical of the oil of bitter almonds, to remind our chemical readers of the impulse given to the investigation of the compound radicals by its publication, which indeed now bears its fruit by the hands of previously eminent chemists, and of others formerly unknown to science, but who now, reared in the school of Giessen, enjoy a reputation more than respectable, amongst the cultivators of the science of chemistry. The work now before us has been in the hands of our readers for a considerable time, and none, we may safely say, of modern authorship has produced a more vivid excitement in the scientific world. Its publication has effected immense good, by directing the attention of medical men, previously too little devoted to chemistry, to a careful study of that science. Medical journals, which ten years ago teemed with papers the most puerile, and which often indicated the grossest ignorance of chemistry, are now, following the general rule of running into extremes, filled with papers so *recherche*, that we have chemical explanations not only of the processes through which the aliment we swallow passes, but even of the action of the condiments and medicinal substances consumed along with it,—the whole confirmed by a chemical analysis, of course not to be disputed, of *tenths of grains*, and of the ratio that the constituents of these bear to some important secretion weighing *ounces!*

These are circumstances that give us infinite pleasure; and we sincerely trust that the authors of these multifarious papers will hold us in no disesteem, if, in the course of the following remarks, which our duty, as journalists, compel us to make on the work of their master, we should appear to hold a doubtful opinion as to the merits, importance, and even scientific truth of what he and they have asserted. The consideration of the organic chemistry is, however, to be approached in no light spirit, but merits our attentive perusal and careful examination. Some of the doctrines enumerated by Liebig and his disciples are so startling, and are apparently supported by facts so incontrovertible, that the whole work wears an air of plausibility, and engages the attention by a pleasing simplicity of arrangement, which must prove exceedingly captivating to all who are desirous of information on the chemistry of physiology. It is not our intention to attempt a minute critique on the whole work of the author, as, to do justice, in all its details, to a subject of this nature, would require a space which our limits cannot allow We would, however, as much as possible direct the attention of our readers to those parts of it most intimately connected with medicine; and as these, if not entirely new, are at least for the first time brought forward in a formal manner, they are well deserving of it.

The organic chemistry is divided into three parts,—the *first*, is devoted to the examination of the chemistry of nutrition;—the *second*, to the subject of the metamorphosis of the tissues;--and the *third*, to the phenomena of motion, &c. The first part commences with some very judicious remarks on the subject of vitality; but at the second page we find a statement which we cannot conceive to express well what the author means. It runs thus;—"The animal organism requires, for its support and development, highly organized atoms." This is a very loose and inaccurate manner of saying that animals require for nutrition a more complex class of chemical compounds than those formed by the ordinary inorganic reactions. We may infer from this, and many similar oversights, that Liebig has not very clear notions of the terms of vitality and life; for a few pages farther on, we find expressions which plainly show that these are, in his opinion, identical. P. 11:—"Certain phenomena of motion and activity," says he, "are perceived; and these we call life or vitality." This, we confess, appears

to us to sound rather contradictory when placed in juxtaposition with the first sentence in the book, where vitality is distinctly stated to be the force which, acted on by external stimuli, produces the above described phenomena of motion. We find, in the succeeding pages, some interesting general remarks on the proportion of oxygen consumed at different temperatures, and on the necessity of an increased amount of carbonaceous aliments at low degrees of heat; with illustrations from the fact, that natives of northern districts can consume with impunity much larger quantities of flesh and stimulating drinks, than inhabitants of the tropics. Without denying, *in toto*, what Liebig has said on this subject, we would merely throw out a hint as to how far these so called carbonaceous articles of diet of northern people do act in the manner he describes; and would ask, whether the desire for such food is not to be ascribed as much to its stimulating nature, as to its merely chemical constitution? Can here be any doubt that the natives of India, tthrive well on a most carbonaceous diet whilst European residents die from various causes, and amongst them, from the abuse of highly azotized and stimulating articles of aliment? It requires that a person should have seen but once the enormous quantity of rice and *ghee* consumed by a Hindoo at a single meal, to satisfy himself, that the conclusions of our author, however plausible they may appear, are still to be received with caution. The experiments of Pepys, made many years ago, were conclusive to the point, that the same person under the influence of intoxicating liquors, exhaled less carbonic acid than when not subjected to it,—a fesult directly the reverse of what we should, according to our author's views, have expected to take place. In stating this, however, we quite agree with the general conclusion to which he has come, that there is no support to the opinion that there exists in the animal body any other unknown source of heat, besides the mutual chemical action between the element of the food and the oxygen of the air.

Glancing hurriedly at the many topics which engage the attention of our author in this the first part of his work, we have only space to call attention to some statements more marked than others; and we cannot pass over the one at p. 39, without expressing our doubt of its correctness. "Exercise and labour," says he, "cause a diminution in the quantity of the menstrual discharge; and when it is suppressed in consequence of disease, the vegetative life is manifested in a morbid deposition of fat." Now, as far as our experience goes, and we should say that of most practical medical men, it will be found that the suppression of this important secretion, symptomatic as it for the most part is of a derangement of the very functions which constitute the so-called vegetative life, is inimical to the deposition of fat. That increased bulk frequently results from it we do not deny; but that this depends on serous deposits in the cellular tissue, &c, is too obvious to require more than a mere comment on the circumstance. The chapter which has given rise to these remarks, is exceedingly interesting, and concludes with a classification of the articles of diet in a twofold division; i. e. plastic elements of nutrition, and the elements of respiration. For further information on these points, we must, however, refer our readers to the work itself.

The Second Chapter is headed, "On the Metamorphosis of the Tissues;" and here the extensive practical knowledge of our author is exhibited. But here facts are so mixed up with hypotheses, that we are frequently at a loss to know what statements are true, and what merely assumptions. At page 114, in speaking of the quantities of air which reach the stomach with the saliva, he states,—"The fact, that nitrogen is given out by the skin and lungs, is explained by the property which animal membranes possess, of allowing all gases to permeate them, a property which can be shewn to exist by the most simple experiments." Then follows an account of the well-known fact of the permeability of dead animal membrane to gases: "and that it is a mechanical property common to all animal tissues, and is formed in the same degree in the living as in the dead tissue." Now, we are all perfectly aware, that such permeability, as a memancal property, exists in the dead tissues but, as physiologists, we are compelled tochesitate before we can designate it as ; erely such in the living membrane. A fact militating strongly against this doctrine is, that different gases when introduced into a tissue are not absorbed with the same rapidity; for, in cases of emphysema, the oxygen disappears long before the nitrogen, and this fac of itself is sufficient, were others wanting, to shew that this is something more than a merely mechanical cause in operation, being, indeed, but a result in conformity with the general law, that, within certain limits, the more stimulating the substance the more rapidly is it absorbed.

The paragraph immediately succeeding gives an explanation of the mode of the production of traumatic emphysema, which confirms our impression of the vagueness of Liebig's ideas on subjects apart from chemis-

try. It runs thus:—"It is known that in cases of wounds of the lungs a peculiar condition is produced, in which, by the act of inspiration, not only oxygen, but atmospherical air, with its whole amount, four-fifths of nitrogen penetrates into the cells of the lungs. The air is caried by the circulation to every part of the body, so that every part is inflated or puffed up with the air, as with water in dropsy." To assume that the air is absorbed by the blood, and again deposited in the tissues, is most illogical, besides being quite opposed to all fact. The air, as all surgeons know, is forced into the cellular tissue surrounding the wounded costal pleura, and is in the ratio of the size of the wound of the pleura and of the force of the inspirations. Were the explanation given by Liebig correct, we should find emphysema as one of the results of the poisoning of the feather white wine, the noxious qualities of which he explains on the supposition that the carbonic acid, so abundantly generated in the stomach after drinking it, permeates the stomach, the diaphragm, and both the layers of the pleura, although it seems to make no stay between these, but proceeds at once to the air-cells, to suffocate the unfortunate drunkard; and the proof that this is the fact, is found in the circumstance, that the inhalation of ammonia is recognized as the best antidote against this kind of poisoning. This hasty conclusion is not, however, at all justifiable. Such a mode of procedure on the part of the carbonic acid is open to numerous objections: and although it is not easy to say what is the cause of death in the poisoning by this wine, it is much more rational to suppose that it may be produced by such a rapid accumulation of gas as to produce asphyxia, by suspension of the action of the diaphragm, knowing, as we do, the effects that result from spasm of this muscle in angina pectoris; or, again, supposing the gas is eructated with great force and rapidity, it may cause, what carbonic acid when pure immediately does, spasm of the glottis, which must be rapidly fatal. The relief afforded by the ammonia may be explained on grounds other than chemical, and is much more likely to arise from its stimulant effects on the nervous system, than from its forming a salt in the air tubes and cells, as poisonous in that situation as the original carbonic acid would have proved.

The whole of this part of the chapter is in the same style, consisting, for the most part, of assumptions without proof, and contortions of phenomena to suit particular hypotheses of the author.

In the opinion of Liebig, theine, caffeine, theobromine, may be considered as the food of the liver; for, by the addition of oxygen and water to the two former, a constituent of the bile—taurine—may be formed; and, by the same addition to the elements of theobromine, taurine and urea, or taurine and uric acids may be produced. Two and eight-tenths of a grain of caffeine can give to an ounce of bile the nitrogen it contains in the form of taurine. And he infers from this, that the reason of these substances having become in their use so universal, as articles of diet, is, that those who chiefly live on vegetables take them instinctively, as it were, for the purpose of supplying azote to the bile, which must otherwise have come from the waste of the tissues. The quantity of theine and caffeine, contained in the infusions we drink, is, however, so extremely small, that, although we may admit their action to be as he describes, yet, practically speaking, it is as *nil*, compared to the amount of biliary secretion. We must look for an explanation of the desire for these articles, other than any dietetic purpose they can serve, in the properties they possess of acting as stimulants on the nervous system. In no other way can we understand how green tea acts with such energy, compared with coffee, when the quantity of caffeine in the latter far exceeds that in the former, than by assuming that the action is dynamic, and not, as Liebig would infer, chemical.

The attempt to explain the mode of action of organic medical agents, on the hypothesis that these, being azotized bodies, produce a peculiar change in the chemical constitution of the nervous tissue, is exceedingly unsatisfactory; for, were it so, the objection which Liebig himself states is fatal, seeing that the poisonous properties of these bodies is not in the ratio of the quantity of nitrogen they contain; picrotoxine, which, if it contains any, at all events very little, of that element, being exceedingly poisonous, whilst caffeine, duinine, &c, are not so.

"The acton," he says, "of these bodies is commonly said to be dynamic, that is, it accelerates, or retards, or alters, in some manner, the phenomena of motion in animal life. If we reflect that this action is exerted by substances which are material, tangible, and ponderable;—that they disappear in the organism;—that a double dose acts more powerfully than a single one;—that, after a time, a fresh dose must be given if we wish to produce the action a second time; all these considerations, viewed chemically, permit only one form of explanation,—the supposition, namely, that these compounds, by means of their elements, take a share in the formation of new, or the transformation of existing, brain and nervous matter."

The common view, that the action is dynamic, is in want of other proof, quite as probable as the chemical view taken of the matter by Liebig, and explains, equally satisfactorily, the necessity of increased dose to produce the previous effect; and, in the present state of chemical analysis, is likely to hold its ground against the doctrines here inculcated. The dynamic theory renders quite clear to our mind the effect of immaterial agencies in disturbing, exciting, or exhausting, the susceptibilities of the nervous tissue, which the chemical one of adding to, or abstracting from, the inorganic components of the tissue cannot do.

We shall, in our next, resume the subject, and examine the contents of the Third Chapter, which contains "The Phenomena of Motion in the Animal Organism,—the Theory of Respiration,—and the Theory of Disease

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HEREDITARY DISEASE.

One of the families of this village, (Truman Judson, by name,) consisting of nine members, have all been sick with a malignant form of typhus fever. Out of this number five have died—the father and mother, one son and two daughters. It has been remarkable that the sickness has been confined exclusively to this house, and although apparently of the most malignant character, and for weeks there have been from four to six watchers day and night, no other person in the town has taken the disease. But the most peculiar fact is. that just twenty-one years ago this same sickness appeared in the family of the mother of this household, which family, as this, was composed of nine members, and out of these nine the same number as now. five, were carried to their graves. As now, no other persons of the town then took the fever. Perhaps this fact might be considered by physicians in some way instructive.

Letter from Woodbury, Ct.

THE GIANT AGAIN.—The skeleton found 50 feet below the surface of the earth, jammed between the rocks, is now exhibiting in Nashville, having been put together as well as could be with several bones broken It presents the appearance of a human skeleton measuring 16 feet from the top of the skull bone to the bottom of the ankle bones. Such wonderful men must have been formed to match the extraordinary mastadon found in that neighborhood. It is impossible to say when they existed. *N. Y. Sun.*

On Incision of the Tunica Albuginea in cases of Inflammation of the Substance of the Testicle.

Inflammation of the substance of the testicle is often attended by intense pain, which it seems rational to attribute to a kind of strangulation produced by the unyielding nature of the *tunica albuginea.* When this pain continues long. is of an intense nature, and obstinately resists the usual therapeutic means, suppuration of the testicle is to be dreaded. With the view of relieving these intense pains, and preventing the termination in suppuration, M. Vidal exposes the testicle and carefully divides the *tunica albuginea* by a longitudinal incision. He has already performed this operation fifteen times successfully: and in answer to any supposed permanent injury which the testicle might be supposed to receive from injury of the semeniferous canals by the incision, or from the testicle becoming fixed in consequence of union with the cicatrix, M. Vidal answers.—1. The inflammation of the testicle ends in resolution after the operation. 2. The wound of the *tunica albuginea* becomes confounded with that of the serous and other membranes, and the whole form a single cicatrix. 3. The cicatrix becomes linear, and then the testicle is found to be but slightly adhering to the other membranes. 4. Lastly, the testicle recovers its entire freedom, its ordinary volume, and normal consistence.—*Edin. Med. and Surg. Jour.*

The Debris furnished by Pavements.

It is stated by Mr. Thorn, a contractor, that the mud on a *Macadamised road* is three times as much as on ordinary pavement; whilst the accumulation on a *wooden* road is not more than one-third of that on pavement. Mr. Whitworth, the inventor of the machine for cleansing streets, and which has been for some time used in a few districts in London, and generally in Manchester, states that at Manchester, he has agreed to sweep the street twice as often as under the old system, and at a saving to the town of £500 per annum. Some idea of the efficiency of this plan, which is applicable to every kind of street surface, may be formed from the fact, that whilst a man can on the average sweep not more than 1500 square yards daily, the machine worked by one horse, sweeps from 16,000 to 24,000 square yards per diem. The economy of labor on the whole is so great, that one machine will do the work of 36 men. Mr. Whitworth states that he is engaged in preparing a hand-sweeping machine for courts and alleys, an amelioration which, if properly carried out by the authorities, will be an unspeakable benefit.—*Med. Chir. Rev.*

THE DISSECTOR:

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FALLACIES OF THE FACULTY.

Lectures delivered at the Egyptian Hall, Picadilly, London, 1840.

By S. Dixon, M. D.

LECTURE IX.

PHYSIC AND POISON IDENTICAL—REMEDIAL MEANS INCLUDE EVERY THING IN NATURE—ACTION OF MEDICINAL SUBSTANCES PROVED TO BE ELECTRICAL—PARTICULAR REMEDIES, AND WHY THEY EFFECT PARTICULAR PARTS.

Gentlemen,

From the History of Medicine we learn, that after Charms came Simples. To the list of our remedial means, chance and experience successively added Poisons.—"Wherefore" asked Pliny, "has our mother, the Earth, brought forth so many deadly drugs, but, that when wearied with suffering, we may employ them for suicide?" If such was the opinion of the polished Roman, can you wonder at the belief of the rude Carib, and the still ruder Boschman, that poisons were sent them for the destruction of their national enemies? The friends of the Chrono-thermal system see the matter in another light. In common with the believers of the Christian creed, they assume, that the beneficent Creator of all things sent nothing into the world for the destruction of his creatures. By the motion of men's hands the Pyramids were produced. The same motion, acting reversely, might make them vanish from the plains where they have stood, the wonder of centuries. If the identical power, then, which may render a temple or a tower a heap of ruins, applied in another fashion to the materials composing it, first erected the fabric—why may not the motive power of a physical agent, which wrongly administered, has destroyed the life of man, be employed, in a right direction, to preserve his existence. ?

"Philosophy, wisdom and liberty support each other;—he who will not reason is a bigot—he who cannot is a fool—and he who dares not is a slave!—[Sir William Drummond.] The base and selfish, of all ages have ruled mankind by terror. By this the priest has trampled down reason; the despot, the rights of a people. To this passion the charlatan appeals, when he sneeringly speaks of particular substances as poisons, the better to distinguish them from his own nostrum of universal and absolute safety? What is the real meaning of the word poison? In its popular sense, it signifies any thing in nature, that, in a comparatively small quantity, can shorten, or otherwise prove injurious to life. It is, then a term of relation—a term depending entirely on degree, volume, or scale. But what is there under heaven, when tried by this test, that may not become a poison? Food, fire, water, air, are these absolutely inocuous? The glutton dies of the meal that gorged him; is that a reason why we should never eat? The child is accidentally involved in the flames of a furnace; must we, on that account, deny ourselves the warmth of the winter-hearth?—Air has chilled and water drowned; must we, therefore, abandon air and water?—Yet, this is the mode in which certain wiseacres reason on medicine! We must cease, according to these praters, to use opium medicinally—opium which, in one degree, has so often given relief to suffering; because the suicide, in another, has settled his earthly account with it! We must repudiate the curative effects of arsenic in Ague; because, with a thousand times the quantity adequate to that desirable end, the cut-throat and the poisoner have despatched their victims by arsenic! We must linger life away in the agonies of gout and rheumatism, instead of resorting to colchicum,

which has so often cured both; because people have been accidentally destroyed by colchicum in a volume, never given for either rheumatism or gout! How many diseases has not prussic acid cured or alleviated; yet we must abjure its benign influence in this way, forsooth; because love-sick maidens, and men maddened by misfortune, have ended their lives with prussic acid, in a quantity which no body ever dreamt of giving for any disease whatever! By the same enlightened Philosophy, we must not pat a child's head, because a blow might knock it down! Gentlemen, need I tell you, that the whole of these agents, in their medicinal doses, are as safe as rhubarb in its medicinal dose; and safer than wine to some people, in the quantity usually taken at table. But granting that, even in their medicinal doses, they all, in common with every thing in existence, occasionally produce the temporary inconvenience of disagreeable feeling—is that any reason why we should abandon their use, in the cure of diseases attended with feelings for the most part more sensibly disagreeable! What on earth, worth accomplishing, was ever accomplished without a similar risk? We cannot cross a thoroughfare without the risk of being jostled—ergo, we must never cross a thoroughfare! Gentlemen, *ubi virus ibi virtus*, is as true in most things as in medicine! Poison and physic are, in truth, ONE and IDENTICAL for any earthly agent may become both, by turns, according as it is used or abused. A German poet rightly observes—

Divide the THUNDER into *single* notes,
And it is but a lullaby for children;
But, pour it in *one volume* on the air,
And the intensity makes heaven to shake.

The same rule holds good in physic.—Everything depends on the scale or degree in which you apply a given substance to the body, and the particular circumstances and condition of the body at the time, whether such substance be a remedy or a poison.—What is there that pertains to earth or air, that we may not usefully employ? If Man, in his ignorance or depravity, turn a particular power to evil account instead of to good, shall blame be imputed to the Almighty, who bestowed it on him as a boon? Let babblers beware how they commit themselves in this matter;—let them fully understand, that when they decry any agent in nature as being, in the abstract, a dangerous medicine, or a poison, they not only arraign God for his goodness, but expose, at the same time, their utter ignorance of his laws. Where men have not examined, surely it were only policy to be silent. Do medical practitioners ever prate in this language of imbecillity? Too frequently, Gentlemen:—but in their case, it generally proceeds less from a want of knowledge of the subject, than from a wish to disparage a professional competitor. Sordid practitioners know that there is no readier mode of influencing the sick, than by playing upon their fears. Not a week passes, but I am told by some patient—"Oh, I showed your prescription to Dr. So-and-so and he said it contains poison!"—Bless my life! I generally answer, what a wonderful thing. Why, then, does not Dr. So-and-so get the College of Physicians indicted for the introduction of such substances into their medicinal pharmacopeia? Why does he not gravely arraign them for the processes which they have devised for the preparation of "medicinal" arsenic, "medicinal" opium, "medicinal" prussic acid,—and tell them boldly and at once that these are all so many concentrated essences of death and destruction, which no skill can render valuable, no scale of diminution adapt to the relief or cure of their suffering fellow-creatures.—Only let Dr. So-and-so put down, in writing, that any of these substances ever poisoned any body, in the dose and at the age for which I and others prescribe it, and I shall have the pleasure of publishing the fact to the professional world, for their future edification. To whisper away an honorable man's reputation in a corner where he has no opportunity of reply, though a pitiful thing to do, is nevertheless a thing very often and very successfully done;—to write or reason down the same man's character unfairly, on paper, is more difficult. Cautions—doubts—insinuations—these are the weapons by which you will be secretly supplanted in practice. Yes, Gentlemen, individuals who call themselves physicians, and who, without a scruple, would pour out a pint of your heart's blood at a time, will effect to start at the sixteenth part of a grain of strychnine, and shrug their shoulders significantly, at two drops of prussic acid! "How easy to put such men down," I have been told. You have only to ask them, if they ever knew an adult die of either medicine in these doses?—and dare them to say, that they have not themselves killed hundreds, by taking away a less quantity of blood than a pint!" Both of these I have certainly done—but *cui bono*?—Reason and sense were on my side, it is true!—but what will either reason or sense avail him who stands, as I stand, ALONE—when his enemies have a party to back them, with the patient's prejudices and fears in their favor besides?

The practitioners of whom I speak, are all so many links of an extensive chain of secret and systematic collusion; they are all bound to support and keep by each other;—they have signs and counter-signs, and a common story to tell; these men, like false dicers, do deeds "never dreamt of in your philosophy." In a word, so far as medicine and medical practice are concerned, the English public are, at this moment, very much in the same blissful state of ignorance as the Emperor Constantine was with the doings of his guards—"But still—but still," said Sebastes of Mytilene, "were the Emperor to discover—" "Ass!" replied Harpax, "he cannot discover, if he had all the eyes of Argus's tail! Here are twelve of us, sworn, according to the rules of our watch, to abide in the SAME STORY"—[*Count Robert of Paris*] If such and similarly constituted, be the medical coteries of England, what honorable physician can hope to rise in his profession, until the eyes of the public be opened Sir James Mackintosh was not the only man of talent who left it in disgust—Locke, Crabbe, Sir Humphrey Davy, the present Master of the Rolls Lord Langdale, and hundreds of others, have done the same.—Depend upon it, in these days, it is only the quack and the unprincipled practitioner who makes fortunes by physic.

But to return to medicines and their doses. What substance in the Materia Medica would be worth a rush, if it were absolutely innocuous in every dose and degree? You all know, that rheubard and magnesia may each be given medicinally, to the extent of many grains;—but, may not both be so advanced in the scale of quantity, as to become equally fatal as strychnine or arsenic—were strychnine or arsenic to be taken in the usual dose of rheubarb or magnesia? May not our deadliest drugs, on the other hand, be so reduced in volume as to become as innocuous, to an adult at least, as twenty grains of rheubarb would be to an infant? Surely, there is not one of you, whether sick or well, would object to an infinitesmal dose of arsenic— the millionth or dicillionth part of a grain, for example! Ah, these homœopathists! I question if they always keep to such doses; for, when a man makes up his own medicines, he may gull his patients as he pleases. But, be that as it may, there can be no surer test of imposture, than to be told you may take any medicine in any quantity? Can food itself be thus taken? If it could, where would be the necessity of cautioning gluttons about their diet? In truth you can scarcely mention any one edible substance, that will agree, even in a moderate quantity, with all patients. One person cannot eat oysters, without becoming the subject of a rash. Another, the moment he eats poultry or veal, gets sick at stomach, though mutton and beef have no such effect on him. See, then, the truth of the old proverb.—What is one man's meat is is another man's poison." Chesterfield says it is vulgar to quote proverbs; but Chesterfield was a lord, and a man of fashion—and as I have no ambition to be either, you will pardon me for preferring, with Cervantes, to strengthen my argument with their pith and point—not only because there is no proverb that is not true, but, because they are all sentences drawn from Experience, the mother of the sciences.

In further illustration of this subject, I pass to the lower animals; and here again you will find that no earthly agent has been given us for absolute evil, inasmuch as substances which, in comparatively small quantities, may poison one class of beings, are food to another, in a volume comparatively large The sweet almond, for example, so nutritious to man, is deleterious to the fox, the dog, and domestic fowl. The hog may be poisoned by pepper, the parrot by parsley, stramonium, or thorn-apple, which, when we prescribe it in physic, we do cautiously, and in small quantities, is greedily devoured by the pheasant with impunity; fowl enjoy the darnal—hogs, the deadly night-shade.—The water-hemlock, which is poison to all three, in common with man, is a most nutritious food to the stork, sheep, and goat.—And the wolf is reported to take without inconvenience a quantity of arsenic which would destroy the horse. You see, then, how completely the word poison is a term of relation.

The infinity of substances which have been successfully applied to remedial purposes, whether derived from the animal, vegetable, or mineral kingdom, like the various Causes of the Diseases for which we administer them, will all, upon investigation, be found to have the most perfect unity in their mode of action. Their influence relates solely to their motive power, differing from each other, where they do differ, merely in their capability of changing in this way, the atomic relations of a particular locality or tissue rather than another, but in no other way presenting a doubt or difficulty as to their modus operandi. What John Hunter said of poisons, applies of course to remedies; they "take their place in the body as if allotted to them." Thus, Mercury and Iodine, in whatever manner introduced into the system, will still manifest their action, chiefly by changes in the motion of the glands and their secretions; while Strychnine

and Brucine, on the other hand, will as constantly produce their effects on the motive condition of the muscles. Through the medium of the nerves of a part, the greater number of medicinal substances, even when directly introduced into the veins, will produce their particular effects, good or bad, according to circumstances, upon that part. When thus administered, Antimony will prove equally emetic, as when introduced into the stomach, Rhubarb equally purgative and Opium as certainly soporific. Is not this the best of all proofs, how surely these agents were intended by the Deity for the use of man?

If you ask a teacher of medicine, why opium sets you to sleep, his answer will be —"from its Narcotic power." What can be more satisfactory? Nineteen out of twenty students at least, are satisfied with it—they are delighted when told in Greek, that it does set them to sleep! Why does rhubarb purge? "From its Cathartic power," you will be told;—what does that mean? simply that it purges! Again you demand how does antimony vomit—again you get the Greek reply, "from its Emetic power;" in plain English it vomits! Such is the mode in which the schoolmen juggle: instead of an answer they give you an echo! Had these logomachists—these word-mongers, been as well acquainted with the motions of living things as with the inflections of dead languages, and the anatomy of dead bodies, they would long ago have preferred reasoning to mystification. But for the last ten centuries at least, professors have been doing little else but splitting straws, blowing bubbles, and giving a mighty great degree of gravity to feathers! We shall endeavor to develope what their answers show they are utterly ignorant of—the Unity of Action of all Remedies.

What are the forces which, by their harmonious movement in a material body, make the sum total of the economy of the life of that body? Vital chemistry, electricity, magnetism, mechanics. By these forces are all the internal movements of a man periodically produced, and by the analogous external forces only, can the material of all animal life be sustained, and otherwise influenced from without. When rightly considered, every force in nature will be found to resolve itself into a cause of motion simply —motion forward, or motion backward—motion outward, or motion inward. Chemistry, Electricity, Magnetism, Mechanics, can each of them do no more than, by their attractive power, bring things or their atoms into closer proximity; or place them, by the force of repulsion, at a greater distance from each other. Attraction and Repulsion then, are the two grand forces by which, not the motions of man only, but the motions of the Universe, are kept in control; and by these forces, and no other, can animal life be influenced either for good or for evil, whatever be the nature of the material agent by which they may be called into play.

Remedial Means.

may include every description of force: The Bandage, Splint, and Tooth-forceps are familiar examples of the Mechanical kind; while to Chemistry, among other things, medical men owe the Alkalis and Earths they use as palliatives in the treatment of acidity of the stomach. But the purely Medicinal agents—what is the mode of action of these? How do opium, strychnine, arsenic, and prussic acid act? Chemically it cannot be,—for they produce no chemical change,—no visible decomposition of the various parts of the body over which they exert their respective influences. What, then, is their action? no man in his senses would suppose it to be Mechanical. One of two things it must be then, Electrical or Magnetic—for these are the only other forces in nature to which we can apply for an explanation. But, Gentlemen, are not these two forces one? nay, under the term Electricity, do not practical philosophers include chemistry also? No person in the least conversant with the physical sciences would now dispute, what Mr Faraday was the first to prove, that all three are in reality mere modifications of one great source of power. For not only can the electrical force be so managed as to produce attraction and repulsion in all bodies, without in any way altering their constituent nature, but it can also, in most cases, be so applied to every compound body as to cause a true chemical decomposition of its ultimate principles. By the same universal power we can either make iron magnetic, or deprive it of the magnetic virtue. We can, moreover, reverse by its means the polarity of the needle of a ship's compass. Is electricity, then the source of Medicinal agency—the source of power by which opium and arsenic kill and cure? Before the question can be satisfactorily answered, we must first know the effect of the direct application of electricity to animal life. What is its action when directly applied to living man? Gentlemen, it has caused, cured, and aggravated almost every disease you can name,—whether it has come in the shape of the thunder-storm, or been artificially induced by the far less energetic combinations of human invention. If, as in the case of the magnetic phenome-

na, it can produce, take away, and reverse the polarity or motive power of the needle, so also can it give, take away, and reverse every one of the particular functional motions of the various parts of the living body to which it may, under peculiar circumstances, be applied. It has cured palsy, and caused it also; but has not strychnia done the same? In common with arsenic, it has made the stoutest and bravest shake in every limb; and like the same agent, it has cured the ague. In what, then, does its action differ from arsenic here? If it has set one man to sleep and kept another wakeful, opium has done both. Electricity has cured cramp and caused it; so have prussic acid and nitrate of silver. Do we not prove then, beyond the possibility of question, that the action of these medicinal substances is purely electrical? By precisely the same power, mercury salivates, antimony vomits, and rhubarb purges. By the very same power they may all produce reverse effects. The primitive agency of the purely Medicinal substances, then, is one and the same, namely, the power of electrically moving the body in some of its various parts or atoms, inwards or outwards, according to the previous state of the vital electricity of the brain of the different individuals to whom they may be administered. For, through the medium of the Brain and Nerves, do all such substances primarily act. The ultimate and apparently unlike results of the action of different substances, depend entirely on the apparent dissimilarity of the functions of the organs they respectively influence. As already stated, the temperature of the part or organ of a living body thus motively influenced, becomes in every case correspondingly altered. If it be asked in what manner opium or antimony can alter the temperature or motion of any organ through its nerves, I can only refer to the analogous changes which take place in chemistry, through the medium of the electric chain or galvanic wire. When acted upon by either, bodies which were previously cold become instantaneously heated, and vice versa, motion being the equally instantaneous effect in both cases. And, according to the degree and duration of the electrical force applied, do such bodies become simply electrified—preserving still their usual appearance and nature,—or chemically decomposed in some of their constituent principles—their atoms in either case being repelled or attracted in a novel manner. In a manner perfectly analogous, do every and all of our purely Medicinal substances act on the living organism. On the dead, if they exercise any influence at all, it can only be by preventing the putrefactive process, or by chemically decomposing the various parts. The older writers were right when they said "Medicina non agit in cadaver"*

If you again demand how a given substance shall influence one part of the system rather than another, I must again recur to chemistry. Have we not eclective affinity, or a disposition in inorganic bodies to combine with, and alter the motions or modes of particular bodies rather than others? By an eclective vital affinity precisely similar, do opium and strychnia, when introduced into the living system, produce their respective effects; they manifest a similar choice of parts—the elective power of the one substance being shown by its influence on the nerves of sense, and that of the other by its effect on the nerves of the muscular apparatus. But here again, you may, with the most perfect propriety, ask, why the influence of opium on the brain should set one man to sleep, and keep another from sleeping? and why strychnia, by a similar difference of cerebral action, should paralyze the nerves of motion in one case, and wake to motion the nerves of the paralytic in another? The answer is simple, and it affords a fresh illustration of the truth of this Electrical doctrine. The atoms of the specific portion of brain of any two individuals thus oppositely influenced in either case, must be in opposite conditions of vital electricity—negative in one, and positive in the other. And what but opposite results could possibly be the effect of any agent acting electrically on any two similar bodies, whether living or dead, when placed under electrical circumstances so diametrically opposite? In common with all medicinal substances, opium and strychnia may produce inverse motions—motions outward or motions inward, according to the particular electrical condition of the living body to which they may be applied. And in this instance again, they only harmonize with everything we know of the great universal force to which we ascribe their medicinal influence. Their ultimate agency depends on attraction and repulsion. Here then, Gentlemen, you have the most satisfactory explanation of an infinity of facts

* Arsenic, oxymuriate of mercury, and alcohol in minute doses, act electrically on the living stomach, whether for good or for evil. In large doses all three act chemically upon the same organ; for they then invariably decompose it; but the same doses applied to the dead stomach preserve it from (the putrefactive) decomposition. The mineral acids, when properly diluted, act electrically upon the living economy. In their concentrated state they decompose every part of the body, whether living or dead, to which they may be applied. The poisons of the cobra and rattlesnake, so deadly to other animals, have no visible effect upon their respective species. What but electricity in its various modifications, can explain all this?

which, from their supposed confliction, have up to this hour, puzzled every teacher and professor that ever endeavored to grapple with the subject. The merit of this explanation I exclusively claim; and I state my right to it thus distinctly, that no F. R. S, no Queen's Physician Extraordinary, or other great official, may hereafter have any excuse for attempting to snatch it from me—whether through ignorance or forgetfulness of my name and writings he venture to predict its future discovery, or deal it out bit by bit to his readers, in the equally novel shape of question and suggestion! Yes, Gentlemen, I exclusively claim the electrical doctrine of medicinal agency as mine—a doctrine which affords an easy solution of the greater number of difficulties by which our art has hitherto been surrounded. By following out its principles, you see at once why colchicum, mercury, and turpentine, can all three cause and cure rheumatism—why acetate of lead can produce and relieve salivation—why cubebs and copaiba have relieved gonorrhœa in one man, and aggravated the same disease in another—why musk may excite and stop palpitation of the heart—why the Fevers of puberty, pregnancy, and small-pox, have each cured and caused every species of disorder incident to the respective subjects of them—and why the Passions have done the same. Now, what better proof could you have of the real nature of the passions than this? What better evidence that rage, terror, joy, surprise, are each and all of them indubitable fevers, than that each and all of them have cured, caused, aggravated, and alleviated almost every human disease—every ache and ailment to which man is liable, from ague to epilepsy—from toothache to the gout! Like opium and quinine, every one of these passions has a double electrical agency—in one case reversing the particular cerebral movements on which existing symptoms depend—in which case it alleviates or cures;—in another, calling them up, or only adding to their rapidity when present—in which case it causes and aggravates simply.

But we have yet to account for certain apparently anomalous effects of all medicines—we have still to explain to you why opium for example, instead of producing its usual somnolent or insomnolent influence upon particular individuals, acts upon him in the same manner as antimony or ipecacuan—and why these particular medicines, instead of producing their usual emetic effect in individual cases, only purge the patient:—or, (as I have occasionally found them do) set him to sleep more surely than henbane or opium. Gentlemen, did opium or antimony uniformly affect the identical portion of brain in all persons, either medicine could never do more than one of two things in any person, namely aggravate or ameliorate the particular symptoms which, in all healthy persons, it then most certainly could never fail of producing. But in common with all medicines, the elective affinity of each of these particular substances may be different in different persons, from difference of constitution. The same medicines, then, do not always influence the same cerebral parts. The usual elective affinity of opium and antimony may be quite reversed in particular patients. Now, as all medicinal agents act solely by changing the cerebral movements of the part over which they exercise their respective influence, antimony and opium, by changing their usual places in the system, change their respective characters accordingly Antimony, then, either becomes a narcotic, or keeps the patient wakeful. Opium in like manner, either becomes an emetic, or the reverse of an emetic—whatever that be. See then, how cautious you ought to be in every new case of disease for which you may be consulted,—and how necessary it is to exercise all your powers of circumspection in practice. When you prescribe medicine of any kind, you ought to feel your way with the smallest available dose—the smallest dose from which you might, from your experience, expect an appreciable effect whether for good or for evil—for, remember, not only do all medicines occasionally manifest a different elective affinity from that which they usually exercise; but, even when they act in their more ordinary course, they have still the double power of attraction and repulsion—the power of aggravating or alleviating the symptoms for which you prescribe. Indeed, by these two powers and no other—attraction and repulsion,—we are compelled to explain every variety of change which the body assumes, whether in health or disease. By attraction, the fluid matter of a secretion becomes consistent and organised, again to be thrown off, by the same organ, in the fluid form of secretion by repulsion.

If this be true, Gentlemen, change of temperature, of itself, ought to produce, in living bodies, every constitutional and local change—every vitiation and variation, whether in gland or muscle, nerve or blood-vessel, that ever formed the subject of medical investigation. That it can do so, might be proved from every thing we know of life, and the laws of life. What disease have not cold and heat produced?—What, in the shape of the warm and cold baths, have they not cured? Look, again at the effect of heat upon the egg. Even when artificially applied, we see this apparently inert

body converted, by thermal influence, into bone, skin, and muscle, with their proper apparatus of blood-vessels and nerves! You will tell me, the egg was predisposed to such changes. True; and change of temperature can only act upon all things, according to their original predisposition. Is not this the reason why a chill will produce rheumatism in one man, and consumption in another? Through thermal influence, the wool of the sheep and the feathers of the hen, may in successive generations be replaced with hair; —certain viviparous animals may even be made oviparous in this manner. The aphis and the wood-louse, for example, may be made to bring forth either eggs or live young at the pleasure of the experimenter, by simply varying the temperature in which he keeps them. Then again, look at the effects of temperature upon the vegetable world! If, in the middle of winter, you introduce the branch of a vine, which happens to grow by your window, into your warm chamber, and keep it there a few weeks, it will put forth leaves and blossoms. See, then, the wide and omnipotent influence of temperature on every living thing, from man, who only attains the maturity of his growth in the course of successive summers, to the gourd, that springs up and perishes in a night!

Having premised this much, we shall now Gentlemen, enter upon a consideration of particular medicines. And first, let us speak of such as have a general constitutional influence, with an affinity, more or less marked, for particular organs.—Of these, the most important are—

Emetics.—When the various doctrines, which attributed all diseases to acrimonies, peccant humors, crudities, &c., prevailed in the schools, Emetics were among the principal remedies to which physicians very naturally resorted, as a preliminary means of cure. The beneficial effect observed to take place after vomiting, in the early stage of almost all disorders, was, of course, urged in confirmation of theories, which, even in the present day, are not without their influence on the minds of medical men. The primary action of emetics we hold to be Cerebral, and the act of vomiting, not so much a cause of the other constitutional symptoms which accompany it, as one of many effects produced by change in the atomic revolutions of the Brain. Whatever will suddenly influence the brain, in any unusual or novel manner, by changing its temperature and atomic motion, must necessarily change the whole corporeal state, whether it be, at the time, in health or disease. Have we not this familiarly exemplified, in the motion which causes sea-sickness—in the sickness produced by the rotatory chair, and in the morning vomitings of early pregnancy? Anything that can withdraw the brain's attention from the stomach, such as a passion, a blow on the head, loss of blood, or a division of the nerves that supply it, may produce vomiting. Experience every day shows us, that the shivering or shudder liable to be occasioned by one cause, may be averted or cut short by agents, which, under different circumstances, can of themselves produce such muscular tremor. It is thus that the emetic exerts its salutary influence in disease. No man can take a vomit, without every part of the body undergoing some change during its operation. A creeping sensation is immediately felt in every part—a sensation, demonstrative of the rapid revolution and change of relation of every corporeal atom. Under the influence of such an agency, you may see the reddened and swollen eye, or testis, become, in a few minutes, of nearly its natural appearance,—nay, a complete abatement of pain in either organ, may be an equally rapid result. Who, then, will tell me, that the same effect may not take place from the employment of an emetic, in what are termed inflammations of the lungs or bowels? Oh, "all experience is against it," I have been told—All experience!—whose experience? I have asked; but I never got an answer, for nobody had ever tried!

But, for a period now of five years, Staff-Surgeon Hume, in his Military Hospital, has treated his pleuritic and enteritic patients in this manner: during all that time he has not bled or leeched one patient for any disease—he has used emetics instead—and his practice has been beyond all precedent successful. Now, that I call a Fact—a fact worth all the hypothetical assumptions of all these doctors, whose gains depend, not so much on speedy cure, as on protracted sickness! There is no part of the body that you may not influence by an emetic;—the old physicians knew it—the physicians of an age gone by. They gave emetics in the case of Typhus even—Typhus in a royal patient. "Louis XIV.," says Mr. James, "was seized with symptoms of illness, and all the marks of Typhus Fever, of the most malignant kind, soon discovered themselves. The whole court was in consternation, the queen in despair, and Mazarin in a state of anxiety and apprehension, which deprived him of all the resources of that art which usually concealed his emotions. Foreseeing that his rule would terminate with the life of Louis, he took every precaution for the purpose of carrying his treasures out of France; but he began to pay court also to those who were about the person of the king's younger

brother, and even to several of that prince's attendants whom he had mal-treated on former occasions. The young king was carried to Calais in his carriage, as to a more healthy spot; but the disease only became worse every hour: the physicians declared that the case was beyond hope; and Bussy assures us that a number of the courtiers even went and congratulated the young Duke of Anjou on his accession to the throne. Louis himself does not seem to have lost his senses or his presence of mind; he spoke with calmness of his approaching fate; and sending for Mazarin, he said to him, 'You have always been one of my best friends: the queen, my mother, loves me too much to tell me the danger in which I am; do not flatter me in the least; speak to me only, in order that I may look into my own conscience, and make preparation for death.' He spoke in the same strain several times, showing no weak clinging to the temporal crown that seemed about to pass away, but looking forward from the brink of the grave into eternity with that calm firmness which might well do honor to a king. Mazarin was too much agitated and terrified to use any concealment; with fears and sighs, he acknowledged to Louis at once the danger in which he was; and the young monarch openly seemed grateful to him for not having concealed hissituation. A physician of great repute, however, was at length brought from Abbeville, and declaring that the King's case was by no means hopeless, he obtained permission to administer to him a remedy, which there is every reason to believe was merely antimonial wine. Louis was so much relieved by the first emetic, that he willingly took a second dose, and, from that day, the fever abated, and health gradually returned. Joy and satisfaction spread throughout France."—[*Jame's Life and Times of Louis XIV.*]

A medical officer, of the East India Company's service, sent for me at midnight, and you may imagine the pain he was suffering, when I tell you that I heard his groans before I reached his chamber. Shortly after leaving a crowded theatre, he had imprudently taken his place on the top of one of the night coaches, where he had not been long seated before he was seized with repeated shivering, followed by fever, and exquisite pain in the back and loins—in medical phrase, *lumbago*. When I saw him he had all the symptoms which, in the Schools, are termed high inflammatory fever, and he complained of agonizing pain in his back. His wish was to be bled, but I prescribed an emetic instead, and this relieved him in the briefest space imaginable. From the moment he vomited, his back became easier, and in a few minutes he was quite free from pain—a result equally pleasing and astonishing to the patient, who, on a previous occasion, had been confined six weeks to bed with a similar attack, notwithstanding repeated bleedings, leechings, and blisters. Another gentleman who shortly after came under my care, experienced a like relief from the use of an emetic in nearly the same circumstances. In the first case, I followed up the emetic with hydrocyanic acid; in the second, I prescribed quinine and sulphuric acid—the latter, my more general mode of treatment in acute disease. Cases without number could I give of the beneficial influence of this practice in acute opthalmia, sore-throat, pleurisy, rheumatism, &c.,—diseases which, under the usual or orthodox measures, would have kept the physician in attendance for weeks, and then, perhaps, have defied both his aid and his art. With the same practice, I have had equal success in the treatment of hæmorrhages, eruptive fevers, &c.; and I might here give cases corroborative of my assertion, were I not borne out by many of the older writers, particularly Heberden and Parr, who found emetics, followed by Bark, to be the best primary treatment of disorder generally. John Hunter says, he has "seen Buboes (collections of matter in the groin) cured by a vomit, after suppuration had been considerably advanced," —and he has "known a large bubo, which was just ready to break, absorbed from a few days' sickness at sea." He attests the cure of "White-swelling" or knee consumption by emetics—and the value of the same class of medicines in pulmonary consumption, has been strongly insisted upon by many writers. In physic, as in everything else, there is a fashion; but the "great men" of our day, notwithstanding their reiterated assertions to the contrary, would do well, in more instances than these, to imitate the old practice.

The principal substances used as emetics are Antimony, Ipecacuan, Zinc, and Copper, —but a great many others might be added, —tobacco, squill, and colchicum in large doses, to say nothing of luke-warm water, which last, from its relation to temperature, will readily occur to you as the best exponent of the mode of action of all. With some people opium will vomit, where ipecacuan would fail. There are individuals whom no known agent can vomit, and others, in whom the common emetics act always as purgatives. This you cannot, of course, know before-hand; so that the experience of every individual case, is the only rule by which such case is to be treated. We must now speak of

Purgatives, or those medicines which influence the intestinal secretions. Like most remedies these all act through the medium of the Brain—but, from ignorance of their mode of action, practitioners have too frequently converted them into a cause of disease and death. The man who proceeds, day by day, to purge away "morbid secretions," "peccant humours," &c., is a mere humoralist, who neither knows the manner in which his medicines operate, nor understands the nature of the wonderful machine, whose disordered springs he pretends to rectify. Do not let me be understood to deprecate purgative medicines—As a remedial means they are inferior to emetics;—when combined with these, they are amongst the best medicines with which to commence the treatment of disease generally,—that is, where the patient has not been previously reduced by protracted suffering. It has been my fate to witness no inconsiderable amount of mischief induced by a mistaken perseverance in purgative measures. Will nothing open the eyes of gentlemen of the humoral school? Surely they will be staggered when told, that in an evil hour the exhibition of a purge has been followed by a paroxysm of gout! Yet nothing is more true or better avouched "Reasoning upon this simple fact," Dr. Parr says, "the humoral theory of gout is altogether untenable." And so is Dr. Holland's hypothesis of its being caused by a "morbid ingredient in the blood" When I say I have known fatal fevers produced by medicines of this class, some may be sceptical; but few will doubt their power to produce Dysentery, which, in the words of Cullen, is an "inward fever."—"A dose of rhubarb," says Dr. Thomson, "has produced every symptom of epilepsy, and, in an instance within my own observation, the smallest dose of calomel has caused the most alarming syncope" or faint. —Let us use, not abuse, purgative medicines!

Mercury.—The frequency with which mercury and its preparation Calomel, enter into medical prescription—its beneficial and baneful influence in the practice of our art, render a knowledge of the true action of this metal, and the proper mode of its exhibition, matters of no ordinary importance.

What are the forms of disorder in which mercury is supposed to be most useful? The records of the profession answer, fever, iritis, erysipelas, dysentery, rheumatism, cutaneous, osseous, and glandular disturbances. To the same records. I appeal for testimony to the truth of my statement, that it has too frequently produced those very maladies in all and every of their forms and variations. Its influence extends principally over the glandular and assimilative systems; it has consequently a great effect on secretion. I have know mercury in small doses cure what is termed scrofula hundreds of times; yet according to Sir. Charles Bell, and I can bear him out in the fact, when wrongly applied mercury has set up "a scrofulous diathesis in the very best constitutions." 'I have seen a person," says Dr. Graves, "labouring under mercurial irritation, seized with common fever, which afterwards became Typhus, and proved fatal in five days. Still you will hear persons say, that if you get a fever-patient under the influence of mercury, you will cure the disease, and that mercurial irritation will protect a man against fever. I have known Jaundice to appear during a course of mercury"—Jaundice, for which some say it is a specific! When you hear a man talking of specifics you may well laugh at him! The value of all medicines has more or less relation to the quantity prescribed. Upon this subject, I think it material to speak regarding mercury; for in consequence of the enormous doses which have been exhibited by certain pseudo-physicians —certain writers on Infantile and Tropical disease—this substance, instead of being a blessing to humanity, has recently become one of the chief agents in man's destruction! You daily see medical men—men who never reflect upon the effect of any medicine—prescribing four, five, and six grains of calomel to children—to infants! Can you wonder at the frightful number of deaths that take place under seven years of age? Look at the bills of infantile mortality; and if you consider the quantity of calomel that children take, you will assuredly be compelled to declare, not how little medicine has done for the prolongation of life—but how much it has done to shorten it! Oh! you may depend upon it, there is a great deal of mischief done by the profession; that is the reason why the people go to the quacks and the Homœopathists. The latter are the least mischievous, for—if they actually give their medicines in the ridiculous doses they pretend—they do little more than hocus their patients with words, while the quacks and the medical men kill them wholesale by physic—physic wrongly applied. Many years have now passed since Mr. Abernethy first advocated the employment of mercury in moderate doses. More recent writers have demonstrated the value of calomel in doses so minute as the twelfth and even sixteenth part of a grain. Combined with equally minute quantities of quinine, I have been for years in the habit of prescribing it in such doses, in all diseases of children, and I have found it invaluable in most. If, with such minute doses of mercury, then, the practi-

tioner may obtain the most excellent effects, what shall we say to the exhibition of four and five-grain doses of calomel to infants? What language can be sufficiently strong to denounce the equally daring practice of ordering scruple-doses of the same powerful mercurial for adults? That individuals occasionally recover from serious disease, after the unsparing use of calomel in such doses, is no more an argument in favor of such a mode of treatment, than that many a man has been knocked down by a blow, and lived to laugh at a description of accident to which others have succumbed—To reason in this manner is to argue that blows are good things. In saying this much I do not mean to raise objections to calomel as a purgative, —in which case a larger dose is necessary. But how often do you see this mercurial given in enormous and repeated doses, with the view of correcting morbid secretions, which inquiry might have satisfactorily traced to the previous mal-administration of calomel itself. Calomel, like every other remedial means, is a medicine or a poison, according to the quantity of the agent, and its fitness or unfitness for the constitution of the patient. This last, as we have previously hinted, depends upon the electrical state of the individual body, and can only be known by trial. You cannot tell that a given piece of steel is magnetic or not till you try; no more can you tell the electrical state of the living body. It is only by experience you can know it. Calomel, then, has no exclusive relation to nomenclature; yet you will hear practitioners say, "It is not proper for this disease, but it is proper for that;" —"it is good for jaundice, but bad for consumption. All this is mere scholastic folly, based upon "the baseless fabric" of a hypothesis! There is no disease, however named, where the administration of mercury, in some of its preparations, may not be advantageously employed or the reverse, according to particular doses and constitutions. How is it that the oxymuriate of mercury, formerly so much extolled by physicians, is now so seldom prescribed? A more effective remedy for numerous forms of disease is scarcely to be found in the Materia Medica I have more particularly experienced its valuable aid in the treatment of dropsy, dyspepsia, paralysis, and eruptions. Very analogous to mercury in its mode of action is

Iodine.—Its influence on glandular parts, and consequently upon secretion, is very remarkable. But, Gentlemen, like every other remedial agent Iodine cuts two ways—atomically attracting or lessening volume and secretion in one case, atomically repelling or increasing both in another—according to the electric state of the individual body for which it may be prescribed Now, the fact that iodine can cause as well as cure glandular diseases is not known to the profession; at least, I have not seen it noticed in the course of my reading. It behoves me therefore to state, that I have been frequently obliged to countermand its exhibition in the treatment of bronchocele and other enlarged glands, from the obvious increase of these tumours under its use. In such cases, patients have told me they were not so well in themselves, that they had shivering fits or suffered from inward fever; for, like mercury, iodine has also a general febrile effect upon the system, for good in one case, for evil in another. As regards my own practice, I have found quinine more generally successful in the treatment of glandular affections than iodine. In a case of goitre that resisted both, a very great diminution of the swelling took place after a short trial of arsenic. But here I may observe, that a remedy which may be found to be generally well adapted to the treatment of a particular type of disorder in one locality may be found to be as generally prejudicial when applied to the same type in another. This, to a certain extent, may account for the encomiums which individual medicines receive from the profession one day, and the contempt with which they are very often treated the next. With iodine I have cured osseous and cutaneous complaints; and I have also found it useful in the treatment of phthisis and dropsy.

Lead.—The acetate of Lead is a valuable agent in good hands, and was long celebrated as a remedy for consumption. I have cured eruptions by it, eruptions that resisted everything else I could think of. "One effect of the continued use of acetate of lead," says Dr. A. T. Thomson, "is the excitement of ptyalism (salivation,) but notwithstanding this effect it has been recommended by Mr. Daniels for the purpose of allaying violent salivation, in doses of ten grains to a scruple, in conjunction with ten grains of compound powder of ipecacuan; how," asks Dr. Thomson, "are these contending opinions to be reconciled?" How, but by the rule that the power which can move one way, may move the other, according to the electrical condition of the individual brain. This question, coming from a professor of materia medica, shows you how much professors have yet to learn about the action of medicines.

Tar—Creosote.—From innumerable trials of Tar, and its preparation Creosote, I am enabled to speak satisfactorily of the remedial power of both. In small doses, creosote produces a mild fever, often beneficial in dyspeptic and hysteric cases, though

in some instances, like every other agent in nature, it occasionally disagrees. I have been obliged sometimes to discontinue its use from the vomiting of which the patient complained after taking it, though where vomiting was a previous symptom, I have succeeded in stopping it by creosote. Generally speaking, I have found creosote an excellent remedy in dropsy, rheumatism, and cutaneous disorders. I once cured with it a case of amaurotic blindness of both eyes, where the disease was of considerable standing. The remedy was pushed as high as twenty drops for a dose; I commenced with two drops. The efficacy of tar-water in the treatment of all kinds of disease was the universal belief of the latter half of the last century. The celebrated Bishop Berkley wrote a treatise which contributed greatly to bring it into fashion. "From my representing tar-water," he says, "as good for so many things, some perhaps may conclude it is good for nothing; but charity obligeth me to say what I know and what I think, howsoever it may be taken. Men may censure and object as much as they please, but I appeal to time and experiment:—effects misimputed—cases wrong told—circumstances overlooked—perhaps, too, prejudices and partialities against truth may, for a time, prevail and keep her at the bottom of her well, from whence, nevertheless, she emerges sooner or later, and strikes the eyes of all who do not keep them shut." The Bishop sums up the catalogue of its virtues, by saying, "It is of admirable use in FEVERS."

SULPHUR —though now seldom used, except for diseases of the skin, was long extensively employed in physic. With the vulgar, it is still a remedy for ague. Like creosote, it produces a mild febrile effect, which may be turned to account in numerous disorders, especially in dyspepsia, hysteria, and also in rheumatism, which last I have often cured with it, after every other remedy usually employed for that distemper had successively failed. The most generally influential agent in rheumatism, is

COLCHICUM, OR MEADOW SAFFRON, the medicinal principle of which is an alkali, termed *veratria*, or veratrine, and an admirable medicine it is, when carefully and cautiously administered. Now colchicum, like sulphur, has cured the ague; and its efficacy in this case depends upon the mild febrile action, which, like hope, or joy, it has the power of producing. If it has relieved pain and swelling in many cases, so also can it produce both; a reason why you should watch its effects, for where it fails to improve, it commonly aggravates. Like all other medicinal agents, it is a motive power, and if it fail to move matter the right way, it must occasionally move it the wrong. The mildest remedial substance, when taken by a person in perfect health, if it act at all, must act prejudicial. What is the action of colchicum, in such cases? According to the journals of the day, pains of the joints and feet were among the symptoms produced by it when accidentally taken in poisonous quantities by previously healthy persons—the very pains for which we find it available in practice!

SQUILL, DIGITALIS.—Are physicians aware that both of these substances have the power of suspending as well as of increasing the secretion from the kidneys? They are often continued too long in dropsy, to the prejudice of the patient, from practitioners being ignorant of their double action. But in this respect they only harmonize with all known agents. The electrical state of the body, which cannot be known but by an experience of their effects upon it, determines whether squill or digitalis prove aggravant or remedial.

STRAMONIUM, OR THORNAPPLE is used by the Asiatics, in their treatment of mania—a disease which it has produced. It can also produce eruptions in the skin, a fact which led me to try its effect in cutaneous disease. Combined with *belladonna*, I have cured some very obstinate eruptions with stramonium. I have also employed the same combination advantageously in pulmonary consumption. The general action of both remedies in small doses, is mildly febrile. Their use sometimes produces a temporary dimness of sight, which goes off when the remedies are stopped.

TOBACCO, LOBELIA INFLATA.—Tobacco is a valuable remedy, when properly prescribed, and it may be administered internally, as well as externally. I have found its internal use, in the shape of tincture, efficacious in dropsy and asthma. Heberden cured a case of epilepsy, by applying a cataplasm of tobacco to the pit of the stomach. The *lobelia inflata*, or American tobacco, is a good diuretic, and has cured asthma. Like the common tobacco, it produces sickness, in large doses.

THE BALSAMS AND GUMS.—Copaiba, turpentine, and guaiac, powerfully influence mucous surfaces, in one case increasing secretion, in another suspending it. They have all produced and cured rheumatism. With turpentine, I have cured cases of Iritis, which resisted mercury aud quinine. Copaiba in some constitutions produces cuticular eruption so like small-pox, that even medical men have supposed it to be that disease. Others putting this rash down to a fanciful cause called Syphilis, have gravely proceeded

to ruin their patients' constitutions with mercury, to cure what they were pleased to call "secondary symptoms!"

Cantharides or Spanish Fly.—This is principally used as a blister; but the tincture of Spanish fly is an admirable internal remedy for gleet and leucorrhœa, and it is also among our best diuretics; remember, however, it can produce strangury, an opposite effect. I am in the habit of combining it with quinine and prussic acid, in the treatment of dyspeptic cases, and I find it useful also in cuticular disease; though in the case of a gentleman—a colonel of the army—a blister to the side had twice the effect of blistering him all over!

The Earths and Alkalis have all particular effects upon the body, according to the mode and degree in which they are administered. Besides their constitutional influence, each has more or less affinity to special organs. Lime and Barytes influence the secretions of the stomach; Soda and Potash those of the lungs, kidney, and bladder; Ammonia or hartshorn affects the salivary glands—each for good or for evil, according to its dose and fitness for particular constitutions. The earth called Alum is a favorite with the common people, in the cure of ague. What is its mode of action? Its power of astringency or attraction simply—the same power by which it arrests the morbid increase of secretion, called leucorrhœa. How does it do that? By its attractive influence over the atoms of the spine and the nerves proceeding from the spine. Well, then, that is the way in which it cures the ague. The greater number of

The Acids have been usefully employed in medicine. Acetic acid, or vinegar, is an old remedy for hiccup, and might be efficacious in other spasmodic diseases. Dilute sulphuric acid has cured the ague, among other disorders. With dilute nitric acid, I have arrested and increased almost every secretion of the body, according to varying circumstances. For a gentleman who was affected with vertigo and tremor, I prescribed dilute nitric acid, which cured him; his wife, by mistake, took his medicine for her own, and in a few minutes after she was affected with a tremor, that lasted for nearly an hour! You see, as a general rule, then, that whatever can move one way, can move the other.

Gentlemen, the medicines of which I have given you some account to-day, are the principal symptomatic medicines which I employ in my own practice, combining or alternating them, as I have already stated, with the chrono-thermal remedies. But there are thousands of other agents, which may be usefully employed in this manner, and a great number are mentioned in our books of Materia Medica. What I have said on the action of remedies generally, will apply to all. At our next lecture, I shall give you some account of the principal chrono-thermal agents—and conclude the course, by a general summary of the chrono-thermal doctrine.

SWEDENBORG'S ANIMAL KINGDOM.

Introductory Remarks by the Translator,

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[*Continued from page* 33.]

We promised at the outset to speak of the relation in which Swedenborg's philosophy stands to the science of the day, but it will now be seen that there is no direct relation between the two, but a plenary repugnancy. For the one is order, the other is chaos; the one is concentration, the other is infinite division; the one enlarges its limits in that interior world where creation exists in all its spiritual amplitude, the other loses its limits, and its distinct life along with them, in the great vacuities of space and time; the one is a rod and staff giving the mind a practical support in the exploration of nature's fields; the other is a mist of hypotheses crawling along the ground, and making every step uncertain and perilous.

The science of the moderns tends to bury physiology more and more within the schools; that of Swedenborg will ultimately shed it abroad as a universal light which like that of the sun belongs in justness to all mankind. In this respect sience is situated precisely as theology. There is no difficulty in either but what man himself induces. The whole scheme of true theology is so simple that the humblest capacity may understand it; and so coherent, that the memory may retain even its details without the slightest difficulty. So in a measure will it be with a true science. The appointed professors of the true theology must be amenable to a common knowledge thereof existing in the understandings of their flocks and congregations. So must it be at last with the professional bodies appointed to preside over a true science. In a word, under the influence of the New Church, a protestant state must come over science itself; the bible of nature must be opened to the public as well as to the professions; and the professions themselves must be content to accept their position, from standing in a

clear and recognized connexion with the common sense of mankind, as brought into play upon their own subjects.

The relation in which Swedenborg stands to the philosophers may be briefly characterized. The analysis and classification of the conditions and states of the mind is a subject which he has only touched on incidentally in the "Animal Kingdom." He maintains that the influx of the soul into the body is truly synthetic, or *a priori ad posteriora*, but that the instruction and information of the rational mind is necessarily analytic, *a posteriori ad priora*; not that the senses generate the mind, but that they supply it with materials, and externally excite it to activity; the soul similarly exciting it internally. With respect to that mentalism which has been introduced since Swedenborg's time by Kant and his followers, the writings of Swedenborg distinctly involve it, but then our author adds to its forms life and substance, and displays a world co-ordinate with each plane of the human faculties, without which man would not exist in nature. By virtue of this, what are mere abstract categories and ideas in the one, are organic causes in the other, (Swedenborg says, "all causes must be formed organically,") and the mind is allied to the body through the whole scale of its ascent. But there is one department of metaphysics or ontology which finds no countenance in Swedenborg; viz., the two schemes of materialism, and immaterialism, or as it is falsely called, spiritualism, as opposed to, and opposing, each other. The controversy between these two he declares to be "a battle of words," a play of "shadowy sophisms," a "game at chess in the high city of literature;" and he refers the whole misunderstanding to ignorance of the doctrines of forms and degrees.* For this war respecting the substance of which things are made, tends to divert the mind from the successive order of nature, and to plunge it at one leap in the occult; consequently to induce it to omit all the series of forms that intermediate between the body and the soul The words mind and matter in this case stand for two substances under one form, and it is not easy to see how the one can be preferable to the other, or how thought can be influenced by either of them. As systems of causation therefore, the rule of use protests against them both. The main argument of Bishop Berkeley, that his hypothesis causes no difference to our sensations, must be admitted, and it is conclusive against immaterialism. Why introduce an element that confessedly plays no part in our affairs ?† Both these schemes are essentially controversial or negative, and if either of them could be substracted, the other would no longer be capable of an ex-

*See the "Economy of the Animal Kingdom," tr. ii.. n. 311; and the "Worship and Love of God," n. 53, note *(p.)*

† If it be alleged that immaterialism produces philosophical results, and is capable of being expanded into a system, we reply to this, that wherever such results appear to follow it, they arise in reality from the tacit intermingling of some organic element of thought in the premises, the presence of which element is not perceived. It would be easy to illustrate this by a criticism of any of the philosophical and religious consequences which are supposed to flow from immaterialism, and to prove that those consequences are not the fruits of the immaterialism, but of other grounds co existing with it in the mind. But the demonstration would carry us beyond the design of the present remarks. With respect to substance, it may be expedient to observe, that the word is commonly used in two meanings, both of which are true, and must concur to a complete idea of the thing. Firstly, it is used in a universal, generative and active sense, as the elemental ground of matter, and as the spiritual ground of the natural world, in which partial sense, substance is spiritual, and its operation purely synthetic. Secondly, it is used in a general, formative, and passive sense, as the complex, continent, and basis of interiors and universals, in which partial sense, substance is material, and its operation purely separative or analytic. But the complete idea of substance is the result of the union of these two senses; in other words, of the ordinary notions of both substance and form; which although two elements in thought, are not two in reality, but "distinctly one." Swedenborg clearly shows both in his philosophical and religious works, (which indeed are perfectly at one on this subject,) that we must take a bodily as well as a mental view of substance. It may be sufficient to cite the following passage from his work on "Heaven and Hell." "Man," says he "cannot exercise thought and will at all unless there be a subject, which is a substance, from and in which he exerts those faculties. Whatever is imagined to exist, and yet to be destitute of a substantial subject, is nothing at all. This may be known from the fact, that man cannot see without an organ as the subject of sight, nor hear without an organ as the subject of hearing Without such organ, sight and hearing are nothing, and have no existence. It is the same with thought, which is internal sight, and with apprehension, which is internal hearing; unless these existed in, and from, *substances, which are organic forms*,—they could not exist at all," &c. (n. 434.)

pression. Both of them tacitly deny the order of nature, and therefore they can never minister at the altar of true science.—Matter and substance may be opposites, but this has nothing to do with the question of the existence of matter. The mind is a substance, but this likewise in no way touches the existence of matter. The question of the existence of matter is perfectly distinct from the question of its substance. What then is the definition of a substance? It is evident that a substance is the ground of a particular existence; and equally so, that the only ground for which anything exists is the end or use that it will subserve in the creation. The particular end or use, then of each thing is its substance. But ends and uses in themselves are spiritual. In order, therefore, that this end or use may institute a series in nature, it must put on a natural form; and the first form that it so assumes, the form of the first degree, is the substance or unit of the whole series, as being all and all throughout the subsequent degrees: it is the universal of the series, as being, by virtue of the properties of its form, universally present, potent, active, &c., in the entire progression of the thing that it constitutes. It is the relation that this unit bears to order, degrees and series, that makes it into a substance and not into an accident. Hence it is order that determines substance, and hence too every substance is an organic form, as being the initiament of all the forms of its series. Mental admissions of substance which do not involve forms analogous to those of the natural creation, are mere terms without ideas: views of mind, thought or affection, which contemplate these subjects otherwise than as prototypes of the human body, are vacant of meaning: metaphysics without they rest upon the order of physics, are a soul without a body, and belong neither to this world nor to the next. Whatever deflects the understanding from order, as the question of questions, deflects it equally from both mind and matter, and consigns it proportionably to the "shadowy sophisms" of materialism or immaterialism. In the highest sense God is the only substance, and yet in a true sense, each degree is a substance to that proximately below it. All finite differences are in reality variations of form determined by uses in their order. Each degree involves the repetition in itself of all the three degrees, of end, cause, and effect; and hence nature itself is full of substances – of bodies possessing real trine dimension,—and matter also involves as many substances as it has distinct forms. If we suppose that nature is a mere surface, we manifestly indispose the mind for admitting a doctrine of forms, consequently we detain it in the last degree, and in the lowest plane of imagery, and when this is the case we must look upon science as something which exists by courtesy, a record of appearances and superficialities which are only presented to us to be negated. Thus the spiritual violates the natural, instead of leaning upon it, as a house upon its foundation. But let no logic disturb our foundations thus: the principle of use, and the test of results, furnish a more conclusive experiment of ideas than any syllogistic process; for they scrutinize the end, and not only the means. This principle and test declare to us, that in the investigation of nature, we are to keep our minds in the idea of order, as manifested in successive degrees of forms, forces, operations and uses, and that then we are legitimately studying the nature of substance in the only meaning that it has for finite beings. Other substance than this is a figment, which is rendered necessary by nothing in the theory of causation, because it will legitimately account for nothing. It has no function in the new state of things but belongs essentially to the scholasticism of a past church.

Having now briefly indicated the relation between Swedenborg's science and philosophy, and that of his own and the present time, we have still to speak of a few points which more particularly belong to the Work before us.

The reader may probably be led to enquire, how far the "Animal Kingdom" embodies doctrines which were current at Swedenborg's day, and how far its deductions are peculiar to our author. To this it may be answered, that many doctrines to be met with in the Work are by no means peculiar to Swedenborg, but were the common intellectual property of his contemporaries and predecessors. We have seen that a host of writers held the doctrine of the animal spirits. It was also no uncommon belief that they were elaborated by the cortical substances of the brain, and circulated through the nerves. Vieussens held that there were distinct degrees of them Brunn propounded the same doctrine as Swedenborg respecting the pituitary gland; and numerous instances to the same effect might readily be adduced from other writers. Perhaps the best means to be certified on this head, will be by the perusal of Boerhaave's "Institutiones Medicæ,"—a work where the theories of ages are condensed into an eclectic system. It appears as though Swedenborg freely availed himself of the treasures that were accumulated around him and before him, and was altogether destitute of that passion for originality which has been the besetting sin of so many

of the learned. He distinctly states that he has relied upon his own experience to but a small extent, and that he has deemed it wiser, for the most part, to "borrow from others."* So also where he found true doctrines and deductions,—these likewise he borrowed, and this, with generously grateful acknowledgment. But what he really brought to the task were those great principles of order to which we have before alluded, and which touched nothing they did not universalize and adorn; nay, which built the materials of experience and the deductions of reason into a glorious palace that truths could inhabit. It is as the architect of this edifice that Swedenborg is to be viewed, and his merits are to be sought for not so much in its separate stones, as in the grand harmonies and colossal proportions of the whole.

After this statement it is scarcely necessary to observe, that Swedenborg is not to be resorted to as an authority for anatomical facts. It is said, indeed, that he has made various discoveries in anatomy, and the canal named the "foramen of Monro" is instanced among these.† Supposing that it were so, it would be dishonoring Swedenborg to lay any stress upon a circumstance so trivial. Whoever discovered this foramen was most probably led to it by the lucky slip of a probe. But other claims are made for our author by his injudicious friends. It is said that he anticipated some of the most valuable novelties of more recent date, such as the phreno'ogical doctrine of the great Gall, and the newly practised art of animal magnetism. This is not quite fair: let every benefactor to mankind have his own honorable wreath, nor let one leaf be stolen from it for the already laureled brow of Swedenborg. True it is that all these things, and many more, lie in ovo in the universal principles made known through him, but they were not developed by him in that order which constitutes all their novelty, and in fact their distinct existence. For in the first place it is impossible for the human mind to anticipate facts; these must always be learnt by the senses: and secondly, Swedenborg was too much a man of business to turn aside from the direct means to his end, or to attempt to develope anything beyond those means. His philosophy is the high road from the natural world to the spiritual, and of course has innumerable lateral branches leading to the several fair regions of human knowledge: but through none of these by-ways had Swedenborg time to travel; nay, could he have done so, there is nothing to shew that he would there have discovered what his successors have done. He had his mission, and they have theirs. His views are at harmony with all that is new and true, simply because they are universal, but in no fair sense do they anticipate, much less supersede, the scientific peculium of the present century. Swedenborg, therefore, is not to be regarded as an Aristotle governing the human mind, and indisposing it to the instruction designed to be gained from nature; but as a propounder of principles the result of analysis, and of a method that is to excite us to a perpetual study in the field of effects, as a condition of the progress of science,

The anatomical knowledge possessed by Swedenborg was undoubtedly very extensive. He appears to have studied more by plates than by actual dissection, as almost any one would do who had in view the same end as himself. This will be regarded as an unpardonable vice by physiologists. But why should the knowledge of the human frame be limited to the dissecting-room? Why should it be the appendage of one craft, and not an inheritance of universal humanity? Why should the truths of the body be the exclusive property of physicians, any more than the truths of the soul the exclusive property of the clergy? Have we not all souls, have we not all bodies? Now good and accurate plates, corrected and generalized during several ages, are far more valuable and available as a basis of general education, such as the New Church must ultimately desire, than either dissections or preparations. It is something that they carry none of the adjuncts of death, disease, or putrefaction; that they do not hinder the mind from recollecting that life and motion are the import and lesson of the body. It is something that they may be placed within the reach of all. Swedenborg has set the example of what may be done by studying them, and his readers must follow the same course if they wish to profit by his instructions.*

The professional reader of the "Animal Kingdom" will not fail to discover that the author has fallen into various anatomical errors of minor importance, and that there are occasionally marks of haste in his performance. This may be conceded without in any degree detracting from the character of the work. These errors do not involve matters of principle. The course which

* "Economy of the Animal Kingdom" tr. i., n. 18.

† See "Animal Kingdom," vol. 1, p. 250, n. 190, note (*r.*)

* The beautiful little book by Erasmus Wilson, entitled, "The Anatomist's Vade Mecum," may be recommended to the readers of the "Animal Kingdom," for the number, of excellent plates that it contains.

Swedenborg adopted, of founding his theory upon general experience, and of only resorting to particular facts as confirmations, so equilibrates and compensates all mistatements of the kind, that they may be rejected from the result as unimportant. To dwell upon them as serious, and still more to make the merit of the theory hinge upon them, is worthy only of a "minute philosopher," who has some low rule whereby to judge a truth, instead of the law of use. Such unhappily was the rule adopted by the reviewer of the "Animal Kingdom" in the "Acta Eruditorum Lipsiensia" (1747, pp. 507– 514;) the book was despised by this critic because Swedenborg had committed an error in describing the muscles of the tongue, and because he had cited the plates of Bidloo and Verheyen, which Heister and Morgagni had then made it a fashion to disparage; and for other equally inconclusive reasons. All they amounted to was, that Swedenborg had not accomplished the reviewer's end, however thoroughly he had performed his own.

But fortunately such criticisms are never decisive; a single truth can outlive ten thousand of them. The "Animal Kingdom" appeals to the world at this time, a hundred years since the publication of the original, as a new production, having all the claims of an unjudged book upon our regards. For during that hundred years not a single writer has appeared in the learned world, who has in the slightest degree comprehended its design, or mastered its principles and details. The reviewer to whom we have more than once alluded, judged it by a standard which was suited only to an anatomical manual and text-book. Haller bestowed a few words upon it in his invaluable "Bibliotheca Anatomica," but he knew nothing of Swedenborg's views; and his notice of the "Economy of the Animal Kingdom," contains errors too numerous not to invalidate his censure, had he bestowed it, which however he has not done directly. Sprengel in his "History of Medicine," has offered a few lines upon the work, but these merely of a bibliographical import. The past therefore has found no fault in it, and it comes before the reader with an uninjured character, and demands as a good, true, and useful book to be taken into his service, and to receive a full trial at his hands. The modern physiologists have no theory of their own, have no reference to it, nor until they quit their present ground can they be allowed to have an opinion on the subject. Their censure would not be more relevant than would the opposition of a Red Indian to the problems of the mathematics.

But it may fairly be asked, what are the prospects that the "Animal Kingdom," and the scientific works of Swedenborg generally, will be received at this day, when they refer to an order of facts almost forgotten, when they involve a scientific terminology which has become partially obsolete, and especially when it is considered that there never perhaps was an age so well satisfied with itself and its own achievements as the present one; Their prospects in the high places of science are not indeed encouraging: it would be vain to build up hopes in that quarter, or to address expostulations to it. A commission of any Royal Academy in christendom would soon decide our claims in the negative. But fortunately there are abundant signs of a breaking up.

The scientific world, and specifically the medical world, which is always the highest exponent of the state of science, is in a state of intestine revolution; nay, what is saying much, it is nearly as full of dissension as the church itself. It would be exceedingly unpalatable to dwell upon its divisions, to specify the sects which have separated from the maternal body, and to shew the irreconcilable nature of the differences that subsist between orthodox medicine and her refractory children. The future historian, standing, upon the grave of once venerated institutions may do this with impartiality, and not without a feeling of pity. Meanwhile it is our privilege to rejoice, that amid the decadence of science new ground is being broken, and new spirits raised up, to some of whom the new truth may be accommodated and delightful.

We use the phrase "new truth," although the works which contain it have been buried in the dust for a whole century; but in so doing we simply allude to the principles involved in those works. The confirmatory facts by which these principles were brought into relation with the science of Swedenborg's day, may doubtless from to time be superseded by better attestations: particular facts are but the crutches of a new theory, and are not strictly speaking its basis; for the basis itself is spiritual, since it is the order and tenor of effects that form it, and not the matter. The principles themselves are eternal truths,—the same yesterday, to-day, and for ever. They are not attached for more than a time, or for any end but necessity of use, to any one range of facts, or to the books of any one author,—no, not even of a Swedenborg.

There are cycles in all things, and even now there are some indications of a revival of medical learning. The weakness of the present state of things is perceived by those who have no appreciation of its barrenness; the temper of the public is an unmistakable

demonstration to this effect Hence many begin to revert to the past,and laying aside for a moment the vociferation of "march of intellect" and "progress of the species," they are content to march and progress, like the crab, backwards and to claim Hippocrates and Galen, and Sydenham as their fathers. This is at any rate so far good, that it shews how a forgotton range of facts and an antiquated terminology may be re-acquired as soon as there is a sufficient motive: nay, it nourishes the hope, that under the pressure from without, the large body of dependents, if not the feudal lord of science, may come to even greater and more unexpected results than these. Who shall say that they may not ultimately see that it is their interest, as practitioners of medicine, to deposit their cloke of mystifications, to bring to market something which is intelligible and useful to humanity, to go wherever truth leads them, even though that truth be "stranger than fiction," and to come to our Swedenborg in his double character, and acknowledge with humble thankfulness that a greater than Hippocrates is here,—a man who has married practice to theory, who has dissected the living body without destroying it, and has so opened the science of anatomy and physiology, that they must sooner or later become branches of human education, in which case the medical profession will have a solid basis in the social world, and be as a golden crown of wisdom and practice resting securely upon the correct knowledge and common sense of mankind.

To all those who are in possession of truths which are uot recognized, or are rejected, by the systems of the day, the writings of Swedenborg may be perfectly invaluable. Those writings will prevent them from being dependent, in any department of reason, upon the old state of science. They will furnish a high rallying point where a number of such distinct truths may be combined, and derive that strength which is the result of union, and especially of the union of truths. They will put weapons of offence and defence in the hands of causes which are now repressed almost into nothingness, and give power to those which are strong in spirit, yet weak in body. They will add force to faith, and sustain the earnest soul through the day of small things, and meanwhile yield it a peaceful delight prophetic of a glorious future To all such persons these writings ought to be as glad tidings, and should be received with hearty thankfulness, and a determination to lose no time in converting them to use.

But it is on the New Church itself that Swedenborg's scientific works have the highest claim. They were written, indeed, to convince the skeptic, yet perhaps their chief end may be to confirm the believer. They disclose the intellectual use of nature, as being a theatre of instruction where man may learn the highest truths in the lowest form, and from which he may mount upwards, on the ladder of divine order, until the intellect merges in the moral sphere. They proclaim that in this course of true instruction there is nothing to be unlearnt, either in this life or in that which is to come, but that our limits are to be successively enlarged, and all that is real and positive ever carried forwards into the proximately succeeding state. For these works are thoroughly congruous with the theology of the New Church. The order which they show to exist in nature, is the very mirror of the order that reigns in the spiritual world. They mark the successive stages through which Swedenborg was led by the Divine Providence, until he was capable of that interior state in which his spiritual eyes were opened, and the inner world disclosed to his view; and as they were therefore the means, so were they in unison with the end. The doctrines which they set forth respecting the human body are reiterated with scarcely an omission in his theological treatises, and particularly in his "Arcana Cælestia," where they serve as the ground-work of his stupendous descriptions of the life of man after death, when he is associated with his like, according to the laws of order and degrees, and if he be capable of it, becomes a part of the grand human form of heaven. It is therefore at once edifying and delightful to examine the scientific evolution of those doctrines in the "Animal Kingdom," and to observe how wonderfully coherent they are, and how firm they stand in nature. At the same time, far be it from us to admit, that Swedenborg's Theology was the outgrowth of his science. This has been stated to be the case, and it is an assertion easily made, a proposition which the sceptic will be too ready to conceive. But we give it a direct negative; it is the offspring of a double ignorance,—of an ignorance of both the premises. Those who are best acquainted with the writings of Swedenborg know full well that it has not a glimmer of probability to support it.

Nevertheless it may be confidently affirmed, that it is impossible to affix a meaning to much that Swedenborg has said of the human body in his theological writings, without a study of his scientific works. In this respect the former presuppose the latter as containing a body of elucidations that can-

not be obtained from the views of any other physiologist.

But these works not only support and elucidate Swedenborg's theological writings, but they also afford the members of the New Church an opportunity of descending from the spiritual sphere into the natural, and there gathering confirmations from the broad field of creation. In proportion as this is rightly done, or done for spiritual ends, there will be a regeneration of the sciences, and the ascending or analytic method will become subservient to the influx of spiritual power and truth from above.

The order of nature will be more and more seen to be at one with the order of heaven. The sciences through which nature is viewed in different aspects, will become easy of comprehension and recollection, because all their details will be ranged on the electric spirals of order. The organic sciences especially will be schools in which the great lesson of society is learnt, and the laws of government and intercourse represented. The human imagination will be limited by the truth, and will admit that all that outlies its sphere, is a monstrosity, and an outrage against the universal principles of art; and that without rational truth there can, at this day, be no true art, as there can be no heroic action. The understanding will no longer love the occult, or dwell in quiddities and logical formulas, but in the recognition of ends and uses in substantial forms. Man will see the omnipresence of God in nature, because he will contemplate a moving order perpetually tending from ends to ends, and thus involving an infinite intelligence and love in every point of its progression. There will no longer be faith alone, nor charity alone, nor works alone. The natural world will not be divorced from the spiritual, nor the body from the soul; for there will be no hostility between the different faculties of the mind, but the spiritual man will rest on the rational, and the rational on the sensual, which last will then become the enduring basis of the heavenly, and the ultimate theatre of its life and fructification. "In that day there shall be a highway out of Egypt to Assyria, and the Assyrian shall come into Egypt, and the Egyptian into Assyria, and the Egyptians shall serve with the Assyrians. In that day Israel shall be the third with Egypt and with Assyria, even a blessing in the midst of the land,"*

But until this prophecy is accomplished, science must be dead. For the Egypt, Assyria, and Israel of the Word, are not places, lying under a particular latitude, or confined to one planet, for the divine truth is omnipresent, and transcends the condition of space and time; but they are general states within every man that is born into the world. The Egypt of divine truth is his scientific mind; the Assyria is his rational mind; and the Israel, his spiritual; and the prophecy here describes the true order of the influx and circulation of mental states and principles, in either an individual, a society, or the human race at large. This is the order to which we believe power will ultimately be given by Him who has all power in heaven and on earth. For we know that until it is established, opinion must be as the shifting sand; human systems must be so mortal that the mere flux of time is sufficient to destroy them; the scientific state of each age must be at the mercy of any strong man with an energetic will and an equal faculty of persuasion; since without a permanent reference to true order, intellectual feats can be measured by no standard but daring and determination. But a better time is at hand, and a better state than man deserves, or than he himself could originate. The new era has commenced already. The truths of a New Church have been revealed in the writings of Swedenborg; and in those truths and those truths alone, may science drink of the waters of immortality.

* Isiah xix. 23, 24.

PRACTICAL REMARKS

On the Treatment of Cynanche, with Cases.

By Charles Travers Mackin, Esq., M. D., Battersea.

Allow me the favor of inserting a few cursory remarks on a disease of common occurrence, apparently simple in itself—simpler in the indications to be followed—simplest of all, by reason, not of the hints, but of the positive directions, for its management laid down for our guidance and instruction by Dame Nature. We shall, however, see that it may, through contingencies which it were needless to enumerate, become a source of imminent danger, and as such, imperatively demand (it would seem) a painful operation for its relief, and that, too, at the hands of our elder brethren of the profession.

In a recent Lancet is a case of cynanche.*

Before proceeding further, I would wish it to be distinctly understood, that I offer the following remarks, not for the mere purpose of criticism, but with a view of showing, as far as my limited powers will admit, that a mode of practice in similar cases, bearing a

* Case of the Rev. John M—, by Mr. Roberts, read at the Medical Society of London —January No., page 79.

strict analogy to the principles which guide us in our management of inflammatory affections in other parts of the frame, will, I have but little doubt, avert the necessity of having recourse, in cynanche, to laryngotomy, or any other final alternative of surgery.

I will first, make a short summary of the case in question; secondly, I will venture a few observations on it—taking it on its own merits, and as I find it recorded; and lastly, I shall hazard both comment and criticism by giving my own ideas of the line of practice to be followed, supporting my opinion with a few of such cases as have occurred in my own practice.

A patient is seized with soreness of the throat, on the 14th of September, accompanied by the usual constitutional disturbance. He is relieved by "appropriate measures." On the 18th he experiences a recurrence of the same symptoms, aggravated in intensity, the left side of the throat being now attacked Difficulty of deglutition is the most prominent local symptom, from the 18th up to five o'clock on the 19th. (Dyspnœa not being mentioned, I presume, does not exist at this stage.) He now, from the engorgement of the mucous membrane of the nares, becomes unable to respire through the nostrils. At noon on the 20th, dyspnœa manifests itself for the first time.

The then existing state of the throat is thus described—

"The velum pendulum palati was much reddened at its lower base. The tonsils could not be properly inspected, but did not seem to be swollen in proportion to the difficulty of deglutition. At five o'clock, the same day, there is impending asphyxia—"semi-consciousness" succeeds, and laryngotomy is performed.

The particulars of the treatment are rather ambiguous. In the first attack, "appropriate measures" were followed by relief. On a recurrence, leeches and fomentations were used unavailingly. When difficulty of breathing supervened on dysphagia, a blister was applied, and belladonna administered without benefit; and, according to the maxim, "Le fin couronne l'ouvrage," laryngotomy is had recourse to, and the patient recovers.

It must be at once conceded, that this case, taking it as related, was one of cynanche. It will likewise be noted, that on the 20th Sept., or about forty-eight hours from the commencement of the second and more serious attack, the difficulty in breathing, with sibilation, was first noticed. The conclusion, then, is plain, that impeded respiration was secondary; and we must, therefore, naturally infer,

1st. That, from continuity of tissue, the inflammation extended from the parts primarily attacked to the summit of the larynx and the surface adjoining thereto. Hence the ultimate necessity for operation.

2nd. That the standard treatment proved insufficient to check or impede its progress in any degree whatsoever.

These premises granted, we will take a general view of the indications of Nature for the reparation of inflamatory affections, from whatever cause they derive their origin.

The first of her intentions is evident. Motion of the inflamed part, tissue, or organ, must, for obvious reasons, check the reparatory process. She therefore wisely ordains that the punishment (or warning for future occasions) shall follow, close as shadow does the substance, any infringement of her directions in this respect. Hence, increase of pain is the immediate and invariable result–increase of inflammation the indirect and frequent consequence. We follow her injunction thus; if a joint be affected, we relax the muscles acting on it, set it at rest, and keep it so. If any intermediate portion of a limb be inflamed, we change not our principle, still bearing in mind her commands, which require no interpretation. Dame Nature acts without a deputy, by exercising her control, without our help, over internal organs when inflamed.

If the bladder require her assistance to prevent motion, it is at hand, and the motion of distention is rendered agonizingly painful. The urine, by her care lessened in quantity, is voided as fast as secreted.

If the kidneys, secretion is regarded or checked altogether. If the stomach, the movement of distention is summarily stopped by the immediate ejection of medicines and ingesta. If the peritonæum, respiration is generally thoracic, the diaphragm, abdominal muscles, and, consequently, the subjacent membrane in question being left in quiet. The bowels are also costive and quiescent, until unwillingly roused into action by a turpentine injection. If the costal pleura, respiration is abdominal, the intercostal muscles and ribs quiescent.

It is unnecssary to multiply examples. If the eye or any of its membranes be inflamed, we interdict and prevent, as far as we can, motion or use. If the brain or its membranes, we proscribe all sources of excitement. But if the throat be inflamed, we fulfil the foregoing plain indications after a fashion, by administering gargles, diluents, and necessary medicines, thus setting the parts in nearly constant motion which Nature tells us to prohibit; plainly erring from her directions, and our principles of treatment founded on the same.

A little further yet, let us pursue this train of reflection.

There is an impediment to the course of the circulation through a tissue in a state of inflammation. The circumjacent arteries propel their contents with increased force to overcome it. If they succeed in effecting this, resolution is the consequence. If not, how does the vis medicatrix unload the vessels of the part in question? By effusing the thinner portion of their contained fluid into the extravascular parenchyma. Tumefaction and tension are increased, and the indication thus offered is plain as the sun at noon. Well, then, we pursue the unerring instructions of our monitress by abstracting blood from the seat of discharge. This rule is not carried out, though perfectly practicable in inflammatory affections of the throat. Hence we are sometimes compelled to have recourse to laryngotomy—"an operation," says Abernethy, "which is a tacit reproach to the healing art, for it is a candid acknowledgment of our inability to cure."

If leeches be applied outside, the inner structures are influenced but little. As the swelling, which is attended with danger to life, is the swelling of the inner aspect of those structures, and as the abstraction of blood from the integuments can only influence the outer portion of the parts in question, it follows that the tendency to spread is not counteracted where counteraction might be practised with facility and probable success.

Having for some time past adopted a plan of treatment in all cases of cynanche presenting themselves, and having noted the results, both immediate and indirect, I offer it with some degree of confidence. The mode I pursue is simple and obvious enough, although I beleive rarely practised. It would also seem, from the perusal of Mr. Robart's case, the discussion which ensued, and the remarks of the president, that the plan which I now proceed to describe is not generally known.

Free incisions of the tumefied parts within the throat, I have never yet seen fail of giving instant relief. I do not mean mere scratches, but one or more bold incisions, varying in depth and extent, according to the urgency of symptom and tumefaction of structure.

The operation, if it can be called such, is easily performed by any one possessed of the average amount of dexterity. The following will, I believe, be found the easiest method:—The blade of a long-handled, round-pointed scalpel is covered with adhesive plaster to within three-quarters of an inch of its extremity. The index finger of one hand is used to depress the root of the tongue (this must be done firmly, as the tonsil frequently swells most in a downward direction, causing dysphagia to a greater degree than if alone increased by swelling in the transverse diameter.) The instrument being then introduced, its edge directed upwards and inwards, one or more free incisions are made, commencing below, and carried in a curve convex outwards and upwards along the tonsil and velum, to the base of the uvula. The time occupied is not more than two or three seconds. The pain is inconsiderable, the relief always immediate, and in the majority of cases, permanent. The bleeding is encouraged by gently gargling the throat with any warm fluid. The depth of the incisions must of course be regulated by the amount of swelling and urgency of symptoms. It is, however, advisable, in every case, to divide the mucous membrane effectually, and even penetrate a short way into the substance it invests. The flow of blood I have generally found to be inconsiderable, when compared with the relief experienced. Whether ulceration be present or not, I have never hesitated, if the concurrent symptoms seemed to demand such interference, at once to cut through the ulcerated part if it lay in the line marked out by the eye for incision. Out of some dozens of cases treated by me in this manner, during the last twelve months, none have proceeded to the formation of matter. I can call to mind many which have been attended with superficial ulceration, previous to my being consulted, but none which ulcerated after incision was practised. I have observed that the viscid secretion poured out by the structures in question when in the state of inflammation, has been materially increased in quantity soon after the division of the congested membrane. The reason being obvious, need not be here mentioned. With regard to gargles, I have latterly discontinued their administration believing that any benefit derivable therefrom is extremely problematical; while, during their use, motion of parts which ought to be wholly at rest is unavoidable. The diet should be liquid, and taken at as long intervals as possible. On the medicines necessary for cure, secundum artem, I have nothing to say, save that it is to be borne in mind that deglutition is difficult and painful.

Mr. W., a moderately stout young man, of good general health, has had hypertrophy of both tonsils for some years past; the passage between is at all times exceedingly narrow; he is liable to frequent attacks of cynanche; dyspnœa and dysphagia at such times productive of great distress. On the 27th of April, I was called to attend him for

the first time. On examining the throat, the half arches of the palate were found to be all but filled up by the protuberance of either tonsil, the uvula and velum strongly injected, to the extent of three-fourths of an inch from the free margin of the latter. Headache, fever, great pain on attempting to swallow, sibilation; voice nasal; incisions followed by relief; bleeding and discharge of mucus considerable.

On my visit the following day, I found a marked improvement.

On September 22nd, a sister of the gentleman just mentioned was seized with the same malady; slight swelling of both tonsils, with an insignificant degree of inflammation about the margin of the velum; some feverishness; incision not permissible; nitrate of silver objected to; blisters politely declined, "as they might leave a mark" Gargles to be used frequently were prescribed with the usual appropriate medicines. The case remained nearly in statu quo from that date, up to October 7th, when it declined gradually.

July 28th, a stout, middle-aged man. The usual appearance of cynanche; ordered a brisk purgative and an astringent gargle; 29th, much worse; incision freely, in the usual manner; instant relief, and on calling next day, found no further occasion for attendance.

Mrs. C., twenty-seven years of age. Hysterical temperament; appearance delicate; general health indifferent. On November 10th, was seized with rigor, pain in the head, and soreness of left side of throat; some difficulty in swallowing; redness and swelling of tonsil and velum; incision practised in usual manner. Aperient medicine, and injunctions to avoid the act of deglutition more than might be absolutety required; 12th: Left side of throat presenting usual healthy appearance; disorder transferred to right side in aggravated form; incision proposed and objected to; apply six leeches. Seven p. m. worse; repeat leeches, and apply nitrate of silver in substance. At eleven the same night I was sent for to stop the bleeding from the leech-bites; found her faint and greatly exhausted from loss of blood; throat worse; deglutition now impossible; some dypsnoea; apply a blister. 13th: Throat worse; more difficulty in breathing: a fresh blister to be applied. 14th; No improvement; dress blister with ung. hydrarg. 15th; Better. Nov. 18th; To-day I have taken my leave of the case. The left tonsil is of its natural size and appearance. The right is still considerably enlarged, and will most likely remain so. All inflammation has now subsided.

I have selected the foregoing few cases from my note-book as they tend to show the results of different modes of treatment in the same disorder.

I have not the slightest doubt on my mind, but that prompt incision of the inflamed tissues will be attended with success in the vast majority of cases. As far as my experience goes, it has never failed of relief, and that almost directly. Without in the most remote degree wishing to derogate from the merit so justly due to Mr. Robarts, I must be excused if I express a small doubt as to whether cynanche, be it dubbed erratic, erythematic, tonsillar, or pharyngeal, would, in one out of a thousand cases, proceed to such a height as to require laryngotomy, were the parts primarily affected by the malady freely divided by the scalpel ere asphyxia left us no alternative.—*London Lancet.*

Nov. 18th, 1845.

ON

Constipation, from Indolence of the Bowels, and its Treatment.

Dr. Teissier, assistant-physician to the Hotel Dieu, at Lyons, has published, in the last number of the *Journal de Medecine* of that town, an interesting article on the treatment of constipation from indolence of the bowels. This form is undoubtedly the one most frequently met with in practice. It is a freqnent cause of ailments, which, when misunderstood, in the end seriously affect the health. The disease is very frequently met with among persons advanced in age, and among the hypochondriacal, in females, particularly those affected with chlorosis, or disease of the uterus; in individuals who do not take sufficient exercise, and in those who devote themselves especially to literature. It accompanies almost invariably all serious affections of the nervous system, and, above all, paralysis. Its consequences are, headache, indigestion, painful hæmorrhoidal, tumours, displacement of the uterus, sanguineous discharge from that organ, and leuocorrhœa, in females, and in extreme cases may lead to marasmus. It is most important, then, to be able to recognize the sort of constipation of which we speak, and, above all, to know the most effectual means to remove it.

The directions given by most authors, for this last purpose, are in general of little use; sometimes they are even hurtful and dangerous. In fact, the means most frequently recommended are, oily enemata, or simple lavements of decoction of mallow, of bran, &c., at the temperature of, from 80° to 86° F.: and later, when these lavements fail to un-

load the bowels, manna, senna, tamarinds, rhubarb, castor oil, seidlitz water, scammony, in short, all sorts of laxatives, or even the most drastic purgatives, are recommended.

Now it is at present recognised as a fact among all practitioners of experience, that in the sort of constipation here treated of, the use of warm injections is hurtful, because, as it depends on a sort of atony, or indolence of the muscular fibres of the bowels, the more you inject warm water into them, the more the muscular fibres are lengthened, distended, softened, and deprived of their contractile power. It is known, also, that the use of purgatives, far from being beneficial in this sort of constipation, is, on the contrary, very prejudicial, inasmuch as they blunt the sensibility of the coats of the bowels, which at length become insensible to the stimulus of fœcal bolus; besides this, their continued use may violently irritate the bowels. But this is not all, for, as Teissier remarks, the authors who most strongly advocate the use of purgatives in this disease, acknowledge also the inconvenience arising from the use of such substances in a great many cases.

Beyond these means, it might truly be said that no resource remains. But science is not so powerless as might at first be supposed: nay, numerous useful means exist, of which the three principal are, nux vomica, cold lavements, and astringents, which Dr. Teissier, on the recommendation of some authors, has employed in several cases, and with apparently happy effects.

Schmidtmann was the first to recommend the use of nux vomica in cases of sluggish digestion, with flatulence, distention of the bowels, and constipation. Teissier cites four cases which show that this substance has been equally succesful in his hands under like circumstances. In the first case, a female, the sluggishness of the bowels was caused by the existence of syphilitic excrescences at the anus, with thickening of the rectum in its whole circumference, which for more than a year caused great difficulty in defæcation. After the venereal affection was cured, the constipation continued, and resisted all the means used to overcome it. Dr. Teissier having remarked that the introduction into the anus of tents (meches) for several successive days, and cold lavements, had in some degree relieved the constipation, was led to think that these means had only acted by rousing the contractile power of the large intestine, and that that end would be more fully obtained by administering the nux vomica. He accordingly gave his patient, every morning, in a pill, nearly the fifth of a grain (one centigramme) of the extract of this substance. Under the use of the nux vomica, in this dose, for nearly a fortnight, the constipation entirely disappeared, and a year has now nearly passed away without any relapse. From time to time, merely, when the bowels are inclined to become sluggish, the patient takes one of the pills as above, and the next day the usual evacuation takes place. In the second case, the constipation, which was of long standing, was complicated with disorder of the stomach, referred to supposed gastritis. The patient was at first put on low diet, gum water, emollient injections, and the white meats, which only increased the sluggishness of the bowels. Recourse was then had to various other means, which relieved the gastric symptoms, without entirely curing them, but had no effect on the constipation. Dr. Teissier, seeing the little success attending this mode of treatment, had recourse to full diet, and the use of the extract of nux vomica, in the dose of the fifth of a grain, daily. In less than fifteen days the constipation and the other symptoms had almost entirely disappeared, and in less than a month, convalescence was complete. In the two other cases the result was the same. It must not, however, be supposed that the remedy is infallible; the Doctor admits that he has seen it fail in the case of nervous individuals suffering from obstinate constipation. He thinks it is particularly indicated in those cases where there is reason to suspect a general want of tone in the bowels, as in the paralytic, or in old persons, or where we may suspect a want of tone of the muscular coat of the intestine, in consequence of great and long-continued distention, or, in short, when the constipation can be referred to an undue secretion of gas, which, of itself, by causing distention of the bowels, diminishes their contractile power.

Injections of cold water, better known than nux vomica, constitute likewise a valuable resource against constipation from want of tone. Of late years they have been much vaunted; but, nevertheless, they are as yet but little used in practice. They act somewhat in the same way as the nux vomica in rousing the sensibility and the contractile power of the intestine. Our author does not however, consider that two remedies ought to be used indiscriminately under the same circumstances; he thinks the cold injections particularly suitable to persons of a nervous, highly irritable temperament; to the hypochondriacal, and to females suffering from irritation or engorgement of the womb.

Females who have contracted the pernicious habit of taking a warm enema daily, and who have thus lost the power of evacu-

ating the bowels by the sole efforts of nature, ought to substitute cold for warm water; they would thus more easily attain the end they have in view, and avoid the inconvenience of diminishing more and more every day the contractile force of the muscular fibres of the bowels, and thereby increasing the degree of constipation. In general, cold injections are very harmless and very well borne; they produce, however, in some individuals, an uncomfortable sensation of cold in the bowels and loins, which may continue for an hour or two. Sometimes they produce pain in the bowels, and slight diarrhœa; in this case, all that is required is to discontinue them for a time, and to use them only every third or fourth day, instead of daily. In the case of patients in whom there is little reaction against cold, it is better not to prescribe water at the ordinary temperature at once, but to begin with it at the degree 68 Fahr., gradually coming down to 64°, 59°, and 53°, till, at length, water of the natural temperature may be used.

Astringent injections are also highly useful, under certain circumstances, in relieving constipation. Bretonneau was the first to establish this new and important fact, which has been again brought forward by Trousseau and Pidoux, in their "Treatise on Therapeutics," but without its having been as yet generally adopted in practice. One can readily imagine the reluctance some medical men have to recommend, in constipation, injections containing the substances they are in the habit of prescribing in diarrhœa—such as catechu, kramiria, alum, &c. But if we reflected, that in persons who have long suffered from constipation, particularly females, the rectum forms above the sphincter a pouch, sometimes of considerable size, in consequence of the distention from accumulated fæces, to which the coats of the bowels have been subjected, we should be less surprised that the idea has occurred to have recourse to the injection into the rectum of tonic and astringent substances, with the view of causing corrugation of the muscular fibres of the bowels, which, by corrugating, become shorter, and thus diminish the enlargement of the cul de sac now spoken of.

Astringent injections are particularly suitable in cases where there is reason to suspect an abnormol dilitation of the lower portion of the rectum; for instance, in constipation from the presence of a mechanical obstacle at the anus, caused by hæmorrhoidal tumours, swellings of a venereal or cancerous character, or contraction of the sphincter with or without fissure. These injections are, moreover, suitable, for the same reason, to females in whom constipation exists, along with engorgement or retroversion of the uterus, and to all those persons who, having their bowels relieved only once in eight or ten days, void, after painful efforts, which can be compared to nothing but a sort of parturition, an enormous mass of hardened and dry fæces. In all these cases, it is of consequence to rouse the tonic action of the muscular bands of the large intestine, and this indication is well fulfilled by astringent injections.

The ingredients of these injections may be infinitely varied; they may be composed of red roses, krameria, oak bark, bistorta, catechu, alum, &c. The following is Tesseir's mode of proceeding:—He begins with the simple infusion of roses, cold, and at the end of a few days, he adds to each injection from fifteen to thirty grains of the extract of ratanhy. He thinks that in obstinate cases a minute portion of the extract of nux vomica—one-seventh or two-sevenths of a grain, for instance—might be added, with advantage, to each enema. He considers, also, that they measure ten or twelve ounces, so that they may not be retained many minutes; that their action may be of short duration, and that the muscular fibres of the bowels may be allowed readily to contract themselves. The nux vomica, the cold, and the astringent injections, are not certainly the only means at the disposal of the practitioner in the constipation we are now treating of; but they are those of which our author has had most experience, and from which he has derived most success. We must not forget here the means proposed lately by Fleury—viz., the introduction of tents into the rectum, which acting as a foreign body, stimulate the bowel by their contact, and rouse its contractile power; nor the shampooing of the rectum, proposed by Recamier; nor, lastly, inspissated ox-gall.

To all these means must be added, as auxiliaries, drinks composed of vegetable bitters, a tonic diet, the use of black meats, Bordeaux wine, active exercise in the open air, &c. These are useful auxiliaries, much more beneficial certainly than the use of white meats, (veal and chicken,) relaxing vegetables, such as sorrel, spinach, chicory, cooling lemonades, juice of prunes, bouillon aux herbes, &c.

Boulogne, Nov. 15th, 1845.

His Majesty the King of Prussia, by a Cabinet order of the 16th September, has been pleased to order the establishment at Berlin, of a homœopathic hospital at the expense of the government.—*Allgemeine Homœopathische Zeitung.*

On the Pathology and Therapeutics of Asthma.

BY M. GENDRIN.

The following valuable clinical remarks, by M. Gendrin, on the nature and rational treatment of asthma, which we extract from the medical section of the *Epoque*, are deserving of attention. They are a good specimen of the high power of generalization, and of the extended views of the La Pitie physician. M. Gendrin's pathological and therapeutical opinions offer a strong contrast to the narrow, limited, local doctrines of the Broussarian school, of which he has always shown himself an enlightened and able antagonist. We are happy to say, that a return to a sound, comprehensive, generalization of the causes, and phenomena, and therapeutic indications of disease, of which we now give an example, is daily becoming more apparent among French pathologists.

The patient lying at No. 8, of the St. Anne's Ward, will enable me to say a few words to you respecting asthma—a disease, the immediate cause of which modern pathologists are endeavoring to find in an organic affection of the lungs. We must first, however, rapidly examine the history of this poor woman. She is thirty-five years of age, and being a washer woman, is daily exposed to the influence of atmospheric variations, and to that of the cold and moist air of the river, where she washes in a boat. She was first attacked with asthma three years ago, and since then has had a fresh attack every third or fourth month. Each accession has lasted one, two, or three weeks, and on disappearing has left behind a certain amount of dyspnœa, which gradually diminishes. She is now under the influence of one of her attacks. Her respiration is slow, short, accelerated; inspiration requires great efforts, the simultaneous action of all the inspirator muscles; expiration is frequent, and accompanied by a sibilant sound, which is heard at the bedside of the patient. She can only breathe when sitting up. Her features express deep anxiety. The state of dyspnœa is not quite continuous; it is aggravated by paroxysms, especially at night. At intervals she is seized with fits of coughing, during which she brings up a quantity of glairy mucous, transparent, and mixed with air. Often in the midst of the coughing, vomiting comes on, and the excretion of the mucous from the bronchi appears to be thereby facilitated. The state of agony in which this woman then appears to be, and the semi-convulsive agitation which induces her rapidly to raise herself upright, in order to favor respiration, give a very good idea of the sufferings of asthmatic patients. The entire organization is disturbed; the pulse is frequent; the systoles of the heart are energetic, the jugular veins distended, and the skin of the face and neck covered with perspiration.

On examining the chest, its form is found modified; it is ovoid at the base, on both sides, in front and behind; the parietes of the chest are prominent, vaulted as it were, and percussion is attended with an abnormal degree of sound; it seems as if a bladder distended with air were struck; the sound of the expansion of the pulmonary vesicles is no longer heard on auscultating; a sibilous sound, here and there humid, coincides with the expiration. This sibilance may be appreciated by the hand, which, on being placed over the chest, feels a trembling crepitation, isochronous with the motions of expiration. The heart, the large arteries, and the abdominal organs, show no indications of disease. Such is asthma in its paroxysms. An analysis of the phenomena shows the prescence in the bronchi of a mucous fluid, which obstructs them, and which the efforts of coughing are destined to expel. The excessive dyspnœa of the patient is the result of the occlusion of the air-tubes by the products of secretion, and also of the emphysematous condition of the air-cells of the lungs, as indicated by the tympanitic condition of the thorax.

Such are the symptoms which have induced some pathologists to consider asthma as bronchitis, accompanied by an unusual secretion of mucous; others, as emphysema of the lungs; and others, as a disease attributable to spasmodic motions of the expiratory and inspiratory muscles; as if such spasms could explain the unusual secretion of mucous, and the stagnation of air in the cells of the lungs. To consider asthma only in the phenomena of its attacks, is only to see a part of the disease, one of its periods. Such a doctrine can only, at the most, lead to the cure of asthmatic attacks. The fit of asthma is only a part of the disease. If we consider it alone, we lose sight of the cause which reproduces the attack for years, during a part of the life of some persons. In order to understand the disease, the attacks must be reduced to what they really are—that is, phenomena of a morbid state which persists in the organization continuously for a longer or shorter time, and which announces its prescence, at intervals, by attacks of dyspnœa, of which the abnormal secretion of mucous is the first symptom. If we take this view of the subject, it becomes easy to understand the appearance of asthma as the result, in one, of gouty cachexia; in another of the herpetic diathesis; in a third, of a metastatic disease, owing to the suppression of chronic suppuration, &c. We can com-

prehend also asthma being transmitted hereditarily, or being the result of erroneous irregular regimen or habits. Lastly, this mode of viewing the etiology of asthma gives valuable indications for treatment, which is the most important. If asthma resists nearly always the curative methods adopted, it is because these methods are only directed to the cure of the attacks, and are not deduced from the nature of the disease. It is not, certainly, an easy thing to establish a system of medication drawn from the study of the entire economy, and from the rational appreciation of the causes which produce the disease; and this, perhaps, explains why cures are so rare. But when medicine is considered in a philosophical point of view, when we cease to search, along with the empirics, for a remedy the nature of which is not known, for a disease the nature of which is still less known, then it becomes indispensable to look for the rules of treatment in the nature of the disease, and not in the lesions to which it gives rise, and which after all, are only its phenomena.

You must not, however, think that I wish to draw your attention from the consideration of the local phenomena of diseases, and that I do not attach importance to their study. It would be a serious omission to neglect the local lesions, and not to take into consideration local phenomena, as it would prevent our appreciating exactly all the elements of the morbid state.

I have prescribed an emetic to the patient whose case is before us. It will, in all probability, modify the bronchial secretion, and favor the expulsion of the excreted products which clog the aerial tubes. I expect, also, that through the spasmodic expiratory movements which it will occasion, it will empty the emphysematous air-cells of the lungs. If this fortunate result is obtained, (as clinical experience tells us will probably be the case,) you will see the dyspnœa cease, as likewise the chronic asthmatic excretions. One day will perhaps suffice to bring the patient to the end of the attack which has occasioned her to enter the hospital.

If we do not cure the attack so rapidly, we shall at least obtain a diminution in the symptoms, which will lead to their disappearance, in the course of two or three days, under the influence of a slight sedative medication, or under that of a renewal of the emetic.

Supposing this result obtained, in what state will the patient be after the attack has been cured? If the repetition of the attacks of asthma has given rise to true emphysema of the lungs, with rupture of air-cells, there will remain a certain degree of shortness of breath, and the physical symptoms of emphysema. But these symptoms will be much less marked and less extensive; there will be no orthopnœa, properly speaking, no fits of coughing, and but a very slight mucous expectoration. If, however, the lungs are not injured in their texture—as we may hope is the case with our patient, who is still young and of a vigorous constitution—the respiratory functions will become completely re-established. You will no longer hear, on auscultating, the sibilant rhonchus produced in the bronchial tubes by the mucous which fills them; you will no longer find, on percussion, the tympanitic sound to which the air that dilates and obstructs the vesicles of the lungs give rise; and you will hear the vesicular expansion murmur at the basis of the thorax, where you now look in vain for it.

The prognosis thus laid down will enable you at once to understand the very different states in which asthmatic persons are in the interval of their attacks. If the patient is still young, of a good constitution, and has only had a small number of paroxysms; you will not perceive, in the thoracic organs, the slightest trace of organic lesions or of functional disturbance in the interval of the attacks; the repletion of the bronchial tubes by viscid mucous, the emphysema which is observed during the attacks, all will have disappeared with the dyspnœa—the cough, the sibilant rhoncus, the tympanitic sonoreity and the bulging of the thorax. The patient is not, however, cured, for the attacks will return sooner or later. Allow these attacks to be frequently repeated, and then examine the same patient in the interval of his paroxysms; you will find his respiration short, frequent, and disturbed by a dry cough, whilst the physical signs of more or less extensive emphysema are present. The repetition of the attacks has given rise to permanent organic lesion of the lungs, and to a functional disturbance of the respiration, which becomes exasperated in the attacks, and persists, during their interval, with a gradually increasing intensity. During the first period of the disease, the asthma existed without pulmonary lesions, only reproducing the lesions during the paroxysms, and as phenomena depending on their manifestation. In the second period, the asthma is not represented by the organic and functional lesions of the lungs. It merely exasperates and aggravates them; and the paroxysmatic affection is complicated with organic lesions and functional disturbance, to which it, the permanent disease, has progressively given rise.

REVIEWS.

Animal Chemistry, or Organic Chemistry in its application to Physiology and Pathology. By JUSTUS LIEBIG, M. D., &c. London; Taylor and Waston, 1842, pp. 345.

(Continued from p. 56.)

The starting point of our author, in the consideration of this subject, is the enunciaof the existence, in the living body, of a distinct force—the vital,—which is stated to be the cause of growth in the mass—of resistance to external agencies—as a cause of motion and of change;—an exciter of decomposition—a changer of the direction of chemical forces—a destroyer of the mechanical force of cohesion—as an attractive force; and that its existence, is an unequal intensity in parts, comprehends not only an nuequal capacity for growth in the mass, but an unequal power of overcoming chemical resistance. This is in direct opposition to what he has stated in the previous part of his work; but as medical men, in this country, seem but too prone to recognise in Liebig a great physiological authority, it may be as well that we inquire into the truth of what he here so dogmatically asserts. "The manifestations of a vital force," says he, "are dependent on a certain form of the tissue in which it resides, as well as on a fixed composition in the substance of the living tissue." If the manifestations are, of course the force is likewise dependent, for it is by the manifestations alone that we can become cognizant of the existence of such a force; and if dependent, how is it at one time a cause, at another time an effect? Nothing, surely, can be more absurd than pompously to announce the existence of a thing, and then immediately to state that it is inadequate for the purpose it is assumed to fulfil. "In inorganic nature, do we require to assume the existence of distinct entities to explain the phenomena of attraction, combustion, &c.? We know not how or why a certain aggregation of matter called phosphorus should be capable, when exposed to certain agents under favorable circumstances, of exhibiting the phenomenon of combustion; or why a certain other aggregation of matter, called ivory, should be capable, when struck by a hard substance, of displaying those of sensible motion. But we know that they do so; and we satisfy ourselves, in these instances, with stating that the phosphorus is *qua* phosphorus, combustible, and the ivory, *qua* ivory, elastic, without ascribing to them any substantial principle of combustion or of sensible motion. In like manner we know not how or why a certain aggregation of matter, called organized, should be capable, when acted on by certain appropriate powers, of manifesting the phenomena of life. But we know that it does so—that the more perfect the organism is, the more remarkable are these phenomena—and that any change in the former produces a corresponding change in the latter; and what other proof can we require, or possess, that organized matter is, *qua* organized, endowed with vitality, and that it is not upon any substantial principle of life that these phenomena depend?"* It gives us pleasure to notice, in the recent work of Mulder on Organic Chemistry, that he has, with much acuteness, although in a form of argument formerly used by Thomson, exposed the fallacy of the vital principle school,—one in which Liebig aspires to be a leader, although he appears to be ignorant of the real force or meaning of the words he employs. "No idea (that of a vital force) can be less distinct than this. The existence of such a force in the fully formed organism is assumed as governing the whole. Respiration, the circulation of the blood, the functions of the nerves, &c., are effected by one force, which is called Vital Force. This vital force causes respiration here, digestion there, the secretion of the saliva and of the pancreatic juice in other parts of the body. It maintains at once the substance of the bones—of the muscles—of the brain. It is supposed that this same force is modified, with reference to the different organs which it influences. What would remain of the primary idea of force, if we saw force—here causing motion, there effecting a chemical alteration—elsewhere producing feelings or sensations? It seems to me that, in its ordinary signification, the term vital force expresses an idea as incorrect as if we supposed that one simple force, differently modified, operated in a battle fought by thousands—a force that acted so as to fire cannon and muskets, cut with swords, transfix with bayonets, sound trumpets, and keep men and horses in constant agitation, &c. The army appears as a substantial whole, and produces phenomena. The organism, composed of the most different parts, also appears as a substantial whole, and produces phenomena. If we assume for the latter a single force, differently modified as the organs vary—a single vital force by which the whole is animated, then, to be consistent, we should assume the existence of a fighting force in a battle."

A careful perusal of this chapter will enable the reader to see that Liebig, however excellent he may be in the practice of chemistry, loses himself in a sea of contradic-

* Fletcher's Rudiments of Physiology, p. 30

tions; and that the ideas he possesses of all forces are exceedingly unlike those, which we should have expected in one enjoying such a reputation as he does for philosophical argument.

It might be as well that we should here inquire what is the true meaning of force.

"When we speak of attraction and repulsion," says John Fletcher, "we, indeed, seem to be speaking of simple forces producing certain actions: but we are, in fact, speaking of the actions themselves, those of attracting and of repelling, the forces being, in both cases, quite distinct from these actions, and consisting of a property of being attracted or repelled, on the one hand, and a power of attracting or repelling, on the other." And again, here is Mulder's explanation of the term force. "In the natural sciences, force is assumed to signify an assumed cause of observed phenomena; we do not, therefore, observe forces, but suggest their existence to ourselves; and we do so in conformity with sound principle, for the phenomena constrain us to believe that such forces exist. No cautious inquirer into nature goes farther than this in the present day. We do not introduce forces to which we assign properties, but we form the idea of some particular force, after the necessity for its existence has been demonstrated by the observation of natural phenomena. The idea of force is, therefore, a concrete one, by which every specialty in the phenomena is embraced, and unity is given to the whole." Here then, we think we have a proper definition of the term force; which is in strong contradistinction to the illogical application of it made by Liebig, who assigns to his vital force a series of properties, with which, if it is endowed, it becomes a distinct entity. Philosophically speaking, we might, with as much propriety, assign to the force of gravitation a series of properties, consisting of all the modes of being which gravitant matter assumes.

So far as we have gone, we find that Liebig has employed the term in a twofold sense,—first, in his "vital force," which is expressive of a distinct entity; secondly, as a property distinctive of an organized tissue; but what can be thought of the clearness of our author's views when he adds a third application of the term, and from his statements we are left to infer that it is only a mode of the being of matter. "The amount of motion," says he, "is the momentum of force."

Liebig has, however, furnished us with as excellent an illustration of our views as we could have desired. It is as follows: "As the manifestations of chemical forces (the momentum of force in a chemical compound) seem to depend on a certain order in which the elementary particles are united together, so experience shews us that the vital phenomena are inseparable from matter; that the manifest actions of the vital force in a living part are determined by a certain form of that part, and by a certain arrangement of its elementary particles. If we destroy the form, or alter the composition of the organ, all manifestations of vitality disappear." It is not long, however. before our author contradicts himself, as the following sentence will shew: "It is obvious that a certain amount of vital force must be expended to retain the elements of the complex azotized principles in the form, order, and structure, which belongs to them:" although, as the former sentence announces, this "form, order, and structure," is the cause of the vital force. The effect is thus made, illogically enough, to have some share in the production of the cause.

His explanations, if such they can be called, although evidently by him intended to be so, of certain inexplicable phenomena, are, to say the least of them, very unsatisfactory. We are told, for instance, that the cause of the decadence of plants, and of the limitation to the duration of life in plants and animals, depends on this, that, after the establishment of an equilibrium betwixt the vital and chemical forces, a further increase of the latter takes place, which, continuing to increase, finally destroys the other. Such a statement brings us not one whit nearer to the knowledge of how this is caused, or how this assumed equilibrium is disturbed. Science has gained nothing by the communication of the dogma; and if it had been stated that all we know of the matter can only be expressed by saying it is an ultimate fact that plants, &c., die, it would have been a less pretending, but not less intelligible statement.

We shall now proceed to a consideration of the theory brought forward by our author on the cause of motion in animal bodies.

For the purpose of illustrating his subject and bringing us step by step to a comprehension of the views he entertains on it, he proceeds to trace the forces exhibited by chemical action in the galvanic pile, which are, according to him, transferred to a distance, and transformed into a new force, the mechanical in producing motion. Now, we are not at all convinced, however pleasing and simple it may appear to be, that any such thing as transference of chemical force takes place here; and we would, so far as we know of a subject, which, for the present, must remain in profound obscurity, rather

adopt a view more material, and look upon the electrical currents proceeding along a wire, as a proof of the elimination during chemical action of something really existing. For, did we not prefer this view of the subject, we should be apt, like our author, in tracing the analogy between the galvanic current and the vital agent, to fall into the error which he evidently embraces, when he inferentially states that the vital force, if not identical, is closely allied to electricity in its nature; and the way this conclusion is arrived at, is simple enough. He sees galvanic phenomena resulting from the decomposition of water by zinc, an absorption of oxygen, and a power produced in the direct ratio of the oxygen consumed, and capable of transmission to any distance. In the human body, again, he finds that oxygen is consumed, that tissues become effete and are thrown off, and that power appears to be produced in proportion to the oxygen absorbed. "Muscular substance is oxidated, as the zinc, in the part, force is generated, which is distributed by the nerves to different parts; when it is in excess in one organ, it is conveyed to other parts where deficient." From this decided relation between the change of matter in the animal body, and the force consumed in mechanical motion, no other conclusion can be drawn but this, that the active or available vital force in certain living parts is the cause of the mechanical phenomena in the animal organism." Now, we admit the facts, that all living action must consist, like ordinary chemical processes, in a series of actions and re-actions, which we only become cognizant of by witnessing them; but, for Liebig to imagine that he has simplified the matter, or thrown any new light on it, by assuming that the force of motion, or motion occurring in chemical changes, is transferred or transformed, on the one hand, into electrical phenomena, or, on the other, into mechanical, or in the third place, into vital phenomena, we feel constrained to deny. The very term, transference of force is unsound. It is only that which is substantial, as Mulder remarks, that can be communicated.

And in truth, all that we know of the matter, or are likely to know, is this, that the living body is composed of various tissues, in other words, vital compounds, each endowed with its own special properties, capable of being acted on by other compounds, and again re-acting on them,—of giving rise to phenomena—to actions (in which, truly speaking, consists life,) that these properties as in the case of the action of an acid on an alkali, are exhausted; that for the purpose of being renewed, and the actions again repeated, they require the deposition of fresh nutriment, otherwise life, which, as we have just stated, consists but of these actions must cease And it may be summed up in this, that of the nature of these vital forces we know nothing; but this we certainly do know, that they are neither the electrical nor the chemical, because the phenomena they present are not those of either of the latter. But when we, as physiologists, admit that of them we know nothing, we are not a whit more in ignorance, than is the chemist or mechanical philosopher, of the nature of the properties which characterize inorganic matter. A few pithy remarks follow up the chapter on animal motion, and these are entitled Theory of Disease. This subject is very summarily disposed of by our author, who states, that disease occurs when the sum of the vital force is weaker than the acting cause of disturbance. Every cause is then assumed to be mechanical or chemical, and acting as such, by producing a disturbance in the proportion of waste and supply. A deficiency of resistance, we are then told, means, that the oxygen of the atmosphere acts more energetically on the living tissue, and of course more motion than normal is produced. The superabundant force is then conducted away by the nerves, and an acceleration of the involuntary motions, with an increase of temperature, takes place. This constitutes a febrile paroxysm, nothing can be simpler; and the proximate cause of fever, which has puzzled the brains of physicians from Hippocrates downwards, is clearly shewn forth to be nothing more than a quicker burning of the lamp of life. The remedies would seem, however, to be, to a certain extent, homœpathic; for a cure, it is stated is effected by the action of blisters, sinapisms, &c., which act by creating a more intense disturbance or combustion of tissue in a previously unaffected part than exists in the diseased one. When, however, the lighting of a neighboring fire does not extinguish the other, the physician we are told, acts with wonderful sagacity indirectly, when he diminishes, by his bloodletting, the oxygen carriers, when, of course, the fire goes out of itself. Pity that the doctrine is not followed out by the admirers of Liebig, and a practical exhibition made of the excellence of the discovery.—Formerly, the inhalation of dephlogisticated air, or of nitrous oxide, was viewed by the enthusiast of half a century ago as a panacea for all the ills that flesh is heir to; but as the world grows older, we grow wiser, and the proper course now would appear to be the very opposite; and there can now be no difficulty in smothering the fever, by ma-

king the patient inhale hydrogen gas, provided it should not smother himself. It is scarcely possible to read this chapter without a feeling of wonder at our author's style of cool assumption. No difficulty occurs to him,—no exceptions to his generalizations ever appear to have entered his mind, but he goes on ploddingly with the most unmatchable gravity, dealing forth his formulæ of disease with all the precision of an algebraist. For instance, sympathy is defined to be the transference of diminished resistance to more distant parts, a mode of expression too palpably absurd to require any comment.

The chapter on respiration is interesting in a chemical point of view, but presents nothing worthy of special notice in a physiological sense, as it is a subject still sub judice. But even chemically, the whole doctrine is open to many objections; and the assertion, that the iron in the globules is the main oxygen carrier, is doubted both by Simon and Mulder, who believe it to be in the metallic state; and that the color of the blood depends on the degree of oxidation is certainly not true, as the coloring matter has been obtained by Simon perfectly free from iron. The inference drawn then by Liebig, of the cause of the frightful effects of prussic acid and sulphuretted-hydrogen, by their ready action on the compounds of iron, when alkalies are present, must fall to the ground.

We have devoted the utmost care to a perusal of this work, and we rise from it with the conviction that Liebig, so far as he states facts connected with nutrition of tissues, amount of food necessary for production of motion, &c., may be chemically correct; but that, departing from his weights and his balance, he aspires to be a philosophical physiologist, and, to explain causes of which he is necessarily ignorant, that he departs not only from his legitimate sphere, which he is so well qualified to occupy, but, from ignorance of what others have done and written before him, he entangles himself in a maze of contradictions, and confuses, by constantly shifting his principles, those who may seek information from his work; and here we are sorry to say, that the difficulty of dealing fairly with him arises less from the nature of the subject, than from the illogical and heterogeneous ideas he seems to entertain, at one time appearing as truisms, clothed in the technical language o' the laboratory, at another, in the use of words which, however special they may be in the vocabulary of those who have previously studied physiology, are by him used frequently in a sense which may mean everything or nothing.

In our next we shall devote a few pages to the consideration of the relation which organic chemistry in general bears to physiology, and more especially to Homœopathy.

British Jour. Hom.

PECULIAR CASES IN MIDWIFERY.

By Thomas Torrance, Esq, Surgeon Andre.

In a late Lancet, I observed a case of expulsion of the entire ovum, at the full period of gestation. The two following cases have ing occurred in my practice, a record of them in the same journal may prove interesting to the profession.

Case 1.—I was called, about mid-day of the 22nd May, 1837, to a Mrs. T.——, aged twenty years, wife of a mechanic, in labour for the first time, of a slender make, but having a large capacious pelvis. After an easy labour, she was delivered, about 7 o'clock, P. M., of a full sized, well formed, male child. Having tied the umbilical cord, and handed over the child to the nurse, I turned my attention to the mother. Upon placing my hand over the uterine region, and making gentle traction with the cord, she gave a groan, and by one expulsive effort a second child was born, enveloped in the membranes together with both placentæ attached. I lost no time in separating the membranes, and exposed the child, also a male, but much smaller than the former, and which survived only a few days. I have been in attendance several times upon the mother at subsequent confinements, but have seldom been forward in time, her labor being too expeditious.

Case 2.—Mrs. W——, the wife of a farmer, and the mother of several children, was taken in labor during the night, in the month of August, 1839: I was called about seven in the morning, and, upon my arrival, found the nurse with one child, a male, upon her knee, which had been born about fifteen minutes. Upon my going to the mother, who was in bed, I was told by her that *all* had come away, but had not been removed. Upon introducing my hand under the bedclothes, I found something unusually bulky which, upon examination, turned out to be a second child, enclosed in the membranes together with both the placentæ attached. I need scarcely add, that this second child, which was a female, was dead.

Expulsion of the second child, enveloped in the membranes with the placentæ, in twin cases, I believe is not at all a rare occurrence at the full period of gestation, at which time, however, I have never met with it in cases of single births, though frequently in cases at the seventh month, particularly when the child was dead.

Lancet.

HOMŒOPATHY

May be considered a heresy in medicine, between whose votaries and the orthodox school a warfare, as bitter as it is *ungentlemanly*, has hitherto been waged. Because its enemies do not tell the truth about it, and because every thing vitally concerning human life and health is matter of deep moment to all; the writer proposes to state briefly and correctly what the claims of homœopathy are, to the favourable notice of the public. In doing this he feels that his position is much like that of Galileo, when advocating the Copernican theory of the world. He is broaching doctrines which, though true, are unfortunately calculated to strike the common sense of mankind, as being *utterly absurd*. The idea that the sun was fixed, and the earth moved, was so directly opposed to every man's senses and experience, that it was *then* unanimously rejected, though it has since come to receive the universal assent. So it is with homœopathy; those who look beneath the surface of things, and have sufficient industry and ability to investigate and comprehend its great truths, *know* that its doctrines, though now rejected by the unreflecting multitude, are destined, ultimately, to be universally received, and to confer inestimable benefits on the human race. "Truth, though crushed to earth, will rise again." Unfortunately, too, for homœopathy, as with almost every other new discovery, its worst enemies are its inexperienced and incompetent advocates and practitioners. Its great lights cannot now, however, be extinguished by all these difficulties and embarrassments, but *must* ultimately work an entire revolution in the principles and practice of medicine.

1st. Homœopathy claims to have discovered the true principles on which medicines should be given, and to have first established their true curative powers in all diseases, by the *Baconian method of induction*. (Thanks once more to the great lord Verulum) By experimenting with all medicines upon the healthy, their true curative powers on the sick are spread out to view, as it were, in a solar microscope, their minutest effect on every portion of the human organism being shadowed forth in clear magnified perspective. The great law, discovered and promulgated by Hahneman, "*Similia Similibus curanter*," is as *true* as the Copernican system of the world, and, like that system, with gravitation added by Newton, it is destined to bring *order out of chaos*, in the science of medicine. The chaotic darkness, uncertainty, and never-ending fluctuation, pervading, till then, *all medical science*, has given place to a beautiful *order*, infallible while the world stands. It has operated in the medical world little less than the omnipotent fiat, "let there be light," once did in the natural world. This discovery of the great Hahneman is fully equal to the discoveries of Copernicus and Newton, and is destined to carry his name down to posterity, as one of the greatest luminaries of science, no less than the benefactor of his race; whilst the petty sneers of those whose minds are either too contemptible to comprehend his discoveries, or too dishonest to give him credit for them, will be buried in deserved oblivion.

The second discovery of Hahneman, scarcely less in importance than the first, is, that all medicines given in infinitesimal doses, are more prompt and powerful in their remedial effects, than when exhibited in sensible quantities; and, indeed, that they never do produce their legitimate curative effects upon the constitution, except when they are thus diluted, *and by a process which charges them at the same time with human electro-magnetism*. When they are attenuated in this manner, so as to become what we may term, a "*subtle medicated magnetism*," and are dissolved upon the tongue, they at once incorporate with the *nervous fluid of the system, and produce their effect directly on the vital powers of life*, removing their morbid condition. That this discovery is another great truth, is as certain as the Newtonian theory of gravitation. *It is one of the eternal principles of nature*, connected with human life, as fixed as the revolutions of the planets. Those who have any concern with healing the sick, and do not *know* these two great principles to be true, are blameably ignorant of what in this day they might know.

When these great principles are scientifically carried out in their application to the treatment of diseases, their beneficial effects on the health and longevity of the human race, will be a very *high per centage above* what the practice of medicine now exhibits. That homœopathy is, to-day, altogether superior to Allopathy in the treatment of small pox, scarlet fever, measles, croup, cholera, typhus fever, ophthalmia, and skin diseases, even in the hands of the most bungling practitioner, are *facts* that the *community generally have a right to know*. That it is superior in the treatment of all diseases, acute as well as chronic, in the hands of a skilful practitioner, no good homœopathist, well versed in both systems, can doubt. That those pretended homœopathists who are too indolent to investigate diseases and idiosyncrasies thoroughly, and who use the low dilutions on all occasions, because they are too

lazy to prepare the higher, do not always succeed, is very true. But it is sinning against the good gifts of heaven and the light of eternity, to charge these *failures* to homœopathy, instead of charging them to the culpable negligence and indolence of those who pretend to practise what they do not. No one who does not legitimately carry out the doctrines and discoveries of homœopathy, should be permitted to dishonor it by assuming the name. The stupid and senseless blundering of blockheads, in the name of homœopathy, ought not to prejudice sensible people against the great truths of the science. These truths are fixed and eternal, and willremain so long after they are forgotten.

A word as to the different effects of medicines in a crude state, and when prepared homœopathically. Mercury and sarsaparilla, for instance, medicines that occupy a prominent place in Allopathy, meet but few indications in homœopathy, and those far from being important. The indications of medicines in the two systems, indeed, are very generally different, and, in many cases, diametrically opposite. Homœopathy has a list of thirty alterative medicines, a large proportion of which are more powerful than mercury. A curious fact developed by homœopathy is, that those substances composing the great proportion of the mass of our earth, are found to be the greatest medicines for chronic diseases generally. Such are silex, carbonate of lime, carbon, sulphur, sulphate of lime, &c.; these, together with graphites and common salt, are, in their crude state, almost inert, but when attenuated and magnetized homœopathically, they are made some of the most powerful medicines we have.

Homœopathy has been charged with being inefficient in the treatment of intermittent fevers. The writer has not found it so in upwards of thirty cases which he has attended the present year. It is true that great labor is required in discriminating symptoms, and in discovering previous Allopathic treatment in cases of relapse, but this carefully done, and homœopathy is bound to triumph in the treatment of this scourge of the Western country. The easy and safe manner in which fever and ague can be gradually but permanently dislodged, by homœopathy, from the system, leaving it sound and uninjured, are such as to be highly satisfactory to its friends.

In conclusion, homœopathy says to suffering humanity,—"Cease ruining yourselves with drugs. Do not injure your constitutions, and shorten your days, any longer, with heroic medication. Emetics, cathartics, calomel, quinine, and bloodletting, are *now* unnecessary. We have discovered an easier, safer, and better method of curing all the diseases that can possibly afflict mankind. Our medicines never weaken or injure the most delicate, while they are more powerful in arresting disease, than the strongest doses that can be given." These assertions are not put forth in the spirit of a quack advertisement, to deceive you, and get your money without any consideration, but to do you good We come, like the good Samaritan, with oil and wine for your wounds.—*St. Louis Magnet.*

On the Use of Sabina in Uterine Hæmorrhage.

By Dr. Aran,

Of the Hotel Dieu.

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This neglected medicine has been lately much recommended by Dr. Aran, who published the following cases:—The first was that of a woman of bilious-sanguine temperament, and strong constitution, who was attacked with hæmorrhage in consequence of a fatiguing journey on foot. Besides feverish symptoms, she had dragging pain in the hypogastrium; the hæmorrhage was not violent, but long continued. Cold applications to the abdomen, the horizontal posture, and blood-letting, (!) diminished the discharge slightly, but it returned in the evening, when 1 gramme and 25 centigrammes of Pulv. Sabin. were administered, which effected a complete cure. Another woman, who had been quite regular in regard to menstruation, was attacked with violent uterine hæmorrhage at the time when the menses ought to have ceased. She neglected it; and when she applied for aid, a very copious discharge had continued for a fortnight. She got a bolus of Pulv. Sabin. After the patient had taken eight doses, with an interval of two hours between each dose, the discharge had subsided.—[Gazette Med. de Paris, 1844. N. 17.] Since the time of Galen, Sabina has been a celebrated enamenagogue. Mohrenheim relates, that a woman who wished to abort, took an infusion of Sabina After some day's severe pain, abortion, with violent uterine hæmorrhage, followed by death, ensued, (Versuche, vol ii., p. 245.) Home found, that, when taken to the extent of half a drachm, it increased the menstrual discharge, (Clinical Expt., p. 419) (Wibmer, vol iii., p. 191·)

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Cantharides in Eczema and Psoriasis,

By Dr. Sick.

Dr. Sick reports four cases of Eczema, and two of Psoriasis, in which the tincture of cantharides proved most beneficial. The first of the patients, a sailor, had suffered from Psoriasis, which affected chiefly the thigh, for above a year, and had tried various remedies in the different sea-ports he touched at. The second, a tailor, had suffered for four years with the disease upon his face and limbs. The disease was half a year's standing in the other two. The tincture of cantharides was ordered, beginning with three drops for a dose, and increasing by a drop daily. The disease was immediately arrested, and disappeared in all the three cases within seven weeks. Of the patients affected with Psoriasis, the first was a young girl, who had suffered with it for three years to such an extent that there was scarcely any part of the skin not covered by the eruption. After using the tincture of cantharides for three weeks, the skin was perfectly sound. In the case of the other two, who were twenty-three years old, the eruption was attended with intolerable itching and profuse sweat, that broke out even when they were at perfect rest. After taking the tincture of cantharides a few days, they were better, and in the course of some months they were perfectly cured.—Archiv des Koniglichen dan. Gesundheit's Colleg. und Œster. Med. Wochenschrift.—1844.—No. 25.

(For the Dissector.)

TRACTS ON CONSUMPTION.

NUMBER TWO.

On some New Pathological Views of Tubercular Consumption.

(Concluded.)

By J—— G——, M. D.

The muscles possess the property of contractility in a more eminent degree than any other animal tissue, and are generally adduced as affording evidences that vital action consists of this single power. But while the phenomenon of muscular motion presents appearances that seem to have no analogy with any mere physical process, and has hitherto been found altogether too recondite for human research, there are many of its effects that can be explained only on the supposition of an expanding force. Careful observation shews, contrary to the opinions of writers on the subject, that in the motions of the muscles for flexion and extension they undergo no diminution of tension—the form of the muscles are changed, the tension is altered with the force exerted, but the feeling of hardness or softness remains the same for the same degree of exertion—a condition that could scarcely exist if one of the motions depended on simple relaxation. If muscular action were the result of one force, we ought to perceive in the act of extending the fore arm, for instance, besides a softness of the biceps flexors, a corrugation of its fibres, in order to dispose of the instant tendency of the muscle to increase its length upon the cessation of the contractile force. Certainly no such changes take place. Again, in the experiments made to determine whether the bulk of muscles are augmented or diminished by their action, no change has been observed This could not be the case if one set of muscles were contracted and, it must follow, condensed, while the other remained simply passive; and it must demonstrably be the result if the one is expanded as the other contracts. Researches into the relations existing between the primary physical forces and vital action, show that galvanism is capable of exciting a muscle to its apparently ordinary actions; but to do this the muscle must not be detached from its congener. The opinion that expansibility or repulsion is a vital property of muscles, is not wholly new to physiologists. Brehat regarded the change that a muscle undergoes from a state of contraction to extension as in part an active force, or at least something more than the mere cessation of contraction; and Barthez maintains the very probable opinion that the relaxation is produced by a nervous action the reverse of that which occasions its contraction; the will relaxing as well as contracting. Dimly as we are compelled to view the subject, it is impossible to resist the impression, that it is necessary to the motions both of extension and flexion in muscles, whether the motion be produced naturally or excited artificially, that there should be two antagonist forces of repulsion and attraction, which must act coetaneously.

The question whether expansibility is a vital property receives an additional importance when we come to consider it in connection with the functions and motions of capillary vessels. This system of vessels undoubtedly penetrates every part of the animal frame, and though it cannot constitute the ultimate structure of tissues, it is the last to be distinctly traced by our means of observation, and, in consequence, demands a high consideration in both a physiologica

and pathological point of view. Though distinct from the matter of tissues, yet, in this system of vessels, aided by the action of its nervous fibrils, their bases must arise, and in connection with them the developement of all observable pathological phenomena. It is a direct and justifiable conclusion that disease of the capillaries cannot exist without change or suspension of their action, and, consequently, without materially interfering, and, in some cases, abolishtng the functions of any organ to which they may belong. It is therefore apparent that the judicious treatment of every disease must have reference to the condition of the capillary system; and it is certainly desirable, in looking for our therapeutic agents, to consider whether our object is to increase a contractile or to lessen an expansile action in these vessels.

It seems to be conceded, at least by many physiologists, that the capillary circulation is independent of any impulsion of the heart. The doctrine embracing this subject was taught as early asStahl and Van Helmont; and the adequateness of the capillaries to maintain their own circulation was clearly shown and enforced in the Zoonomia of Darwin. Physicians are indebted to Bichat for the beauty with which he illustrated, and the force with which he called their attention to a renewed consideration of the subject. Broussais not only maintained the independence of the capillary circulation, but attributed the venous circulation, chiefly, to the impulsion given to the blood in this system of vessels.* In this country the belief in the capillaries as organs of propulsion, with its necessary accompaniment, a vital property of expansibility, has been embraced by Professor Smith of Yale College, by his son, Professor N. R. Smith of Baltimore, aud by Dr. Hodge of Philadelphia. But to no one is science more indebted for a bold elucidation of expansible and contractile forces, as vital principles, than to Dr. H. H. Sherwood of New York.† It thus appears that the doctrines of a force antagonist to that of contractility, with the perfect independence of the capillary circulation, and an actual influence exercised by it over the general circulation, have been long since promulgated and entertained by a numerous class of physiologists.

Capillary motions being exceedingly minute and essentially vital and organic, they admit of but little demonstrative proof, and like other operations of the kind, may never receive a clear exposition. It is adduced as a proof of the independence of the capillaries of the heart, that the pulsation of the latter organ becomes imperceptible in the smaller arteries before reaching the former system of vessels, and hence that in them its force must be entirely spent. A higher evidence is afforded in the existence of a capillary circulation in those classes of animals—as the vermes—in which no heat exists. The experiments of Fabre on the mesentery of frogs, show that slight stimulations will change the generally monotonous regularity with which the blood passes from the arteries through the capillaries into the veins. By irritating this membrane he found the blood and other fluids rush, for some moments, towards the point irritated; and after accumulation there, the globules have been seen to take a different direction, and even to traverse the vessels that conveyed them in an opposite course. The idea of an expansible capillary force has an equal foundation in the fact that capillary circulation can be carried on without a heart, and is proved, experimentally, by excitants having been seen, by Hastings, Wedemeyer and others, to occasion not only contraction but dilatation of the capillaries. In addition to the proof afforded by this experiment, the phenomena observed in the erectile tissues, have been considered, though upon insufficient foundation, to favor the hypothesis. I have wished to make this subject clear, because, notwithstanding its foundation in natural organic laws, and the most demonstrative experiments, the heart has never ceased to be considered, by the mass of physiologists, as the sole mover of the circulation; and, very recently, some physical experiments, *with water*, on the dead, relaxed and, perhaps, disorganized vessels of an animal have been triumphantly adduced as proofs that the capillaries are inactive in the circulatory process.

From the above inquiry it is manifest that a distinct action,—consisting of an exertion of both the contractile and expansible forces—of the capillary vessels, is the agent by which the blood and other fluids are propelled through them. Admitting this as an obvious matter of fact it remains for us to ascertain, both for its value as a physiological truth, and as a basis from which to apply remedies in disease, what is the specific cause by means of which this action is accomplished. In this inquiry, it must be confessed, we can derive but little assistance from the researches of the anatomist, and the physiologist must therefore look for its elucidation from other branches of science. The experiments and the reasoning which

* American Journal of the Medical Sciences, No. 4, p. 484.

† Motive Power of the Human System. Passim.

these afford, when cautiously applied, have frequently enabled us to arrive at physiological truths, which we perhaps could not have attained by any other method, and which may have been beyond the reach of actual observation.

I have already adverted to the fact that the blood of the two great circulatory systems—venous and arterial—bear towards each other different electrical relations; and in this circumstance I am disposed to look for light by which we may be able to understand the precise nature of the vital powers of the capillaries, and the process by which they maintain their circulation. In the absence of command over any of those delicate instruments which have been devised for ascertaining the electrical states of bodies, I have been unable to determine, by direct experiment, which is the negative and which the positive fluid; but for reasons which will be rendered more obvious in a future communication. I have concluded that the arterial is the positive, and the venous, the negative. Reasoning upon both the fact and the conjecture, we may further suppose that the blood, in the healthy condition of the system, leaves the heart with its electrical equilibrium slightly disturbed in favor of the positive state. The arterial side of the capillaries, deriving their nutriment from the unaltered arterial blood, must be in a similar state of excitation, and upon the approach of the blood, will, in conformity with the universal law that similar electricities expand and repel, become enlarged in their calibre, and, at the same time tend to repel the blood. But this fluid, being impelled forwards by the *vis a tergo* of the heart and arteries, is compelled to enter as the capillaries are compelled to receive it. It is well known that in this intermediate portion of the sanguiferons system the blood undergoes that important alteration which changes it from arterial to venous. In the process by which this alteration is effected the blood becomes carbonated, and the functions of secretion, nutrition, and some degree of calorification are effected. It is impossible to conceive of so material an alteration in the physical properties of any substance taking place without inducing a varying relation in its electrical condition; and accordingly we find, by experiment, that venous blood has its electrical equilibrium disturbed, and, we may suppose, on the side of the negative state. As a consequence of this change and of the common electrical law, that opposite electricities attract and contract, the capillaries will now be excited to contraction, and their contents will be forced into the veins. I have given this part of my subject but a hasty examination; and yet it appears to me that it affords a simple and probably true way of explaining how the capillary circulation is maintained.

I have hitherto considered the functions of the capillaries in connection with the science of physiology, but their agency in disease is an object of more importance to the physician. Enlargement of the capillaries, with diminished or irregular action, is one of the most common proximate causes of disease, and more particularly of chronic affections. If the capillary circulation be independent of the action of the heart, this enlargement of capillary vessels cannot be, as commonly supposed, the result of simple relaxation, and dilatation by the injecting force of the heart. It is evident that for this condition of the vessels to exist there must be a deviation from a natural state; and it appears to me more philosophical as well as more in accordance with experimental reasoning, to suppose that this has arisen from a subversion of an exact balance between the vital force of contractility, and an opposing force of expansibility, than from a simple mechanical relaxation.

The interest which this subject inspires derives increased importance from its connection with the formation and growth of tubercles. It has already been remarked that these adventitious substances are the result of a certain diseased condition of the system, which it is highly probable has its salient point in a derangement of the blood. Their immediate precursor is a turgescence of the lymphatic glands, or of the whole or a part of the tissue of the organ in which they are formed; and it may be inferred, from post mortem appearances, in some cases, that this simple turgescence may result mortally, or pass away with the recovery of the patient, without the supervention of tubercles. In order that the turgescence may be followed by tubercle, it would seem to be necessary that it should extend to that degree that all power of contraction in the capillary vessels is lost, and consequently to an ability to empty themselves of the contained fluids. In this state the fluids coagulate, and a new morbid process is set up; changes occur in the vessels themselves, as well as in the cellular texture surrounding them.

The process by which tubercles are formed, it is conceded, may go on to a very considerable extent without any accompanying inflammation, while it is ascertained that the condition of the capillaries, supplying them with nutriment, undergo the change in magnitude which has been considered the characteristic effect of inflammation. It is of the

utmost importance, in a practical point of view, to distinguish this apparent resemblance, and, at the same time, pathological difference between the process of inflammation and that by which tubercle is formed: the one from the other.

Inflammation, according to the views of those who confine their belief to a single vital principle, is generally considered dependent on a diminution of contractile force, and consequent relaxation of the vessel, with dilatation from the injecting force of the heart. That this cannot be the true explanation of the phenomena, even as understood, is evident from its incompatibility with another acknowledged doctrine, that a larger quantity of blood passes, in the early stage of inflammation, through these very vessels. The increased capacity of the vessels for transmitting fluids implies that their function instead of being passive must be more active—a state entirely inconsistent with the view that inflammation depends upon relaxation of tonicity in the extreme vessels. It would be more in accordance with a reasonable deduction from facts to consider that in the earlier and, perhaps, real stage of inflammation, there is an active expansion of the extreme vessels, sufficient to admit of the state characterised as hyperœmia, and analogous to that known to take place in the heart during its diastole, but more permanent. This action of the expanding force, or *turgar vitalis*, of the capillaries falls short of that degree which would subvert contractility, but is sufficient to modify or even to stimulate it to increased but unequal exertion. Inflammation, according to this view, consists, at least in its forming and active stage, in an increased action of the two vital forces of contractility and expansibility, with, perhaps, a preponderance on the side of the latter.

In the formation of tubercle another process in the capillaries takes place. Their growth and enlargement depend upon the vital power of expansibility, in these vessels, having, a slowly formed but, such a certain ascendancy that the opposing force of contractility is diminished, subdued, or ceases to act. In this state of moderate but permanent dilatation of the capillaries an undue afflux of morbid but white fluids takes place in conformity with simple physical laws. The expansion, in all probability, depends upon an increased repulsion between the fluids and walls of the vessels, arising from an increase of electrical excitation in both fluids and vessels. As upon hydraulic principles the motion of fluids through pipes diminishes with the increase of their calibre, so the first effect of the expanded capillaries, whether in the turgid tissue or affected gland, must be simply a slower motion of its fluids than in healthy vessels. In the earliest stage and simplest form of the disease this may be the whole pathological condition; but as soon as the balance and harmony between the two forces in the capillaries is seriously disturbed, their fluids cease to circulate, become stagnant, and their various constituents, which were maintained in a homogeneous state by constant motion, begin to decompose and undergo separation by precipitation. In place of the vital transudations into the secretary tubes of the lymphatic glands, by which the proper secretions are formed, the increased quantity of fluid, and the slowness or entire absence of its motion, admit of those changes and structures which constitute the substance of tubercle. Chemical or electrical laws take the place of the simply vital, and the effused fluids, stagnant and insusceptible of organization, assume a solid and crystalline arrangement. The forms of tubercles, induced under these circumstances, are modified by the mechanical resistance of the structures in which they are produced, but have sufficient generic resemblance to show that they are under the control of one general law.

Tubercle, as thus explained, is a non-vital or foreign body, capable of undergoing no change that is not induced in it by external agents, but, by its irritation causing the surrounding tissues to pour out fluids which soften, dilute and dissolve it. This softening commences at the circumference, and is a consequence of the changes excited in the living tissues in which this matter is deposited. The parts in immediate contact with the tubercle pour out serocity, and take on the ulcerative action, by which the tubercle is not only softened, but is gradually transmitted, by continuous ulceration, to the bronchiæ, whence it is expectorated. These processes are the efforts by which nature relieves itself of an exhausting irritation, and attempts a cure of the disease. After their discharge, if the curative powers of nature retain sufficient force, a new membrane or lining invests the resulting cavities, and the patient, with a diminished respiratory apparatus, may be enabled to live on, and even to attain good health. This fortunate result, long since foretold by Laennec and others, recent anatomical investigations have so far demonstrated to be true, that no practical pathologist, upon fully considering the subject, can doubt that tubercular phthisis is a curable disease.

The pathology of tubercles, then, according to the views of the writer, consists in an expanded state of the extreme vessels, pro-

duced by electrical force, and causing, by a perversion of the nutritive process, the formation of new products, chiefly in the lymphatic glands of the serous tissues. This may be considered as manifested by their increased size, experiments on the electrical relations between venous and arterial blood, the character of their composition, their general location, and, as explained in our preceding number, by their susceptibility to pain, upon pressure on the sympathetic ganglions of the spine. They are a secondary effect of a peculiar depraved state of the system. Though the precise state of the depravation preceding and accompanying tubercles is unknown, yet it seems to be ascertained that it is independent of any kind of inflammation—the usual source of morbid growths in the animal economy—and reason has been afforded for considering that it probably arises in a morbid state of the blood, imparting to the arterial portion a more exalted electrical relation. The effect of this electrical excitation is to stimulate the capillaries to expansion, to cause an interruption in their accustomed actions, to allow their fluids to stagnate, and to induce a suitable condition in the part affected for the action of physical and chemical laws. Tubercles thus becoming non-vital, matters in the system, excite efforts of nature for their expulsion. The irritation induced by them, as foreign bodies, produces an effusion of fluids from the surrounding tissues—(by which they are sooner or later dissolved)—and inflammation and ulceration in the direction of the nearest surface, by which the now liquid matter may escape, commonly through the bronchial tubes.

On the Pathology of the Tuberculosis.

By Dr. Clese, Practising Physician at Stuttgard

In this essay the author treats of the occurrence of tubercles in these several organs.

The Lungs. Here tubercules are so frequent that Louis established the principles, that, in every case in which tubercles are found in other organs, they exist in the lungs also; that tuberculosis in the lungs is always much further extended than anywhere else; and that in consequence, the presence of tubercles in the lungs would appear a necessary condition of their development in any other part.

Recently, however, exceptions to this have been not unfrequently observed.

Amongst 152 cases of adults suffering from tubercle, that were examined by the author (where tubercles were present either in the peritoneum, the pleura, or in the bronchial and mesenteric glands simultaneously,) he found six where the lungs were free from tubercles; also in some special cases the tuberculosis was more important and further extended in some other organs (the peritoneum and lymphatic glands,) than in the lungs. Yet the rule ever remains standing, that in the great majority of cases, tuberculosis of the lungs forms the predominating affection, although frequently during the life-time, disease in the other organs appears the more intense.

In childhood, however, tubercles of lungs do not seem to predominate, but rather tubercles of the bronchial and mesenteric glands. Nevertheless, the observations of the author and of Barthez and Rilliet tell for the contrary. With children, as well as with adults, the lungs must be held to constitute the chief seat of tubercles, save that with them the exceptions are somewhat more numerous than with adults.

The author further found, in more than three-fourths of the cases which he examined, tuberculosis simultaneously spread over several organs. The number of cases of insulated tuberculosis in childhood is very small; the tendency towards general diffusion being strong. The author rarely found one lung only affected with tubercles; when that did occur, it was, in the majority of cases, the right lung which suffered, that being also when both were diseased, the one most extensively affected. This observation refers equally to children and to adults. In most of the adult cases observed by the author, the tuberculosis of the lungs advanced to the formation of vomicæ; this, however, occurred less frequently in children. Barthez and Rilliet found them in not quite one-third of the cases which fell under their notice. It is chiefly the acute tuberculosis which causes death before the ripening of the tubercles, and this is with children by far more frequent than with adults; yet chronic phthisis often exists without ever arriving at the formation of vomicæ. Death occurs with children more frequently by the intercurrence of other diseases (particularly acute hydrocephalus).

As concerns the seat of tubercles in the lungs, they begin usually in the apex and in the upper lobe, and spread from thence to other portions of the organ. It is but seldom that an exactly equal degree of intensity and development of tubercles is observed at the same time, in both the upper and lower lobe (and when it is so, it is usually a concomitant of the miliary form). In some cases, indeed, the author found the seat of the tubercles in the lung to be exclusively in the lower lobe, but then the tubercles were insignificant and secondary: more frequently, indeed, in a complete case of pulmonary phthisis the disease was found to have been confined to the upper lung until its terminal stage.

Bronchial Glands. Among 152 cases of adult bodies with tubercles which he examined, the author found eight only with tuberculosis in the bronchial glands. These eight arrange themselves into three classes: 1st. Those accompanying the more diffused tuberculosis; these were four in number. 2ndly. Those accompanying tuberculosis of the lung without considerable diffusion of the disease in any other organ; including two cases. 3dly. Those in which it was the only, or at least the prevailing affection; they also were two in number. None of these individuals were above thirty years of age.

It is an established fact, that with children the bronchial glands are very frequently, and by far more frequently than with adults, the seat of tubercles. Some writers have however gone too far, in asserting that the phthisis of children is chiefly or alone a consequence of bronchial tuberculosis. The author never found tubercles in these glands alone, but always accompanied by simultaneous affections of other organs.

Barthez and Rilliet maintain that very few cases of insulated bronchial tuberculosis are met with, but that they are generally united with corresponding affections of the pleura and lungs. Bertin also assigns a secondary place to bronchial phthisis, and according to him the tuberculosis of the bronchial glands diminishes in frequency from one decade of years to another, and never occurs after the close of the third decade. Barthez and Rilliet knew no important difference in the frequency of the occurrence of bronchial tubercles in the several ages of childhood, or at most observed a very small preponderance in young children, while Bertin remarked the disease three times as frequently between the ages of two and eight years, as between nine and fourteen years.

The Larynx and the Trachea. Pathologists are at variance upon the nature of ulceration of the larynx and of the lining membrane of the trachea in phthisical patients; Louis declares that he never in one single case found tubercular granulation in these organs; he therefore attributes the origin of the ulcers almost always to a simple inflammatory process, occasioned by the irritation of the expelled matter frequently resting on its way; yet it has recently been placed beyond all doubt (by Rokitansky and Hasse,) that a third part of the ulcers found there, are really of tubercular origin, while certainly the erosions so frequently observed seem to be the product of a simple inflammatory, catarrhal, or apthous process. The author also in many cases convinced himself in the most decided way, of the tuberculous nature of these ulcers, yet he found some where no tuberculous formation was to be discovered.

Deep ulcerations appear most frequently to be seated in the larynx; and superficial ulcers are more frequently found in the epiglottis and trachea.

Amongst the cases observed by the author, not a single one appears where the tuberculosis or ulceration of the larynx and of the trachea formed the primary and predominating affection; it was always secondary and attendant upon the simultaneous disease of the lungs.

According to Louis, ulcerations of the larynx and trachea are twice as frequent in men as in women; and according to Hasse they occur most often between the twentieth and twenty-fifth years of age. In childhood these ulcerations are very rarely found.

Pleura and Peritoneum. Tubercles in serous membranes are ordinarily regarded as signs of tuberculous inflammation (pleuritis, peritonitis, and tuberculosis;) but a true inflammatory process is not always connected therewith. This tuberculosis is with phthisical patients of rather frequent occurrence, and attacks all ages from early infancy to advanced years: but it is perhaps with children more frequently than with adults.

If with adults the pleura is more frequently affected than the peritoneum, yet tubercles of the peritoneum, when they do occur, are more general and more productive of serious after consequences; so also the symptoms produced by tubercles of the peritoneum appear with more intensity and virulence.

Chronic peritonitis, when not produced by organic disease of some of the abdominal organs, is founded almost without exception on tuberculosis of the peritoneum, and very frequently a simultaneous affection of the lungs is more or less and sometimes altogether masked by the appearance of peritoneal disease. Tubercles of the pleura and peritoneum present themselves, it is true, most frequently as secondary affections, and principally as the product of intense universal tubercular dyscrasia; yet they do occasionally appear as primary, and even as the only tuberculosis. So also the author observed upon the pleura, broad, flat, confluent tubercles, single and insulated; the same upon the peritoneum, where he also remarked a peculiar appearance of the tubercular matter. Each single tubercle was at its base surrounded by a black or blue-black ring, formed by melanotic segment; sometimes a red border around the tubercles of the peritoneum and pleura, was also seen.

According to the observations made by the author, the peritoneum and mesenteric glands are seldom affected with tubercles at one and the same time; indeed, a high degree of the

disease in the one, appears almost entirely to arrest or prevent it in the other. This was established by Berthez and Rilliet; but Rokitansky asserts, on the contrary, that the result of tuberculosis of the peritoneum is usually tuberculosis of the abdominal and lymphatic glands.

Heart and Pericardium. Tubercles on the pericardium range amongst pathological rarities, and do not easily attain to a serious and excessive degree. According to Rokitansky they usually arise out of the tubercular metamorphoses of an inflammatory exudation; this, however, in one case observed by the author, was not confirmed.

With children, tubercles in the pericardium and upon the serous membranes, occur more frequently than with adults. The author never saw tubercles in the muscular tissue of the heart; they do indeed present themselves there very rarely, and thence spread. Upon the endocardium and upon the lining membrane of the vessels, according to Rokitansky, they never appear.

Intestinal Canal. Tuberculosis of the intestinal canal appears in two states; as submucous tubercular-granulation and infiltration; and as ulcer. (Probably many enlargements of the mucous-follicles and erosions are mistaken for tuberculosis.)

The author found in 83 cases (that is, in more than the half of those which he observed,) that the small intestine was affected; and in about a fourth part of them (namely, 37) he found the large intestine also suffering. Louis, on the contrary, observed with five out of six of his phthisical patients, ulcers in the small intestine.

Tuberculosis of the intestinal canal is of frequent occurrence at all ages. It is found the least often in extreme old age, and in the earliest periods of childhood. It is to be remarked, that in the experience of the author, the occurrence of tubercles in the intestine was less frequent between the 30th and 40th years of life than in any other period, whilst in the preceding and following decenniums with two thirds of the tuberculous subjects, tubercles were found in them. Of these two thirds, it appeared that between the ages of 30 and 39 the half were diseased in that organ.

As concerns the affection of the large intestine, it appears that between the 20th and 30th years of life there is strong disposition in this disease to seat itself there, since more than the half of the whole cases in which it was found there occurred in this period. In no single case of tuberculosis of the intestine did the author find the disease existing there alone; neither did he ever find it predominant and inclined to spreading when there was simultaneously existing tuberculosis of the other organs. It consequently appears that it never here exists as an isolated or primary affection.

The author only once found ulcers in the stomach and æsophagus; Barthez and Rilliet, on the contrary, remark that the stomachs of young children appear to be more frequently affected than those of older persons, the reverse of which is observed with regard to the small and large intestines.

Ulcers in the duodenum are very rarely found; but when present, according to the observation of the author, they most frequently commence near the lower portion.

As concerns the affection of the large intestine, it is most commonly found existing simultaneously with that of the small intestine, though it is indeed in some exceptional cases found where the small intestine remains healthy.

The cæcum and ascending colon are frequently attacked by tuberculosis; the further downwards the less frequent the affection; the author never found it reaching below the descending colon.

Whilst the tuberculosis of the large intestine is of more rare occurrence than that of the small intestine, yet, in some individual cases, the former reaches an intensity never observed with the latter.

Mesenteric Glands. In these glands both Louis and the author found tuberculosis in a fourth part of their phthisical patients, and at all ages; yet they appear more liable to attack in advanced age than in the prime of life. They were seldom affected in any preponderating degree between the 30th and 39th years of life, whilst during the preceding, and still more during the following decennium, the proportionally largest number of cases was presented. With children, however, the tuberculosis of the mesenteric glands appears to be somewhat more frequent than with adults of middle ages (but with them it seldom presented isolated or in preponderating degree, and mostly only as the accompaniment of a general and diffused tuberculosis). Barthez and Rilliet found indeed the existence of tubercles here in almost the half of their cases; but only in one of 22 children were they of any serious extent. They found also that in these glands they scarcely ever appear before the third year.

The author thinks that it is without reason that these glands, together with those of the bronchia, have obtained so prominent a degree of attention in our days, amongst children's diseases. The too conspicuous rank given to them is caused by a mistaken opinion respecting the enlarged bellies of children, to which this character has been

given; these enlargements, however, are often altogether independent of tuberculosis or other degeneration of the mesenteric glands.

So far as concerns the connection of the tuberculosis of these glands with that of other organs, it appears only, in general, associated with further developed deposits in other organs, as the sign of a high degree of tuberculous dyscrasia, and holds only a secondary and subordinate place. That organ in which tuberculosis most frequently accompanies tuberculosis of the mesenteric glands, is the intestinal canal; yet tubercles in the mesenteric glands are nevertheless independent of the formation of ulcers in the intestinal canal. The latter frequently occasions simple redness and swelling of those glands.

Mesenteric and peritoneal tubercles are seldom found simultaneously. In one case, indeed, the author found fully-developed mesenteric tubercles (with deposition of bone-earth) in a female patient aged 41, who died of pulmonary phthisis. The lungs, with the bronchial and mesenteric glands, are the only organs in which the author has observed the process of earthy deposition.

Liver. In adult age this organ is one of those most rarely attacked by tubercles, which when they do occur scarcely ever progress very extensively. The tuberculosis stands here in strong contrast with carcinoma, whose especial seat is in the liver. With children, however, tubercles of the liver are more frequent. Barthez and Rilliet found their existence in this organ in one fourth of the cases of children affected with tuberculosis, but generally in a secondary and subordinate degree as compared with their presence in other organs.

Spleen. With adults tubercles are here also seldom found, and scarcely ever do they arrive at any extended development or occur in large masses. But it is otherwise with children, with whom Barthez and Rilliet found them present in more than a third part of their cases; and in intensity exceeding on the average that of the other organs. Tubercles in the spleen are, according to the author, not only very frequent with children, but, if we except the lungs and the serous membranes, in no other organ do they so often appear. The volume of the spleen is thereby usually increased; it sometimes, however, is observed that the spleen is quite covered with them and yet retains its ordinary size, the parenchyma being sometimes softened and at other times of natural consistence.

It is worthy of observation that, notwithstanding the frequency and intensity of tuberculosis of the spleen in childhood, yet it never appears as a primary or insulated phenomenon. In the majority of cases tubercles of the spleen are the concomitants of diffused and general tuberculous disease. Never during life are they known by any separate or special symptom.

The author has often observed the commencement of the softening process of tubercles of the spleen, but never their actual and entire liquefaction accompanied with the formation of vomicæ.

The disposition of the spleen to tuberculosis does not appear (as is the case with the bronchial glands) to be entirely lost with old age.

Kidneys. Here tubercles are presented at every age; they are, however, decidedly more frequent in children than in adults, yet they are with them also subordinate to other affections, and seldom obtain an intense degree.

The parenchyma of tuberculous kidneys has always been found by the author in a perfect condition, with the exception of one case, where it was found considerably congested. In the greater number of cases, the tuberculosis of the kidneys was almost entirely unaccompanied during life by any appearance of disease proceeding from it. With some adults in the last stage of phthisis, diabetes insipidus appeared, which, however, the author regarded only as a symptom of general wasting, and independent of the tuberculosis of the kidneys (analogous to the colliquation of diarrhœa,) since in the last stage of phthisis and with unaffected kidneys he repeatedly observed the same.

With a boy of 12 years old, in whom the tuberculosis of kidney had reached the highest degree, the urine was strongly albuminous, without the kidneys presenting any appearance of granular degeneration (Brights' disease.)

Uterus, Fallopian tube, and ovary. The tubercular degeneration of the internal genital organs of women has received too little attention. The author observed it six times; and it is by no means of infrequent occurrence, though Rokitansky asserted that tubercles are never found in the ovary.

The author saw tuberculosis of the uterus under three forms: 1st. As tubercle deposited in the substance. 2d. As resting upon the inner superficies. 3d As converting the whole substance into tubercular matter.

In all cases of tuberculosis of the genitals, there also existed simultaneously the same disease in the adjacent regions of the belly and bowels, but the former appeared only as secondary, and as the expression of a high degree of tubercular dyscrasia. Conspicuous symptoms marked the affection only in one case; in this its similarity with those of

cancer of the uterus was worthy of observation.

At all ages, and also before puberty, the author found the tuberculosis in the parts indicated. Rokitansky observes, of the tuberculosis of the uterus, that it never extends beyond the *os uteri internum*, and that it never attacks the vaginal portion (in which it differs from cancer.)

Brain and its membranes. The French pathologist first observed the so-named tuberculosis of the arachnoid, wnich is important on account of its relation to *hydrocephalus acutus.*

The author found arachnoidal tubercles in five children, between the ages of 8 months and 11 years, and with the exception of one case, the affection was always associated with acute hydrocephalus. In all these cases, tubercles existed in the lungs, and in most of them, in other organs also. Barthez and Rilliet once found tuberculosis of the meninges isolated.

Tubercle of the arachnoid easily escapes observation, for it is frequently obscure and of no great extension. Tubercles here are always found on the outer side of this membrane, between that and the pia mater, never upon the inner, whilst this is the case with the other serous membranes. These observations are quite in accordance with the appearance of the simple normal serous effusion, as well as of the product of inflammation of the arachnoid being only to be found on the outer side.

Valleix has described tubercular arachnitis in adults, and affirmed that it is present wherever, in adults, inflammntion of the membrane of the brain, or effusion from hydrocephalus exists. The author contradicts this last assertion.

Arachnitis with purulent effusion and hydrocephalus, are certainly often present with adult tubercular subjects, without, however, being necessarily accompanied with tubercular granulation in the arachnoid.

Tubercle in the arachnoid holds certainly a secondary place amongst the other diseased products of the brain.

Tubercles in the substance of the brain are by no means infrequent with children. According to Green they occur most between the ages of 3 and 7 years. Sometimes one single tubercle is found there, and sometimes also they are more in number. This seat is more frequently in the hemispheres of the cerebrum, than in those of the cerebellum. According to Green, in no case were tubercles exclusively confined to the brain, but they always existed simultaneously in the cavities of the chest or abdomen, yet the greater development of the cerebral tubercles induced the presumption that the disease had originated there. Barthez and Rilliet observed two cases of isolated tuberculosis of the brain. According to the fore-named authors, the coincidence of cerebral and arachnoidal tubercle was frequent. This, however, was not confirmed by the author.

Lymphatic glands. With diffuse tuberculosis it is not infrequent that the glands of the neck, shoulders, abdomen, &c., present degenerated tubercle; also in that case the subcutaneous cellular texture is not infrequently the receptacle of tuberculous matter, which then produces ulceration of the skin.

Muscles, bones, and joints. Although mention has scarcely ever been made of tubercles in the muscles, yet the author twice found them in the case of children suffering under the highest degree of scrofulous or tubercular dyscrasia (they were existing in the musc. soleus, glutæus, and in the tendo achilles.) In both cases, tubercular disease of bones was found in the neighborhood of the affected muscles. The tubercles were of roundish form, and from the size of millet grains to that of hemp seed, of whitish yellow color, and mostly solid, but some of them half-liquified, and resembling pus. Rokitansky denied the appearance of tubercles in muscle in the form of original grey tubercles; according to him they are no more than tubercular exudations.

Tuberculosis of the bones is in a majority of cases the cause of pain in the bones in scrofulous and phthisical subjects. These tubercles also occasionally appear isolated and without the simultaneous affection of inward parts. Even with adults, tubercular affections of the bones sometimes appear.

In the joint itself also, and in its soft parts, the author once found tuberculous degeneration, (namely, in the sterno-clavicular articulation,) and at the same time the ends of the bones were carious and impregnated with tubercular matter.

The author has never found tubercles in the thyroid gland, in the pancreas, in the salivary or in the mammary glands. The testimony of Rokitansky supports his experience, that in these organs they are never presented. On the contrary, tubercles in the testicle are often spoken of by writers. Rokitansky also mentions them, and says, " they not infrequently appear there first, and spread from thence to the other sexual and urinary organs."

The frequency with which the several organs subject to tuberculosis are, in the case of adults, liable to the disease, is in the following proportion: Lungs 146, small intestines 83, mesenteric glands 38, large intestines 36, peritoneum 18, pleura 13, larynx and tra-

chea 10, brouchial glands 6, external lymphatic glands 6, female parts of generation 5, spleen 4, kidneys 4, bones and joints 3, liver 2, membranes of the brain 1, pericardium 1; all together 152.

The proportion as given for childhood would be very different, and in advanced age also, particular exceptions occur.

The lungs at every period of life are tbe most liable to tuberculosis, but the cases in which the lungs remain sound, whilst other organs are attacked, are yet more scarce in adult age than in childhood; and the difference between the frequency of tubercles in the lungs, and their frequency in the organ standing next in liability to attack, is with adults much more considerable than with children.

In childhood, next after the lungs, the bronchial glands are most exposed to this disease; but with adults its occurrence there is rare, and almost unheard of after the 30th year.

In like manner, the presence of tubercles in the mesenteric glands is more frequent in childhood than in adult age, yet the difference here is not great; and the affection of these glands is secondary in importance to that of the bronchial glands. With them, however, liability to tubercular degeneration does not appear to be lost with advanced age.

The liver, spleen, and kidneys are more frequently affected with tubercle in children than in adults. Of these three organs, the spleen is with adults the most rarely a tacked.

Cases of tuberculosis in the serous membranes, are also in childhood more numerous than in adult age; especially in the arachnoid, and in the brain itself.

On the other hand, adults are most liable to tuberculous disease in the intestinal canal. Tuberculosis of the larynx and of the trachea appears particularly to occur between the 20th and 40th years of life. With children it is very rare, and it is infrequent also in old age.

The internal genital parts of females may be attacked at any age; yet such affections are less frequent in childhood than in adult years.

The question whether a physiological law may somewhere be established according to which the development and distribution of tuberculosis in the several organs may be ranged, can hardly yet be answered. The assertion of Hasse, that "the development of tubercle in the different organs happens most frequently simultaneously with their greatest physiological activity," is easily confuted by matter of fact.

With regard to the difference of tuberculosis in childhood and in adult age, so much may perhaps be explained, that with a fixed tubercular dyscrasia in the organs of children, the specific matter of the disease is deposited with greater ease, and in larger abundance in the different organs, on account of the changes of tissue, and of the freedom of the function of nutrition and circulation at that period of life. Doubtless these circumstances have their effect as respects the tendency of individual organs to tubercular affection, or the contrary.

That tuberculosis has in childhood a greater tendency to general diffusion, than later in life, is an established fact. Amongst the children who fell under his notice, the author found only one case in seven, where the disease was confined to one organ or one cavity of the body; whilst on the contrary, it was with one-fourth spread over all their cavities.

With adults as with children, tuberculosis manifests a tendency to general diffusion; but the disposition is more strongly marked in childhood. In one-fourth only of his adult cases did the author find the affection confined to one organ, and with more than two-thirds it had established its seat in all the three cavities of head, chest, and belly.

This tendency of tuberculosis to general diffusion in many organs, and to diffusion also amongst the whole human race, is the essential and proper characteristic of the disease, and has procured for it the character of being the most universal of all diseases.

Autograph letter of the King of Prussia to Staff-Physician Dr. Marenzeller of Vienna.

CHARLOTTENBURG, 3d January, 1842.

"I am gratefully obliged to you for the confidence with which you have recommended the homœopathic system to my protection, and attach much value to the recommendation of this important subject by a man, who like you, has practised Homœopathy successfully for so many years. I shall, with pleasure, continue, as I have hitherto done, to give the system every protection which can favor its free development. I have already approved of the establishment of a homœopathic hospital at the expense of the Treasury, and also intend to grant to homœopathic physicians, under certain conditions, the right of dispensing their own medicines.

"I remain, &c.

"FRIEDERICH WILHELM."

[*Leipsiger Zeitung.*

Professor Roger's Lectures and Experiments *On the subject of "Animal Magnetism" or "Mesmerism," "Clairvoyance," &c.*

The last of these highly interesting, amusing and instructive entertainments, took place at the large saloon of the Mercer county court house in South Trenton, on Saturday evening, the 14th inst. That spacious apartment was crowded to overflowing with the largest and most intelligent audience which has attended any public lecture in this city during the past winter. There were present a large proportion of the members of both houses of the legislature of New Jersey, many of the most respectable lawyers, physicians, and clergymen of this city, men of science, ladies, merchants, artists, mechanics and other. The experiments were of the most surprising and interesting character, and highly gratifying in their results. "Miss Martha," daughter of Prof. Loomis of Philadelphia, who usually accompanies her;--whose exhibitions of clairvoyance had previously excited great admiration, was thrown into the "mesmeric state" by Professor Rodgers, and after her eyes had been most carefully blindfolded, by a committee of gentlemen selected by the audience, she read a large number of newspapers furnished by persons present, also designated the time by various watches handed to her, told the denomination of various bank notes and the names of the banks by which they were issued, and pointed out the different flowers in a boquet, and told with accuracy the names and colors of all of them. These experiments were very surprising, and excited general wonder and admiration.

A young lady, suffering severely from a diseased tooth, was then placed upon the stage, and mesmerised. A committee, composed of the Hon. Mr. Kitchell of Morris, the Hon. B. Hamilton, Senator from Sussex, Edward I. Grant, M. D., and the Hon. Mr. Halsted of Trenton, and George W. Smyth, Esq., of Warren, and Mr. Gustin, of South Trenton, were appointed to superintend the experiment, being the same persons who bandaged the eyes of "Miss Martha." Dr A. H. Armour, Surgeon Dentist, of Trenton, was called from the audience to extract the tooth. He and the committee concurred in pronouncing the tooth much diseased, but firm in the jaw, difficult to pull, and that it had not been previously tampered with. The doctor proceeded to extract the tooth, which caused a copious flow of blood; but the patient gave no symptoms of pain or suffering, and made not the slightest movement of any kind. Shortly afterward, when restored to consciousness, by upward passes, she stated that she did not feel the operation at all, and had no knowledge of any thing which had passed. The audience was filled with pleasure, and not a little astonishment at the entire success of this most remarkable experiment.

Professor Rodgers next proceeded to operate on some half dozen well known citizens of Trenton, who, on former occasions had been publicly mesmerized by him. This experiment was also entirely successful. The limbs ol all those subjects were paralized and rendered rigid at will, relaxed, or excited into the most violent action, at the pleasure of the operator. Some were made to dance and sing in the liveliest and most violent manner. Others seemed in deep devotion, and chaunted low and solemn tunes, while others brandished their clenched fists, and manifested all the symptoms of infuriate rage. The audience were by times overwhelmed with wonder and reverential awe; and anon convulsed with irrepressible laughter.

On motion of George W. Smyth, Esq., the following gentlemen were appointed a Committee to prepare and report Resolutions expressive of the sentiments of the audience in reference to Prof. Rodgers, his Lectures and Experiments; viz:—The Hon. William Halsted of Trenton, the Hon. Mr. Kitchel of Morris, the Hon. S. W. Phillips of Middlesex, the Hon. B. Hamilton, Senator from Sussex, the Hon. J. Shotwell from Warren, E I. Grant, M. D., J. B. James, M. D., A. H. Armour Dentist, S. Hotchkiss M. D., Thomas Gordon, William P. Sherman, Peter Grim, Jr., William Grant, John R. Dill, Joseph Hammet, John B. Anderson, Liscomb R. Titus and Mr. Gustin, Esquires; to whom was added George W. Smyth, Esq., of Warren County. This committee having withdrawn for a short time, returned and reported through the last named gentleman, the following Preamble and Resolutions, viz:

Whereas, Professor Rodgers has delivered during the last three years, no less than fifteen lectures before large and respectable assemblies of the citizens of Trenton and South Trenton, and the vicinity, on the subject of Animal Magnetism, Phrenology, and Clairvoyance; on all which occasions he has successfully magnetised some times two, and several times as many as three and four, and once ten of the audience, persons of good character and incapable of entering into any collusion or fraud to deceive their fellow citizens, on all of whom very astonishing and amusing experiments were exhibited, such as paralyzing the limbs, exciting the organs of tune, benevolence, acquisitiveness, self-esteem, combativeness, etc., etc., and whereas, on two occasions a lady suffer-

ing severily with diseased teeth, accompanied with abscess and extensive inflammation, was publicly magnetised, and had each time a molar tooth drawn, the one by Dr. Hotchkiss, the other by Dr. Armour, respectable Dentists of this city, and in the presence of sundry practising physicians of high character; on which occasions the said lady appeared to be wholly unconscious of pain or suffering from the operation: And

Whereas, This lady, as well as all the other citizens of this place who have been magnetized by Prof. Rodgers, invariably protest that there was no collusion or deception in the experiments performed upon them, respectively, and that they were, at the time of these experiments, wholly unconscious of what they were doing as well as of what was done to them; and to the truth of which statements they express a willingness to make solemn affidavits.—Therefore,

Resolved,—That this audience is forced, by the weight of irresistible evidence, to conclude that there is reality in what is denominated "Animal Magnetism," or "Mesmerism," and that by the gaze of the eye and certain manipulations, properly employed, persons can be thrown into the so-called "magnetic state," in which the mind and actions of the patient are subjcct in a great degree, to the will of the operator: and as in natural somnambulism, the person magnetized may do many things and may be subjected to many operations and experiments of which he or she will retain no recollection or consciousness when restored to the natural condition. And

Whereas, "Miss Martha" has, on several different occasions after being magnetized by Prof. Rodgers, had her eyes effectually bandaged with gloves and handkerchiefs confined at the top and bottom with tape by a committee of intelligent and scientific gentlemen appointed by the audience, and not unfrequently chosen on account of their skepticism; and when thus blind-folded to the entire satisfaction of the committee and the audience, with scarcely any exception, she having promptly read the heading of newspapers and handbills, and told the denomination of bank notes, and described pictures and sundry other articles furnished indiscriminately by the audience, and in most cases privately brought as a test of her powers, and shown to no one but the committee; and neither Prof. Rodgers nor any other person who could possibly be in collusion with him or "Miss Martha," being allowed, previously, to examine the same. And she having, in many instances, with great promptitude and accuracy, told in like manner the time indicated by watches, which had been privately set by their owners; the committee carefully watching in the mean time to see that the bandage was in no wise disturbed so as possibly to admit of her seeing with her eyes:—Therefore,

Resolved,—That "Clairvoyance" as well as "Animal Magnetism" is incontestibly proven by these experiments, which demonstrate the interesting and all important fact that the human soul can act independent of the body, and receive ideas and impressions independently of the external senses, that it is immaterial in its nature, and endowed with powers analogous to those of its Almighty Author.

Resolved,—That we have great pleasure in recommending Professor Rodger's lectures and experiments to the liberal patronage of all earnest and unprejudiced enquirers after truth in mental philosophy.

Resolved,—That the thanks of this community are due to Professor Rodgers for his generous and patriotic donation of the proceeds of two of his lectures at the Court House, in behalf of the "Trenton Monument Association," the amount of which is, of course, less a criterion of the liberality and public spirit of the Professor than of the citizens of Trenton.

The foregoing preambles and resolutions having been read, were unanimously adopted by the vast concourse present, with the liveliest manifestation of satisfaction. Whereupon it was unanimously

Resolved,—That the various editors of newspapers in this city be requested to publish the proceedings of this meeting.—*State Gazette, Trenton, N. J.*

Dreaming a Translation.

A French savant, at Dijou, went one night quite exhausted to bed, after long and vain efforts to make out the sense of a passage in a Greek poet. On falling asleep, he seemed to himself to be transported in spirit to Stockholm, where he was conducted into the palace of Queen Christina, ushered into the royal library and placed before a compartment, in which he distinguished a small volume that bore a title new to him. He opened the volume, and in it found the solution of the grammatical difficulty which had so perplexed him. The joy which he felt at this discovery, awakening him, he struck a light and made a memorandum of what he had seen in his dream. The dark passage he now found perfectly cleared up. The adventure, however, was too strange to suffer him to rest satisfied without taking some steps to ascertain how far the impressions of his nocturnal journal corresponded with the reality.—Descartes was at that

time, at Stockholm, and our savant wrote to Chanut, the French Ambassador to the Swedish Court, with whom he was acquainted, requesting him to ask the philosopher whether the royal library had such and such peculiarities, (which he described,) and whe'her, in a certain compartment, a certain volume of such a size and form, was not there to be found, on such and such a page of which stood ten Greek verses, a copy of which the savant subjoined. Descartes answered the ambassador that, unless the querist had been in the habit of visiting the library for the last twenty years, he could scarcely have described its arrangement more accurately; the compartment, the volume, the ten Greek verses, all tallied exactly with the description.

A counterpart to this story is related by Wangenheim:

The son of a Wirtemburg jurist was studying at Gottingen, and having occasion for a book which he could not find in the library there, and which he remembered to have seen at home, wrote to request his father to send him the same. The father searched the library for the book in vain; it was not to be found, and he wrote to his son to this effect. Some time after, as he was at work in his library, and rose from his seat to replace a book which he had done with on its shelf, he beheld his son standing not far from him, and in the act, as it seemed, of reaching down a book, which stood at a considerable height, and on which the outstretched hand of the figure was already laid. "My son!" cried the astonished father, "how came you here?" As he spoke the apparition vanished. The father, whose presence of mind was not disturbed, immediately took down the book on which the hand of the figure had seemed to be laid, and behold, it was the very one the son had written for He sent it, by that day's post to Gottingen, but soon after received a letter from his son, written on the very morning on which he had seen the apparition, and stating the exact spot where the writer was confident the book was to be found. It is unnecessary to say that it was the very spot which the apparition had already indicated.

COMMUNICATIONS.

C. M. S. is a remarkable clairvoyant, and has had much experience illustrating our spiritual relations. She was hourly expecting the death of a young friend about which event, she for personal reasons was peculiarly anxious. It is a custom of the town, to announce a death by tolling the bell. The first sound caused her to faint, and it required much effort to restore her. After this, she made remarks showing that she was not aware of his death, but still in consequence of the effect produced before the friends dared not tell her. When she went to her room some time after, she saw on he wall in bright characters of a reddish cast, "He is Dead." As it accorded with several other incidents of a similar character, she knew it to be a spiritual communication, and was perfectly calm. She called her mothers and sisters, and they saw it distinctly, and it remained there something like an hour, visible to any one. W.

S. F. was mesmerized at my study, Friday, P. M., and on being left to herself, looked for the reason why a friend who lived many miles distant, had not made her a visit that week as was expected.—Soon she was noticed to be in the greatest and most distracting grief; and after sometime, on coming into communication, said her friend was dead—that he died at 8 o'clock, P. M. the Tuesday previous, that before his death, he requested his father to write to her and that he had so wrirten, and the letter was on the way, and would be in the office in one hour,—a friend went to the office, and found that there was no letter there then, but it was received at the end of an hour.

An extraordinary fact connected with this case, was that S. F. at the very hour when her friend died many miles from her, and (she never having had an intimation of his sickness, but expecting him daily to see) was passing to her chamber, and met this friend at the head of the stairs. She was perfectly conscious of shaking hands,—of asking how he came there, and of his answering, and then passing down stairs, and opening, and closing the door as he passed out. The next thing of which she was conscious, was of sitting on the next flight of stairs, being unconscious of having passed the length of the entry.

Some will say this was a swoon or vision, or something of that kind;—but the fact that this happened at the hour of his death, still remains wonderful, and to be attributed to some cause. W.

Dr. Sherwood:—

I have read with great interest the communication of W. H. in the last number of the Dissector, in answer to a letter of Mr. Sunderland in a former number. Although I have but little sympathy with Mr. S. in his views, I cannot come to the same conclusions as W. H. I have no disposition to

abate anything from the claims which are made for him, "as the herald of a new dispensation of divine truth."

At least so far as this question is concerned, I shall admit all his followers claim. It is said by Swedenborg that the facts related by him, "were truly done and seen, not in a state of the mind asleep, but in a state of full wakefulness."

If I understand his writings, he saw these things pertaining to the spiritual world by means of his spiritual vision,—i. e., by the same powers through which he now perceives the realities with which he is at this moment surrounded. This I suppose to be the general idea entertained by the members of the "New Church," most of whom I suppose will maintain that Swedenborg was "specially inspired" to "herald the new dispensation," though he says, "The Lord opened the interiors of my mind and spirit."

From Swedenborg's own "revelations," we understand that all human beings will have essentially the same spiritual faculties or organs, but only becoming active or available, to most men, after the death of the natural body. The outward organs are the instruments through which the spirit receives impressions from the natural world.

Now will your correspondent deem it impossible or improbable that any other man shall ever have "the interiors of his mind and spirit," so opened while yet in the natural body as to perceive some things in the spirit world? I trust not.

In this connection, then, we give it as our opinion that by the will of a second person the physical in some individuals may be so held in abeyance as to admit of the action of the spirit precisely as it will act after death, and precisely as Swedenborg's spirit did act without the intervention of a second person. We will not say it will act to the same extent, but in the same manner. We have had facts occur in our experience settling this matter to our entire satisfaction, and helping us to very clear ideas concerning the spirit world and spiritual faculties and relations, before we had ever seen a word of Swedenborg's on the subject. We have been led by this to study Swedenborg's writings, and have not yet found anything to lead us to change from our former conclusions.

We are compelled, however, to distrust the revelations of those whose mercenary disposition would lead them to show the most sacred developements before a curious and scoffing crowd. The best clairvoyant by such a course as this, would soon be ruined for such experiments as led us to our conclusion. It is a use of the most sacred of the powers of man, and they should only—aye more! they can only be used by those who have a true and enlarged faith, and who use them for pure and holy purposes.

If your correspondent is a true disciple of Swedenborg, and he should ever have a clairvoyant having full faith in the ideas entertained by "The herald of the New Church," and he should from pure and holy motives seek communion with the spirit world, he would be led to see that the phenomena in some of the more advanced states of the clairvoyant are more nearly allied to the experience of Swedenborg than he at present conceives possible.

If these conclusions into which we have been led are correct, what wonderful consequences shall result to the world as they shall come to be generally understood. It is in view of these consequences that I have been led to offer this communication in the hope that it may do something to lead to high conceptions of one of the most valuable and sacred developements of science.

Yours, &c.,

AN ADMIRER OF SWEDENBORG.

New-York, March 17th.

From Dr. Black's Treatise on the Principles and Practice of Homœopathy, p 175.

"The first extract then we give is one attested by Hufeland, which is a sufficient guarantee for its impartiality and authenticity. (Hufeland's at Jatrognomick, Berlin, 1829.")

"The success of a homœopathist, Dr. Stap, in curing Egyptian ophthalmia among the soldiers in the garrisons of the Rhine, attracted the attention of the Prussian Minister of war, who solicited him to visit Berlin, to take charge of its military hospitals, Lazareth and La Charité. He accepted the invitation and officiated to the entire satisfaction of the minister. HUFELAND, who introduced Stap to the assembled company of La Charité, then paid him a deserved personal compliment, and at the same time expressed these impartial views respecting the homœopathic system:

"'Homœopathy seems to me particularly valuable in two points of view—first, because it promises to lead the art of healing back to the only true path of quiet observation and experience, and gives new life to the much neglected subject of symptomatology; and secondly, because it furnishes simplicity in the treatment of disease. The gentleman, whom I have the honor to present to you, is not a blind worshipper of his system; he is, I have learned with joy, as well acquainted with the entire science of medicine, and as classically educated as he is well informed in the new science."

Treatment of Indurated Tonsil Glands by Compression.—Professor Huss of Stockholm, has employed the following method with success. He introduces the index-finger into the mouth, and compresses the indurated gland with its extremity for several minutes at a time. This is repeated three or four times a day. After some days of this treatment, the professor states that the gland becomes softer, absorption commences, and the surface of the tonsil is evidently relaxed and wrinkled. When this condition has been attained, stimulating gargles may be employed. The author remarks that this treatment should always be tried in those cases in which excision is contemplated.

Gazette de Hopitaux.

Diseases of the Pancreas.—In "Casper's Wochenscrift," No. 17, Dr. Melion, of Freudensthal, has published an essay, with the object of giving more precision to the diagnosis of pancreatic diseases. Four cases are recorded, in two of which he was able to verify his observations by post-mortem examinations. The symptoms were pain in the epigastric region, vomiting of albuminous fluids, constipation alternating with diarrhœa, fixed pains in the loins and shoulders, rapid emaciation, and great mental depression. In the first fatal case, the pancreas was found adherent to the liver and stomach, and was of a cartilaginous hardness; in the second, the organ contained a cavity in its centre, filled with an ichorous fluid. [It is to be feared that in the catalogue of symptoms above mentioned, there is none which can be considered as in the slightest degree aiding the author's object. Dr. Dick (Medical Gazette, October, 1845,) is, beyond doubt, correct in the statement that there is no single symptom strictly indicative of pancreatic disease, and that no system of treatment, therefore, can be laid down.] M. Cenric* has noticed the connection between pancreatic disease and spermatorrhœa.

ON HOOPING-COUGH.

By Dr. Kasemann of Lich, in the Grand Duchy of Hesse.†

Since I began to practice homœopathically, I have seen several epidemics of this disease, and the results I have obtained, force upon me the conviction, that we cannot boast of so much certainty in this, as in many other diseases, the cause of which seems to depend, partly at least, on some peculiar circumstances connected with the disease. For not to mention many other things, were we actually in possession of a better knowledge of remedies, so diverse are the shades of the accompanying symptoms, that their elucidation is often a matter of difficulty; for we seldom or never see the children during a fit: and as in many the severe fits occur only at night, we are deprived of all opportunity for observing them. As, however, it is necessary to ascertain the symptoms with extreme accuracy, in order to determine the choice of a remedy, it will be found extremely difficult to do this here, for most children are unable to describe their sensations, and the parents or friends are not always gifted with good powers of observation; they are indeed often very careless, many things completely escaping their notice: they, consequently, give but a superficial history of the case, notwithstanding the most careful examination. But, although I would not relinquish the homœopathic practice for any other, although I have met with some success, and have indeed obtained some speedy and favorable results, still my mind is not yet perfectly at rest, for, under similar circumstances, many patients have been little or not at all relieved, and the disease has run its course unabated. I am, consequently, forced to express a wish, that ere long we shall attain to greater certainty on this subject.

Were it true that the proximate cause of hooping-cough consists in a catarrhal inflammatory irritation of the organs of respiration, then there might be a possibility that Aconite would be of good service, but the possibility would never rise to a certainty; for it is far from true, that Aconite is applicable to all diseases dependent on inflammation or inflammatory irritation. On the contrary, inflammatory affections of different organs seem to demand different remedies. Without at all denying the extensive applicability of Aconite, we may say, that its sphere of action seems to lie principally in the arterial circulation; and, hence, it appears to be most specifically indicated in the inflammatory diseases of those organs which perform an important part in the circulation. All who have properly exercised the homœopathic method, are familiar with the excellent effects of this remedy in such cases; but all likewise know, that, in other cases, it has only power to moderate the vascular excitement, without affecting the form of the disease to which it does not correspond. But Aconite does not always deserve the preference in *all* cases where there is evidence of vascular excitement. Such a mode of procedure indicates a certain degree of superficiality; for the vascular excitation may be subdued without the intervention of this

* Il Raccoglitore Medico, and Gazette Medicale, Sept. 28, 1845.

† Extracted from the Hygea, vol. x.

medicine, by means of a remedy which is specific to the whole case, as is proved by the efficacy of Belladonna in many irritated conditions of parts in which the nervous system is predominant. Were the action of Aconite in inflammatory conditions unbounded, as some falsely suppose, hardly a single acute contagious disease would get leave to develop itself, if only Aconite were administered early enough; for all such diseases are preceded by a state of inflammatory irritation,—belladonna and other prophylactics would be thrown into the shade; but it is well known that in this respect there is still much to be desired. In the sometimes so violent excitations of the vascular system which frequently precede typhoid fevers, even such as are not infectious, Aconite is far from proving always of service; and indeed, I have latterly found Belladonna much more useful in such cases than Aconite, to which I formerly trusted too much. Every contagious disease has, however, its focus in some particular organ; and as hooping-cough may also claim to be a contagious (strictly a miasmatical contagious) disease, it would, at its commencement, demand remedies of a more specific character; and in reference to its probable seat in the pneumogastric nervous apparatus, Belladonna would appear to be not unfrequently indicated, if the cough at the beginning be of a spasmodic nature. In the catarrhal stage, however, and as long as the cough continues simple, and without any tendency to a spasmodic character, I imagine I have warded off the *stadium convulsivum* by means of nux vomica. This is, however, a ticklish question. Frequently, in many epidemics almost invariably, there is present an inflammatory chest-affection; and in these cases it is not easy to dispense with Aconite. It is, moreover, remarkable, that this remedy is said to be indicated by the essential nature of the disease, by persons who hold out hopes of a successful treatment of this disease only by the strictest individualisation. But is it true that the essential nature of hooping-cough is as varied as the numerous morbid symptoms which accompany this disease? or are these only accidentally connected with it, and is the large number of remedies recommended for it, directed rather against the concomitant symptoms? This disease, like several others, seems to prove that where many remedies are vaunted, the true remedy still remains undiscovered; whereas we have fewest remedies for those diseases which are treated with the most brilliant results.

Every homœopathic physician has, doubtless, remarked that, by the employment of medicines selected in this manner, the concomitant symptoms disappear, but the hooping-cough itself does not always undergo a change. Thus I have often (not always!) succeeded in subduing the violent nocturnal attacks by means of conium, without thereby producing any alteration in the diurnal fits; chamomilla has relieved the concomitant diarrhœa of greenish matter, but the attacks of cough remained unaltered. In one child which had, in addition to vomiting during the severe attacks, great diarrhœa of a pale yellow color, and which passed its stools during every violent fit, veratrum removed the diarrhœa almost completely in a very short time, but the cough underwent little change. In a case of frequent vomiting ipecacuanha proved serviceable; and although this remedy frequently acted very advantageously on the attacks of hooping-cough, yet this was not always the case. Where the sputa were tough and expectorated with difficulty, Bryonia made them looser, but produced amelioration only in so far as the violence of the attack depended on this symptom, for the *stadium convulsivum* pursued its course unabated. The greater or less severity of the attacks, as also the different stages, seem to constitute the chief indications. The other symptoms, however, appear to be worthy of particular notice, only in so far as they are of themselves important, and thereby endanger life or the organism. Laughter, weeping, crosses, overloading of the stomach, &c., occasion, in every case a renewal of the attacks, because they act on the part of the nervous system affected; these, therefore, are little fitted to serve as indications for treatment.

Among the remedies which possess the power of relieving the *stadium convulsivum* (the most important stage,) I have found from experience, that belladonna and ipecacuanha answered best in this year's epidemic. Cuprum I found serviceable only in cases of suffocating fits during the cough. Belladonna appeared to act best in the commencement of the *stadium convulsivum;* ipecacuanha at a more advanced period of the same stage, when there was frequent vomiting of food. In the case of a girl of 3 years of age, belonging to this town, who, for 8 days, had frequent attacks of the characteristic paroxysms of coughing, each time with vomiting of mucus and food, along with frequent alvine evacuations and colic, and in whom laughter, weeping, crosses, large meals, &c., brought on attacks, these became slighter after the first two doses of ipecacuanha, the colic and diarrhœa disappeared, and in 14 days the cough was quite away. In one solitary case of a child of 18 weeks old,

which, after three weeks of ordinary cough, got the real hooping-cough, against which I had employed cuprum without effect; and where there were, at the same time, retching and slimy evacuations, China proved very speedily of service; for, after the second dose, the attacks lost their intensity and frequency, and, after a few days, nothing remained but a simple cough. In so young a child, there can be no question of an abortive form of hooping-cough. I could adduce several similar instances with regard to belladonna. In one case, conium and cuprum were employed without the slightest relief, not even were the severe nocturnal attacks, with vomiting, &c., moderated after conium; whereas belladonna changed the state of matters so, that the powder which was calculated for twelve doses was not all required. The boy had no third stage, and continued quite well.

I administered all the remedies in low dilutions, 6 to 12 drops in sugar of milk; and prescribed about the twelfth part to be taken after every severe paroxysm, generally about every 4 hours, seldom only twice or thrice a day.

I cannot help thinking, that it is only in the commencement of the *stadium convulsivum* that we may occasionally succeed in changing the character of the cough, and checking the further development of the disease. If this stage have already existed some length of time, and reached a certain height, the severity of the paroxysms may indeed be moderated, but the disease continues to pursue its course, thus presenting an analogy to the acute exanthemata. I doubt, however, whether there would be any particular disadvantage in subduing, or totally extinguishing, by the specific method, the paroxysms of cough themselves, in their highest stage of development.

We labor under a disadvantage in the treatment of infants at the breast, which makes us less successful than we might be,—I mean the influence of the nurse; for I have frequently distinctly remarked the effect produced on the attacks of coughing by the health of the nurse; so that a cold caught by the latter often causes the fits of coughing, which were on the decline, to return in all their severity. Affections of the mind in the nurse, and the occurrence of catamenia during nursing, were always accompanied with violent paroxysms of cough. Several infants at the breast, even of the most tender age, suffered from hooping-cough,—some even who never came in contact with other children, and had no brothers or sisters. It is not to be denied, that, under homœopathic treatment, the last stage runs a more rapid course, just as acute exanthemata, under the same treatment, are attended by fewer consecutive diseases.

This year's epidemic was often complicated with croup, or inflammatory affections of the chest. Croup frequently came first, and was followed immediately by hooping-cough; so that the premonitory catarrhal symptoms contained the germ of both diseases. It is possible, that the germ of hooping-cough was first planted, and that, in its catarrhal stage, the croup was joined to it; that, however, the fully developed croup made its appearance before the characteristic symptoms of hooping-cough, because the latter, probably, demand a longer latent stage. We see something analogous to this in the class of exanthematous diseases. When an inflammatory chest affection developed itself during the hooping-cough, a few doses of Aconite, administered in rapid succession, sufficed to subdue the febrile symptoms to such an extent, that belladonna could then be administered as applicable to both affections, and generally acted splendidly. To this remedy I attribute the recovery of a scrofulous girl, who was previously in a bad state of health, and who, by this complication, was so severely affected, that her parents had no hope of saving her. In many instances, this medicine does not require the aid of Aconite; when, for example, the cough is not dry, and the inflammatory fever not very violent.

Whether belladonna and ipecacuanha are deserving of particular attention in these cases in which there is a regular type; or whether they are applicable to such cases alone, is a question which I must leave to be decided by experience; but I wish here to call attention to the subject. In a little child, the paroxysms occurred regularly every two hours; but I was forced to employ means to combat too many other symptoms, to allow me to draw any conclusion from this case.

The close connection between hooping-cough and measles was again well exemplified in this epidemic; for, whilst the hooping-cough was pretty general here, the measles prevailed in Giessen, which is distant about 9 miles (as I am informed by a physician of that town.) I witnessed a case which fully proved that porriginous skin diseases are not positively opposed to the contagion of hooping-cough. Co-existing with the porrigo, the hooping-cough attained a considerable development; and it was only when the latter reached its acme, that the exanthema dried up, which it had previously frequently done; but it broke out again, during the *stadium nervosum pertussis.*

The last stage is seldom observed by the physician, as the medicinal means are generally discontinued as soon as the paroxysms have lost their frightful character; but, as far as I could learn, it was, after my treatment, very short, in comparison with that of patients treated in a different manner. A child, under a year old, had the hooping-cough long and severely; it was frequently quite comatose. I obtained some evident amelioration, notwithstanding many complications; but affections of the mother always did away with all the benefit obtained. After the cessation of the characteristic paroxysms, I gave a few doses of sulphur for some irritation of the skin; and the child had only for a short time longer some mucous expectoration: whereas other children otherwise healthy, had to undergo a long consecutive stage, although they had been previously much less severely affected. In some instances there was no appearance of a third stage; in those, namely, in which the paroxysms were early subdued.

The mortality was small; for till now (the 3d of April, 1839,) only a few children have died (under other treatment,) I believe, by suffocation during the fits. It has hitherto been my good luck not to lose any patient in hooping-cough.

The prevalence, for some time back, of east and north-east winds, seems to have caused a decline of the hooping-cough; and instead of it we have croup, of which disease I have, within the last few days, had a greater number of cases.

ZYMOTIC DISEASES---FEVER.

Typhus and typhoid.—The French Academy has for a considerable period since the date of our last Report been occupied by discussions respecting one or two points of great importance in the pathological history of fever. The questions of essentiality or non-essentiality, of its dependence or non-dependence upon inflammation of the Peyerian glands, have at length ceased to be agitated, and in their place we have that of the identity or non-identity of typhoid with typhus fever, and of its contagious nature. The discussion on these points originated in the presentation of a memoir by M. Gaultier de Laubry,* in which both propositions were distinctly affirmed. M. Rochoux, who opened the debate which ensued, denied the identity of the two diseases on these several grounds. 1. That typhus was contagious, typhoid fever not so. 2. That the former attacks at all ages, the latter rarely occurs before 15, or after 40. 3. That the peculiar delirium and eruptions of typhus are not observed in typhoid fever; and lastly, that the duration of the two affections is different, being in the one case from ten to fifteen days, in the other, from twenty to thirty.

This confessedly intricate question is extremely well reviewed by a writer in the Dublin Journal,* who discusses the objections of M. Rochoux seriatim, after the following manner:—

The first point of difference which M. Rochoux seeks to establish, is the circumstance of contagion. This argument the author of the article alluded to shows to be of little value, as the typhus of Ireland is not always contagious, any more than the typhoid fever of Paris. As a proof of this, he states that out of 9-588 cases of fever admitted into the Belfast Hospital, no trace of contagion could be discovered in 2-342.

A second ground of distinction much insisted upon, is the different ages at which the two diseases occur. This is opposed by the author for two reasons: 1st. That much error is committed in estimating age, from the omission to notice the fact, that as it is the custom for the youth of both sexes to congregate in Paris from all parts of the French dominions, the majority of patients of all classes must necessarily be near the age of puberty. 2d. That the reason why typhoid fever is said never to occur in children, is that the French pathologist is apt to deny the existence of the disease, unless he has an opportunity of seeing the diseased bowels, which, as children comparatively speaking seldom die of fever, he has but little opportunity of doing. But, as the author observes, the objection is completely reversed by the fact, that cases are on record in which the rose colored spots of fever were visible even at birth. On the other hand he remarks, that the true typhus of Ireland is equally rare among children with the typhoid fever of France, and equally uncommon among aged persons, since of 11,209 cases admitted into the Bellast Hospital, 301 only were under 6 years of age, and 171 only were over 60. The other objections of M. Rochoux meet with the same opposition at the hands of the author, who therefore concludes that there are no just grounds for regarding the two diseases as distinct affections, but that the most which can be said is that they are varieties of the same type of fever.

The contagiousness of typhoid fever asserted by M. Gaultier de Claubry is likewise

* Revue Medicale, and Archives Gen., Juillet, 1845.

* September, 1845.

maintained by M. Jacques,* and M. Patry,† the former of whom affirms that the disease never quits a house until every person has been attacked who is predisposed; and that it is extremely rare to see the inhabitants of the same lodging, down with the fever at separate times, with an interval of more than a fortnight, the usual limit of the period of incubation.

In the treatment of fever we might gain but little information from the writings of the last few months. The plan pursued by M. Jacques, is the combination of emetics and purgatives, with the constant application of cold to the head and abdomen. The same treatment is likewise recommended by Professor Huss,‡ with the addition of frequent ablution with chlorine water, and the exhibition of opium, musk, and phosphoric acid. The latter medicine was found particularly serviceable in the adynamic forms of the disease, and it is somewhat remarkable that the professor takes the same symptom as an indication for the employment of this medicine, which is mentioned by Dr Graves as indicating the necessity for wine, namely, a feebleness of the first sound of the heart, and its approach in character to the introduction of the second sound.

9. *Typhus material.*—It is a favorite theory with the German physicians, that during the progress of typhus fever, a certain morbid material, said by Rokitansky to resemble medullary sarcoma, is poured out from the blood into the texture of various organs. Vogel,§ among others, has paid much attention to the point, and has published observations which have recently been translated by our talented reporter on anatomy and physiology, Mr. Kirkes. It would seem that the parts most liable to become the seat of the above-mentioned material are the mucous membranes, but it may also appear in the substance of the denser organs. The action which precedes the deposition of the typhus material, is said to be inflammatory, and to affect especially the solitary and aggregate glands of the small intestines. The most important transformation undergone by the typhus material after its deposition is its conversion into a brownish slough, which upon separation leaves the typhus ulcer. The material examined by the microscope is seen, according to Vogel, to consist of an amorphous granular product of a brownish-white color, and containing cells of 1-300th of a line diameter; some nucleated.

The subject of the typhus material has also been taken up by Engel.* This author has observed it under two forms, a fluid and a solid, usually combined; the fluid matter is viscid and opaque, and when allowed to rest, throws down an abundant sediment of epithelial cells and phosphate crystals; the solid matter, as observed by Vogel and Rokitansky, is chiefly found in the intestinal follicles. The processes of ulceration and reparation are faithfully described by Engel, as well as certain anomalies to which the diseased product is occasionally subjected; for a detailed description of these, we must refer the reader to the original.

10. *Yellow fever.*—The pathology of this severe malady, which has lately been invested with unusual interest from its appearance on our shores, is ably treated of in a communication from the pen of Dr. Nott,† of Mobile, giving the particulars of several epidemics witnessed by him in that locality. In seeking to determine the nosological status of this fatal disease, he comes to a conclusion, of the truth of which little doubt can be entertained, namely, that it is a special fever, and like other fevers, subject to considerable variations in its leading characters, according to the local or individual circumstances under which it arises. The author eulogizes, as every candid reader must do, the philosophical researches of Louis upon the disease as it occurred in Gibraltar, but finds it necessary to differ from him in some particulars. Louis, as may be remembered, considers the leading characteristic of yellow fever to be a "peculiarly anemic and friable condition of the liver, giving to it the color of butter." This appearance was not found by Dr. Nott as a general rule, being present in only one-third of his cases. It may be observed, however, that Dr. Imray,‡ to whom we are also indebted for an essay on the fever in question, sides with Louis.

Dr. Nott has examined with great minuteness the condition of the blood and secretions in yellow fever. As in other fevers, the blood was found to be dark and grumous, and exhibited but little disposition to coagulate. The peculiar and fatal symptom, the black vomit, is decided by actual experiment to be blood, modified by admixture with the acids of the stomach.

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* Reported in Archives Gen. de Med., Aout, 1845.

† Gazette Medicale, No. 21, 1845.

‡ Gazette Medicale, No. 21.

§ Erlauterungstafela zur Pathologischen Histologie, and Med. Gazette, Oct. 31.

* Schmidt's Jahrbucher, No. 7, 1845, and Med. Gazette, Oct. 31.

† American Journal of Medical Sciences, April, 1845.

‡ Edin. Medical and Surgical Journal, October, 1845.

The causes of yellow fever are discussed both by Dr. Nott and Dr. Imray; the former, however, goes no further than to admit, what cannot in the present day be doubtful, that it is a poison which by some means or other gains admission to the blood, and then propagates itself by zymotic action. He does not pretend to decide whether the poison is of animal or vegetable origin. Dr. Imray examines the question upon a more extended basis, and discusses the opinion held by some, that the exciting cause is of malarial origin, differing only from that which originates the intermittents and remittents of tropical climates, in the degree and concentration of its effects. He considers this opinion to be a fallacy, since there are many localities, as the islands of Dominica and S. Lucia for instance, in which circumstances necessary to the development of malaria exist in a high degree, without the production of yellow fever, while, on the other hand, in the neighboring island of Barbadoes, to which intermittent fever is comparatively a stranger, yellow fever forms a fearfully large item in the bills of mortality. Another reason which he considers to militate against the identity in origin of yellow with intermittent fever, is the fact that the former does not appear to be influenced either by season or temperature, being equally rife in wet seasons and dry; when the temperature was high, and when it was low. In this he is quite borne out by the observations of Rufz.*

11. *Intermittent fever.*—M. Piorry has lately adopted the strange opinion that ague is not, as it is generally held to be, the cause of the enlarged condition of the spleen with which it is associated, but, on the contrary, that the hypertrophy of this organ is the exciting cause of the febrile paroxysm. True to his belief, he has lately recorded a case which proved rebellious to quinine, and which was at length cured by the application of a bandage preventing the descent of the enlarged spleen. The paroxysms are supposed by him to depend upon traction exercised upon the splenic plexus of nerves.† At a late meeting of the Academie de Medicine,‡ M. Savielle denied the influence of miasmata in the production of intermittent fever, and attributes the disease to the sole agency of cold and damp; the opinion, as might be expected, met with decided opposition from the majority of the members present. In the treatment of ague, M. Trousseau* advises the exhibition of quinine in a single large dose, rather than in repeated small doses; he states that he has known an obstinate case which had resisted an ounce of quinine given in the ordinary way, to yield at once to a single dose of fifteen grains. The same opinion as to the efficacy of large doses, it may be remarked, is held by Dr. Elliotson (vide Watson's Lectures, vol. i., p. 747,) and has recently been acknowledged by Dr. Chambers,† of Colchester. The Achillea millefolium has also recently been employed with success as a substitute for quinine, by an Italian physician.

* Gazette Medicale, No. 37, et seq.

† Gazette Medicale.

‡ France, Sept. 16, reported in Med. Times, Sept. 27, 1845.

THE DISSECTOR.

APRIL 1, 1846.

New Evidence on the Extensive Range of Tuberculosis.

In nothing is the progress of Medical Science, at the present time, so strongly marked and impressively distinguished, as in the new evidence now rapidly accumulated and clearly presented, of the wide range and dominion of tuberculosis in the human system. Indeed so vast in amount, and so forcible in undeniable proof is this evidence, that it must of necessity, within a brief period, render a new classification of diseases absolutely imperative upon the profession. As our nosology now stands, this disease, when occurring in different organs, is classified as different diseases, requiring different treatment. The new evidence demonstrates that tuberculosis is one and the same disease in whatever organ or part of the system it may be found, and consequently requires essentially the same treatment. Another most important and influential fact is that tuberculosis is specifically and exclusively a disease of the serous surfaces or membranes; and that whilst it is found in each and every portion of these, the mucuous membranes and surfaces are exempt from its attacks, and have their own peculiar and distinctive class of maladies. Every day contributes substantial foundations for this bold and novel conclu-

* Journ. de Med., Mars, 1845.

† Provincial Medical Journal, Oct. 29.

sion, and the time can now scarcely be remote when it will become so firmly and broadly established, in the sight of the whole world of science, as to demand a grand simplification of all diseases into the dual division 1 SEROSIS, and 2 MUCOSIS, each of these requiring but the equally brief and simple subdivision, of 1 *Acute*, and 2 *Chronic* SEROSIS; and 1 *Acute*, and 2 *Chronic* MUCOSIS.

It is well known that we discovered this fact in comparatively early life, and have adopted and practised upon this simple classification for a great number of years, during many of which we stood alone beside the altar of this great truth, the solitary minister of its flame, waiting in patience and hope, until the morning of greater light should come. We now happily see it brightly dawning, and doubt not its advancement to meridian day.

To the able and unanswerable papers upon *tuberculosis* from eminent French, German, English, and American authorities, which we have republished in this journal and in our other medical works, we have now the pleasure of adding one, "On the Pathology of Tuberculosis," by Dr. Cless, of Stuttgard, and commend it to the close and candid perusal of our readers. It is so luminous and generally unexceptionable as to call for no special remark, except in reference to the following paragraph:—

"The question whether a physiological law may somewhere be established according to which the developement and distribution of tuberculosis in the several organs may be ranged, can hardly yet be answered."

We here deem it a duty not less to ourselves than to the interests of truth and humanity to state, that this question is already answered, and the law here sought already found and established, in our own method of detecting tuberculosis, in the several organs and limbs, by pressure on the posterial spinal ganglia, in the intervertebral spaces, and of determining the precise seat of the disease, by the pain, more or less severe, which that pressure excites. The symptoms by which this law is established, we have published in detail in this and various other works; as yet we have found no exception to them, in an extensive daily practice of more than thirty years, and have, therefore, no expectation that any such will hereafter be found.

The Magnetic Machine in Intermittent Fevers.

We have already described the prompt and efficient action of this machine, in subduing the most violent paroxysms of fever, but were not at that time aware of its equal efficacy in the cold stage of intermittent fevers. We can now, on the authority of a number of physicians as well as private individuals, confidently recommend its use in this case, as the cold chills are mitigated immediately, and cease altogether, in a few minutes after the commencement of the action of the magnetic machine. We are, moreover, assured that the chills, and consequently the fever, very rarely return, this circumstance, therefore, is well worthy of the attention of physicians in the Western and Southern States, and indeed wherever this disease is prevalent.

True Science versus "Young Physic."

To the Editor of the Tribune:

Being a constant reader of the Tribune, my attention has been attracted to the various articles on the subject of medical science, and the several modes now in vogue for treating diseases. The Chrono-Thermalist, the Homœopathist, the Hydropathist, the No-pathist and the Every-pathist, with *Doctor* Brandreth, *Dr.* Kelly, *Dr.* Taylor, *Dr.* Chrystie, and the whole race of anti-Allopaths, seem to have united their forces, and employed the Tribune as their organ, to crush the truth, as it is found in the old and still regularly and steadily pursued theory and practice of medicine. I do not wish to find fault with you for your course in this respect, for you have as a man an undoubted right to express your opinion on any matter, however unacquainted you may be with its true nature, and you have a right also to permit others to use your columns for the purpose. But I question the wisdom of making the Tribune or any other ordinary newspaper a *Medical Journal*, even under the pretence of enabling the people to decide what is true science and what is not. But when the writers of these articles occupy your *reading* columns with puffs of themselves and their systems, and especially when they throw out silly and unjust insinuations about the "*indiscriminate* use of the lancet, calomel and their violent allies," &c

&c.—when the opinion of some great writer abroad, who perhaps never looked beyond the title of a medical book, or of some learned divine, or eminent lawyer, who never took a dose of medicine, is quoted in derogation of the labors and studies of truly scientific men, and in favor of these numerous, half-fledged, "Young Physic" systems, I think I have a right to complain, and at least to ask room for an attempt to put the matter right before the public. In doing so, I would not endeavor to defend the science of medicine; it is far from needing it. Its investigation and improvement are pursued with steadiness, and an ardor unsurpassed in any former time; and as well may we look for an overturning of the truths of Christianity by the spread of Mormonism, as for a prostration of the science of medicine by any of the new-fangled notions of the day, or all of them combined. And why? Simply because it is based upon *well proved principles.* The people, ignorant of the truths of medicine, may be induced to say to the regular practitioners, 'You are humbugs, and we will take no more of your big, disgusting doses—we intend in future to be cured by some one of the more modern and fashionable *systems* of medicine!' but will that destroy the truths of physiology, pathology, or therapeutics, as they have become established by long years of research and experience?

The most serious effect of these attempts to weaken the confidence of the public in the true science, and to build up the fortunes of their projectors, is, that by a withdrawal of the support which is needed by its votaries to prosecute their studies and to increase their experience, they become discouraged and their investigations are retarded. Every dollar put into the hands of Charlatanism, is so much taken from the support and encouragement of science. The Charlatan only is benefited in person—while true science loses its means of improvement.

But who is to decide what is true science and what is not? Amid the conflicting claims of all these *isms* (not forgetting Thomsonianism, once the *hottest* of all,) who is entitled to sit in judgment and decide which is right? You will perhaps reply the *public,* who are most interested in the result. But are not those who have devoted their whole time to these studies the most capable of judging between truth and error in their own art? As well might the science of geology or chemistry be submitted to the popular vote. As well might a physician who never looked into a law book, sit upon the Bench of the Supreme Court, as a lawyer or mechanic who knows not the difference berween ipecac and rhubarb, or is unable to distinguish the lungs from the stomach, be asked to decide that Allopathy, Homœopathy, &c. are all wrong, and Chrono-Thermalism is all right. Were I a proselyte to either of these notions, I would not give a straw for the favorable opinion of any non-medical man, *except I could make money by it*, which is the principal object of those who seek it.

But I go farther, and say that the public is not alone interested in knowing which is the best and truest mode of medical practice. The aim of medical science is to cure diseases in the speediest and surest manner, and it is the duty and *interest* of the physician to discover that mode.

Every far-sighted practitioner knows, and has lately been made to feel, that it would be for his *pecuniary* advantage to join in the popular cry against the old and well established principles of medicine, and in favor of the Homoœopathic System; but I regard it as in the highest degree honorable to the profession that so few of them have been weak enough to forsake the truth, for a present temporary gain. While they are anxiously seeking all possible light to guide them in their duty to the sick, the public should feel that the profession has no interest beyond their benefit, and that if either Homœopathy, Chrono-Thermalism, Hydropathy or Thomsonianism were proved true, or even reasonable, the enlightened men of the Profession would at once see it so, and adopt it. But they alone are the proper judges of the right in these matters.

These inflammatory and disingenuous appeals to the prejudices of the public through the daily press, are therefore highly disreputable and injurious to the public welfare and can be made for no other purpose than benefiting the pockets of those who make them, If their authors are honest in their opinions and are members of the profession, let them expend their logic in such a way as will convince practical physicians of the truth of the opinions they hold. The medical press is open to them, and that alone is the proper place for such discussions—provided they write and act as the truly honest seeker after the right should. By appealing to the public, who are manifestly incapable of giving an enlightened opinion on such profound matters, they exhibit their weakness, unless they merely wish to profit by popular prejudice, which is *prima facie* evidence of their want of an honest disposition for scientific improvement. M. D.

Remarks by the Editor of the Tribune.

Having given M. D.'s phillippic *verbatim*, we claim the privilege of telling him what we think of it. And first, we find it exactly paralleled by a Pharisaic inquiry and denunciatory assertion in John's Gospel, vii. 48: "Have any of the *rulers* believed on him? [Christ.] But this *people*, which *knoweth not the law*, are *cursed?*" Next, we will state our strong conviction that the advocates of Homœopathy, Hydropathy, and other radical innovations on the old system of medicine, have *not* "the medical press open to them," and would *not* be allowed to explain and advocate their views freely and fully through the more orthodox and popular channels of medical discussion. Neither is the *mind* of the medical faculty generally open to the reception of truths which sweep away a foundation on which their several superstructures of fame and fortune are erected. Our missionaries to pagan lands rarely think of beginning the work of conversion on the chief priests of the countries they work in, however learned these may be in science and theology. It was no eminent lawyer but a thorough soldier who in the 'Code Napoleon' effected the mightiest legal reform the world has seen But space fails us. Suffice it that we allow the advocates of relative novel theories of healing an occasional and generally brief hearing through our columns, because we believe they cannot obtain a fair hearing otherwise. To each new thought which our time evolves, we are disposed to say, 'As a stranger, give it welcome!' If it be an error, that will soon be made manifest; and we choose not to treat inhospitably any of the disguised angels which a Paternal Providence is continually sending for the guidance and blessing of our Race.

To the above just and candid remarks of the independent editor of the *Tribune*, it may not be inappropriate to add, that the present panic outcry of the regular profession against the quacks, and of which the above letter of M. D. is merely a natural and irrepressible specimen, will be made in vain, through all the moods and tenses of indignation, until the former discover the true cause of that success and popularity of the latter, which so highly excites their apprehension and ire. That cause, we hesitate not a moment to declare, is to be found only in the want of knowledge and skill, and consequently of success, in those by whom this hopeless outcry is raised. Quackery flourishes more rankly than ever, not in the increasing ignorance of the popular masses—for that is incontestibly diminishing every day—but in the non-advancement of the regular profession, which is so flagrantly behind the age. In many respects, it is even ludicrously and contemptibly so; and in almost every department, except the distinctly surgical, the multitude have found by experience that the audacious quack effects as many cures as the pompous professor, and at less cost. The great secret is now discovered, and universally proclaimed, that, in nine cases out of ten, however diversified in character or degree, the regular practitioner, who calls in his carriage, prescribes cathartics, as a conjecturally safe and comprehensive foundation for further experiments and a future bill; and it is equally well known that the quacks do precisely the same thing, with rival if not superior success. The physician's general prescription is usually almost identical with the quack's general compound; and the skill and judgment exercised in the generalization of the latter, are at least equal to the learned discrimination and reflection which are presumed to dictate the former. But the quack has this manifest advantage—his cathartics, anodynes, or tonics, are always ready at hand, nicely and even elegantly prepared, and, above all, thoroughly recommended by the voluntary and grateful testimonials of huudreds of persons, real living beings, of unimpeachable character, whom these self-same quack remedies have essentially relieved or cured. And what has the regular practitioner to say to these things? Literally nothing, to any effect; he may sneer, and scoff, and rail, until the whole circle of his patients and friends become convinced that his emotions are very different from those of mere contempt; but he cannot rail such testimonials from the record, nor recovered health from observation and experience.

The fact is, and the truth may as well be spoken, the great majority of the regular profession, are as utterly ignorant of the true symptoms and treatment of a very wide range of chronic diseases, and of the administration of the true remedies, as the lowest

quack that never read a book nor heard a lecture. Is it any wonder, then, that the mere quack who has so extensive a scope for the application of his general panaceas, so wide a field from whence to call testimonials to their efficacy, should leave the medical tortoise far behind in the race for popularity and fortune? The prosperity of the quack, is the reproach of the profession. If the educated physician were really learned and skilful in his profession, according to his exclusive claims and pretensions—if he really kept pace in his practice with the progress of science and discovery—if he were as docile in learning as he is conceited and intolerant in teaching—quackery would wither and vanish, or at least be confined to the entirely illiterate and unreflecting portions of the community, instead of attracting, as it now does, the attention and respect of the most liberal and enlightened, and deriving its most lucrative support from the wealthy and influential. It is not the people but the profession who are responsible for the prevalence and palminess of quackery, and for the retardation of true medical science from whence it springs and which it tends to perpetuate. If medical men were really what they pretend and claim to be, patients would no more think of resorting to the quack, than they would apply to a blacksmith to repair a watch, or to a stone mason to set a diamond.

Ed. Dis.

A communication has been made to the Paris Academy of Sciences, by Mr. Eseltze, relative to some experiments with the electro-galvanic light obtained by Bunsen's apparatus. The writer states that he causes this light to enter a dark room through an opening in a screen or shutter, and then, with the aid of powerful reflectors, is able to distinguish the internal parts of the human body. The veins, the arteries, the circulation of the blood, and the action of the nerves, are, he says, seen by him with perfect distinctness; and, if the light be directed towards the region of the heart, he is able to study all the mechanism of that important organ as if it were placed before him under a glass. The author even asserts that he has ascertained the existence of tubercles in the lungs of a consumptive patient, and gives a drawing of them as they appeared. On rubbing the skin with a little olive oil, the transparency becomes augmented, and he was enabled to follow the process of (digestion!)

REMARKABLE PHENOMENON.

The following narrative deserves, and will from the thoughtful receive, the greatest attention, authenticated as it is by the names engaged in the investigation. The name of Arago precludes all suspicion of quackery, credulity, or inaccuracy. The facts are of a class which claims daily more and more attention and seems to promise light as to Vital Dynamics—those motive causes which, because so closely interwoven with all our thoughts, have hitherto almost wholly eluded the cognizance of the Intellect. We have not been able to get a point of view distant enough from our habits and prejudices to see from.

Translated for the N. York Daily Tribune from the Courier des Etats Unis.

The Academy of Sciences was much moved, at its sitting on the 16th of February, by an account of the most extraordinary phenomena. This recital was given to the illustrious assembly by M. Arago, with the spirit and courage of a man who does not fear being misunderstood. We repeat the facts for our readers. Angelica Cottin, a child of 13 years, is a villager of the department of Finistere and works in a manufactory of ladies thread gloves. She knows how to read and write, though of only mediocre intelligence. In the early part of January last she was winding silk with her workshop companions when suddenly the cylinder which she turned was thrown to a distance. Not knowing how to explain that accident the young girls replaced the cylinder and recommenced their labor. But the same event recurred and they soon perceived that Angelica Cottin was the cause of the extraordinary occurrence. General terror was communicated to the entire village. They ran to the curate who exorcised the young girl and pronounced the "Vade retro Satanas," (Get thee behind me, Satan.) But the curate having thrown away his holy water and his Latin, was obliged to conclude that Satan had nothing to do with the phenomenon, consequently the physician succeeded to the curate. Accompanied by the physician and her father and mother, Angelica came to Paris. She was conducted by M. Arago to the observatory, and it was in his presence and before Messieurs Laugier and Goujon that the following observations were made and mentioned. It is the left side of the body which appears to acquire this, sometimes attractive, but more fre-

quently repulsive property. A sheet of paper, a pen or any other light body being placed upon a table, if the young girl approach her left hand, even before she touches it, the object is driven to a distance as by a gust of wind. The table itself is overthrown the moment it is touched by her hand or even by a thread which she may hold in it. This causes instantaneously a strong commotion in her side which draws her toward the table, but it is in the region of the pelvis that this singular repulsive force appears to concentrate itself. As had been observed the first day, if she attempted to sit, the seat was thrown far from her with such force, that any other person occupying it was carried away with it. One day a chest upon which three men were seated, was moved in the same manner. Another day, although the chair was held by two very strong men, it was broken between their hands. These phenomena are not produced in a continued manner. They manifest themselves in a greater or less degree, and from time to time during the day, but they show themselves in their intensity, in the evening from 7 to 9 o'clock. Then the girl is obliged to continue standing and is in great agitation. She can touch no object without breaking it or throwing it upon the ground. All the articles of furniture which her garments touch are displaced and overthrown. At that moment many persons have felt, by coming in contact with her, a true electrical shock. During the entire duration of the paroxysms, the left side of the body is warmer than the right side. It is affected by jerks, unusual movements and a kind of trembling which seems to communicate itself to the hand which touches it. This young person presents moreover a peculiar sensibility to the action of the magnet. When she approaches the north pole of the magnet she feels a violent shock, while the south pole produces no effect, so that if the experimenter changes the poles, but without her knowledge, she always discovers it by the difference of sensations which she experiences. M. Arago wished to see if the approach of this young girl would cause a deviation of the needle of the compass. The deviation which had been foretold was not produced. But perhaps the phenomena did not exist at that moment in their greatest intensity. The electrical fishes themselves exercise no action upon the magnetic needle, excepting by the aid of particular precautions. The general health of Angelica Cottin is very good. We must nevertheless consider her as being in a diseased state. The extraordinary movements, the paroxysms observed every evening, resemble what one observes in some nervous maladies. Angelica feels herself violent commotions every time that a discharge of the influence takes place. Her wrist is subjected to a sort of rotation upon itself and she is in a state of great suffering during all the continuance of the attack. M. Arago has requested the Academy of Sciences to appoint a commission to examine Angelica Cottin. The Academy have named a commission composed of MM. Arago, Becquerel, Babinet, Rayer and Pariset.

ANIMAL ELECTRICITY.

In the muscles of living animals, as well as of those recently killed, an electric current exists, which is directed from the interior of each muscle to its surface. The duration of this muscular current corresponds with that of contractility: in cold-blooded animals, therefore, it is greatest; in mammalia and birds it is very brief. Temperature has a considerable influence on the intensity of the current, a small amount of electricity being developed in a cold medium, a larger one when the medium is moderately warm. The muscular current appears to be quite independent of the nervous system. It is uninfluenced by narcotic poisons in moderate doses, but is destroyed by large doses, such as kill the animal. The development of this muscular current seems evidently to depend on the chemical action constantly taking place as an effect of the changes accompanying nutrition; these organic changes, in short, give rise to an electric current, just as do the chemical changes attending the mutual reaction of inorganic materials, such as the reaction between a plate of metal, and an acidulated fluid in the ordinary voltaic pile.

That considerable chemical changes attend the process of nutrition in muscle, seems evident when we consider the constant supply and waste of material of which it is the seat, and the evolution of sensible heat which accompanies its contraction; in this way the generation of electricity can be readily accounted for; the muscular fibre represents the metal acted on in the arrangement of the voltaic apparatus, and the arterial blood corresponds to the acidulated fluid. The surface of the muscle, which is more or less tendinous, and therefore different in structure and in function from the interior, represents the second plate of metal used in the voltaic apparatus, which does not suffer chemical action, but which only serves to form the circuit. The direction of the muscular current, therefore, from the interior to the surface of the muscle is just such as might be expected, supposing it to be due to a chemical action taking place in the interior of the muscle.—*Matteucci.*

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FALLACIES OF THE FACULTY.

Lectures delivered at the Egyptian Hall, Piccadilly London, 1840.

BY S. DIXON, M. D.

LECTURE, X.

PRINCIPAL CHRONO-THERMAL REMEDIES.

Summary of the Chrono-Thermal Doctrine of Disease.

GENTLEMEN,

We now come to consider the mode of action of the Chrono-Thermal agents—or those substances so generally effectual in prolonging that remission of symptom which we have proved, beyond question, is a law of all disease. Whatever be the nosological name of a distemper—Ague, Epilepsy, or Eruption—the physician will more surely accomplish his purpose of cure by taking advantage of this period of immunity than by any measures to which he may resort during the paroxysm. The more perfectly periodic the paroxysmal return, the more amenable will the disease for the most part be to the chrono-thermal medicines; but however imperfect, irregular, or brief the remissions, there is no case of disorder that may not be beneficially influenced by these remedies—whether they be alternated with baths and emetics, or be perscribed in combination with such symptomatic medicines and local measures as the features of the case, from place or prominence, may appear to demand. Let us commence the consideration of the Chrono-Thermal agents with a few observations on

THE PERUVIAN BARK.—To the value of this Bark as a remedy for many diseases, the celebrated Cullen, among others, bears his unequivocal testimony: what does he say are the ailments in which he found it most useful? Rheumatism, Gout, Scrofula, Scurvy, Smallpox, Dysentery, Gangrene, Diseases of the Bones, Convulsions, Hysteria, Hypochondria, Hæmorrhages. Is not this a pretty comprehensive association of apparently different diseases, all cured or relieved by a single substance! And yet never seemed to enter the head of any previous medical writer, that these diseases have each something in common—each some principal of continuity which, amid all their apparent variety establishes their Unity of type. One remedy alleviates or cures them all—and yet physicians either cannot or will not see that the action of that remedy is one and one only, viz., motive power. What better evidence of the absurdity of Cullen's own Nosological System—a system that so far from explaining the perfect continuity that prevades the chain of all morbid motion, separated the links so widely asunder that the student could not for the life of him believe them to be any thing else but so many distinct and unlike disorders, each of which, forsooth, required a separate treatise to understand it! What a beautiful piece of work for the quacks! what an admirable method of darkening the world, that bad men might the better pursue their game of imposture!

An accomplished French physician, Baron Alibert, speaks thus of the Bark and its influence in disease,—"I have been able to pursue and appreciate the salutary results of the employment of this substance in Cancerous affections, in Scrofulous tumours of the Glands, according to the recommendation of Fordyce in many Cutaneous diseases, and principally in Lepra, Elephantiasis, and in certain cases of Jaundice, arising from diminished tone in the secretary organs of the bile—in the alterations effecting the Osseous system, such as Ricketts, Spina Bifida, &c., With the Bark we may also advantageously ocmbat certain disorders of the Nervous sys-

tem, such as Epilepsy, Hypochondria, Hysteria, &c. Many authors recommend it in Hooping-Cough, and the various convulsive coughs. No remedy, according to them, is so efficacious in strengthening the organs of respiration, and in preventing the state of debility induced in the animal economy by the contractile and reiterated movement of the lungs. The most part of those who employ it in like cases, are nevertheless, of opinion, that the administration of it is imprudent without some previous preparation, according to the particular stage of disease. These practitioners (influenced, doubtless by their hypothesis of a humour in the blood) would in some sort mitigate the ferocity of the paroxysms by sweeteners and temperants—often even by evacuants, such as emetics and bleedings. To prevent irritation, they wait until the strength has been absolutely struck down. But upon this point, the celebrated Murray differs from these practitioners *in toto*. The Peruvian Bark according to that physician, is equally adapted to the cure of Convulsive and Periodic Coughs as to the cure of Intermittent Fevers. He witnessed an Epedemic in which these maladies were efficaciously met by this powerful remedy from the commencement. He has therefore proved that there is no advantage in retarding its administration; and that to permit, in the first place, so great a waste of the vital powers, only renders the symptoms more rebellious, and their consequences MORE FATAL!"

Gentlemen, I am not now giving you opinions,—I am not now dealing in hypothetic disquisitions—I state facts simply, facts powerfully attested; for Murray in his day was celebrated over all Europe, and Alibert only a few years ago, was second to no physician in France. Both have now passed from the scene of life; but their writings may be still read with advantage by every one who takes any interest in medicine.—The value of the Bark in all diseases, both authors distinctly state. You have also heard what they say of the sanguinary practice. Nothing can be stronger than the expression of their united evidence against that practice; yet in the teeth of that evidence—in the teeth of common sense even, which says that whatever reduces the vitality of the whole, must more surely confirm the hereditary or other weakness of a part,—the medical herd of this country still go on like their ignorant fathers before them, bleeding, leeching, and purging to death, or all but death, every unfortunate creature who falls into their hands. Did the disciples of Malthus only know how admirably their master's system has been carried out by the great body of English practitioners, what encomiums would they not heap upon the schools to whose regiments of lancers and leechers the world is so indebted for keeping down a surplus population! But let not people suppose that possessed of a remedy so powerful, and, so far as nomenclature is concerned, one so almost universally applicable as the Bark, the physician has an infallible elixir—a remedy adapted to all constitutions. The most perfect ague-fit within my own remembrance, appeared to me to be the effect of two grains of quinine, prescribed for an asthmatic patient. Dr. Thompson mentions the case of a patient of his, in whom this medicine brought on an attack of asthma: "When he was getting well, after seven or eight days, I again," he says "began the sulphate of quinine, and the same attack was the result." A lady, after taking it, became subject to intermittent fainting-fits. Now some would be glad to lay hold of this as a reason why you should never use quinine.—But the smell of the rose has produced fainting fits—the smell of ipecacuan asthma:—must we, therefore, never smell a rose, or keep ipecacuan in our houses? What agent in nature is absolutely innocuous?—Rhubarb in a very minute dose, has produced convulsions with some people—but, according to some people, should we never perscribe rhubarb? When quinine disagrees, the common complaints are tremor, faintness, headache, vertigo, nervousness, cramps, and "all-overishness." Ratier, in his Hospital Reports, among its deleterious effects mentions, "nervous agitations," which, I fancy, might be as well translated, "shivering-fits,"—or, what say you to "ague," Gentlemen, Oh! you may depend upon it whatever can correct a morbid motion. may cause it!

Like many other medicines, the Peruvian Bark is termed by writers on Materia Medica, a *tonic*. All medicines are tonics, when they improve the health of the patient; but when on the contrary, weakness or nervousness is the result of using them, who will say, that in that case they are anything but debilitant? Bark, like an emetic, or a purge, may cause both one and the other. To go on, then, day after day, prescribing this substance, and what are termed "strengtheners," without manifest amelioration, or with positive retrogression, is not giving a course of "tonics," but a succession of exhausting or debilitating agents;—it is to prescribe a name for a name.

What then, is the mode of operation of the Peruvian Bark when its action proves salutary? This I conceive to be the true explanation. Whether it be administered during the Remission or Paroxysm, the bark,

like every other medicinal agent capable of influencing the corporeal *totality*, must, if it act at all, do one of two things, namely,—Being a superadded, *power*, it must either, with more or less force, CONTINUE, or with more or less force REVERSE the direction of the existing order of corporeal movement, according to the *attractive* or *repulsive* manner in which it may exercise its motive influence. Now, as this difference of result depends upon whether the patient's brain be *negatively* or *positively* electric, a thing which can only be known by trial, it must be clear to every reflecting person, that where the chances are equal in favour of the presence of either electrical state, it is better to prescribe the medicine during the remissional movement of body, when so far as continuance goes, it must act to a certain extent at an obvious advantage. In common with every material agent capable of influencing matter in motion, the power of the bark, under ordinary circumstances, must be more effective in continuing than in reversing existing motion. To *reverse* generally suggests opposition, difficulty, disadvantage. To *continue* what is already begun as generally implies a course of action that can be advantageously undertaken. The chances, then, being so much in *favor* of *continuance*, it no longer remains a question, which, state of body should be selected for the exhibition of the bark,—the Paroxysm or the Remission. Which of these two periods has most resemblance to Health? The term Remission at once suggests the answer; that then is the proper period for the administration of this particular remedy. And experience has confirmed what exact reasoning might have anticipated; for when exhibited to the patient during the Paroxysmal movement, the bark, for the most part, not only renders that movement more intense, but prolongs with equal frequency the duration of its period. A like effect follows its administration during the movement of Remission, for not only in most instances does it prolong this period, but adding force to the existing order of movement, it brings it at last to that desirable standard which it only previously approached, namely, the standard of Health. Numerous instances, of conrse, have occurred where a contrary effect has followed the exhibition of the bark, both in the case of the paroxysm and remission. But the general result of its employment determines us in the line of practice we should, under ordinary circumstances, pursue. So long, then, as we can,-by the bark or any other agency keep up the movement of remission in as great, or even greater force than before, so long do we secure our patient from a recurrence of the previous paroxysmal movement, involving, as the latter must do, the identical corporeal matter of the movement of remission. Whatever be the name or nature of the disease, the remissional movement, in most instances, though a shade or two beneath that of health, may, as we have already said, by the increase of force effected by the bark, be brought at last to the healthy standard; nay, in some cases, by a too long continuance or an excess of the medicinal force applied, it has itself been actually converted into a new febrile paroxysm of more or less intensity. But in that case the paroxysm of the old disease has, with equal certainty, been prevented from recurring. Still, however mild and subdued the movement kept up by the bark may appear, in comparison with that of the previous paroxysm, if it only be continued for a sufficient time, it generally becomes at last so habitual as entirely to supersede the original disease, and to destroy, as a matter of course, the constitutional memory upon which the recurrence of the old paroxysm depended. Such constitutional memory French writers term "memoire machinale." It is by this that all the motions of health are periodically reproduced—and by the same law, all morbid motions take on a habit of return. Whatever will put the brain on a new course of thonght or action, will confuse this memory. Hope, joy, faith, and enthusiasm act in that manner. What are these—what are all passions but mild fevers?—and, as no two fevers can affect the body at one and the same time, inasmuch as no given coporeal atom can move in opposite directions at the same moment—these fevers, however mild in themselves, are sufficiently powerful, in many cases, to avert the return of the more dangerous morbid motions. Like the fevers of pregnancy, puberty, &c., they may cure or arrest every kind of disease you can name, from toothache to pulmonary consumption; like the same fevers, they have produced all! according to constitutional predisposition.

The Chrono-thermal medicine next in value to the Bark, is

PRUSSIC ACID.

The College of Physicians have given a formula for the preparation of this acid for medicinal purposes; but I prefer that of Schcele, and I believe most other practitioners do the same. The concentrated acid cannot be prescribed in practice. It must, then, be given in a diluted state. "Diluted prussic acid," says Magendie, "is employed with success, in all cases of morbid irritability (weakness?) of the pulmonary organs.

It may be advantageously used in the treatment of nervous and chronic coughs, Asthma, and Hooping cough; and in the palliative treatment of Pulmonary Consumption; indeed, a great number of observations induce the belief, that it may effect a cure in the early stage of the latter disease. In England it has been administered with success in Dyspepsia, and also in Hectic cough sympathetic of some other affection. [Why sympathetic of another affection? When a man's health is wrong throughout, some prominent symptom is seized upon, and considered to be the cause of all the others!] [Dr. Elliotson, both in hospital and private practice, has frequently employed medicinal prussic acid, prepared after the manner of Vauquelin. He has recorded more than forty cases of Dyspepsia, with or without vomiting, and accompanied with considerable pain, in the epigastric region, and with pyrosis, (water-brash,) which were cured by this acid. The same physician quotes a case of colica pictonum (spasm of the colon) in which Dr. Prout gave the acid, and procured instantaneous relief. Dr. Elliotson also administered hydrocyanic acid, in a great number of Pectoral affections; and has almost invariably succeeded in allaying the troublesome cough. [Why will people use this word "invariably?"—what agent in the Materia Medica acts invariably in the same manner? such medicine would be, indeed, a specific! but that we shall never discover!] Applied externally in lotions, in different diseases of the skin, it has not, in Dr. Elliotson's practice, produced any decided effect. Dr. Thomson, however, asserts, that he has employed it in lotions with constant success [here again, "constant success!"] in diminishing the itching and the heat so annoying in cutaneous diseases, and has cured several species of herpes."

"M. J. Bouchenel has published an interesting memoir on the employment of prussic acid in the treatment of chronic Pulmonary Catarrh. He mentions four cases in which this remedy proved effectual. He concludes by urging that prussic acid, when given in a small dose, is not more inconvenient than an ordinary cough mixture. M. Bouchenel has also employed prussic acid in a case of consumption, but he only succeeded in allaying the cough for a time, which leads him to doubt the fact of its having really effected the cure of confirmed consumption. I do, however, assert and maintain," says Magendie, "that with prussic acid I have CURED individuals, having all the symptoms of incipient PHITHISIS; and even those in a more advanced stage.

"In Italy, the medicinal hydrocyanic acid has been used to allay excessive irritability of the womb, even in cases of Cancer." "Professor Brera extols its happy effects in pneumonia: he recommends it also in Rheumatic cases, and as a worm-medicine. Since this professor has employed it in diseases of the Heart, Dr. Macleod has administered it in the same diseases. He has found it allay nervous Palpitations, especially those which seemed to depend on derangement of the digestive organs. [How common this error of accusing one symptom of being the cause of another!] He has also employed it in some cases of Aneurism of the Heart. Dr. Frisch, of Nybourg, in Denmark, has allayed the intolerable pain caused by Cancer of the Breast, which had resisted all the antispasmodics, by washing the ulcerated surface with diluted prussic acid. He has also successfully employed the remedy in several cases of Phthisis. Dr. Guerin, of Mamers, has obtained beneficial results from its employment in two cases of Brain Fever."

Thus far I have given you the experience of others, with this acid as detailed in MAGENDIE'S FORMULARY;—let me now add a few observations of my own in its favor.—Combined with the tincture of lobelia inflata, I have found it one of the most generally effectual remedies for Asthma, with which I am acquainted. The same combination has enabled me to cure Spasmodic Stricture of the urethra; and, generally, speaking I have obtained successful results from the administration of prussic acid in cramp and spasms wherever developed. In the low, habitual Fever, whether misnamed dyspepsia, hysteria, or hypochondria, I have found it particularly valuable. I have also experienced its curative influence in the treatment of Dropsy; more especially when complicated with difficult breathing.

In Palsy, I have found prussic acid more generally successful than strychnia. I may here again, however, mention that it is my custom, in the treatment of disorder generally, to combine one or more chrono-thermal powers—quinine, hydrocyanic acid or arsenic—with one or more symptomatic medicines, possessing marked local influence.—Thus, one or more of the chrono-thermal agents may be advantageously combined with iodine, in glandular and skin affections, with colchicum or guaiac in rheumatism—squill or digitalis in dropsy—cantharides or copaiba in leucorrhœa and gleet—with squill in catarrh—with purgatives where costiveness is a symptom; and so in like manner, according to the most prominent feature of a case. Combined in this way with tincture of ginger, cardamoms, &c., I have found prussic acid extremely valuable in the treat-

ment of flatulency and acidity of the stomach. In all these disorders, however, this, and all other remedies will be found to be advantageous only in so far as they contribute to improve the temperature, and, consequently, the circulation of the subjects of them. Your patients, when obtaining their beneficial effects, will tell you, "I have not had those heats and chills which used to trouble me,"—or, "my hands and feet are not so cold or so burning as formerly." If you poison a certain number of rabbits with prussic acid—say a dozen, and pour cold water in a stream over six of them, these six will recover, while all the others will die. This has been done over and over again with the same result. You see, then, how clearly the influence of this agent depends upon its power of controlling temperature.

We have seen that prussic acid may be successfully employed in the most obstinate agues; yet I remember the case of an Irish barrister. who, from the same medicine, experienced severe shivering and chilliness, with cramp, pain of the stomach, and slight difficulty of breathing; the very symptoms, you will remark, Gentlemen, for which it is so often available in practice. The electric condition of the cerebral part influenced, determines whether a given remedy shall produce attractive or repulsive motions; and this, we have repeatedly stated, can only be known by trial. From such trial, no greater harm than a little temporary inconvenience can take place, when prussic acid disagrees, if prescribed and watched by a judicious physician. Rhubarb or magnesia may do the same, for, like prussic acid, both act electrically.

From Prussic acid, I now pass to

Opium, and its salts of Morphia.—These, like the Bark, may be advantageously employed, as we have already stated, in prolonging the interval of remission in every form of disease. Opium, indeed, like every other remedy, possesses more or less influence over the whole system, but its more obvious effect is the control which it exercises over the nerves of sense. With these we associate Memory—and as every part of the body has, through the brain, a power of remembrance, whatever will confuse or suspend the action of the senses, will often equally suspend and confuse memory, and consequently conduce to the suspension or interruption of any habitual or periodic action of any part of the body. A minute dose of opium generally heightens the perceptive powers, while a large dose as generally diminishes them. But a large dose, after all, is only a relative term—for the quantity that would poison a horse, may be a moderate dose to the habitual opium eater!

I do not know a disease in which I have not found opium useful. In dropsical cases, when administered at that particular period of the day when the patients have confessed to amelioration of their feelings generally, it has, in my experience, been frequently followed by a copious flow of urine after every diuretic had completely failed. By giving it in a large dose during the remission, I have kept several consumptive patients alive for months, and some for years even, whose existence must assuredly have been shortened but for the beneficial influence of this drug. There are persons, however, whom

> Not poppy, nor mandagora,
> Nor all the drowsy syrups of the world

would medicine into slumber—but upon whom the cold affusion would instantly produce that effect. Behold again, how much all things depend on temperature! With some people opium, as I have already mentioned, acts like ipecacuan—who can tell what may be the effect of any remedy till it be tried? It is only impostors who *never fail!* As a proof of the influence of opium as a preventive against disease, we are informed by Dr. M'Pherson, of the Madras army, in his book on China, that "the peculiar active principle in opium, the narcotic, has of late been employed with considerable success in Bengal, as a substitute for Quinine. It may also be mentioned, that at the time fevers prevailed so extensively among our troops at Hong-Kong, but comparatively few of the Chinese suffered, though exposed throughout to the same exciting causes." And this Dr. Mc Pherson attributes to their habit of opium smoking. Travellers, who have witnessed the effect of this drug in the East, mention tremor, fever, dropsy, delirium, and restlessness, as the consequences of the habitual use of opium. It has, nevertheless, contributed to the cure of all these symptoms when produced by other causes. In practice, we find it gives repose in one case and preclude all sleep in another. It has caused mania, and cured it.

Very analogous to opium in their mode of action are

Alcohol, Wine, and Malt Liquors; but like every other medicinal agent, they act upon the body, beneficially or the reverse, in no other manner than by changing the existing temperature of the brain. If a glass of brandy has arrested the ague-fit and its shudder, the army surgeon will bear testimony to the "horrors" and tremblings which the abuse of strong liquors too frequently induces in the previously healthy. Are not the

chill, the shiver, the fever-fit, the epileptic, asthmatic, icteric, strictural, and other spasmodic paroxysms daily produced by potation? How often have we known dropsy brought on by gin-drinking:—yet is not gin daily prescribed with the best effect for the dropsical? See how differently alcohol affects different men! One it renders joyful or gentle—another sullen and morose—in a third, it gives rise to wit, while a fourth, under its influence, loses the wit he previously possessed. I remember the case of a man of the 1st Regiment of Foot, who grew mighty religious and took to psalm-singing every time he got drunk. But this spurious kind of godliness, as you might have expected, generally evaporated with the fumes of his liquor. That excess of religious feeling or *veneration* (as the Phrenologists call it) does, however, depend upon the temperature or motive condition of some cerebral part, there cannot be a doubt; and that it takes place by fits or periods, Shakespeare well knew, for he makes one of Clarence's murderers say: "I hope this holy humour of mine will change; it was wont to hold but *while* one would *tell* (count) *twenty.*"

Wine will make the brave man timid and lachrymose—the coward capable of actions, the mere thought of which, in his sober moments, would have inspired him with terror. One man will first show the effects of drunkenness in his speech—another in his diminished powers of prehension—some individuals will not betray the influence it has obtained over them until they try to walk; their limbs may then fail them, though neither hand nor tongue show any signs of inebriety. Now all this is done by the change of temperature which wine induces on various parts of the cerebrum of particular individuals. It throws them into a state of fever; and the same phenomena may be witnessed in the course of fevers produced by cold or a blow. Dr. Jenner, in describing the effects of excessive cold on himself, says, "I had the same sensations as if I had drunk a considerable quantity of wine or brandy, and my spirits rose in proportion to this sensation. I felt, as if it were, like one intoxicated, and could not forbear singing," &c.—[*Baron's Life of Jenner.*] Take the converse of this—A man shall get as "drunk as a lord," and immediately become sober under the influence of a cold shower, or plunge bath. Does not this unity of result argue unity of mode of action? We prove, then, by every possible manner, that the effect of wine, whether for good or evil, like that of every other power in nature, relates to the influence it exerts over the temperature of *one* or *more* portions of the Brain.

Musk, Valerian, Camphor, Assafœtida, have each and all of them cured the ague. Were it not for its expense, Musk would, doubtless, be more extensively used in the practice of medicine. For myself, I place it in the same rank with quinine and arsenic in the treatment of what are termed the purely nervous affections. It is generally recommended in books to begin with ten grains;—in my hands a much smaller dose has been attended with the best effects in numerous cases. But a great deal depends upon the purity of the drug. I lately succeeded with musk in a case of intermittent squint, which successively resisted quinine, arsenic, prussic acid, and iron.

A married lady, who always when pregnant became the subject of epilepsy, but had no fits under other circumstances, consulted me in her case: I tried every remedy I could think of without any advantage whatever; I then gave her musk, which at once stopped the fits. The dose in this case was four grains.

We have constant disputes whether a particular remedy be stimulant or sedative. Opium, musk, and prussic acid, have by turns become the subject of discussion. One theorist will take one side, another another, and each will bring you facts of equal cogency. Both are right, and both are wrong. To reconcile this seeming paradox, we have only to observe that all remedies are either stimulant or sedative according to the dose and the constitution of the patient.

Strychnia can both interrupt and produce fever. In an experiment upon a horse suffering from "lockjaw," a watery solution of nux vomica—the well-known source of the strychnia—produced, when injected into the veins, a shivering fit of some duration. I have, nevertheless, found the sulphate of strychnia of great service in obstinate agues, and in many chronic diseases in which chilliness, vertigo, and hallucination or phantasy were symptoms. In the case of a female affected with nervous blindness, for whom I successfully prescribed sulphate of strychnia, the remedy deprived her, for about an hour, of the use of her limbs. The recovery of her sight, under its exhibition, amply compensated for this temporary accident. I have found it confuse the vision in a similar manner when prescribed for muscular palsies. In the treatment of epilepsy and many other spasmodic affections, this substance may be advantageously combined with the sulphate of quinine. I have, notwithstanding this, on several occasions, been obliged to intermit its use, from the pains of which the patients complained while taking it;—and this led me to make trial of the remedy in rheu-

matism, which, in some instances, it cured.

Silver.—A consideration of the occasional beneficial influence of Nitrate of Silver in epilepsy, led me to try its effects in other disorders of the spasmodic kind, such as asthma, cramp, &c., and I am glad to have it in my power to bear testimony to its very great value in all of these affections. It is a powerful Chrono-thermal medicine—and like every medicine of this class, it can produce the diseases it can cure.

We have seen that tremor, spasm, palsy, differ but in degree. In all these disorders, silver may be advantageously substituted for bark, prussic acid, &c. While engaged in prosecuting my researches upon the merits and demerits of silver, I found it to be one of the most powerful diuretics in the Materia Medica; a circumstance not altogether unobserved by the older authors, particularly Boerhaave, who was accustomed to prescribe it with nitre in dropsy. It has, nevertheless, the power to suspend the urinary secretion. There is an affection to which young women are remarkably subject—a periodic pain of the side—or *stitch*. This disorder has been maltreated under a variety of names, according to the notions entertained by attending practitioners, as to its origin and nature. If practitioners would only take the trouble to ask the patient whether the affected side be colder or hotter than natural, I do not think they would be so forward, as they usually are, to order leeches and cupping-glasses. In ninety cases out of a hundred, the sufferer will tell you that that side is always chilly! This at least might convince them Inflammation is not the "head and front of offending." Such pain is the result of spasm of one or more of the intercostal muscles—which pain, when the patient is told to inspire, will assuredly increase. Beware of adding to it by bloodletting! In numerous cases, it will yield to half-grain doses of nitrate of silver—failing which, prussic acid, quinine, or arsenic, may be successively tried; and to one or other of these, it will prove, for the most part, amenable. In pain of stomach after eating—also a disease of the spasmodic kind—I have found silver particularly valuable. In all varieties of cough and catarrh, I have derived advantage from its employment; and I am sure it has, in my hands, contributed to the cure of indubitable phthisis. Let it be at the same time remembered that I do not exclusively rely upon this medicine in any one form of disease;—for, unless it be sulphur for *psora*, I do not know a specific in physic!

There is a disorder to which aged individuals and persons who have suffered much from mental anxiety are liable—a disposition to *faint* and *fall*—often mistaken, and fatally mistreated, under the name of "tendency to apoplexy." The employment of silver in this affection has, in my practice, been very generally successful. I have found it also decidedly advantageous in vertigo, and in many cases of mental confusion.

Nitrate of silver has a great influence over the spine and spinal nerves; for patients sometimes complain of pains like lumbago, sciatica, and rheumatism while taking it. I have occasionally known it produce shivering and fainty sensations, but these inconveniences were merely temporary, going off upon the discontinuance of the medicine. It has cured them all when procured by other causes. You are aware that blueness of skin is an occasional effect of nitrate of silver; and I must here explain to you the reason. Many of you have seen, doubtless, the pictures produced by *light* on paper saturated with nitrate of silver. Before the nitrate of silver could turn the human face blue, the skin, as in the case of the paper employed in that process, must be completely saturated with the preparation—for how otherwise could the light affect the face in that manner. Though I have myself prescribed nitrate of silver thousands of times, I never witnessed the slightest tinge from its use—nor would any other practitioner have to complain of it in this respect, but such as had employed it in too large doses, or too continuously. Who, then, would reject a valuable remedy, because its abuse has produced, in rare instances, a peculiar color of skin—seeing that every remedy, if improperly applied, may occasion the far greater calamity of death itself?

Copper, like silver, is now seldom used but in epilepsy. Fordyce, nevertheless, thought so highly of it as a remedy for ague, that he ranked it with the Peruvian bark. Boerhaave, Brown, and others, esteemed it for its diuretic power; and accordingly they prescribed it in dropsy. In the same disease, and in asthma, I have had reason to speak well of it, and I can also bear testimony to its salutary influence in chronic dysentery—a form of disease so frequent in the East Indies, that while serving there, I had many opportunities of testing Dr. Elliotson's favorable opinion of its value. That it can produce all these disorders is equally true: for where it has been taken in poisonous doses, "it excites," according to Parr, "a pain in the stomach, and griping in the bowels, tenesmus, ulceration, bloody stools, difficult breathing, and contraction of the limbs." A universal or partial shiver will be found to precede or accompany all these symptoms. Copper was a favorite *febrifuge* with the older practitioners.

Iron is a very old remedy for ague—perhaps the oldest. Stahl particularly dilates upon its virtues in this affection. Much of the efficacy of a medicine depends upon the constitution of the season and climate—much upon the constitution of the patient. This metal, like every other remedy, has consequently had its supporters and detractors in every form of disease. It is at present, one of the principal remedies for Hysteria, and other female disorders—disorders which we have already shown are mere variations of remittent fever. The water in which hot iron had been qnenched used to be prescribed by the ancient physicians as a bath for gout and palsy. In skin diseases and cancer, ricketts, epilepsy, urethral stricture, &c., iron has been vaunted by numerous modern practitioners. The ancients recommended it in diarrhœa, dysentery, dropsy, hectic, vertigo, and headache. Now, in all these affections, it has served me much like other powers—ameliorating or aggravating the condition of the patient, according to peculiarity of constitution. Some pseudo-scientific physicians have amused themselves with witticisms at my expense, on the subject of iron. Finding it in some of my prescriptions for Phthisis, they have accused me of mistaking this disease for dyspepsia. How long will men deceive themselves with such puerile absurdity? When will they learn that the human body. in disease, as well as in health, is a totality,—not a thing to be mapped into parts and portions, like a field of rice or corn! Let them take a lesson from St. Paul, who, in his first epistle to the Corinthians, has these remarkable words: — "And whether one member suffer, all the members suffer with it: or one member be honored, all the members rejoice with it." With

Zinc and Bismuth I have occasionally succeeded in prolonging the remission in many cases of disease, where the other principal chrono-thermal medicines had been ineffectually tried. Generally speaking, however, they are less to be relied upon for this purpose, than those I have had so frequent occasion to mention in the course of these lectures. The successful employment of

Arsenic by the natives of India, first, I believe, induced European practitioners to try its effects in ague, and also in diseases of the skin. The happy effects of this medicine were found not to be confined to these disorders. Not only has its judicious administration been attended with success in epilepsy, and numerous other forms of convulsive disorder, but it has been advantageousfy employed in the treatment of structural change. Like every other remedy, arsenic has its advantages and disadvantages. Enquire of miners, exposed to the fumes of this metal, and you will find that fever, tremor, spasm, palsy and sores, compose almost the sum-total of their sufferings. In the Edinburgh Medical and Surgical Journal there is a relation of five cases of poisoning by arsenic. Among the symptoms mentioned by the narrator, Mr. Marshall, were vomiting, pain, and burning of the stomach thirst, crural and abdominal spasms, purgings, headache, dimness of sight, intolerance of light, palpitation, chills and flushes, epilepsy; all of which proceeding from other causes, I have successfully treated by arsenic. The first case of epilepsy in which I ever derived benefit from any remedy, was cured by this metal; the disease was principally brought on by hard drinking, and the fit came on at a particular hour, every alternate night. Now it is worthy of remark, that after an attempt at suicide by arsenic, detailed by Dr. Roget, periodic epilepsy was among the effects produced. The subject of it, a girl of nineteen, had also chills and heats, which if you please, you may call Intermittent or Remittent Fever, or any-thing else you can fancy—for it is not my custom to quarrel about names!

As a remedy for skin disease, I have every reason to speak highly of arsenic, even when complicated with much structural change. Some cases in which it had very great effect, I will detail to you. The subjects of them were sepoys, or Indian soldiers who had suffered in the Rangoon war, from climate, defective food, and the usual privations of men in the field. These patients were under my care for a fortnight only; and to that period the treatment refers. All of them, be it remembered, had had the Fever.

Case 1.—Jan Khan, havildar, (Native Sergeant,) had diseased thickening of the skin of the legs and arms. His nose was enormously enlarged, and his whole appearance unhealthy. He ate and slept badly, and his tongue was foul and clouded. After the operation of an emetic, the liquor arsenicalis was administered in six drops thrice a-day. At the end of a fortnight, the alteration in his general appearance was wonderful. The nose had then become nearly of the natural size, and the disease of the skin had gradually lessened. He then slept and ate well, and expressed himself much pleased with the improvement he had received from his medicine.

Case 2.—Daud Khan, sepoy, had pains of the bones and joints, white patches all over his skin, and an irritable sore of the scrotum, from which a fungus, about the size of a chesnut, sprung up. He complained also of a burning sensation in his feet. When I

first saw him, he was so weak he could not rise from the floor without assistance, and his countenance indicated extreme wretchedness and debility. Having detached the fungus with a pair of scissors, the lunar caustic was applied, and arsenic administered, as in the previous case. In a week, there was great amendment of the sore. The patient since then, rapidly gained ground; of the pains of the bones he no longer complained, and the eruptions on the skin gradually disappeared; the ulcer at the same time closed, and I expected he would soon be fit for duty.

Case 3.—Setarrum, sepoy, had large sores of the leg, sloughy, ill conditioned, and spreading in different directions. He had also cuticular eruptions, like the last mentioned patient; and his appearance and strength, though not so wretched, were yet sufficiently miserable. Pure nitric acid was applied to the whole surface of the sores, and a poultice ordered. The arsenic was given as above. On the separation of the dead matter, the leg was supported by Baynton's bandage. The sore gradually healed—the eruptions disappeared—and the patient regained complete health and strength.

Case 4.—Subryah, sepoy, had had his leg thrice amputated, the last time in the middle of the thigh, but the bone had been left with only a covering of skin. The stump was in an ulcerated state when I first saw him—and the probe, upon being passed through one of the sores, found the bone carious, (abraded) and denuded as far as it could reach. The patient's health was altogether wrong, not one function being properly performed. It was proposed to amputate at the hip joint, as it was not believed that any other treatment could do good. To this step, however, he would not submit. A trial was given to arsenic, and the sores, beyond expectation, at the end of a fortnight had nearly healed. The patient then slept and ate well, and looked comparatively strong and healthy.

Case 5.—Vencatasawmy, sepoy, had disease of the skin, and an ill-looking sore over the sternum, (breast bone,) which bone was perfectly carious,—the probe could be passed through it to the depth of three inches in the direction of the mediastinum. The patient was weak and irritable, and could neither eat nor sleep; his pulse was rapid and small, and his appearance altogether miserable. Arsenic was resorted to as before The ring worm, under its use, disappeared—the sore began to look clean—the probe, when he went from my hands, only passed to the depth of an inch, and the patient's health was rapidly improving.

These cases were intrusted to my care by Dr. Gibb, of the Madras Medical Staff, while he himself was on "sick leave," and were afterwards reported by him to the Medical Board of that Presidency.

Do I now require to tell you the principle upon which arsenic proved so efficacious in the treatment of these various structural changes? It acted simply by its power of controlling Remittent Fever, under a chronic form, of which these unfortunate sepoys were all suffering—the structural changes being mere features or developements of the general derangement.

Gentlemen, we have now established—indisputably established—even by the cases of the schoolmen themselves, that Fear, or any other given passion,—Bark, or any other given chrono-thermal medicine, has each cured a host of maladies, which the authors of nosological systems not only put down as separate and distinct disorders, but to which the profession usually ascribe a difference of cause and nature;—some, according to their views, being diseases of debility,—some, nervous—some, inflammatory. Now, connecting this with the fact, that the subjects of all these apparently different ailments have Fits and Intermissions, and have each a greater or less number of the symptoms or shades of symptom constituting the particular type of disorder, so well known to the vulgar by the term Ague; for which the same vulgar are aware, there are no powers so generally applicable, as Bark and the passion Fear; to what other conclusion can an unprejudiced person come, than that all disorders are variations of this one type—that, abstractedly speaking, there is but One Disease! If this then be true—and its truth may be easily tested in every hospital in Europe—am I not justified in believing that the notions (for I will not call them principles) which have hitherto guided or rather misguided physicians in their treatment of disease, are a mere romance of the schools; that their views of its causes have, for the most part, been as erroneous as their modes of cure are defective; and their nomenclature and narrations throughout, little better than an unmeaning jargon!

Gentlemen, I shall conclude these Lectures with a brief summary of the doctrines which have occupied us during the course. Their importance to the human race, if true, cannot for a moment be doubted;—if proved to be false, I shall be the first to acknowledge my error; but, as I said in the outset, I will only appeal to results—to nature. I have proved, however, I hope to the satisfaction of most of you, that

1. The phenomena of perfect health consist in a regular series of alternate motions,

or events, each embracing a special period of time.

2. Disease, under all its modifications, is in the first place a simple exaggeration or diminution of the amount of the same motions or events, and being universally alternative with a period of comparative health, strictly speaking, resolves itself into Fever, —remittent or intermittent, chronic or acute. Every kind of structural disorganization, from Tooth Decay, to Pulmonary Consumption, and that decomposition of the knee-joint, familiarly known as White Swelling, being merely "developments" in its course; —Tooth Consumption,—Lung Consumption, —Knee Consumption

3. The tendency to disorganization usually denominated acute or inflammatory, differs from the chronic or scrofulous in the mere amount of motion and temperature;— the former being more remarkably characterized by excess of both, consequently exhibits a more rapid progress to decomposition or cure; while the latter approaches its respective terminations by more subdued, and therefore slower and less obvious alternations of the same action and temperature. In what does consumption of a tooth differ from consumption of the lungs, except in the difference of tissue involved, and the degree of danger to life, arising out of the nature of the respective offices of each.

Disease, thus simplified, will be found to be amenable to a principle of treatment equally simple. Partaking, throughout all its modifications, of the nature of Ague, it will be best met by a practice in accordance with the proper principle of treatment of that distemper. When the doctriue of the Concoction of Humours held its baneful sway over the mind of the physician, it was considered the greatest of medical errors to repel paroxysm—each fit being supposed to be a friendly effort of nature, for the expulsion of a peccant or morbid humor from the body. Like the popular error of our own day, so prevalent in regard to "the Gout," it was deemed to be a salutary trial of the constitution. An ague in spring was said to be good for a king! That monarchs occasionally became its victims at this season, had no particular share in the revolution which has since taken place in medical opinion. So late as the time of Boerhave, a physician asserted, that if he could produce a fever as easily as he could cure it, he should be well satisfied with his own skill! The consequence of such notions was, that the practitioner exerted his utmost to increase the heat of the body during the paroxysm,— but the fearful mortality attending the practice had no other effect upon the mass of the profession, than to make them redouble their exertions in the discovery of means of increasing this heat, that they might thereby assist the unknown process which morbid matter was supposed to undergo! One hundred years have scarcely elapsed since the fever patient was wrapped in blankets, his chamber heated by large fires, and door, window, and bed-curtain closed upon him with the most scrupulous attention. The few that escaped this terrible ordeal, were said to be cured—and these cures, like ignes fatui, only served to delude and blind the practitioner to the awful mortality which followed the practice.

Like the present treatment of the symptoms still absurdly called Syphillis, the practice proved infinitely more destructive to life than the disease itself—but, so far from opening men's eyes, the seniors of the profession, when the invaluable Bark was first introduced to their notice, opposed it with a violence and a virulence only since paralleled by the resistance offered to the introduction of the variolous and vaccine inoculations. To bring forward any sweeping or useful measure in Medicine. requires a moral courage and perseverance that fall to the lot of few. The man who wishes to gain a ready notoriety, has only to puff off some inert or mystical mode of treatment, and his success is certain. He must beware of coming before the public with a remedy to which the stigma of poison can be attached. Does not the quack constantly boast of the absolute safety of his remedy!—see with what pertinacity he contrasts his vegetable medicine with the words mineral poison, which last he uses for a bugbear, as if the vegetable world was all for a blessing, and the mineral all for a bane; and the wonderful part of this is, that it answers admirably, even with what are termed the educated public—if those can be really educated who would swallow opium and hemlock in any quantity because they are vegetables, and who appear not to know that table-salt is a mineral—that coal or carbon is a mineral—that iron and lime are minerals, and that all of these mineral substances actually enter more or less largely into the economy of their own living frames! To sum up the whole, every vegetable substance is the product of the earth; and if there be truth in scripture—if there be a statement in the sacred writings more deserving of the attention of the physician than another, it is that contained in the 38th chapter of the Book of Ecclesiasticus, namely, that "The Lord hath created medicines out of the earth, and he that is wise will not abhor them!"—Can the man be a Christian

who, after this, would dare to rave against mineral medicines?

As now practised in England, Medicine is little better than a copy of the exploded navigation of the ancients. Taking his bearings, less by the observations of the fixed stars, than by every little eminence and prominent locality, the ancient mariner, cautiously if not timidly, crept along shore. With the unerring compass for his guide, the seaman now steers his bark boldly upon the boundless ocean. Despising the localism that formerly guided his sail, he now completes his voyage to the distant port, in as many days as it formerly occupied him weeks or months. Keeping in view the principles here laid down, the physician, may in like manner, with a few rare exceptions, entirely dispense with the common anatomical landmarks of his art—if he be not startled with the novelty of the light by which we have endeavored to dispel the darkness that has hitherto clouded the field of medicine. Taking corporeal unity and totality for his rudder and compass—the brain and nerves for the ocean and seas on which he is to act—temperature and remittency for his tide and season; constitution and habit for the rule by which he must occasionally change his tack; he may now rapidly accomplish ends which, by groping among the intricacies of nomenclature or by a vulgar attention to mere localities, he can only imperfectly attain by the reiteration of long and pafnful processes; he may thus, with ease, obviate difficulties which he previously believed to be insurmountable. Let him not question whether or not the adoption of this will best serve his own interest. As physic is for the public, not the public for physic, he may rely with certainty that notwithstanding the present over-crowded state of the profession, the supply of medical aid will sooner or later, adjust itself to its own, as well as to the general weal.

It was one of the boasts of the eccentric Radcliffe, that he could write the practice of physic on half a sheet of paper: the whole might be comprised in half a line—attention to temperature! This, you may be sure, was Radcliffe's chief secret—for he was one of the earliest physicians who first introduced what is called the cooling system in fever. When the Duke of Beaufort was taken ill of the small-pox, "the doctor," says Pottis, "was sent for, and found his grace's windows shut up in such a manner, by the old lady duchess, his grandmother's order, that not a breath of air could come into the room, which almost deprived the duke of the very means of respiration. This method had been observed by the physicians (!) in her grace's youthful days, and this she was resolved to abide by, as the most proper in this conjuncture, being fearful that her grandson might otherwise catch cold, and, by means of it, lose a life that was so precious to her and the whole nation. She had also taken a resolution to give her attendance upon the duke in person during his sickness, and was in the most violent consternation when Radcliffe at his first visit ordered the curtains of the bed to be drawn open, and the light to be let in, as usual, into his bedroom. "How," said the duchess, "have you a mind to kill my grandson?—Is this the tenderness and affection you have always expressed for his person—'tis most certain his grandfather and I were used after another manner, nor shall he be treated otherwise than we were, since we recovered, [escaped, truly!] and lived to a great age without any such dangerous experiments" "All this may be," replied the doctor, with his wonted plainness and sincerity, "but I must be free with your grace, and tell you, that unless you will give me your word that you'll instantly go home to Chelsea, and leave the duke wholly to my care, I shall not stir one foot for him: which, if you will do, without intermeddling with your unnecessary advice, my life for his, that he never miscarries, but will be at liberty to pay you a visit in a month's time." When at last, with abundance of difficulty, that great lady was persuaded to acquiesce and give way to the entreaties of the duke and other noble relations, and had the satisfaction to see her grandson, in the time limited, restored to perfect health, she had such an implicit belief of the doctor's skill afterwards, that though she was in the eighty-fifth year of her age at that very time, she declared it was her opinion that she should never die while he lived, it being in his power to give length to her days by his never-failing medicines."

Well, Gentlemen, the proper medical treatment of all diseases comes, at last, to attention to temperature, and to nothing more. What is the proper practice in Intermittent Fever? To apply warmth, or administer cordials in the cold stage; in the hot to reduce the amount of temperature by cold affusion and fresh air; or, for the same purpose, to exhibit according to circumstances, an emetic, a purgative, or both in combination. With quinine, arsenic, opium, &c., the interval of comparative health—the period of medium temperature, may be prolonged to an indefinite period, and in that manner may health become established in all diseases—whether, from some special local developement, the disorder be denominated mania, epilepsy, croup, cynanche, the

gout, the influenza! In the early stages of disease, to arrest the fever is, in most instances, sufficient for the reduction of every kind of local developement. A few rare cases excepted, it is only when the disorder has been of long standing and habitual, that the physician will be compelled to call to his aid the various local measures, which have a relation to the greater or less amount of the temperature of particular parts.

The Unity of Disease was first promulgated by Hippocrates, and for centuries it was the ancient belief. In modern times it found an advocate in the American physician Rush—but except in this instance of unity, betwixt the respective doctrines of both authors and my doctrine of disease there is not a single feature in common For while the first, from his observation of the resemblance of disorders one to another, inferred that one imaginary humour must be the cause of all complaints—the doctrine of the second was that all disorders consisted in one kind of excitement. The principle of Hippocrates led him to purge and sweat;—that of Rush to bleed, leech, and starve. In practice and in theory I am equally opposed to both. Other physicians doubtless have held the idea of a unity of disease, but neither in the true theory of the nature of morbid action, nor in the principle of the practical application of medical resources have I as yet found the chron thermal system anticipated. The opponents of my doctrines, and those who embrace them by stealth, have alike searched the writings of the ancients in vain to discover a similarity to them in either respect If it be urged against the author of the chrono-thermal system of medicine, that he has availed himself of facts collected by others—and that therefore, all is not his, which his system contains—I answer, Facts when disjointed are the mere bricks or materials with which the builders of all systems must work. And to deny to any man the merit of being the architect of a great Edifice of Truth on that account, would be just as reasonable as to ascribe the merit of St. Paul's Cathedral to the donkeys and other beasts of burden Sir Christopher Wren necessarily employed in fetching the marble and mortar composing it. "Merely to collect facts is an easy and mindless task, that any common being can perform; it requires eyes and hands, and almost dispenses with a brain; it is the work of a toiling wretch, who, like the miser, is incapable of using what he possesses. Mere facts lie around even the savage, but he knows not what he sees—and such, precisely such, is the case with the mere learners of the names of things, the collectors of little facts, the undiscriminating triflers, who think they are cultivating the sciences."—[*Alexander Walker*] It is of these, nevertheless, that our medical clubs and coteries, are chiefly composed, and it is with the conglomerating effusions of these that the editors of the medical press chiefly contrive to keep the daylight of medical truth from the eyes of the student. "Microscopial observations,"—straw splittings, and other little facts you have from their hands in abundance—but facts properly arranged and systemized into a whole or great fact; not only do you never find in their writings—but when you present such great facts to their eyes, they either comprehend them not, or if they do so, they immediately endeavor to steal or stifle the discovery. Out upon such contemptible creatures, fit only to

> Suckle fools, and chronicle small beer!

What was the first reception of the chrono-thermal system by medical men? I do not speak of its reception by the *canaille* of the profession—the twaddling intriguing sycophants of country towns—I mean its reception by the medical *aristocracy*, as the Court doctors call themselves Immediately after its publication, one of these court gentry (James Johnson) misrepresented, ridiculed, and denied it—three years after that another court physician (Holland) attempted, as you have seen, by a side-wind to steal it—three years more passed away and a third court doctor (Forbes) by those meanest arts, misstatement and misquotation, did his little endeavor to stifle it. If such was the candid and gentleman-like conduct of the *town* doctors, what had the chrono-thermal system of medicine to expect at the hands of the physic-selling profession in the country? What could these intriguing little gossips do but follow in the wake of their town masters, the court physicians? Now they ridiculed it—now they denied it—but all the while they had no hesitation to practice it by stealth, some in one, some in another of its fragments. This moment it was partially true, but not new;—the next, the newness was admitted, the truth denied. But, Gentlemen, up to 1836, when I first published the heads of that system, the profession to a man were utterly ignorant of the very nature of disease. Its periodicity in the case of ague, and in a few other disorders, they knew—the periodicity of all animal movement, whether in health or disease, they knew nothing at all about—and of the mode in which remedies act they were just as ignorant As to blood-letting, which the great majority of them now admit they did carry too far, the

exclusion of it from the chrono-thermal system, so far from being its principal feature, as some of them pretend, is only a fragmental part that of necessity followed its discovery. I have never taken credit for being the *first* opponent of the lancet. But one thing in regard to this matter I do claim credit for—I claim credit for being the first man who, by a strong array of facts, and some force of reasoning, produced an impression on the public that all the facts and all the arguments of former opponents of the lancet never before produced on the Profession; namely, an impression of the dangerous nature of the remedy; and whether they like to be told of it or not, I claim to have either convinced or compelled the profession materially to alter their practice.* In all the late medical reviews of my writings, the subject of blood-letting, which afforded so much mirth to my early critics, has either been kept entirely in the back-ground, or, if noticed at all, my strictures on it are declared to be a mere echo of the present opinions of the profession!—but whether they be so or not, the astute editors of these publications determine that no merit attaches to me for my endeavors to put it down, inasmuch as it had been equally opposed and decried by somebody of some place or another in Greece, who lived before the time of the Messiah! Gentlemen, to say blood-letting is a bad remedy is one thing; to *prove* it to be bad is another; of force the world to believe and act upon your arguments against it, in the teeth of the opinion of the world, is a still greater achievement. That merit I distinctly claim. The silence and admissions of the medical press on that head equally attest the fact; while the recent bare-faced attempt of Dr. Laycock, under the disguised (?) name of "Vital Periodicity," to purloin my doctrine of the *Periodic* movement of all *Vitality*, whether in health or disease, is as much a compliment to the genius of its real discoverer as it is a proof of the worth of the discovery. On that discovery is based the whole chrono-thermal system of medicine.

Before concluding, I will just make a remark upon the subject of the doses of all medicines. Perceiving, as you must have done by this time, the utter impossibility of foretelling, in many cases, especially of chronic disease, the particular agent by which you are to obtain amelioration or cure,—and as in almost every case where an agent does not act favorably, it does the reverse—you must see the necessity of commencing your treatment with the smallest available doses of the more potent remedies; of feeling your way, in short, before you venture upon the doses prescribed by the schools Let me not, for a moment, be supposed to countenance the homœopathic nonsense.—The 12th part of a grain of calomel, for example, is a proper medicine to give to an infant; but such dose has no more relation to the millionth or decillionth part of a grain of the same substance, then the twelfth part of a bottle of wine—one glass—has to a drop of that liquid. The one has power to influence the whole body;—the other is utterly inappreciable beyond the taste it may impart to the tongue, the only organ it can, by any possibility, even momentarily influence.—Gentlemen, pity the Homœopathists!—shun the Pathologists and Bloodsuckers—and follow only that best guide of the physician—Nature! not in the confined sense of our mortal economy, but in every department of her works.—One great principle binds them together—God, in his Unity, prevades them all!

(For the Dissector.)

TRACTS ON CONSUMPTION.

NUMBER THREE.

On the Cause and Prevention of Tubercular Phthisis.

By J—— G——, M D.

The term Phthisis, being that of Hippocrates, imports the high antiquity of a certain disease, and the interpretation given of it by Aretaeus shows that it is the same which is so alarmingly frequent and fatal at the present day, and characterised as Consumption. The aid which the study of the origin and cause obviously contributes to the accurate knowledge of all the departments of disease must have made an enquiry into this subject coeval with the first observations of Consumption. Moral and physical evils coexist with and exert an agency in producing, per-

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* Even upon the subject of *Apoplexy*, it is amusing to see the manner in which those who formerly advocated the lancet in that disease now end avor to get out of their difficulty. Sir C. Bell, Dr. Clutterbuck, Dr Marshall Hall, Mr. Wardrop, &c., in *recent* remarks upon the treatment of apoplexy give so many doubts, *cautions*, and *reservations* as all but to amount to a complete prohibition of the lancet in this disease—not one of them, however, having the boldness to oppose it entirely in direct words, or virtue enough to acknowledge to whom he owes the new light that has so lately come upon him in this matter.—"Awful is the duel between Man and the Age in which he lives!"—*Bulwer.*

haps, every form of disease, and this connexion being obvious to the senses and the understanding they early formed a branch of Medical Science, that includes many of its essential principles. The importance of this connexion is perceived to be such that it may be said, in proportion as the medical practitioner is acquainted with the just relations between its various parts, so will he be enabled to prevent the existence, or to treat with success the diseases which may come under his care. The species into which Hippocrates divided Consumption, embracing as they do the varieties of good classifications of the present day, show that he had diligently endeavored to investigate it; and his book *De Aribus* affords evidence that the physical evil whence it springs had engaged his serious attention. Apparent as it then is, that the cause of consumption did not escape the enquiries of the earliest cultivator of medicine, it still does not appear that he, any more than the countless devotees to medical science who have followed in his steps, discovered any thing in relation to its true nature.

Investigations into the origin and nature of Phthisis Pulmonalis have given authority to the opinion that two things are necessary to its production—a cause which acts on the lungs, and a disposition in the lungs to be acted upon; or in the language of medical men, a predisposing and an exciting cause. The first of these may be regarded as the cause which induces the morbid state of the constitution, giving the name and character of tubercular diathesis; and the second that which determines the local deposition of tuberculous matter. The difference in the operation of the two causes may be illustrated by considering that a person little exposed to the exciting cause may have the constitutional affection long before any local disease becomes manifest; while no degree of exposure to exciting causes will determine the local disease when the constitutional affection does not exist. Of the predisposing causes the most prominent is considered a certain feebleness of constitution, the result of hereditary predisposition to tuberculous formations. Indeed, the great importance given to hereditary influences in the causation of the disease, and the small share which it is believed external agents possess, when hereditary taint is not also present, is the striking peculiarity, in the views of consumption entertained by medical men of the present day * Besides this cause, several others are added, as interference with the due nutrition of the body, from deficient or improper diet, absence of sufficient exercise to insure the proper growth and development of the body, or its check from the exhausting and debilitating effects of excessive labor; an imperfectly protected state of the body from inadequate clothing; inattention to cleanliness; gluttony and the abuse of spirituous liquors; and intense affections of the mind. Viewed as predisposing causes, this enumeration of evils is as applicable to any other disease as consumption; and, at any rate, they have been fully and elaborately treated of, and with all the importance due to them. in monograph treatises on the disease. As my object is not to repeat what has been said on Consumption, but to endeavor to find out what ought to be said, I shall dismiss this subject with the remarks, that the terms predisposing and exciting have been found useful in facilitating an understanding of the disease; but if we can determine the true cause of the effect—discover that efficient source of the disease which, when present may be and is followed by it, and which being absent it cannot exist—these terms may, without disadvantage, be banished from medicine.

* On this subject, so painful to the feelings of parents, it is highly probable physicians have generalized too largely. Observation shows that while no temperament, complexion, or frame of body confers immunity from Consumption; and it is frequently observed to originate in the healthy offspring of healthy parents, the infancy and youth of the children of tuberculous parents are very often characterized by as full a development of the organs and general system, and as active a state of the functions, as in those who are considered free from the supposed taint; while, equally with them, they may die in old age without the supervention of the disease. It must be admitted that the impure nutriment which the fœtus derives from the abnormal state of the blood, and the infant, from the milk of a tuberculous mother, may reasonably be regarded as the sources of the disease when it exists at these early periods of life. But as tubercular consumption is far the most frequently developed after puberty, and after the changes of constitution have shown that the effects of diseased fœtal or infantile nutriment have for a long time ceased to act, and been superseded, we must look for its cause in some more general, constant and independent source. It is possible to conceive that an impulse to the disease may be present in the materials furnished by one or both parents at a fecundating copulation; but it is impossible to understand how it can remain latent for an indefinite number of years, or, as believed, for one or more generations. The discovery and application of a *causa vera* will obviate the necessity of solving these difficulties.

This grand cause of Consumption is to be looked for in a vitiation of the atmosphere. The sensible effects produced by this element show that it has a powerful and enduring influence over the terrestrial creation. It is recognised as the chief agent in producing; and as the grand recipient of a large proportion of nature's operations. It is the perpetually working laboratory, in which spontaneous distillation, sublimation, composition and decomposition pursue their eternally recurring revolutions. In addition to the well known chemical elements of its composition, its contents are the mineral vapors from the earth, the products of combustion and respiration and of the volatile exuviæ—whether gaseous or fluid—of animal and vegetable decomposition. Besides these vaporous and gaseous productions, we now know that the atmosphere is freighted with countless multitudes of insect ovula and vegetable semina, which, on meeting with a proper nidus, are hatched and developed into organised matter. This is clear to the naturalist, when he observes that stagnant water, though purified by distillation and confined in a marble basin, will, in a short time, become loaded on its surface or about its sides with various species of conferras, while the interior will be peopled with microscopic animalcules. To this thickly inhabited state of the atmosphere has been satisfactorily traced the cause of the rapid and wonderful effects of what, in common language, is called a blight upon plantations and gardens; and of the appearance of lichens and mosses which, in a single night, will line the surface of floors and brick walls.*

Importance has been given to this subject by many physicians, and particularly the disciples of the Linnean School, having considered organic matters floating in the air, as the direct cause of nearly all the diseases to which both animals and vegetables are subject. More recently Hahnemann, in his organon, tells us that almost all chronic diseases are the result of a morbific animal miasm which he calls the psori or itch principle. According to Dr. Baron all tubercular disease, originates from vesicular worms, generated in minute serous cysts. This opinion has received a degree of support from the researches and assertions of Dupuy; who states that he has traced the conversion of the Cysts, containing these animals into collections of tuberculous matters. It is some further corroboration of these views, as applicable to consumption to find that animalcules can always be discerned in the Sputa of its victims, while vegetable organizations have been found connected with the matter effused into the textures in tuberculous constitutions.

Although the atmosphere acts with great energy upon the inorganic materials, and the microscopic productions of our planet, its influence over the two great visible classes of animal and vegetable life is more conspicuously discerned. To animal life it is observed to be more particularly indispensible; without it, respiration is impossible; all its other functions must cease, and death be inevitable. But this fluid so essential to vitality, "this most excellent canopy, this brave overhanging firmament, this majestic roof, fretted with golden fire," is the direct source of the greater position of "the ills that flesh is heir to." Whether organic or inorganic matters be this source of deterioration we may be unable to determine; but enlightened observation, in various parts of the earth, shows that human health cannot be maintained, without a certain degree of chemical purity in the elements of the atmosphere. From the reasons already mentioned, it is evident, the portion of its constituents essential to this purity rarely exists; and, though we do not well understand in what the impurities consist, or the principles on which they act, yet their influence in inducing, at least, those general diseases termed endemical and epidemical, is generally acknowledged.

Uncertain as we are as to the precise nature of the morbid changes of the respirable medium which induce disease, yet they have been always supposed to arise from one of two causes: "either some temporary peculiarity in the constitution of the atmosphere itself, or a mixture of adventitious deleterious matters with it" Illusive as the difference between these two causes has been to the researches of philosophers, it is of unquestionably great importance, as well as the determination as to which is the true one, because it involves the dearest interests of the human family. If diseases are dependent on the former, it is scarcely possible to conceive that they admit of control, while, if they are generated by the latter, they may be prevented by a simple application of human agency. But the subject in all its bearings is one of the most difficult to elucidate that can be presented by any science, not only on account of the impassable nature, or apparent variety of the causes themselves, but, also, because of the mysterious action which they exert on the living system. Its obscurity gives importance to the investigation, and, while it justifies the labor, requires that it should be examined in detail.

In the early ages of medicine, and before

* Good's Study of Medicine, vol. i., p. 197.

chemistry existed as a science, the general suffrage of physicians seemed to be in favor of the opinion that some undefined change in the properties of the air, independent of the mixture with any accidental impurities, gave rise to all endemical and epidemical diseases. And it is the general opinion, at this day, that certain states or vicissitudes of the atmosphere, particularly in its temperature or hydrometric condition, may produce sporadic ailments, if not some of general prevalence. Consumption in particular, has been considered not only dependent for its predisposition on a cold, damp and variable climate; but as in an especial manner determined by this cause to its local manifestation in the lungs. The direct and constant exposure of the lungs to this element, would naturally suggest it as the probable source of all their ailments. In corroboration of the apparent truth of this opinion, we find removal from such a climate, as above mentioned, to one which is warm, dry and more equable is well known to be productive of the most beneficial effects to phthisical invalids, where other therapeutic agents are of little avail. "If we take into account also the effect of the continual action a bland atmosphere on the extensive surface of the respiratory organs both as abating irritation of the lungs, and enabling them more effectually to produce those changes in the blood that are essential to health, we have an apparently satisfactory explanation of the results observed." And when, on the other hand, we observe a change from the latter to the former climate, is as frequently attended by a contrary state of the functions and of the circulation, with a deterioration of health, we can scarcely avoid attributing the evil consequences of consumption, to these states of the atmosphere. But it may be said, in modification of these views, that there is reason for believing that consumption is limited to no climate, and scarcely to any country. It is particularly prevalent over the temperate regions of Europe and Northern America, it extends over the isles of the oceans; pervades the northern tropics; and according to recent statistical reports exerts its most destructive influence in the West Indies.. If there is any portion of our earth exempt from the direful effects of this terrible disorder, it is the southern hemisphere; and certain facts render it very doubtful whether it prevails endemically, or in that common form of our division that affects the serous tissue, in any part of that region. The different magnetical or electrical condition of that hemisphere justifies the inference that a disease, which we shall show has a direct relation to this state of the earth cannot probably originate in it. This conjecture is sustained by reference to the medical reports of the British army, which show that at the cape of Good Hope, and in Australia, the mortality from this disease is smaller than in any part of the northern hemisphere, in which the subject has been examined with a view to determine this fact. In regard to this proof of the existence of the disease in the southern portion of the world, it must be considered that the estimate is taken from accounts illustrating its prevalence among strangers, and who, in all probability, brought with them the disposition to it. Other medical statistics assert that the disease does not originate in Peru, Quito, or Buenos Ayres. Our information respecting the influence which the different electrical states of the hemispheres exerts over tuberculous disease is too limited and imperfect to enable us to decide how far they are causes of, or furnish exemption from the disease. But the freedom of intercourse, which a long peace and the extension of commerce have been the means of producing, throughout the different parts of the world, has subjected all regions and climates to the acquaintance of accurate and intelligent observers; and it may be reasonably calculated that the data will soon be multiplied from which, upon comparison of one country with another, the real causes of disease may be ascertained. No subject is more worthy of full examination, or would, in all probability, be attended with more important results.

But since the discoveries of chemistry, and more particularly of hydrogen, and the other gases by Cavendish and his followers, the opinion is more probable that atmospheric heat, or moisture, acting alone or together, and even though alternating with cold, is not capable of producing an epidemic, an endemic, or, perhaps, any one of those forms of disease which are commonly ascribed to these causes. To effect such a result something must be superadded to the ordinary constitution of the atmosphere—it is necessary that there should be a morbid condition of the air we breathe, independent of either mere temperature or moisture. That alternations or fluctuations in these phenomena exercise a great influence in the development of diseases admits of no doubt; but alone they can only act as predisposing causes. Besides, observation and research as well as reasoning assure us that during the prevalence of both endemics and epidemics the atmosphere always receives some extraneous accessions, other than either heat or moisture. By taking this comprehensive view of the causes of disease, we act more in harmony with the true system of philosophizing, inasmuch as it refers to a distinct

and palpable relation between the effect and a cause, and by directing our attention to, enables us to approach nearer to the discovery of the nature of atmospheric deterioration.

Though no doubt can be entertained of the agency of atmospherical influences in the production of many diseases and particularly Consumption; yet the manner in which it acts is not easily proved. Whether the deteriorations act directly on the nervous system, or, as I have found reasons for supposing,* produce their effect primarily on the blood, and through it on the solids of the body, or whether they are all acted upon together and simultaneously, remains for further consideration and research It is certain that chemical analyses of the atmosphere, rarely, or never present it to our senses as formed simply of those gaseous elements considered essential to its composition. Acting upon every species of mineral, upon every kind and state of animal and vegetable bodies,—the receptacle of myriads of organized substances;—the air we breathe, comes to us loaded with various heterogeneous matters, which, though imperceptible to the analytic chemist, may be supposed to include every form and species of gaseous combination known to us, and others which have yet eluded the researches of the most patient investigators. These extraneous substances so far as known, are most generally compounds of carbon and hydrogen, sulphur and hydrogen, probably all the compounds of metals with hydrogen, selenium and hydrogen, cyanogen, or other compounds of carbon and nitrogen, ammonia, animalcules and microscopic vegetation. Some specific combination of these gaseous and organic products, possessing peculiar qualities, and imparting a peculiar vitiation to the air, is undoubtedly the cause of both endemical and epidemical diseases. The evidence of this appears in the similarity of soil, and general elements of climate necessary to the production of diseases, as well as in the analogy, or identity, all over the earth, of the several forms of disease referred to vitiation of the atmosphere for their origin. But as these combinations undergo constant decomposition, and form new compounds as soon as dissolved, even under the process of analization, it is impossible with our present knowledge, and may always be so to define the kinds or quantities of matters necessary to produce the variety of ailments dependent upon vitiation of the atmosphere Unsatisfactory as have been antecedent discoveries, or future may continue to be, it is still useful to be able to establish the position, that, from the contemporaneous existence of most diseases, with peculiar conditions of the atmosphere, they are undoubtedly connected with extraneous aerial absorptions.

But though atmospheric impurities are a very great, and the chief source of the diseases to which the human frame is liable; yet it is not by their direct action on any part of the system, that they produce their deleterious operation. No one of these gases, nor any combination of them administered artificially will produce an intermittent fever, the influenza, or consumption. It is true that effects somewhat similar have been observed to arise from the respiration of particular gases; but however analogous in appearance they cannot be considered identical; resembling diseases of particular names in many of their phenomena, but still so different as to be unlike both in nature and consequences. It is by the electrical states induced in the atmosphere by combination of gases, vapors and organized substances, too complex for human ingenuity to imitate; that the respiratory organs, and through them the blood, and through that fluid the energy of all parts of the system is affected, and the phenomena of disease become apparent. If we consider that the facts connected with animal life, accumulated by modern physiologists, point to and authorise the opinion that vitality is but an exalted electrical state, in which electricity as known to the experimental philosopher, galvanism, magnetism, chemistry, and the common physical laws of matter are subordinate and contributory, we shall not hesitate to recognize the probability, that the presence of an agent, partaking of the same character, and existing in undue quantities, must modify its action, and thus form the true and ultmate source of diseases.

The energy of electricity and its known influence over organized matter, whether animal or vegetable, must convince us that any deficiency or redundancy of it in the air we breathe cannot be long endured, especially by the feeble, without the most injurious consequences. When the constitution is enervated and possesses that character which is denominated the tubercular diathesis, all the parts of the economy partake of the debility, and any defect in what is essential to the due elaboration and perfection of the animal fluids, and to the energy of the nervous power, as of electricity, is felt with greater force, and is productive of much more injury than in sound health. A redundancy of the vivifying influence of electricity must favor the formation and development of morbid accumulations, like tuber-

*See Number 2, Page 22 of this Volume.

cles in the system; for it is rendered almost certain by a variety of facts that the proper performance of the functions in the human body requires a fixed quantity of this fluid. This has been proved by Dr. Wilson Philip and others in numerous experiments on animals, though it must be admitted, not so clearly, or to the same extent, as in its well marked effects on the growth and properties of plants. It has been distinctly observed that under its action the animal functions are discharged with increased vigor, particularly the circulation of the blood, and the cutaneous secretion. Observations such as these and many others of a similar description, which might be quoted, demonstrate very completely that the animal machine is sensibly affected by electricity; and there is nothing improbable in the conjecture that its varying states in the atmosphere is the cause of the salubrity or insalubrity of particular districts and seasons, the existence and character of epidemic and endemic diseases, and hence may be inferred, is the cause of all diseases.

Recent researches into the laws of electricity show that it is developed, and its quantity modified by every change in the form and composition of substances. The combustion of charcoal, dydrogen, alcohol, oil and other imflammables imparts positive electricity in abundance to the portion of air with which its products is mixed. The volatilization of metals, and even the evaporation of water, at least from substances susceptible of chemical change, are sources from which the atmosphere becomes charged with an excess of electricity. Indeed, the researches of Becquerel and others authorise the conclusion that electricity is evolved in all cases of chemical solution whether by liquids or acriform fluids; and it is even contended that variations of atmospheric temperature, and barometrical pressure develope it. When these are the ascertained facts arising from means so simple on a scale so limited, we may reasonably suppose that the changes of form and chemical composition which take place from the decomposition and volatilization of the immense variety of substances on which the atmosphere acts, or is the receptacle, must be productive of much more energetically electrical effects. In the northern hemisphere, and with an hydrometrical state of the atmosphere admitting of the use of our instruments, it always indicates positive electricity, and Mr. Daniel states that it has been ascertained its intensity is subject to regular variations. These variations, it is believed, are found to correspond with those periods of the day in which, from the action of the sun, the emanations from the earth arrive at their maximum and minimum at the atmospheric elevation in which the experiment is made. Experiments on this interesting branch of science must be multiplied before we can acquire data on which we can reason with absolute precision; and certainly no subject holds out a prospect of results that would be more gratifying to the physician, or more beneficial to mankind.

The fluctuations in intensity of this positive electrical state of the atmosphere, by acting on and modifying the vital electricity of the animal system, produce corresponding changes in it, and thus induce the immense variety and modification in individuals of those diseases which are considered dependent for their existence on atmospheric influence. Its long continued action must sooner or later affect the whole mass of the blood, and thus cause that cachectic state constituting the tubercular diathesis, from which springs the positive and expanded condition of the capillaries in the lungs or other weakened organs, and which, it has been shown is the proximate cause of tubercles. As different elements of soil, plants and animals exist in different climates and different parts of the world, so, no doubt, their decomposition and volatilization generate different electrical states of the atmosphere, but always maintaining a greater or less conformity with the local circumstances. Consumption is one of the most prominent of the diseases originating in and influenced by the atmosphere, is connected with and dependent upon an electro-positive state of that element.

This view of the cause of Consumption is strengthened by the known electrical condition of the atmosphere in some countries—as in England—in which it is peculiarly prevalent; by a rational consideration of many of its characteristics; and as has been referred to before, by the effects of remedies in subduing it.* To the comparatively negative, or at least, different electrical state of the air over marshy parts of a country, where intermittent and remittent fevers are frequent, we may reasonably attribute the less liability of their inhabitants to Consumption, as well as the advantages such situations possess over the air of mountains for consumptive invalids. And to some such operation we must look for an explanation of the singular and salutary effect excited by a hurricane at Barbadoes, in 1780, which produced such a change upon the air that (according to Sir Gilbert Blane) some who were laboring under incipient consumption were cured by it, while others, who had reached a more advanced stage, were deci-

* Number 2, page 22.

dedly relieved, and freed from many of their symptoms.

The view of the cause of consumption we have adopted, has before come within the scope of medical surmise; but the subject has been considered so intangible that however interesting as a scientific fact its existence may be, it has been deemed insusceptible of practical application. Though, in truth, no discovery in medicine, nor in nature could be of more value to the interests of humanity than to be able to identify the cause of consumption with a certain electrical state of the atmosphere, the suggestion of the possibility of such a connection has been dismissed as a fruitless conjecture. Opinions in this respect have, however, recently undergone a change. Improvements in the construction of electrical apparatus have furnished us with means of research sufficiently delicate to enable us to observe the variations in the electrical state of the atmosphere with as much accuracy as those which occur to its temperature and pressure; and they will no doubt, henceforth, be registered with as much diligence as those phenomena have heretofore been. But in examining the cause with a view to the prevention of consumption, it is fortunately of comparatively little importance for practical purposes, whether it consists in the forces of matter, or in matter itself—organic or inorganic—because, in the present state of our knowledge, we can only act upon matter. The removal of the cause of consumption, and consequently the means of preventing it are dependent upon our ability to render the air we breathe respirably pure; this condition being alike incompatible with the existence in it of noxious exhalations, and that electrical state which acts injuriously on the vital powers.

A review of the history of consumption induces, irresistibly, the mortifying conclusion that there is no disease over which medical art has exercised less power, that in fact all medical treatment, if not positively injurious, has been of no avail—and that all its reputed salutary effects have been imaginary or deceptive. Experience, the great test of the useful, has rendered the opinion general, that any control over it, exercised by the physician, has consisted more in abolishing pernicious practices than in ascertaining any positive methods of lessening its fatality. If there is an exception to this sweeping charge of the inutility of the physician, it consists in his power to correct that derangement of the digestive functions which sensibly modifies and perhaps is modified by the disease, and which, being the result of an undue indulgence of the appetites and passions, like the agency employed, is artificial, and the proper subject for human control. But though the beneficial effects of treatment on this principle, in lessening suffering, is undeniable, it has no tendency to cure the disease. If it is necessary that we should be able clearly to discern and to understand what it is, in every malady that must be removed or changed in order to restore health, how can we justly pretend to remedy consumption when its pathology is so unsatisfactory and unsettled that nothing can be conceived more contradictory than the various views that have been given to the world? Instead of an undoubted, well regulated, or even plausible theory of the true state of the body, on which we have been attempting to operate with our remedies, we have been left to the fallacious guidance of a multitude of unconvincing conjectures. Justly confident of the utility of their profession, as physicians generally are, and proud as many of them may be of their individual skill, all must acknowledge, that consumption has hitherto, mocked alike the scientific efforts of the enlightened physician, and the presumptuous labors of the empiric. The unmanageable symptoms of this disease, plunge the most learned and experienced physician, called upon to treat them, into doubt and despondency; while its universal termination in death, has, in this enquiring age, created in both the medical and non-medical public, a demand for some mode of managing it, radically different from those in practice.

This urgent want of a means by which the mortality from this dreadful malady may be diminished, has incited physicians to look to prevention as the most probable agent by which they can attain this object. Prevention of disease is, indeed, independent of relief from the suffering, which in a greater or less degree, accompanies every malady, of greater consequence to society than its cure. "That must be a decided improvement in the art of medicine which provides the means of preventing diseases;" and, we trust, the time will soon arrive when the attention of medical men will be turned as much to the former, as in all past time it has been directed to the latter. On the progress which may yet be expected in this, in connexion with the former line of enquiry comprised in this article, in both of which our success has been hitherto very limited, depend our chief hopes of the increasing usefulness and efficacy of the medical art in the treatment of consumption. The investigation and discovery of its cause will teach us the nature of the influence under which the vital properties of the fluids, and the vital actions of the solids of the body become liable to deviations from their natural and healthy state, and will suggest

the only principles on which a hope of cure can be based; while the application of the means of prevention may be made to intercept the diseased actions of which the body is susceptible in this disease.

Under the head of prevention, in systematic treatises on Consumption, arresting the causes of the disease is the avowed principle of action; but, in defining them. we find that the predisposing have been confounded with the *causa vera*, and even with exciting causes. Influenced by this error, writers have been profuse in their directions regarding the means and importance of securing athletic health to parents; of maintaining the health of the mother during pregnancy; of a proper regulation of the food, clothing and residence of infants; of suitable dress, exercise and education of youth, &c. All the minute attention and advice which have been directed to this subject, are not only useful to those predisposed to consumption, but acting upon them would undoubtedly produce a beneficial effect upon society at large. They are, however, better calculated to make a book than to prevent a single case of consumption. But we contend that as it may be considered an ascertained fact that consumption is directly dependent on a vitiated state of the atmosphere, therefore, it must be equally maintained, that by changing this state, *sublata causa tollitur effectus*. in that portion of atmosphere employed in supplying the respiratory necessities of man we must prevent its existence. Vast as the evil is, and wholly as it has heretofore been beyond the control of man there is, in this principle, an undoubted means of preventing consumption, the truth and practicability of which it will be the object of this portion of our communication to demonstrate.

As the only rational means of preventing maladies must be founded on some plan for preventing the generation of their cause, or of turning it aside, we propose to show how the cause of consumption may be rendered innocuous, and consequently how the disease itself may be anticipated and superceded. The discovery of the precise nature of this cause is essential to a perfect knowledge of the subject, though, perhaps, not indispensible to the successful application of our principle for obviating the disease. Although the process we propose to use for preventing consumption is also better adapted than any previous devise for enabling us to ascertain all the chemical properties of the atmosphere and through them its electrical state, and thence its cause, we have already shown that we cannot pretend to have determined them. Even if our invention be fully adequate to solve the subtle and recondite question, we have not yet had time or conveniences for making the requisite experiments. All the circumstances, at present known, connected with consumption, concur in establishing, while no one can be said to be in opposition to the view we have taken, that it is dependent upon an electro-positive state of the atmosphere; and thus it fulfils the fundamental condition of a theory, or in other words of a truth. But whether this electrical state is induced by one or more vaporous or gaseous solutions in the atmosphere, by organized substances floating in it or by the assemblage and mutual action of the whole, must still be classed among those arcana of nature, which will only reveal themselves to time and an adequate means of investigation. We know the terrible effects of this cause, and we know that, as in all similar phenomena, an accurate scrutiny of these effects must precede any safe reasoning or useful experiments on its nature.

To subvert the original cause of consumption it is only necessary to put forth an amount of industry and ingenuity in the construction of our habitations, and their adaptation to domestic comfort equal to that employed for the simple but indispensible purpose of warming them in cold climates. But instead of building for the purpose of counteracting the cold of winter almost exclusively in view, we must pay equal attention to our comfort in summer, and, by providing an adequate supply of pure air, make all subservient to the security of health. The ends to be attained by these great objects are embraced in our remedy. Let our houses, in every climate, be built with a thorough regard to insulation, and an exclusion of the external impure atmosphere with its excesses of temperature, and let a labor and expense like that for elevating the internal temperature, be incurred in lowering temperature, and freeing air from excessive moisture and extraneous exhalations, and thus rendering it respirably pure, and the occupants would incur little or no risk of consumption. By applying a process, which will be explained as we advance in our labors, an abundant supply of pure air, conjoined with the means of moderating temperature in summer and aiding in exalting it in winter, may be obtained—a process which, if at present overlooked, or from its simplicity deemed inadequate to effect the objects in view, will, we feel confident, sooner or later receive the suffrages of mankind.

The testimony in regard to Consumption abundantly shows that atmospheric contamination arising from extraneous impurities is the original, or at least, an indispensable, co-operating cause of the disease; and it

must be equally obvious that its purification is sufficient to prevent or put an end to the production of this cause, and it follows of course to the disease itself.

The means by which we propose to counteract the evils of an impure atmosphere, so as to prevent, or at least moderate, the liability to so terrible a disease as Consumption, consists essentially in subjecting the portion of atmosphere employed in respiration to mechanical condensation. Physical science teaches us that mechanical pressure is one of the best means of divesting air of condensible vapors. It is well known that equal volumes of air, whatever may be their respective densities, the temperature being the same, have equal capacities for vapor; so that a cubic yard of air, under a pressure of four, eight, or any number of atmospheres, will, *caeteris paribus*, hold no more watery vapor in solution than one under the ordinary pressure of a single atmosphere. By condensing four cubic yards of air into the space of one, its capacity for retaining water in solution, the temperature remaining the same, must be diminished to one fourth its previous power, and, consequently, if before saturated, it must precipitate three fourths of the water it contains. The same law undoubtedly holds with regard to all other vaporous solutions, and it is probable has a similar operation upon solid matters, in the air, retained in suspension.

The atmosphere, in its ordinary condition, always contains aqueous moisture, and a variety of other impurities, which have already been mentioned. It would seem to be a provision of nature that all the exhalations from the earth, capable of acting injuriously on the human system, should be condensible by pressure; and therefore removable from the mass of respirable air by human agency. If we force into a reservoir a large quantity of highly condensed atmospheric air, and then drain from the bottom the moisture that has been precipitated by the condensation, it is evident that by this process air may be as thoroughly depurated of vaporous solutions, as water of solid matters, by filtering or by distillation. Even that adventitious, though constant, and for the purpose of respiration, probably deleterious component of the atmosphere, carbonic acid gas, may be condensed into a liquid, by a very high degree of pressure, and withdrawn from a mass of air employed in respiration. Air thus freed from injurious admixtures may, in order to impart to it a proper degree of hygeometric moisture, be exposed to pure in the place of the impure water previously held in solution—the quantity of which it is capable of absorbing must be equal to that it lost in its condensation.

Extraneous matters in the atmosphere are not in any circumstances essential to its healthful composition. On the contrary, they impart to it properties resembling their own, which, in proportion to the quantities in which they exist in it, are injurious to the animal system. None of these extraneous substances, so far as known or suspected, require so great a mechanical pressure for its condensation as carbonic acid, and therefore, if this gas can be separated from atmospheric air by mechanical agency, we can have no difficulty in rendering adequate quantities of it respirably pure. The separation of the liquid, or perhaps solid and organic substances that are diffused through the atmosphere, and the knowledge of their properties that may thereby be obtained, will afford just ground for determining the minute constituents of the air, the quantities and nature of its deteriorations, the mode by which they operate in the production of diseases, and hence the certain means of preventing them. Heretofore, the physician, in seeking for the cause of distempers, could argue only from effects, but with the means of divesting thousands or hundreds of thousands of cubic yards of air of its impurities, in his possession, he may compel the cause of disease to put on a tangible shape, and by developing its secret power, teach us to demonstrate and neutralize its effects on the animal economy.

To determine the value of any scheme, we must ascertain the full extent of the means that are required to effect its objects, and whether it is within our power to reach the end to be attained. It would be useless to devise a process for even preventing a mortal disease, if it could not be ac ed upon without an expense which would render the plan unattainable, and it would be of diminished practical utility in proportion as it did not admit of being applied to general use. In a plan for preventing a disease arising from the respiration of impure air, we must take into consideration the quantity of cause necessary to produce the effect, or, in other words, the amount of pure air that must be substituted to prevent it. All are aware that the respiration of pure air is essential to the preservation of good health, and that its purity and salubrity depend, in a great measure, upon its freedom from foreign matters, and a due proportion of oxygen gas. We know, too, that air may be more suddenly and destructively contaminated, where the processes of respiration and combustion are going on, than by the most abundant production of animal and vegetable decomposition. To maintain it in its purity, under any of these circumstances, frequent change is necessary. This change, it is true, may be

caused to a further extent than is necessary, or even salutary; it may be administered, like any other medicament, too copiously; and as we propose to effect purification as well as change of air, which cannot be done but at some cost, we have no desire of carrying them beyond the point of utility To make our meaning more evident, it is necessary to recapitulate some facts that, though they may appear to have but an indirect, have an important connexion with the principles on which the proposed means of preventing Consumption are founded. They are all necessarily based upon the quantity of atmospheric air used in human respiration.

The quantity of pure air requisite for the respiration of an individual cannot be accurately determined, since it varies according to his constitution, the temperature of the air, the condition of his stomach as regards fulness or depletion, and numerous other extraneous circumstances that must always regulate the quantity which it is desirable to supply. In systematic works on ventilation, the estimates greatly exceed the amount that it would be necessary or even desirable to provide for the respiration of invalids, or healthy persons not in exercise. Contrary to the representations that have been uniformly made on this subject, it is possible as already intimated, to carry ventilation to an injurious extreme, and to shorten rather than prolong life by too much fresh, and even pure air. Startling and paradoxical as this position may seem, it is borne out by many analogies in nature. The composition of the atmosphere, as well as the whole process of respiration, shows that but a limited quantity of oxygen is necessary for the healthy exercise of that function. Oxygen exists in the atmosphere in the proportion of but one to four of all the gases; and the quantity of nitrogen and carbonic acid, which remain in the lungs after each expiration, show that these gases are not absolutely injurious, while they authorise the inference that air may be too pure as well as too impure for respiration. Dr. Liebig, in his animal chemistry, demonstrates that oxygen exerts such an affinity for all parts of the animal frame, that it would inevitably consume it, unless its utmost demands were supplied by food; and as there is a limit to the power of assimilating food, it is clear, on this view of the subject, that the admission of oxygen into the lungs may be carried to an injurious excess. As a candle in the ordinary and quiet state of the atmosphere, burns with a mild and sufficient light, giving to it the duration called for by the demands of economy, while if immersed in oxygen gas, it is rapidly consumed in surpassing splendor, and even in frequent change of the air surrounding it flares away, so the human frame in this gas, or in too great supply of fresh air, must have its energies more actively exerted, but the more rapidly exhausted. There is a proper medium between the lurid flame and the splendid light—the feeble change of the system from an insufficiency of respiration, and its rapid consumption from excess—which, if attainable, would give the proper supply of air; but as the requisite quantity is ever varying, even in the same individuals, with changing circumstances, it is hopeless to expect that any fixed standard can be attained.

It is ordinarily calculated that a human adult employs in respiration an average of about four hundred cubic inches of air a minute, and consequently nearly fourteen cubic feet in an hour, or about twelve cubic yards a day. This, then, is the minimum quantity of pure air that ought to be furnished to him daily. But he also saturates a certain quantity with moisture, and renders it unfit for absorbing more, and as a necessary deduction, for one of the purposes of respiration. Therefore, in addition to the amount each adult requires for daily consumption, it is desirable to change as much of the air in his residence, as the moisture given off by the lungs and by cutaneous transpiration, would saturate in the same time. If we consider that as soon as the air we respire becomes diffused through and attains the same temperature as the atmosphere, a portion of its vapor becomes redundant, and must be precipitated or otherwise discharged, we shall probably find, difficult as the accurate determination of the fact may be, that the moisture given off in this way does not require, at the most, more than half a cubic foot of dry air a minute to absorb it. Hence it may be calculated that not more than seven hundred and twenty cubic feet, or twenty-six cubic yards of pure and dry air can be required, daily, for all the purposes of respiration by each adult that may be in a habitation. Now the power of ventilating a house or room should be proportioned to the number of persons that occupy it; but it is obvious that a calculation which supposes the average number of adult inhabitants that remain in a habitation continuously, throughout the twenty-four hours, to be ten, and allows twenty-six cubic yards of pure air for the respiration of each individual, must be amply sufficient. It will be shown hereafter that by our means there will be no difficulty in producing this quantity, or, if desirable and not injurious, two, four, eight, or more times that much to every person that usually inhabits a house.

Besides the purification of air which ari-

ses from its compression and draining off its deposites, there are the accompanying advantages of an evolution of heat from the compression, and a generation of cold from its subsequent expansion, both of which, and particularly the latter, may be applied to moderate the temperature of a dwelling. The elements of physics teach us that condensation is an invariable source of heat, and every student of the science knows that the compression of the gases furnishes it in considerable quantity. It is evident, then, that there is in the principle of mechanical condensation a means by which heat may be obtained without fuel from air; and, by increasing the pressure and quantity, to any extent we may please. Little important as this fact is in a practical point of view, from the cheapness of fuel all over the world, we shall hereafter show that the result can be obtained by a comparatively small consumption of mechanical power, and, as a consequence, of expense.

Whenever, or wherever, air which has been condensed is allowed to escape, it will expand into the volume it occupied previous to its condensation, and, in the process, the quantity of heat which was previously extracted from it, will be absorbed from all surrounding substances and rendered latent. It is a matter of indifference whether the expansion take place rapidly or slowly, at one temperature or another, the amount of heat absorbed by equal expansions of equal volumes, is a constant quantity, the only difference being that the amount absorbed is taken up in unequal times. The importance to invalids, of a diminished summer heat is not less than an increase of winter temperature; and we propose to obtain the former of these ends by the rarefaction and distribution of air throughout the rooms of a house, asylum, &c., of atmospheric air, previously subjected to mechanical condensation.

High atmospheric air is acknowledged to have a powerful effect in predisposing to consumption. This condition of the atmosphere with its invariable accompaniment—a diminished supply of oxygen, and an increased quantity of moisture in the volume of air used in respiration, act injuriously upon the constitution of the Caucasian race, and, if long continued, induce that feebleness which subjects the human system to the liability of falling an easy prey to the cause of consumption. Upon the inhabitants of very hot countries, as the Malays and Negroes, this effect is more marked. In confirmation of this opinion, it may be cited that both these races are well known to be much more subject to tuberculous disease than Europeans, when exposed to the same causes* The languor and debility which invariably affect all the varieties of the human race, subjected to the over-stimulation of long-continued high states of the thermometer, deranges sooner or later, all the functions; and if they are not restored to their healthy action by a remission of heat, or the withdrawing of an equivalent stimulus of other kind, they will be liable to be destroyed by the slightest external influence. The value, then, of a principle which, besides rendering air respirably pure, proposes to modify temperature to our comfort as well as security, can, if physical effects are invariably dependent on physical causes, be readily appreciated.

The quantity of caloric evolved by the condensation of a column of air, and consequently the quantity absorbed by its expansion, is the next subject to which we must give consideration, in order to determine the value of our scheme both as a prophylactic and as a source of refrigeration. A variety of experiments, conducted by the most eminent philosophers, have been made with a view to resolve these questions in physical science. For the purpose before us, these investigations are of much importance, because upon their result depends the value of our researches into the means of rendering a sufficient portion of the atmosphere for practical purposes, respirably pure. We confess that to solve these and their consequent problems with accuracy, is exceedingly difficult, and, on this account, the various experiments undertaken with the view are by no means found uniform in their results. Air may be condensed and dilated an indefinite number of times, and there will be a simultaneous and proportional diffusion or absorption of its heat; and in a quantity as well as intensity, which probably admits of being equal in both instances, certainly in the production of cold, to the greatest degree that they are capable of being generated by art. But though the heat evolved by condensation and absorbed by the rarefaction of air is equal and invariable, the experiments to demonstrate these facts require a particular manner of performance to make the results apparent and uniform. In consequence of this difficulty (of which it does not belong to this Journal to treat) the quantity of caloric assigned to the condensation of air, or the quantity absorbed by its rarefaction, has not yet been ascertained with any results approaching to undoubted certainty. The deductions from such experiments as have been made, show a variance so large as in the proportion of one to five or upwards. It is

* Clarke on Consumption, p. 157.

true the mode of experimenting or of reasoning has not been uniform. Different philosophers have employed different means of investigation; but this affords only additional evidence of the uncertainty that must attach to the apparent results. The instrument which we have devised for purifying and refrigerating the air we breath, has a peculiar fitness for aiding us in determining this question with great accuracy; and, at some future day, we intend to institute a series of experiments necessary for the attainment of this desirable object, the result of which, we shall give to the public through the columns of this journal. A powerful one, well planned for illustrating the principle has already been made, but owing to errors and defects in its construction incidental, perhaps, to every new engine, and to a novitiate intercourse with working mechanics, it requires alterations to enable it to be used with all the advantages it is capable of affording. The result of a number of experiments that have been made with it accords with the testimony furnished by other experiments that air gains and loses, at least 180° F, for every time its volume is reduced to one half or rarefied into two volumes; while it is probable that the large amount of 280°, for the same changes, assigned to it by Guy Lussac, does not exceed the reality. The smaller of these amounts would be sufficient to establish the utility of employing condensed air for cooling, and ventilating houses.

This engine is simple in its construction, requires but a small expense of power, admits of being complete in its operation, and its parts, if well made, are not liable to get out of order, or to be injured by wear. It consists, essentially, of two double acting force pumps—one for condensing, and the other for rarefying air—both connected with a common beam or axle—and an air magazine or receptacle for condensed air. By this principle of construction, the pressures on the pistons in the cylinders, when the machine is in operation, are made to oppose each other, and the power consumed in the former is reclaimed in the latter, and made, as far as possible, to reproduce the original effect. This method of working the machine is important for the production of refrigeration; by no other known means than such as admit of the mechanical effect of expanding air being obtained, can the cooling power of dilatation be made apparent under all circumstances. The machine may be placed in any part of a house; but it is obvious that for supplying it with cooled air, the nearer the roof the better. By such an arrangement the heat squeezed out of the condensed air, would unite with the air round it, and, from its levity, ascend in the atmosphere above the height to affect human comfort; while the heat absorbed by the expanding air, as it descended by its gravity, must be derived from the objects which it is desirous to cool.

To put the apparatus in operation, it will be necessary to pump air into the reservoir to the pressure at which it is intended to be worked, say two, four, eight or sixteen atmospheres. When this point is attained, the condensing pump is made to force another of its measures of air into the reservoir. As this latter vessel is constructed with a balance valve, at a point where it communicates with the expanding pump accurately loaded with a weight equal to the pressure of air within it, or, what is much better, furnished with an accurately adjusted cut off, it allows as much air to escape into the expanding pump, as the reservoir receives from the condensing cylinder. In the expanding cylinder the air received will tend to dilate into the volume it occupied under the atmospheric pressure, and, according to the law discovered by Boyle, will, in the act, exert the same mechanical force that was required to condense it. With every succeeding motion of the piston in the condensing pump, its measure of air must be found in the reservoir, and, at the same time, an equal quantity must flow through the balance valve with or by means of the cut off, with a repetition of its mechanical effect on the piston, into the expanding pump.

The quantity of air condensed and expanded and consequently the extent of refrigeration, produced by an engine of this description, depends upon the area of the cylinders, the length of the stroke, and the number of strokes in a given time and the tension at which it is worked. As the size of the pumps can be proportioned to any demand for air, a due consideration of the circumstance may enable us to adapt the engine, not only to dwelling houses, but also to hospitals, asylums for the predisposed, schools, large manufactories, churches, prisons, or fortresses. The dimensions deemed fully sufficient for a house of an ordinary size are as follows:—The diameter of the cylinders should be four inches, and the length of the stroke about two feet. Pumps of this size will have a capacity of about three hundred cubic inches; and if we consider them as making sixty double strokes a minute, they will condense and expand about twenty cubic feet of air a minute, forty-five cubic yards an hour, and upwards of a thousand cubic yards a day. Working at a tension of two atmospheres they would, theoretically, furnish one thousand cubic yards of air a day cooled at least 180 degrees F below the

natural temperature, or would produce a quantity of cold equivalent to the production of about six hundred and forty pounds of ice. Practically they have been found, working at the above tension, and with a mechanical force equivalent to that of two men, with the atmosphere temperature at 80 degrees F, to pour out air, at the rate of a thousand cubic yards a day, cooled down to 10 degrees F below zero. According to either the theoretical or practical datum, and after making large allowances for the conducting power of the walls of a house, for the animal heat generated by the inhabitants, and for every other usual source of heat, it must be evident that there is in this principle of refrigeration and ventilation, the means of commanding under Summer, even if tropical heat, the most desirable mean temperature. It is proper to remark that though the process of reasoning, by which the best plan for constructing the machine was arrived at was simple, yet the effects were not obtained without repeated trials and failures; while there are many appliances besides the essential principles already mentioned, requisite to give complete efficiency to it, which it is not necessary at this time to describe.

Such are the only measures which, in the opinion of the writer, are calculated to prevent that particular morbid state of the constitution on which the terrible disease characterized as tubercular phthisis depends. Regarding this constitutional state as originating in an electrical condition of the atmosphere, dependent upon the presence of extraneous impurities, it is obvious that if this be true, and we can subvert this condition, we must be able effectually to prevent the disease. Our plan provides the means by which atmospheric air may be divested of aqueous moisture, and all condensible gases, while the process may be made to aid in elevating the natural temperature of winter, or of moderating that of summer in a limited space like that of a dwelling house, a hospital, or a public school. It will possess to the invalid more than the advantages of migration to a climate reported to be most favorable to his condition, while it may be made to enable the native of either the tropical or frigid zones to breathe in any climate, an atmosphere having an approximation to the temperature of his own. And all these effects, except the elevation of temperature, can be made to comport with the measure of our wants as easily and at as moderate expense, as the natural temperature of cold climates can be raised to an equal degree in similar spaces.

The machine we have alluded to, may be worked by manual, horse, water, or steam power; but in order that its effects may be obtained at the least possible expense, the preferable power would be the wind. Horizontal sails capable of receiving from the wind a mean force equivalent to the power of two men and applied to the engine, would be adequate to condense with all the attendant frictions and losses of power, a thousand cubic yards of air a day, under a tension of two atmospheres; nor on the principle of construction adopted would an increase of tension materially increase the demand for power. Such sails would be so small, and could, by a slight modification of the present means of constructing roofs, be so easily screened from view, that they would present no unsightly object. In regard to the expense attending its operation, if we consider that the materials employed are simply air, or air and water, and that the mechanical agent is the wind, the only cost will be that of the machine and the oil and labor it will take to lubricate it. The cost of the engine and the appliances for making the necessary distribution of air, would not be greater than for fire places, grates, and chimneys of a well-built modern dwelling. As an enterprize of benevolence, or as a pecuniary speculation, constructing an asylum for the reception of consumptive invalids, or the predisposed to that disease, might in this age of difficult investment of capital, be an object of consideration. The natural laws on which this scheme for preventing Consumption is based, certainly exist, and therefore if we can at this small expense obtain a rational hope of modifying or subverting them, so as to render them innocuous, it is worthy of the assent and practical adoption of mankind, or at least its careful examination. If it shall have the effect of superseding the cruel, absurd and homicidal practice of sending pulmonary invalids to a foreign land and a hurried grave, it will have conferred incalculable benefits on mankind.

MAGNETISING MEDICINE, TRIUMPH OF SCIENCE.

The following article is extracted from a London publication entitled "The Popular Record of Modern Science." The book from which the extracts are taken is written by Professor Gregory, of Edinburgh, a gentleman held in high estimation for his scientific acquirements, and a son of the celebrated Dr. Gregory.

RESEARCHES ON MAGNETISM.

A contribution to science of far more than ordinary interest, has this week been furnished by Professor Gregory, of the univer-

sity of Edinburgh, in a comprehensive statement of the researches of Baron Von Reichenbach on "Magnetism and certain allied subjects."* It appears that, while travelling on the continent last summer. Dr. Gregory's attention was directed to a detail of Baron VonReichenbach's experiments, just published in the "Annalen der Chemie und Pharmacie," a periodical of the highest rank, conducted by Baron Liebeg and Professor Wohler.—The conclusions to be derived from these experiments were of the most startling character; but Dr. Gregory being aware of Reichenbach's character for minute accuracy and untiring perseverance, and of his reputation among chemists, in consequence of his laborious and successful researches on the tar of wood and of coal, which made us acquainted with creosote and many other new compounds, could not for one moment hesitate to receive the facts on which they rested. He felt anxious, therefore, on his return to Scotland in October last, that these experiments should be made known, and while preparing a translation of Reichenbach's statements, he took the opportunity of describing, in two lectures to a numerous audience, a considerable part of the results obtained. The fame of these lectures spread to London, and coming as it did at a time when discoveries by Faraday and Hunt had already excited the public mind upon the subject, the greatest interest was felt for further information. This information is now supplied, and it is of a character to awaken the liveliest gratification, as opening up a new and inexhaustible field for philosophical inquiry.

Baron Von Reichenbach's experiments originated in his having the opportunity of studying a patient, Madlle. Nowotny, aged 25, subject for eight years to increasing headaches, and latterly affected with cataleptic fits, accompanied with spasms. She possessed a remarkable acuteness of the senses, could not endure the daylight, and in a dark night perceived her room as well lighted as it appeared to others in the twilight, so that she could even distinguish colors. She was also very sensitive in various ways to the influence of the magnet. Struck with these things, and remembering that the aurora borealis appears to be a phenomena connected with terrestrial magnetism, or electro-magnetism, it occurred to him that possibly a patient of such acuteness of vision might see some luminous phenomenon about the magnet. Dr. Von Eisenstein, (the physician in attendance?) afforded every facility, and experiments were accordingly commenced.

"The first trial was made by the patient's father. In profound darkness, a horse-shoe magnet of nine elements, capable of carrying eighty pounds, was presented to the patient, the armature being removed; she saw a distinct and continued luminous appearance, which uniformly disappeared when the armature was applied.

"The second experiment was made as follows, on her recovery from a cataleptic attack, when the excitability of her senses was greatest. The room being artificially darkened, and the candles extinguished before the fit was ended, the magnet was placed on a table, ten feet from the patient, with the poles upwards, and the armature removed. None of the bystanders could see anything whatever, but the patient saw two luminous objects, one at each pole, which disappeared on joining the poles, and re-appeared on removing the armature. At the moment of breaking contact, the light was somewhat stronger. The appearance was the same at both poles, without any apparent tendency to unite. Next to the metal she described a luminous vapor, surrounded by rays, which rays were in constant shooting motion, lengthening and shortening themselves incessantly, and presenting, as she said, a singularly beautiful appearance. There was no resemblance to an ordinary fire; the color of the light was nearly pure white, sometimes mixed with iridescent colors, the whole more like the light of the sun than that of a fire. The light was dense and brighter towards the middle of the edges of the ends of the magnet, than towards the corners, where the rays formed bundles, longer than the rest. I showed the patient a small electric spark; this, she said, was more blue, and left on the eye a painful and lasting sensation, like that caused by looking at the sun, when the image of the sun is afterwards seen on every object."

These experiments were repeated, and sometimes with a weaker magnet, nothing being said to the patient, who then saw only two luminous threads; the first appearances, however, always returning when the original magnet was substituted. As she regained strength, her impressibility diminished. After some time she saw nothing more than a kind of flash when the armature was removed, and eventually her recovery put an end to further experiments.

Dr. Lippich, clinical professor, now ob-

* Abstract of "Researches on Magnetism and on certain allied subjects," including a supposed new imponderable. By Baron Von Reichenbach. Translated and abridged from the German, by William Gregory, M. D., F. R. S. E., M. R. I. A., Professor of Chemistry. Edinburgh. 1846.

tained for the Baron the means of experimenting with Madlle. Sturman, a patient aged 19, suffering from consumption, and subject to the lower stages of somnambulism, with attacks of spasms and catalepsy, and she proved still more sensitive than Madlle. Nowotny.

"When the magnet (capable of supporting eighty pounds) was placed six paces from the feet of the patient, (then in bed,) in the darkened ward and the armature removed; the patient, then quite conscious, gave no answer, having instantly fallen into a state of spasm and unconsciousness. After an interval, she came to herself, and declared that the moment when the armature was withdrawn, she had seen fire rise from the magnet, which fire was the height of a small hand, white, but mixed with red and blue. She wished to examine it more closely, but the action of the magnet (the circuit being then not closed) instantly deprived her of consciousness. On account of her health, the experiment was not repeated."

A lad, subject to frequent convulsions, was the person next experimented upon, and with somewhat similar results. The next was Madlle. Mair, aged 25, suffering from paralysis of the lower extremities, with occasional spasms, but exhibiting no other derangement of the nervous functions, As often as the armature was removed from a large magnet in the dark, she instantly saw the luminous appearance above the poles, about a hand's breadth in height.—Her sensitiveness increased when she was affected with spasms, and she then not only saw the light at the poles much larger than before, but she also perceived currents of light proceeding from the whole external surface of the magnet, weaker than at the poles, but leaving in her eyes a dazzling impression which did not for a long time disappear. This was the fourth confirmation of the existence of the magnetic light. The sensibility of the next patient was still more remarkable and distinct

"This was Madlle. Barbara Reichel, aged twenty-nine, of stout build. At the age of seven, she had fallen out of a window two stories high, and since that time she had suffered nervous attacks, passing partly into lunacy, partly into somnambulism, and speaking in her sleep. Her disease was intermitting, often with very long intervals of health. At this time she had just passed through severe spasmodic attacks, and retained the entire sensitiveness of her vision, the acuteness of which was singularly exalted during her attacks. She was at the same time in full vigor, perfectly conscious, looked well externally, and went alone through the crowded streets of Vienna to visit her relations in their houses. The author invited her to his house, and she came as often as he wished it, so that he was enabled to employ her extraordinary sensitiveness to the magnetic influence, in researches with such apparatus as could not conveniently be brought into other houses.

"This person, although strong and healthy, saw the magnetic light as strong as any sick individual; she could move about freely, and was very intelligent, and in addition to these rare advantages, although highly sensitive, she could bear the approach of magnets, and experimenting with them, far better than sensitive peasons generally do."

"This patient saw the magnetic light, not only in the dark, but also in such a twilight as permitted the author to distinguish objects and to arrange and alter the experiments. The more intense the darkness, the brighter and larger she saw the flaming emanations, the more sharp and defined was their outline, and the more distinct the play of colors."

"When the magnet was laid before her in the dark, she saw it giving out light, not only when open, but also when the poles were joined by the armatures; but the luminous appearance was different in the two cases. With the closed magnets, there were no points where the light appeared concentrated, as was the case when the magnet was open; but all the edges, joinings, and corners of the magnet gave out short flame-like lights, uniform in size, and in a constant undulatory motion. In the case of the magnet of nine elements, capable of carrying eighty pounds, these were about as long as the thickness of a little finger."

"When the armature was removed, it presented a most beautiful appearance. Each arm of the magnet was about eight and a half inches long, and the light rose almost to an equal height above the magnet, being rather broader than the bar. At each depression, where two plates of the magnet are laid together, there appeared smaller flames ending in points like sparks, on the edges and corners. These small flames appear blue; the chief light was white below, yellow higher up, then red, and green at top. It was not motionless, but flickered, undulated, or contracted by starts, continually, with an appearance as of rays shooting forth. But here, as in the case of Madlle. Nowotny, there was no appearance of mutual attraction or mutual tendency towards each other of the flames, or from one pole to the other; and, as in that case, both poles presented the same appearance."

"Experiments performed on a sixth patient, Madlle. Maria Atzmannsdorfer, aged twenty, who had headaches and spasms, and walked in her sleep, led to results confirmatory of the preceding. The light dazzled her eyes by its brilliancy.*

"From the above facts it appears, that the foregoing six sensitive individuals, each according to the degree of sensitiveness or to the diseased state of the body, saw, more or less vividly, a luminous appearance like a moving flame, at the poles of powerful magnets. These individuals were highly sensitive, although of unequal sensitiveness; and, although unacquainted with each other, and with each other's observations, their accounts agree in all essential points, and were in each case, uniformly consistent, not only with themselves, but with the known laws of electricity and magnetism. The author, having no reason to doubt the perfect honesty of those persons, and feeling, at all events, confident of his own caution, accuracy and bona fides, had no hesitation in admitting the reality of the phenomenon, although invisible to ordinary men; and he considers the fact of the existence of such luminous appearances at the poles of powerful magnets as fully established as the researches of one man can establish a fact. He confidently anticipates confirmation from other observers, since sensitive persons, although not numerous, are readily found in small towns, and quite easily obtained in large cities."

But in order to prove that the impressions upon these persons were the result of actual light, Baron Von Reichenbach instituted the following experiment:—

"A very sensitive Daguerreotype plate, being prepared, was placed opposite to a magnet, the armature of wnich was removed, in a closed box, surrounded with thick bed-clothes, so that no ordinary light could enter. After sixty-four hours' exposure, the plate, when held over mercurial vapor, was found fully affected, as by light, on the whole surface. In a parallel experiment, made without a magnet, the plate was found entirely unaffected. This proves that, unless other imponderables, such as magnetism, act on the prepared plates as light does, the emanation from the magnet is of the nature of light, however feeble and slow in its action on the Daguerreotype."

This beautiful and satisfactory experiment was followed by another equally remarkable. By means of a lens, the magnet was made to produce a focal image on the wall, and whenever the experimenter moved the less, Madlle. Reichel was able to point to the situation of the light.

Thus much with regard to the luminous appearances. We now come to the mechanical force exerted by the magnet on the human frame. Dr. Patelin, of Lyons, and other observers. having formerly stated instances of the attraction of the human hand by a magnet, and of the power of some patients to distinguish water, along which a magnet had been drawn, resolved to institute experiments in this direction.

"The adhesion of a living hand to a magnet is a fact unknown in physiology as in physics, and few have seen it: it, therefore, requires explanation. Madlle. N. being in catalepsy, insensible and motionless, but free from spasms, a horse-shoe magnet of twenty pounds power was brought near to her hand, when the hand attached itself so to the magnet, that whichever way the magnet was moved, the hand followed it as if it had been a bit of iron adhering to it. She remained insensible; but the attraction was so powerful, that when the magnet was removed, in the direction of the feet, further than the arm could reach, she, still insensible, raised herself in bed, and with the hand followed the magnet as far as she possibly could, so that it looked as if she had been seized by the hand, and that member dragged towards the feet. If the magnet was still further removed, she let it go unwillingly, but remained fixed in her actual position. This was daily seen by the author between six and eight P. M., when her attacks came on, in the presence of eight or ten persons, medical and scientific men." At other periods of the day, when she was quite conscious the phenomena were the same. She described the sensation as an irresistible attraction, which she felt compelled against her will, to obey. The sensation was agreeable, accompanied with a gentle cooling aura, streaming or flowing down from the magnet to the hand, which felt as if tied and drawn with a thousand fine threads to the magnet. She was not acquainted with any similar sensation in ordinary life; it was indescribable, and included an infinitelyrefreshing and pleasurable sensation when the magnet was not too strong."

Similar results were obtained with Mademoiselle and Madlle. Sturman, and the statement of the various modes in which the veracity of the patients and the accuracy of the experiments were tested, is such as to inspire the most unreserved confidence

* Dr. Gregory's pamphlet contains well executed lithographic representations of the appearance of the various flames and streams of light, from drawings made by the patients.

in the experimenter. Mr. Baumgartner, the distinguished natural philosopher, was one of those who, amongst others, tested in a very ingenious way the above phenomena.

With regard to magnetised water, Baron Von Reichenbach, although strongly prejudiced against this "mesmeric idea," was compelled to admit that a palpable effect was produced.

"He saw daily that his patient could easily distinguish a glass of water, along which a magnet, unknown to her, had been drawn, from any others; and this without failure or hesitation. He found it impossible to oppose a fact like this by arguments; but when he saw the same result tn many other patients, he ceased to struggle against that which, whether he understood it or not, was obviously a fact. He then perceived that it was more rational to admit the fact, and to wait with patience for the explanation."

The experimenter then determined to see whether bodies besides water could be magnetized, so as to produce similar effects. He passed the magnet not only over all sorts of minerals and drugs, but over indiscriminate objects, and they all affected the patient more or less powerfully. But although all were equally magnetised, the results were different, some substances producing a strong and others only a slight impression. It was therefore clear, that the different results must have been caused by an inherent difference of power in the various kinds of matter, and he resolved to test if this difference would manifest itself, when the substances were applied in their natural condition. To his astonishment they still acted on the patient, and with a power often little inferior to that which they had when magnetised.

Amongst the various substances tried, (of which a well arranged list is given) distinct solitary crystals were found to act in the strongest manner.

"In trying the effect of drawing the point of rock crystal, 7 inches long, and 1 3-4 thick, from the wrist to the points of the fingers, and back, as in magnetising, the author found that the sensation experienced by the patient, was the same as with a magnetic needle or bar, nearly five inches long, one-sixth inch broad, and one-thirtieth inch thick, weighing nearly 180 grains, and supporting about 3-4 oz. The patient felt an agreeable cool aura in both cases, when the crystal or magnet was drawn from the wrist to the point of the middle finger; if drawn in the opposite direction, the sensation was disagreeable and appeared warm. A crystal thrice the size of the first, produced, when drawn downwards, the same effect as a magnet, supporting two pounds of iron; and when drawn the opposite way, a spasmodic condition of the whole arm, lasting several minutes, and so violent that the experiment could not well be repeated."

It was found that this peculiar force residing in crystals was analogous to electricity and magnetism, inasmuch as it was capable of acting through opaque bodies, and admitted also of being transferred to other substances. A large rock crystal, placed so that its point rested on a glass of water, produced water as strongly magnetised as a horse-shoe magnet. It was further ascertained that the power thus transferred, was capable of being retained for a short time (in no case, however, longer than for ten minutes.)

In Madlle. Nowotny, the hand was attracted by a large crystal, exactly as by a magnet of middling size. Crystals also gave forth the same luminous appearance as the magnet, only more singularly beautiful in color and form.

Still proceeding steadily in his researches, and calling to mind the many effects analogous to those of the magnet, alleged to have been produced on sick persons by the human hand, Reichenbach, while he avoided all study of the literature of animal magnetism, in order to retain an unfettered judgment, resolved to ascertain "whether animal magnetism, like the crystalline force, might not be subject to physical laws? As crystallization seems to mark the transition from organic to inorganic nature, he ventured to hope, that by experiment, he might discover a point of connection between animal magnetism and physics, or perhaps even obtain, for animal magnetism, that firm foundation in physics, which had so long been sought for in vain."

And here the philosophical caution of the practised observer is strikingly displayed.

In order that his experiments might be free from every disturbing cause, he felt it essential, previously, to ascertain the part which terrestrial magnetism plays in relation to human sensations. If a magnet or crystal produces marked effects, it is certain that the magnetism of the earth must exert a powerful action, and, therefore, it became necessary for him to ascertain the conditions of this action, to enable him to estimate the degree in which the results of the new experiments might be modified by its influence.

The inquiries instituted with this view, led to the discovery of a singular fact, namely, that persons sensitive to the magnetic influence (at least, in the northern hemisphere,) find, when in a recumbent state, every other position except that from north to south highly disagreeable; that

from west to east being in particular almost intolerable.

"On examining the position of Madlle. Nowotny, she was found lying almost exactly on the magnetic meridian, her head towards the north. She had instinctively chosen this direction; and it had been necessary to take down a stove to allow her bed to be placed as she desired it to be. She was requested, as an experiment, to lie down with her head to the south. It took several days to persuade her to do so, and she only consented in consideration of the weight which the author attached to the experiment. At last, one morning, he found her in the desired position, which she had assumed very shortly before. She very soon began to complain of discomfort, she became restless, flushed, her pulse became more frequent and fuller, a rush of blood to the head increased the head-ache, and a sensation of nausea soon attacked the stomach. The bed with the patient was now turned, but was stopped half-way, when she lay in a magnetic parallel, with the head to the west. This position was far more disagreeable than the former, indeed, absolutely intolerable. This was at half past eleven, A. M. She felt as if she would soon faint, and begged to be removed out of this position. This was done; and as soon as she was restored to the original position, with the head to the north, all disagreeable sensations diminished, and in a few minutes were so completely gone, that she was again cheerful."

Further singular corroborations are quoted in confirmation of this view; and Reichenbach thinks it sufficient to account for many of the errors and contradictions which have occurred in animal magnetism from the time of Theophrastus and Mesmer to our own day. "For if the same disease were treated magnetically, in Vienna, in the position north to south; in Berlin, in that of east to west; and in Stuttgard, in that of south to north; totally different results would be obtained in the three cases, and no agreement in the experience of the different physicians could be obtained."

"Nay, if the same physician, at different times, or even at the same time in different places, were to treat the same disease with the same magnetic means, while accidentally the beds of his patients were placed in different positions, he must necessarily see quite different results, so as to be entirely puzzled with magnetism and with himself. He must conclude it to be full of caprice and change; and finding it impossible to foresee and regulate its action, reject magnetism altogether as an unmanageable instrument. Such has been, in fact, the sad history of magnetism. From the earliest times, often taken up, and as often cast aside, it now lies almost unemployed, and yet is so distinguished, so penetrating, nay, we may say, so incomparable a means of relief in cases where man has hitherto been unable to afford any benefit. Nervous diseases are still the scandala medicorum. It may be confidently expected, that ere long an improvement will be effected. The all-powerful influence of terrestrial magnetism will be measured and calculated, and the whole subject of magnetism will now admit of being regularly studied in reference to medicine. Progress will be made; experimenters will mutually understand each other; and the world at length hope to derive some actual benefit from those extraordinary things which have so long excited expectation without satisfying it. Having thus established the existence of a powerful influence exerted by the earth's magnetism on the magnetic phenomena in sensitive persons, all subsequent magnetic experiments were made with the patients in the position from north to south, which is considered by the author as the normal position for the living body, sensitive or affected with nervous maladies."

The experiments then instituted resulted in convincing Reichenbach that a similar force to that which he had detected in the magnet, and other bodies, resides in the human hand.

The most singular experiment is that with a glass of water.

"If it be grasped from below by the fingers of one hand, and from above by those of the other, during a few minutes, it has now acquired to the sensitive, the taste, smell, and all other singular and surprising properties of the so-called magnetised water. 'Against this statement,' says the author, 'all those may cry out who have never investigated the matter, and to the number of whom I formerly belonged; but of the fact, all those who have submitted to the labor of investigation, and have seen the effects I allude to, can only speak with amazement.' This water, which is quite identical with that treated with the magnet or with the crystal, in all its essential properties, has, therefore, received from the fingers and hand an abundant charge of the peculiar force residing in them, and retains this charge for some time, and with some force. It was found that all substances whatever were capable of receiving this charge, which the sensitive patients invariably detected. The inevitable conclusion is, that the influence residing in the human hand may be collected in other bodies, in

the same way, and the same extent, as the influence residing in crystals."

But in ascertaining thus much we have not arrived at all the sources of this force. Some of Reichenbach's most interesting and striking researches go to establish, in the most unquestionable manner, that it resides also in the rays of the sun, and the moon, and the stars; that it is developed likewise in chemical action, (especially in the processes of digestion and respiration,) and again by electricity. These are its ascertained and peculiar sources; but it seems, from the experiments subsequently detailed by Reichenbach, that there is scarcely an object in the collective material world through which it may not be manifested in relation to peculiar indiosyncrasies.

Towards the conclusion of his remarks, the author gave some very interesting statements of the relative developement of the magnetic force in individuals, at specified periods of four and twenty hours, and he suggests many applications of these facts of great practical value in the preservation of health. He promises also, within two months, to publish the results of extended inquiries.

On the whole, it is scarcely too much to assert, that a more interesting series of observations in relation to physical science has rarely been presented to the world. Those who will take the trouble to enter into the statements, of which little more than an outline has here been presented, will meet suggestions sufficient to give direction to a whole life-time of thought and observation. The phenomena observed and narrated bear with almost equal force upon every branch of inquiry—crystallography, mineralogy, geology, botany, anatomy, physiology, medicine, astronomy; in short, the whole circle of the sciences. It opens up a field of inquiry, to which every student of Nature must direct his steps, and to which all, no matter how varied their pursuits, may bring their labor with a certainty of reward.

In conclusion, it is proper to mention that one very gratifying circumstance, in connection with the publication of these researches, consists in their having drawn forth the admirable remarks of Professor Gregory, by which the publication of them is accompanied. It is also a matter of congratulation, that, in a letter dated from Vienna the 7th of the present month, published in the appendix and addressed by Baron Von Reichenbach to Professor Gregory, the followtng paragraph is to be found:

"Berzelius has expressed himself in the same way as you have done; and carries on with me a friendly and brisk correspondence on the subject of my researches, on which we may shortly expect a report from him, to be laid before the Swedish Academy of Sciences."

CURATIVE EFFECTS OF MESMERISM.

A young lady of Ohio, about 18 years of age, who has been for some time at school at Hartford, Conn., received an injury in the lower part of her spine in November last, from a fall which rendered her unable to bear even the slightest elevation toward an erect position, and kept her in continual pain. She was attended by the most skilful physicians without benefit, but at length, under the advice of a physician of this city, she was placed on a bed constructed for the purpose, and brought here by railroad and steamboat, with the view of trying the effects of mesmeric treatment under his direction. She arrived here on the 3d inst. (April, 1846) accompanied by her brother-in-law and sister, and put up at Judson's Hotel, Broadway. The following evening the physician introduced Mr. Oltz, a distinguished magnetizer, and recommended him to make the proper mesmeric passes along the spine for the purpose of allaying the high nervous excitement under which she was laboring, and which had continued without intermission, from the time of the accident. The passes were quite effectual, and that night she enjoyed sound and refreshing sleep which she had not obtained for the previous five months.

The next morning, the magnetizer, by means of the mesmeric passes alone, gradually raised her to an erect position, in which she remained about a minute. In the evening he operated again, and she was again enabled to sit erect. The doctor then directed him to raise her upon her feet, which he did with a few passes; and supported by the magnetizer and the physician, she found herself able to walk several times across the room. After resting about fifteen minutes, in an easy chair, where her expressions of wonder and gratitude were deeply fervent and affecting, she repeated her walk around and across the room, and retiring full of joy and hope, again passed the night in tranquil sleep.

On the following morning, the mesmeric passes proved so effectual that she was considered sufficiently restored to undertake a

journey to Philadelphia, that afternoon, on her way to her family in Ohio. Mr. Oltz accompanied her to the depot in Jersey City, and having seated her comfortably in the car, and stowed away her previous travelling coach upon the top, transferred his mesmeric power over her to her brother-in-law and saw her start on her unexpected journey. The following are extracts of a letter from the sister who accompanied her, to her physician in this city, dated Harrisburgh, Penn., April 13th, 1846:

"I fear our neglecting to write from Philadelphia will lead you to think we do not appreciate the kind interest you took in sister's case. Be assured we do and ever shall remember you with gratitude. * * Our kind friend Mr. Oltz, (to whom you will please remember us) doubtless told you how well we succeeded in getting to the cars. Mr. B was able to continue the influence to such a degree as to keep her very easy for about two hours, when, owing to some relaxation of effort, she became sick at the stomach. We gave her the globules [Ipecacuanha] which soon relieved that, and then, notwithstanding the noise and motion of the cars, Mr. B——succeeded in putting her into a sounder sleep than ever she had been in before, and she awoke from it quite refreshed. For two days after our arrival in Philadelphia she felt too weary for exertion; but on the third night, after being magnetized, she sat up for more than two hours and walked about the room for nearly an hour; she slept well for that night, and was next day quite comfortable. We left Philadelphia at half-past seven in the morning, and rode nine hours over the roughest rail-road in the country, but under the magic influence she was kept quietly asleep most of the time. She feels much fatigued and sore today, but is in good spirits at the idea of starting and the comparative ease with which the rest of the journey will be performed."
—*New York Tribune.*

Besides the ordinary effects of an injury from a fall in this case, there was great derangement in her magnetic organization which required the power of the magnetizer to restore to its proper condition and normal action, and hence our confidence in the success of the experiment and the rationale of its results.

Tubercular Disease of the Organs and Muscles.

Miss M. S. of Providence, R. I., aged 25 years. This young lady had been out of health about seven years, when she was placed under my care in May, 1845. She presented the external appearance of the most robust health; yet this was one of the worst cases of tuberculaar disease I ever saw; for on an examination, I found all of her organs, including the cerebrum, cerebellum and uterus, as well as all the muscles, in a very advanced stage of tubercular disease; accompanied often on retiring to bed with the most violent and prolonged spasms, terminating in insensibility and coma or sleep. The muscles of the body and limbs presented everywhere the same elastic and puffy state seen in the common white swellings of the joints and limbs. There was also great sensibility to pressure the whole length of the spine.

A clairvoyant examination of this case, confirmed the above diagnosis, and besides located the disease in the cerebrum in the organs of imitation, marvelousness, hope, and conscientiousness of the left hemisphere; a matter of great importance in directing the passes in mesmerising and in the application of the buttons in magnetising.—Prescribed the magnetised gold pills and plaster, mesmerism and the action of the magnetic machine.

The following letter from this talented young lady will show the result of this practice:

Providence, March 9th, 1846.

Dr. Sherwood, Sir:

I feel it a duty devolving upon me, to write you at this time. As regards my present state of health, I can say, I am well. During the past winter my constitution seems to have undergone a change; which change cannot be attributed to any other source than strictly adhering to your practice. I consider it a case worthy of note; for after having spent my "living upon physicians, and was nothing bettered, but rather grew worse," and all that were ever employed gave me no encouragement of ever fully recovering, after having experimented upon me until my patience was worn out.

Under my present state of health the whole creation seems created anew. I now begin to realize how many years I have spent in a disordered state of health, enjoying naught of life or its charms. I am now able to attend any public assembly without apparent inconvenience; my head feeling as clear the next day as before. The privilege I think I know how to prize. My sleep is sweet and refreshing; none of those long, dreaded nights, and anxious watchings and fears. My gratitude I can never express, in being led to persist in your method of treatment.

I will endeavor to state as nigh as I can the origin and progress of the disease. In the spring of 1838, my health began to give out, a general weakness seemed to pervade my frame, and in the month of May was quite reduced with distressing pains in the lower part of my back, accompanied with spasmodic affections; employed a physician who immediately pronounced it a severe case of spinal irritation, and was put upon a mode of treatment general to their clique; no relief was gained excepting short periods of repose when the disease seemed to be preparing to break out anew, until it seemed to extend to all parts of my system, and for seven years I have been going on in this way, employing other physicians, but all to no purpose. When I recall the nights and days of suffering with my head, it is more a wonder that mind has kept her throne. I say not that my mind has not suffered from the shock, but enough of reason is left to know from what source I at last found relief.

I have stated what was then considered the source of so much trouble, but since applying to you, find that an organic affection in the lower part of my body must have been the primary cause of so much pain in my back and head.

I commenced the use of your remedies the early part of May, 1845, and used two boxes of pills, and the magnetic machine and plaster, and am now enjoying more of life and better health than I had previously, for eight years; this is not only my testimony, but of friends who have seen me most, and it is a wonder to them that I am where I am. I am now 26 years of age, and feel younger than I did at 18. I know my recovery is attributable to the thorough use of your remedies; and if my recovery can be of any assistance to others similarly affected, use it as far as you think proper.

Baron Reichenbach's Experiments.

We were made aware, some time ago, that a German periodical, devoted to chemistry, had presented last summer, a long and carefully prepared paper, detailing certain experiments of the Baron Reichenbach of Vienna, respecting hitherto undescribed phenomena connected with magnetism. We were informed that, conducted as they had been by a rigidly scientific investigator, and one whose writings were usually but statements of dry facts, they might be considered as entitled to respectful notice; and yet they were of such a nature as we have been accustomed to regard with the greatest suspicion. They appeared, in short, as tending towards the domain of animal magnetism, and yet as promising to bring that theme of marvels within the scope of exact science. This is a subject of course, on which curiosity will be greatly excited; and we are therefore glad to obtain an opportunity of conveying some account of it to our readers in consequence of a very readable abstract of Reichenbach's papers in the "Dublin Quarterly Journal of Medical Science."

The writer sets out as follows, strictly following, we believe, the statements of the Viennese chemist, but condensing his language: "If the poles of a strong magnet capable of supporting the weight of about ten pounds, be passed over the bodies of fifteen or twenty persons, there will always be found some individuals among them who are affected by it in a very peculiar way. The number of such persons is much greater than is generally supposed. Of the above number, there will be three or four at least. The nature of this impression on sensitive persons, who, in other respects, may be looked upon as perfectly healthy, is not easily described, being rather disagreeable than pleasant, joined with a slight sensation, now of cold, now of heat, as if the person were blown upon by a cold or lukewarm current of air. Sometimes they feel contractions in the muscles, and a prickly sensation, as if ants crawled over the body; and many persons even complain of sudden headaches. Not only women, but even young men, are sensible to this influence, and in young children the sensation is very strong." Susceptibility, however, amongst the healthy, is strongest in sedentary persons, and those suffering from secret grief and deranged digestive organs Persons affected by nervous complaints, as epilepsy, catalepsy, hysteria and paralysis, are peculiarly sensitive; and still more so are lunatics and somnambulists.

To pursue the abstract of our Dublin cotemporary—"Actually or apparently healthy sensitive individuals discover, in their relation to the magnet, nothing besides the sensation just described. But the case is very different with the sick sensitive. Its action on them is sometimes agreeable, sometimes unpleasant—often disagreeably painful to such a degree, that fainting, cataleptic fits, and spasms, at times violent, and sometimes dangerous, ensue, according to the nature and degree of their disease. In this latter class, to which the somnambulists also belong, an extraordinary increase takes place in the sensitiveness of the senses. The patient sees, tastes, and feels better than others and often hears what is said in the next

room. This is, however, a fact well known and is not by any means unnatural."

"The hypothesis that the aurora borealis is an electrical phenomenon, produced by the magnetism of the earth, the real nature of which is at present unknown, owing to our not having been as yet able to detect an emanation of light from the magnet, led Reichenbach to try whether persons, in a state in which the senses were thus sharpened, could detect such an emanation from the poles of a magnet. He was enabled to make trial on a young woman named Vowotny, aged twenty-five, who suffered from continued headache, accompanied by catalepsy and spasms. So sensitive was she, that she could distinguish all the things in her room, and even the color of objects, on a dark night. The magnet acted on her with extraordinary force; and though by no means a somnambulist, she was equally sensitive with one"

"The experiment was made in a perfectly dark room. At the distance of about ten feet from the patient was placed a horse-shoe magnet of nine plates [a magnet of nine plates of alternate metals, bent into a horse-shoe form, so as to make the ends or poles approach,] and weighing about eighty pounds, with its poles directed towards the ceiling. Whenever the armature of this magnet [a piece of iron clapped upon the poles of the magnet] was removed, the girl saw both poles of the magnet surrounded by a luminosity, which disappeared whenever the armature was connected with the poles. The light was equally large on both poles, and without any apparent tendency to combine. The magnet appeared to be immediately encircled by a fiery vapor, which was again surrounded by a brilliant radiant light. The rays were not still, but continually flickered, producing a scintillating appearance of extreme beauty."

"The entire phenomenon contained nothing which could be compared to a common fire; the color was much purer, almost white, sometimes mixed with irridescent colors, and the whole being more similar to the light of the sun than to that of a common fire. The rays were not uniformly bright; in the middle of the edges of the horse-shoe they were more crowded and brilliant than at the angles, where they were collected into tufts, which extended further out than the other rays. The light of the electric spark she considered much bluer. It left an impression on the eye similat to, but much weaker than that left by the sun, and which did not disappear for several hours, and was transferred to all substances upon which she looked for some time in a painful manner."

Reichenbach endeavored to verify these results by trials upon other persons, particularly upon a woman named Reichel, who was rendered sensitive in consequence of an accidental hurt but was nevertheless healthy.

In her case, "the appearance of the light along the four longitudinal edges of each plate composing the magnet was extremely curious, even where the edges of two contiguous plates fitted one another exactly; and where one would think rays of light given off from each plate must necessarily merge into one another at their basis, they could be distinguished with great accuracy." Reichenbach, "in order to be certain that there was actual light given off in these cases, made some very careful experiments with the daguerreotype; the result of which was, that an iodized plate was acted upon when placed opposite the poles of a magnet. He was also able to concentrate it with a lens; but the focal length was found to be fifty-four inches, while for a candle, it was only twelve inches. He could discover no action of heat with the most delicate thermoscope. In some cases the patients declared they could see the surrounding objects by means of this light, and that any substance stopped its passage, as it would ordinary light: thus, for example, when the hand was laid before the poles, it streamed through the fingers. From the similarity of this light in many respects, to the aurora borealis, Reichenbach considers them identical." We may here add, from another source, that the Baron contrived to subject his patients to an effectual test in these lens experiments; for he caused the lens to be shifted about, and the theoretically proper place for the focus on the opposite wall was invariably and at once pointed out."

Continuing his abstract, the Dublin journalist says: "From the observations of Petelin, made at Lyons in 1788, and which were afterwards verified by many others, we know that, in catalepsy, the hand is capable of being attracted by a powerful magnet, just like a piece of iron; and as Mesmer observed that water over which a magnet has been several times passed, can be distinguished from ordinary water by sensitive patients. Reichenbach has fully verified these facts in a large number of persons. He found that this effect took place not only during perfect catalepsy, but even afterwards, when the persons were in full possession of their senses. Miss Vowotny described the sensation to him as an irresistible attraction

which she felt obliged to obey, though against her will; that it was a pleasant feeling combined with a cool, gentle aura, which flowed over the hand from the magnet, the former feeling as if tied and drawn to the latter by a thousand fine threads; and that she knew nothing similar to it in ordinary life, it being a peculiar indescribable feeling of refreshing and extraordinary pleasure, particularly if the magnet attracted the right hand, and was not too strong.

"He did not, however, verify Thilorier's observation, that nervous patients can convert needles into magnets; and he considers in fact, the attraction of the hand by the magnet to be of a totally different nature from that between iron and the magnet. This opinion we shall see verified further on.

"We have had no instance hitherto of the form or arrangement of the molecules of a body rendering it capable of exerting force on other bodies at a distance; but Reichenbach, by a series of experiments on magnetic water—that is, water over which a magnet had been several times passed—was led to suppose that other bodies could, in all probability, be also rendered magnetic. This he soon found to be the case in a greater or less degree; but he also observed that many substances, which were never in contact with a magnet, affected the nerves; and by extending his experiments, he arrived at the law that amorphous bodies possess no power similar to that possessed by the magnet, but that crystals are capable of producing all the phenomena resulting from the action of a magnet on cataleptic patients. This is true, however, only of single perfect crystals, and not of an agglomeration of crystals such as lump sugar. Thus, for instance, a large prism of rock crystal, placed in the hand of a nervous patient, affects the fingers so as to make them grasp the crystal involuntarily, and shut the fist.

"The power is not equally distributed over every part of the surface of the crystal, but is found to concentrate itself in two points or poles corresponding to the principal axes of the crystal. Both poles were found to act similarly; but one was generally somewhat stronger than the other, with the exception that one gave out a cool, and the other a luke-warm gentle aura."

Notwithstanding the apparent resemblance of the magnetic power in crystals to ordinary magnetism, Reichenbach satisfied himself that there is a difference; because he found that crystals do not attract iron filings or affect the compass or needle. It appears that the ordinary magnetic power is of two kinds; one of which is this peculiar power resident in crystals, and in the living body. The learned chemist also found that a charge of this power can be communicated to bodies, as is the case with a charge of electricity. "The readiness with which the situation of the poles could be detected by those sensible to their influence, was striking. Many of the patients could detect all the ores, even in the most complicated crystalline forms, with unerring accuracy, by their effects on them; as of course it is unnecessary to observe they could have no knowledge of crystallography. By extending his experiment, he soon found that the poles of a crystal gave out light exactly as the magnet does. Miss Sturman described it as a tulip formed flame, blue at the base, passing into perfect white at the top, with scattered rays, or stripes of a reddish color, passing upwards from the blue towards the white. The flame scintillated and flickered, and threw on the support on which the crystal rested, for a space of about eighteen inches all around, a certain degree of brightness. Miss Reichel describes the flame similarly; but, in addition, she saw a peculiar star-like light in the interior of the crystal; which evidently resulted from reflection, produced by the structure of the mineral.

It may be necessary to remark, that, in order to observe these phenomena, the room must be perfectly dark, and the crystal very large; not less at least than eight inches thick, and proportionately long. Smaller crystals will, however, answer with exceedingly sensitive persons.

"The curious results produced on cataleptic patients, which we have already mentioned, excited some attention in the last century, and it was soon found that similar results could be produced without a magnet, by the hand alone. It was impossible from the then state of physical science to show the connection between these phenomena and the ordinary physical ones of the magnet; and the subject was therefore passed over by philosophers, and gradually grew into disrepute, principally from the use made of it by mountebanks, and from the unsuitable name—animal magnetism—which it received. From the similarity of some of the phenomena observed by Reichenbach with those described by the elder magnetisers, he was led to think they might be the result of the same cause.

"As a magnet affects the human body he thought that the magnetism of the earth cannot be without some influence of a similar kind; and in this he was not mistaken; for he found that, of all positions in which a nervous invalid can lie or sit, the best is in the magnetic meridian, with the head towards the north; the opposite direction is

not quite so good; but the worst possible is at right angles to the magnetic meridian, with the head towards the west. He found that patients placed in the same position slept better at night, suffered less from headaches, and in general found themselves much better; while, with the head towards the west, the same patients suffered greatly; their pulse increased in frequency, hectic fever often resulted, and catalepsy was sometimes occasioned; but the moment the patient was restored to the first position, all these symptoms ceased, and were in general replaced by an agreeable feeling of well-being. In some of the cases which were tried, the most extraordinary effects were produced on the patient by this change of position; and he hence concluded that the various and contradictory effects which have been attributed to the application of electricity and magnetism to the cure of diseases, have arisen from the neglect of the influence exerted by the magnetism of the earth on the patients; and to the same cause he also attributes the little success which has hitherto attended the treatment of nervous diseases.

"In extending his experiments, he found that soft iron, which loses its magnetism when removed from the inductive power of a magnet, does not lose the power of acting on the nerves; and he hence concludes that magnetism, properly so called, is perfectly distinct from this new power, as we have already seen in other instances, when speaking of the crystal. We have already mentioned that bodies placed in contact with a crystal or magnet, such as water, &c., became possessed of the same power of affecting the nerves as those bodies, and could be distinguished from portions of the same substances not magnetised. But we have now to learn that the same properties can be communicated to the human body; or, in other words, that a man rubbed, or in mere contact with a magnet or crystal, is capable of producing the same effect on the nerves as those bodies: nay, more, that a man has these properties even when he has not touched a magnet or crystal; in fact, that we are a source of this peculiar power ourselves. It is unnecessary to give here the mode in which he arrived at this remarkable conclusion, as the experiments are all similar to those made with the magnet and crystal—a man being merely substituted for these latter. Like them, the hand produces an aura, attracts the limbs of cataleptic patients, and communicates a charge to other bodies which, as in the case of magnet and chrystal, disappears again in a short time, and is capable of passing through all bodies, is little influenced by the magnetism of the earth, and like them, is polar, the principal axis being across the body, the ends of the fingers being the poles. The head and genitals very likely form secondary poles.

But the most extraordinary part of the whole investigation is, that the top of the fingers of healthy men give off tufts of light, just as the pole of chrystals, while those of women give off none, or at most merely appear slightly luminous. The patients who were able to observe these phenomena, described the flame as being from one to four inches long, according as they were more or less sensitive, and of an extremely beautiful appearance.

Baron Reichenbach has also attained what he considers as conclusive evidence, that magnetism exists in the sun's light. All bodies exposed for a time to sunlight, retain a magnetic light for some time after. One of his experiments is so curious that we shall give it here: To a piece of thick copper wire, about thirty feet long, he fastened a piece of sheet copper about nine inches square. The end of this wire was placed in the patient's hand, and the plate exposed to the direct rays of the sun outside the window; this was scarcely done when an exclamation of intense pleasure was heard from the patient; she instantly felt the peculiar sensation of warmth, which gradually spread from her arm to her head. But, in addition to this, she described another and hitherto totally unknown sensation, namely, a feeling of extreme well being, as the patient said, similar to the sensation produced by a gentle May breeze. It flowed from the end of the wire to the arm, and spread itself over the whole body, producing a sensation of coolness, the patient feeling at the same time strengthened and refreshed. In some of his experiments Reichenbach substituted various bodies, and among them a man, for the plate of copper, and still obtained the same results What is extremely curious, the yellow part of the ray of light produces the agreeable and refreshing feeling, while the violet part causes the disagreeable feeling sometimes experienced from the action of the magnet; and this violent part we know to be that at which the greatest chemical action takes place. In heat, friction and artificial light, the Baron found various modifications of the same surprising effects.

It equally appears that "in every case of chemical action, even where it consists in nothing more than the combination of water of crystalization, with a salt or mere solution of a body in some solvent, this power is set free." "If we recollect," says our journalists, "how manifold are the circumstances under which chemical action takes

place on the earth, we will be able to see what an inexhaustible source of this power there must be. In the animal boy there is a series of such change continually going on; we eat food, it is digested in the stomach, and converted into blood, which is again further changep into muscle, fat, &c., and these in turn are again decomposed to yield fuel for animal heat and motive power. The continued chemical action is, therefore the generator of the peculiar force which we find developed in man, as in the magnet and crystal. But not only does the chemical action going on in the living body generate this power, but the decomposition which ensues immediately after death is also an abundant source of it. Reichenbach, on going into church-yards on dark nights with some of his patients, discovered that graves were always covered with a lurid phosphorescent glow, about six or eight inches high; and in one case Miss Reichel saw it four feet in height in a grave yard in Vienna, where a large number of persons were daily buried, When she walked through this grave-yard, the light reached up to her neck, and the whole place appeared covered with dense, misty, luminous fog. This the baron conceives, explains in a very satisfactory manner the appearance of light and ghosts, &c., which have been from time to time observed over graves."

After thus discovering several sources of the power, Reichenbach was led to the detection of it, in a certain measure, in all bodies whatever. From this flowed some observations, the curious nature of which must be our apology for borrowing so largely from our contemporary. "Every one," said he, "is aware that there is a large number of persons upon whom certain substances have a certain peculiar effect, generally of a disagreeable kind, which sometimes appears to be absurd and ridiculous, and is often attributed to eccentricity; thus there are some who cannot bear to touch fur, others who do not like to see feathers; nay, some who cannot bear the look of butter. The invariable nature of this feeling, and the similarity of circumstances attending its existence among the most different races, and in the most distant countries, led Reichenbach to examine it closer; and he found that these antipathies occurred, for the most part, among persons apparently healthy, but more or less sensitive, and that they increase in degree according as persons suffer from nervousness, &c., and that, hence, there was evidently some connection between these sensations and the effects which he had in so many instances found to attend the action of magnetic crystals and on similar persons.

"We have already seen that in certain cases, the action of the crystal was attended by a disagreeable feeling, which sometimes produced painful spasmodic affections of the limbs; and that this property could be communicated to various bodies, though in different degrees; and that it is never totally absent from bodies which form perfect crystals. On this subject we have, however, already said enough; and it only remains to say a few words on the sensations of apparent difference of temperature, the disagreeable feeling, as it were of disgust, and the apparent mechanical agitation of darting pains through the body, sometimes produced by most sdisimilar substances.

"Some of these sensations were felt by healthy persons, but highly sensitive individuals felt them all more or less strongly, according to the nature and extent of their disease.

"On making a number of experiments on the most different substances, he arrived at the conclusion that all amorphous bodies which do not possess the peculiar power resident in crystals, possess, in different degrees, according to the nature of the body and with a great degree of constancy, the property of giving rise to disagreeable sensations, sometimes accompanied by heat, and sometimes by a feeling of coolness. In the crystal, we had a power depending on the state of aggregation or form, while in the case before us, the nature of the substance is the determining cause of some dynamical effect of another kind."

Many curious observations remain, but our space is exhausted. Most readers will, we think, join us in wishing that the experiments of the Viennese philosopher should be repeated, and subjected to every imaginable test; as, in the first place, they seem worthy of this pains; and in the second, it is impossible to receive such extraordinary matters into the book of science without the strongest of attainable proofs. It would now, we think, be wrong to treat such things with the indifference of mere incredulity. It is far from likely that so many persons as have testified to peculiar effects of a zoo-magnetic nature, should have been entirely mistaken, or altogether possessed by a spirit of deception.

Nor is there any improbability that we are tending towards the discovery of some new form of the imponderables, in which the human organization is strangely concerned, and which therefore promises to possess medicative power. Where a prospect, however shadowy, holds out so much temptation, men will venture to follow it, and surely it were well for a few genuine men of science

to go into inquiry, if only to prevent the multitudes of the unlearned from breaking their heads upon it. It sometimes appears to us as if the spirit of incredulity over-reached itself; and perhaps there is an instance here. Forty-six years ago, many cures by magnets, called "metallic tractors" were announced. They were suddenly quashed by two physicians, who stimulated the applications by using bits of wood and iron, disguised as tractors instead. What, however, if it should prove that the cures were real cures in both cases, only produced by a cause different from the tractors, and which resided in the bodies of the operators, and connected with an earnest exertion of the will in both cases? Things as strange have happened.

REMARKS BY THE AUTHOR.

An attentive perusal of the preceding articles will naturally induce the reader to revert, with an additional degree of curiosity at least, if not of confidence, to what has been said in the successive chapters, and various appended articles of this work, on the subject of Magnetism, as the motive power of the human system, and also the curative power of the author's peculiar remedies. Even the routine practitioner of the schools, hedged in, as he may be, by habitual prejudices, and by an equally habitual deference to stationary medical authorities, not a whit more advanced in science than himself, may be led to suspect the possibility of magnetizing other substances besides iron, to which his knowledge may hitherto have been limited, and he may, if not altogether invincible to the approaches of modern science, even exert his mental courage so far as to speculate upon the possible magnetization of substances adopted in the practice of medicine. We do not expect, of course, that he will permit his speculations to become so daring as to take even a glimpse at the idea that all medicines, of every kind whether having their natural properties enhanced by artificial magnetism or not, operate, either for good or evil, by the magnetic forces alone, for this would be akin to the grand conclusion that all the forces of nature in all substances whatever, are identical with those of magnetism. But when he reads the conclusion of the inquisitive, cautious, and philosophical Reichenbach, republished and respected as it is by the learned and eminent Professor Gregory, of Edinburgh, that not only water, but all sorts of minerals and drugs, were not only susceptible of being magnetized, but also capable of imparting to his patients the magnetism they had acquired; when he further reads, on the same authority, that Reichenbach found that all substances whatever were capable of receiving a magnetic charge from the human hand, and that sensitive patients "invariably detected" the magnetism thus imparted, he may be led to think that there are greater absurdities in the world than the doctrine of magnetised medicines, and that even "Sherwood's Magnetic Remedies," after astonishing and confounding the medical faculty of the United States for more than thirty years, may admit of an explanation in perfect consistency with the demonstrable principles of magnetism. It must be a rather disagreeable transition of feeling, we dare say, for the too confident and arrogant sneer of derision to subside and change into the involuntary assent of grave and respectful conviction; but thousands have been compelled to experience this queer sensation, and every day is rapidly increasing the number.

It it is difficult for the author of this work to advert to the preceding notices of the recent work of Reichenbach, without exposing himself to the charge of egotism, while merely sustaining his just and honest pretensions to precedence in this field of magnetical enquiry. In a matter, however, which may hereafter affect the claims of his country to a just position in the history of the science of the present age, all considerations relative to himself, whether of honor or of reproach, are, with him, of inferior moment. On this account, therefore, he will cheerfully incur the risk of the imputation of personal vanity, by claiming that it was an American physician who first not only asserted and demonstrated the practicability of magnetising medicines, but established, in the course of a long practice, their paramount, indeed *exclusive efficacy*, in an exten-

sive range and heretofore supposed wide diversity of human maladies, for which science had previously discovered no appropriate nor reliable cure. He fearlessly asserted that his remedies were *magnetic*, not upon the general principle that all remedies act magnetically, but upon particular and strictly chemical principles, at a period when he well knew that his supercillious brethren in the profession would ridicule the idea, and even before magnetism was distinctly recognised as a chemical agent at all. He thus, for the sake of holding forth a humane and guiding light of truth in advance of the age, and when his country, young even in national existence, had but comparatively few pretensions to the honor of original discoveries in science, voluntarily and deliberately incurred the envious hostility of a profession, jealous and implacable to a proverb, towards any of its members who shall dare to step beyond the hard, conventional limits, prescribed by previous authorities.

He not only adopted magnetic medicines, but he magnetised them himself, in a chemical process necessarily and unavoidably too elaborate to be entrusted to the unprincipled recklessness of quacks on the one hand, or to the illiterate mass of the profession (in this respect but little higher than quacks) on the other; and thus had to encounter another and more plausible source of reproach, sustained only by sound convictions of prudential necessity. He has truly informed many members of the profession concerning the composition of his medicines, and has concealed from none, that their basis is a perchloride of gold, exalted, by a process of magnetic chemistry, above any other chloride that can be produced either in this country or in Europe; and he has frankly imparted even this process, so far as it can be made without actual observation and explanation of every detail in the laboratory itself; and it has been as frankly conceded by all who are capable of forming a sound judgment upon the subject, that it could not with safety be entrusted in any written formulæ, either to the profession in general, or even to the best pharmaceutical chemists, ignorant of the peculiarly critical operations upon which a valid result depends. To do so, would not only be to risk, but to inevitably ensure in a great majority of cases, the manufacture of a spurious production, and thus eventually consign to neglect and disrepute a remedy now, and, we trust, hereafter, a rescue to thousands from hopeless and fatal disease.

In this Journal, the author has advanced and defended the opinion that the great secret of Homœopathy, or of the extraordinary efficacy of infinitesimal quantities of medicinal substances, consists in their being actually magnetised by the triturating and other attenuating processes by which they are prepared. In other words, that the homœopathic medicines are magnetic, and that this is the sole explanation of effects at once undeniable and hitherto ridiculed, only because they appeared inexplicable. In his little work, "A Manual for Magnetising with the Rotary and Vibratory Magnetic Machines," the author has given Hahnemann's directions for magnetising medicines, by trituration and shaking. On page 166 of the Motive Power of the Human System, he has given extracts from Hahnemann on the subject of certain preparations of gold, as possessing "great remedial virtues, which cannot be replaced." This explanation of homœopathy was received with little favor at first, by some of its professors in this country, although fully and decisively sustained by Hahnemann's own language as quoted, notwithstanding his somewhat mystical dialect. Many of the objectors, however, upon more mature reflection, have assented to the force of the evidence adduced, and we think that the experiments of Reichenbach will now leave but little doubt upon the matter, in the minds of any who carefully investigate it.

On the subject, too, of the magnetic organization of the human system, first advanced by the author of this work, and for some time regarded as a mere imaginative vision of real or pretended clairvoyance, Reichenbach will be found to have elicted

strongly confirmatory evidence and elucidation, although as yet his experiments have left this exceedingly curious and important branch of science in a cruder condition than he might have found it in this and other works long since published by the author in this country. Thus he appears to have supposed that the major magnetic axis of the human body is across it, and that the principal poles are in the hands at the ends of the fingers; whereas the author has clearly determined, by experiments equally legitimate, and much longer repeated, that the major axis is a longitudinal one, and the principal poles are in the brain, the solar plexus and the genitals; those in the fingers, although as luminous and emittive as he describes them, being merely among the great number of minor or secondary poles. The author, nevertheless, cannot but congratulate himself and his readers upon this substantially conclusive corroboration or a discovery which, when first advanced, was deemed, even by many of his friends, as too bold and startling to be prudently offered to the public. Scientific caution, however, has been, and may be carried to the excess of frivolous fastidiousness and timidity; and moral courage in discovery, when properly sustained by evidence satisfactory to all reasonable minds, is a quality much more useful to the cause of truth and the advancement of science.

☞ While Mr. Sunderland was giving lectures last February in the Tremont Temple in this city, he was applied to by Capt. W—— of the U. S. A., to magnetise his daughter for the purpose of rendering her *insensible* while a *cancer tumor* should be cut from her left breast. The lady was 23 years of age and weighed about 180 pounds. The tumor had been examined some eighteen months before, by a number of our first physicians, who all agreed that it should be taken out with the knife. One of them pronounced it fibrous, and another cancerous. It caused her much pain, and about three months before she came to Mr. S., her attending physician put a diachylon plaster upon it; but took it off again in twenty-four hours, as he said it "only made it worse." In about 17 days Mr. Sunderland succeeded in securing the *spell* upon her system, so that she was utterly *unconscious*. During this time she was visited by her surgeon, but the tumor was not particularly examined. Feb. 22, at 10 A. M. was the hour fixed upon for the surgical operation to be performed.

The night previous was spent almost without sleep by the anxious husband and parents. The patient herself had not been made acquainted with the design, and at the appointed moment she was *spell-bound* in a state of utter *unconsciousness*, with her left arm stretched over her head in a state of rigidity resembling death. The operating surgeon came precisely at 10, accompanied with three other surgeons; and, after arranging his instruments, waxing his thread, &c., he, with the attending surgeons, examined the breast for the space of half an hour, and,—finally decided *that there was no tumor there!* During the time she had been magnetised, the *pain* and *tumor* had *disappeared as by magic!—Boston Paper.*

On Nature's Temporary Hæmostatics.

BY C. H. HALLET, ESQ.,

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Physiologists and surgeons have long been agreed about Nature's hæmostatics, in the case of lesions of the external parts of the body. They have described two classes of these, the temporary and the permanent, and four conditions combining to the production of the former—namely, retraction and contraction of the coats of the injured vessels, the formation of coagula, and a tendency to syncope. The two first—the effects of the action of the vital properties of the vascular texture—act by diminishing the rapidity of the flow of blood through the cut orifices, and thus favor the supervention of the third—the formation of coagula. The fourth, or tendency to syncope, contributes materially to these results. "These important changes," says Professor Miller,* "are contributed to by the natural result of loss of blood in considerable quantity; a growing faintness and tendency to syncope. The heart's action abating, and the general circulation becoming more and more feeble, the contraction of the arterial orifice is favoured as also the formation of coagula." Although coinciding fully in the opinions which are universally held respecting the extent to which these several conditions act in arresting, or conducing to the arrest of, hæmorrhage. I believe we must take into considera-

* Principles of Surgery.

tion a fifth and most important element—the relatively increased amount of fibrin in the blood following on its loss.

We have been for some time aware that the loss of blood causes a change in the relative amount of its principal constituents; a diminution of red corpuscles, and increase of fibrin. Now, as the coagulation of the blood depends on the fibrin, we should naturally be led to expect the accession of that phenomenon to be accelerated by the abstraction of the vital fluid. Such is really the case. "Thus, if a large quantity of blood be withdrawn from the vessels of an animal at one time, or within short intervals, the portions that last flow coagulate much more rapidly, but much less firmly, than those first obtained."* A familiar example will suffice to illustrate this. A medical practitioner determines to phlebotomize a patient, and desirous of observing the state of the blood, causes it to flow into a number of small receptacles—say teacups—successively. On arresting the flow of blood, he proceeds to examine that which he has designedly abstracted from the patient's system, and observes that the last cupful has coagulated as soon as the first; in fact, has solidified immediately on removal from the vessels.

Such an important change in the constitution of the blood, and such an augmentation of one of its most remarkable properties, cannot but be of great service as a hæmostatic. The phenomenon is so striking as to be worthy the attention of the profession. In fact, the advantage to be derived in one form of hæmorrhage—that accompanied and complicated by the hæmorrhagic diathesis—from an increased fibrinous state, and consequent heigthened coagulability of the blood, has been brought prominently before the profession by Professor Miller. He writes, (op. cit., p. 513,) "We shall endeavor to increae the blood's power of coagulation, more especially its power of forming a dense coagulum. If possible, we would increase the proportion of fibrin." But the fact of hæmorrhage inducing not only a direct effect on the powers of the system, but also a change in the blood favourable to its own arrestment, seems not to have attracted that attention which I am led to believe it deserves. The formation of coagula curing syncope, or a state approaching it, is well known. Thus Druitt ("Surgeon's Vade-Mecum," p. 280) says: "Now if a very large artery, such as the femoral or subclavian, is wounded, and if the apertuee in it is large, and if the flow of blood is in no manner opposed, the loss of blood will be so rapid as to occasion death almost instantaneously. But if the wound in the artery is very small, it may be closed firmly by coagulated blood during syncope, and the patient may survive." He does not give any explanation why the coagulum forms during syncope, but appears to ascribe it to the occurrence of syncope, not to the change in the blood, as the following sentence will show. "Fourthly, the faintness induced by hæmorrhage both checks the current of the blood from the heart, and gives it an increased disposition to coagulate." A statement opposed to all we know on the subject.

When a vessel has been divided, I consider Nature's proceedings towards the salutary results of occlusion of its orifice, and arrest of hæmorrhage, to be as follow:—On the immediate occurrence of the injury, the coats of the vessel retract and contract, an effect which lessens the diameter of the arterial orifice, retards the current of blood through it, leaves a space between the vessel and sheath, in which they stagnate, and exposes a rough surface on which the blood may be entangled as it flows past, and nuclei formed around which the blood may coagulate; a result to which these various states tend. The wound being small, or other conditions being favourable, these may be adequate to the purpose; but if they should fail, the hæmorrhage will, of coure, continue, and another series of actions will be brought into force. Nature's local powers having proved insufficient, she calls the whole system, to her aid. A faintness or tendency to syncope—syncope itself in extreme cases—is induced; and the blood is become more fibrinous. Both these conditions operate essentially in the same manner as retraction and contraction of the vessel, that is, retard the current of blood through the arterial orifice, and favour by this, and by increased coagulability of the blood—the result of the latter condition—the formation of occluding coagula, although these would be less firm, and therefore more liable to be broken up by the returning force of the circulation than those formed by the first set of conditions. In the more severe cases, as hæmorrhage from wounds of vessels of the first or second magnitude, even these may prove insufficient, and the issue, unless the surgeon is opportunely able to prevent further loss by the exercise of his art, must necessarily prove fatal.

The chief elements, it will be observed, in Nature's temporary hæmostatics, is the presence of coagula within the sheath and open extremity of the vessel. To procure these, I conclude, from the foregoing observations, that two consecutive series of auxiliaries are brought into play by Nature: these I shall name, for the sake of distinc-

* Carpenter's Physiology, p. 476.

tion, the primary and secondary series. Each series will be found to have the same action, at least, tend to the same results,

To retard the current of blood, we have the retraction and contraction of the vessel in the primary series, the sedative result on the heart's action from the loss of its wonted stimulus in the secondary. To assist these in the formation of coagula, we have the rough surface of the sheath to entangle the blood, and the space between the sheath and the vessel in which the blood may be at rest in the primary; the change in the relative amount of the constituents of the blood, cansed by the previous excessive depletion, and causing an increased amount of fibrin, and hence, increased tendency to coagulation of the blood in the secondary. The only distinction which seems capable of being drawn between the two is, that the primary series depends on local, the secondary, on constitutional changes.

In ordinary slight cases of hæmorrhage, the primary ts always the principal agent in causing occlusion of the injured vessel. In more severe cases, the secondary is indubitably the more efficient, since the primary has failed in its attempts to achieve a salutary effect. Still, it must be remembered, that the action of the latter can not possibly exist without the former, except where the hæmorrhagic diathesis is present; for here the primary is almost, if not wholly, in abeyance, whilst the secondary is Nature's chief reliance in the hour of need. With this exception, therefore, we observe that Nature has both series in action when the secondary has been induced at one and the same time.

This would appear to lead to the conclusion that the secondary was only accessory to the primary series. But the phenomena are so striking, the relation, as pointed out between the two, so close, their order of occurrence so natural and so regular, their results so similar, that I am led to place the secondary on the same footing with the primary, even higher in the scale of importance, in severe cases, and to consider it as Nature's greatest safeguard in those severe cases where the primary has failed.—*London Lancet.*

A few Observations on the Use of PROF. SEUTIN'S STARCH BANDAGE, In the Treatment of Fractures.

BY ALFRED MARKWICK, SURGEON, LONDON.

In the treatment of fractures, any apparatus capable of fulfilling the chief indication —namely, that of maintaining the extremities of the fractured bones in exact apposition, and which at the same time permits of progression—must undoubtedly be a very valuable one to the surgeon. Numerous apparatus have been invented for this purpose, since the time of Hippocrates; the principal ones now had recourse to are, the common apparatus, with splints. Dessault's long splint, with Boyer's modification of it, for fractures of the thigh; the double inclined planes of Mac Intyre, Liston and Amesbury; Greenhow's apparatus; the fracture box; the *appareils inamovibles* of Larry and Emile Lacroix, the former consisting of—1stly, a linen cloth several times double; 2ndly, two cylinders or junks formed of straw, bound tightly together with twine, each an inch and a half in diameter, and rather shorter than the cloth; 3rdly, one or two bags or cushions, stuffed with chaff, of sufficient thickness, and of the same length as the junks; 4thly, a conical pad, stuffed with tow, six inches long, three wide, and two thick at its base; 5thly, three six-tailed compresses; 6thly, a long compress, called the stirrup; 7thly, the "tibiale", a large piece of linen cut to the shape of the apparatus: 8thly, ligatures five or six in number: 9thly, the resolvent liquid, a mixture of camphorated spirit, Goulard water, and white of egg, beaten together in water; and the latter, which is frequently employed by Dieffenbach, of a solid case of plaster of Paris, procured by pouring into a convenient sized wooden box, containing the fractured limb covered with oil or cerate, a sufficient quantity of semi-fluid gypsum; the *appareil hyponarthrecique*, or "a suspension," proposed by Sauter, of Constance, in 1812, and adopted with certain modifications, by Mayor, of Lausanne, and Chelius, of Heidelberg. It consists of a flat piece of board, a chaff cushion, and ligatures for fixing the limb; the whole is suspended by attaching a cord, passed through a hole in each corner of the board, to a pulley, fixed either to the ceiling or the top of the bed; the moulding tablets of Mr Smee, prepared by copiously brushing over one side of a piece of coarse sheeting with a thick solution of gum, and afterwards covering it with a composition made by rubbing whiting with mucilage, continually adding the powder, until the whole is of the consistence of thick paste; a second piece of sheeting is then rubbed over on one side with the solution of gum, and the moistened side applied upon the composition with which the piece of sheeting has been covered;" the apparatus invented by Jobert, of the Hopital St. Louis, Paris, which consists of a leather sock or bracelet fastened to the foot of the bed, for making extension, a long

cloth folded and passed over the opposite side of the body, and fixed to the head of the bed, for producing counter-extension, and another, if required, placed across the limb, for counteracting the action of the muscles, on the upper extremity of the fractured bone; and lastly, the *appareil amidonne*, or starch bandage, which forms the subject of the present paper.

The principal advantages of this bandage, which—from the facility with which it is split, thus constituting, at will, a moveable and immoveable apparatus—has been termed also by its inventor, the *appareil amovo-inamovible*, are, 1st, that of effectually preventing any motion between the fractured extremities of the bones; this is evidently of the utmost importance in the treatment of all solutions of continuity in the osseous tissue, as, unless coaptation be maintained, not only will irritation and inflammation be excited, and the pain and suffering of the patient greatly prolonged, but also the formation of the callus considerably retarded, if not entirely prevented; for children and infants, also, whose restless nature is a source of considerable anxiety to the surgeon, in consequence of the difficulty thereby experienced in maintaining perfect immobility of the fractured bones, the starch bandage is an invaluable apparatus. All others, independent of their total inability to maintain perfect coaptation, become, in cases of fracture of the lower extremity, constantly saturated by the alvine and urinary excretions They therefore require to be frequently changed, in order to prevent the irritation, excoriation, and fœtor, which would otherwise be occasioned But this frequent changing must evidently cause considerable pain to the patient, as well as greatly retard the formation of the callus, by allowing the fractured ends of the bones to rub against each other. Thus, it will be perceived, that by remedying one evil the surgeon creates another. In the delirium occurring in cases of compound fracture from extensive laceration of the soft parts, injury of the nervous filaments, &c., no apparatus will so effectually prevent the fragments producing that disturbance upon which the delirium in many cases depends It forms, with the fractured limb a whole, which cannot move without the concourse of its constituent parts. Hence the impossibility of any partial movement taking place, or the occurrence of any displacement of the broken bones, the whole limb being obliged to move in the direction of any impulse given. "Neither can there be free motion in any articulation; for supposing a bone was solicited to move on another, it will be prevented from doing so by two diametrically opposite surfaces of the bandage; hence it is easy to conclude that the muscular contractions themselves will be unable to produce any change in the relation between the fractured surfaces, since, on the one hand, the contraction, requiring a certain lateral space for the development of the fibres, can but imperfectly take place, and on the other, although it might be freely effected, the displacement would be rendered impossible by the contentive means."* The compression also which the bandage exercises, considerably suppresses the suppuration occurring in compound fractures which, from its frequently being very excessive, greatly reduces the strength of the patient and consequently protracts his recovery. It likewise secludes the purulent matter from the free contact of air, and thus renders its absorption much less dangerous. In gun-shot fractures of the articulating extremities of bones, in which, when amputation has not been immediately performed, a cure can only be obtained by ankylosis, the starch bandage affords an excellent means for securing this desirable termination, by preventing all motion of the joint; 2ndly, that of adapting itself when properly applied to all elevations and depressions, consequently it exercises an equal degree of pressure on all parts, and is therefore not liable to produce congestion or mortification; on the contrary, it acts antiphlogistically by giving tone to the vessels, relieving the inflammation, and by preventing any unnecessary afflux of the fluids towards the fractured limb, allows this to receive only sufficient for the repair of the solution of continuity; 3rdly, that it does not become deranged, but remains in the same position as when applied; 4thly, that it admits of progression and enables the patient to be removed to any part without danger; thus the adult patient who has been accustomed to a life of activity, is no longer under the necessity of remaining in bed during the formation and consolidation of the callus, there to become exhausted and cachectic by a long-continued decubitus, and a prey to his bitter reflections, but is able to change his position, get up, and even walk about on crutches, and by this means recruit his strength, relieve his mind, and facilitate and hasten his recovery. Those severe and distressing cases of ulceration and gangrene which are so commonly met with, especially in old people, and which are consequent on remaining long in the recumbent posture, are of very rare occurrence. if not entirely unknown to those who employ the "appareil amovo-inamovible;" 5thly, that of the

* Seutin du Bandage Amidonne, p. 71.

material of which it is composed being economical and easily procured: 6thly, that it is equally applicable to all kinds of fractures; 7thly, that it admits of the limb being placed either in a state of flexion or extension, of pronation or supination, or of abduction or adduction; 8thly, that it is more easily removed and more speedily applied than any other apparatus; 9thly, that from the facility with which it may be divided, it forms, as its name implies, a movable and immovable appareil, at will. These advantages are certainly not trivial, and when they are considered together with the success with which it has been attended in the hands of several distinguished surgeons, in the treatment, not only of both simple and compound fractures, but also of dislocations, ruptured tendons, caries, and other affections of the joints, &c., &c., it is a matter of surprize that this bandage has not been more favorably received and more generally adopted by the profession in this country.

On the mode of application.—The necessary requisites are one of Scultetus's bandages or a common roller, two or three old linen bandages, of convenient length and breadth for the fractured limb, some pasteboard, of sufficient stiffness and firmness, from which splints are to be torn rather than cut of the proper size, in order that their edges may be so levelled off as to lie evenly on the limb, instead of being sharp and angular, and thus produce an injurious pressure on certain parts, and some fresh well-made starch. These things having been previously prepared, the surgeon immediately proceeds to reduce the fracture. When this is accomplished, and while the bones are being maintained in apposition by an assistant, a bandage is to be applied first round the toes,—for instance, supposing it to be a fracture of the leg, taking care, however, to keep their extremities free, as an index to the condition of the remainder of the limb. Those parts which, from their prominence, are likely to receive too great a degree of pressure, and by this means become inflamed and gangrenous, such as the ankles, the tendon of the tibialis antices, the spine and tuberosities of the tibia, the head of the fibula, and the condyles of the femur, are then to be guarded with wadding or amadon, previous to the application of the first roller. This is then to be passed round the foot and leg, as hig has the knee or to a short distance above it, according to the situation of the fracture, and afterwards slightly starched for the purpose of fixing its edges; if more be applied, it will penetrate through to the internal surface of the roller, which will in consequence be rendered harsh and irritating to the skin. The posterior splint, from which a semicircular piece has been torn to allow of a space for the heel, having been softened in water, starched and padded, is now to be applied and secured with the second roller, which must be well starched by means of a brush, or the palm of the hand. The lateral splints, prepared as the posterior one, are next applied, and over them the third bandage, which should receive a good coating of starch. If preferred, the lateral splints may be applied at the same time as the posterior one. However, I think more firmness is obtained by applying them as I have stated. If more solidity should be required, a fourth, and even a fifth bandage may be applied. It is advisable, previous to the application of the bandages, the first, however, excepted, to dip their extremities into the starch; by this means the edges become fixed as the bandage is unrolled. The end of the last bandage should also be folded in and placed in a conspicuous place. In cases of compound fractures, the apparatus must be so applied as to allow a free exit to the secreted fluids; thus, the edges of the rollers must either be turned back from the solutions of continuity, or holes cut in those situations corresponding to them, and the splints either notched or perforated. A communication can then, if necessary, be established between two openings, and a free discharge promoted. The wounds can also, by this contrivance, be dressed according to circumstances. Metal splints are sometimes requisite to give support to the fractured limb when the apparatus becomes softened by an abundant suppuration. Extension and counter-extension should be kept up until the bandage is perfectly dry. An old shape, resulting from a previously treated fracture, is an excellent addition to secure coaptation during its desiccation, which may, in some cases, be promoted by hot bricks, bottles of hot water, bags of heated sand, or by exposing the limb to a fire or the sun's rays. In fractures of the lower extremity in children, the bandage should be covered over, when dry, with white of egg or some kind of varnish, or enveloped in a piece of oiled skin, in order to prevent its being soiled and softened by the excretions.

The period at which the bandage should be applied has been and still is a point of much controversy. Professor Seutin is in favor of its immediate application, whether tumefaction be present or not, and states that, instead of its being followed by any ill effects, it lessens the traumatic inflammation by diminishing the afflux of blood, promotes the absorption of that already effused, and

favors the circulation by its compression, which should be gentle and equal.

Others argue that if the bandage is applied where there is much tumefaction, and before this has arrived at its height, either strangulation will be the consequence, or else the swelling will decrease and leave a vacuum between the surface of the member and the bandage, the result of which would be a want of proper support to the fractured bones. These are certainly objections, but objections of little weight. It is true, strangulation would be occasioned if the swelling should increase after the application of the bandage, but this would not be the case provided the apparatus were properly applied. I believe the following remark of M. Velpeau to be perfectly just, and founded on clinical observation—that "if there is no tumefaction, the bandage will prevent its recurrence; and if there is, and the pressure be well made, it will disappear." Whenever the swelling is considerable, I should recommend the first roller to be wetted in simple or Goulard water previous to its being applied. This would tend to reduce the tumefaction; but should such not be the case, space would however be given for its increase by the expansion of the bandage in drying. It is true, also, that the bandage no longer affords the necessary support to the fractured limb when an empty space becomes formed between it and the latter, in consequence of the subsidence of the swelling. But this will be of but short duration, as it is sufficient when the vacuum is but trifling, to soften it with water, then mould it to the shape of the fractured member, and finally to secure it by a starched roller; or if the vacuum is considerable, to split up the bandage with the scissors which Mr. Seutin has invented for that purpose, and remove a slip, if necessary, of the requisite width, and then bring it together again with a starched roller. The section of the apparatus is of the utmost importance; it enables the surgeon to make a careful examination of the limb, to remedy any improper pressure or defect, and to ascertain the position of the fractured bones. It should always be done on the following day or the day after. It causes no pain or displacement, and may be repeated as often as required without any danger of retarding the formation of the callus, as the posterior surface of the bandage gives the necessary support. It is a good plan, when applying the "bandage amidonne," to place a piece of tape in the situation where the section will have to be made, so as to serve as a guide to the scissors.—*London Lancet.*

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A Sketch of the Relation of the Spinal Marrow to PARTURITION AND PRACTICAL MIDWIFERY.

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The Uterus is a muscle,—the largest and most important muscle of the animal economy. It supports the race in the same way that the stomach and the heart support the individual. It is the organ of nutrition and circulation to the species. Parturition, the chief function of the uterus, is performed like the functions of other muscles, under the direction of the nerves by which it is supplied. These nerves have been beautifully made out by Dr. Robert Lee; and are derived chiefly from the third and fourth sacral nerves, and hypogastric ganglia. Through its nervous endowments the ulterus has the power of associating with itself other muscles, in a certain definite order, for the safe and efficient performance of parturition. But the act of parturition never had been, and never could be, studied properly, as a motor function, until the discovery of the physiology of the spinal marrow by Dr. Marshall Hall.

The Spinal Marrow is the central organ presiding over the motor actions of the uterus.

All the chief *physiological* uterine motor actions are *reflex* in their nature.

Other causes of uterine contraction are, *direct* or *centric* spinal action, the inflence of *emotion*, and *muscular irritability*.

Contraction of the uterus from irritation of mamary excitor nerves, as in the sucking of a child, or from irritation of the cutaneous nerves of the abdomen, as by the aspersion of cold water, are pure instances of *reflex spinal action*. In either case the direction of the motor influences is *from* the extremities of the incident excitor nerves *through* the spinal marrow, and then *to* the motor organ.

Contraction of the uterus from fear is an instance of the influence of *emotion*. Emotion may be induced by external objects, as from the sight of instruments; or it may arise within the mind, as from the remembrance of former suffering. In these respects there is some analogy between reflex action and the action of emotion or volition; but emotion and volition are *psychical*, excito-motion is *physical*. This constitutes such immense difference, a difference so preponderating over the analogies referred to, that there is danger of great confusion in physiology, if the term *reflex cerebral action*

(proposed by Dr. Laycock) should come to be generally applied to motions dependent either on emotion or volition.

The seat of emotion is not yet ascertained, but it acts *through* the spinal marrow and the spinal motor nerves, as would appear from the facts that emotional movements remain in parts entirely paralyzed to cerebral voluntary motion.

Contraction of the uterus from the application of galvanism is an instance of uterine action from *vascular irritability*. Here, the stimulus directly affects the muscular fibres of the uterus.

Volition may increase the actions of the expiratory muscles after the dilatation of the os uteri, or it may bring into action before this part of labor is completed; but the motor forces, dependent on the will, are *accessory*, and *essential* to the process of parturition; delivery may take place in cerebral paralysis with total loss of voluntary motion, the actions dependent on *reflex action*, or *emotion*, and on *muscular irritability*, all remaining perfect.

Delivery may take place in profound coma—many such cases are on record; or in paraplegia from disease in the middle portions of the spinal marrow, as in a case related by Ollivier, when both volitional and emotional action are subtracted, but labour proceeds by virtue of the reflex action and the muscular irritability which remain. It should be mentioned, that in simple coma, only emotion and volition are withdrawn; but in paraplegia from disease in the middle of the spinal marrow, there is also the absence of the expiratory reflex action, the abdominal muscles are now inactive.

In paraplegia from disease involving the whole lower portion of the spinal marrow, labour either does not take place, or proceeds with extreme inertia, as in a case related by M. Brachet; here volition, emotion, and all the reflex actions, are absent, and *muscular irritability* alone remains Patients in this state have nevertheless been delivered by the stimulus of galvanism applied to the uterus itself.

Thus the motor actions concerned in natural parturition admit of an interesting synthesis and analysis; obstetrician should be as familiar with the simple and compound forms of muscular action as the chemist with elementary bodies and their combinations.

The *type* of uterineaction is rhythmic; the pains succeeding each other at regular intervals. The *rhythm* is probably dependent on the spinal marrow, being synchronous with the action of the expiratory muscles, which is undoubtedly reflex in its nature.

The *mode* of uterine action is probably peristaltic; peristaltic action has been observed by Muller in the uterus of the rat, and in the oviduct of the turtle; In the human female, the contractions appear, according to Michaelas and Wigand, to commence at the cervix, to extend from thence to the fundus, and then to pass downwards again towards the os uteri This is analogous to what takes place in other organs possessing peristaltic action; the heart begins to contract at the auricle, the contraction traverses to the apex, and then returns; in the stomach also, on the authority of Magendie, contraction begins at the pylorus, proceeds to the cardia, and then sweeps back from left to right .The objects to be obtained by this double action in the uterus would seem to be the prevention of the descent of the umbilical cord, the ascent of the arms of the child at the commencement of the pain, in cases when they hang down, and in this way to prevent arm or shoulder presentation, and the prevention of inversion of the uterus. Intussusception of the upper part of the organ, and complete inversion, would probably be frequent if contraction uniformly commenced at the fundus.

The peristaltic *mode* of action appears to depend on the ganglionic nerves. The question may be asked. is peristaltic action anything more than the muscular irritability of parts supplied by the ganglionic system? The uterus contracts so as to expel its contents after death. In the æsophagus, which, like the uterus, is endowed both with *peristaltic* action and *reflex* spinal motion, Dr. Marshall Hall has observed distinct contraction after death; I have also observed the same phenomenon.

The excitors of the reflex spinal actions in the uterus are numerous.

First in importance are the incident nerves of the whole length of the parturient canal, from the fundus uteri to the constrictor vaginæ.

Irritation of the incident nerves of the ovaria and of the mammæ, the cutaneous nerves of the abdomen and general surface, the nerves of the stomach, bladder, and rectum, all excite reflex uterine action during labour.

A definite order is observed in the phenomena of labour.

With respect to that great problem in physiology and obstetrics—namely, the cause of the coming on of labour at the end of the tenth lunar month of gestation, nothing definite has hitherto been said. In the earliest part of the parturient process,

which in my lectures I have been accustomed to call the *premonitory stage* there is an equable, continuous contraction of the uterus, which exists for some time before the appearance of the periodical contractions. This equable contraction urges the head of the child firmly against the os uteri. What is the cause of this equable contraction? We must look beyond the uterus for the answer; for the uterus attempts to act in extra-uterine pregnancy. I believe the ovaria are the excitors of the first motor action of the uterus. It is well known that the majority of cases of abortion occur at what would have been menstrual periods, and it is equally well known that the entirety of the phenomena of menstruation depend upon the ovaria as their cause. In the human female, labour comes on at the tenth menstrual period from the time of conception; in animals also, as far as my observations have extended, the term of gestation is some multiple of an æstrual period. Now the menstrual periods of the human female and the æstrual periods of animals are alike in this, that in the one case ova are *chiefly* prepared at these epochs, in the other *solely*. Further than this the analogy cannot fairly be pressed. It is too much to speak of any moral similarity between the human female and the lower animals in this respect. I consider, then, that parturition in the human female is essentially a menstrual period; but that instead of an *ovule* being thrown off from the ovary, an *ovum* is expelled from the uterus, and I compare the lochial to the menstrual discharge In animals, the phenomena of parturition are more strikingly similar to those of æstruation; there is evidence that a similar state of the ovaria obtains. For instance, the guinea pig and the rabbit will admit the male immediately after delivery, and conception will follow the congress. In the mare also, a few days after foaling is the time chosen for the admission of the male. On these and other grounds I believe the ovaria to be the excitors of the first contraction of the uterus in parturition, but I am engaged in testing the matter experimentally. I shall excise the ovaria in animals which have conceived, and note the results.

The effect of the equable contraction of the uterus first induced, is, as I have said, to urge the head of the child against the os uteri. This is the most excitable part of the uterus, and after a time, irritation of the os and cervix call forth the pains which constitute the commencement of actual labour. The effects of irritation of the os uteri are shown in cases of premature labour induced by irritation in this situation, as by the introduction of a plug, and by certain cases where, from the pendulous state of the uterus, the head cannot be brought in apposition with the os uteri, and labour, in consequence, is put off until this cause of inertia is removed by an abdominal bandage, or the prone position. Irritation, then, of the os uteri must be looked on as a cause, though, in ordinary cases, a secondary cause, of the coming on of labour. I believe the ovarian nerves and the nerves of the os uteri, are as much the excitors of the motor actions of parturition, as the pneumogastric and the trifacial are the excitors of the motor part of respiration.

After the persistence of the premonitory stage of labour for a certain time, actual labor pains commence. The object now to be attained is the dilatation of the os uteri, and I therefore propose to call this the *stage of dilatation*. Throughout this stage, the body and fundus contract periodically. The contractions of the uterus in this stage are not so violent as they subsequently become. This is owing to the contact of the membranes and the amniotic fluid with the os uteri. At the same time the os uteri and the vagina dilate. This dilatation is effected partly by the mechanical pressure of the membranes and the advancing head of the fœtus, but the os uteri possesses a *positive* as well as a *passive* power of dilatation—a dilatation similar to the dilatation of the cardia in vomiting or deglutition. This *positive dilatation* is shown by the extreme suddenness with which it takes place after the existence of previous contraction, and by the sudden contraction which sometimes occurs immediately after the birth of the child, as encysted placenta. The perinæum, in the dilatation of which is *passive*, never contracts in this way. It is also shown by the form of the hæmorrhage in placenta prævia; after the separation of a portion of the placenta, hæmorrhage is increased during the pains; if the dilatation were from mere pressure, the hæmorrhage ought to cease during the pains, and come on in the intervals. The direction in which the motor force is exerted in the stage of dilatation is *downwards* and *backwards*, in the direction of the axis of the pelvic inlet. In this stage of labour the motor actions are purely of a reflex kind, the excitor being the internal surface of the uterus, and particularly the os uteri The centre of the nervous arcs involved in the uterine actions is in the lower part of the spinal marrow. In natural cases, emotion does not at all influence this stage physiologically.

During the *stage of dilatation*, various extra uterine reflex actions occur. The actions of the bowels and of the bladder are excited, and in many cases vomiting takes place. At

the time of the completion of the dilatation of the os uteri, several rigors affecting the whole muscular system are frequently experienced. Defæcation and micturation have evidently a beneficial purpose in enlarging the capacity of the pelvis; the nausea and vomiting promotes the dilatation of the os uteri, and is a preparation for the expiratory action of the next stage.

In the next stage of labour, the head of the child advances through the vagina to the os externum; this I propose to call the *stage of propulsion*. In this stage, the whole of the uterus contracts upon the child, but new motor powers are now brought into play. Irritation of the os uteri only excited reflex motor action in the uterus itself, but irritation of the vagina excites both the uterus and the respiratory muscles. The contractions are also more violent, because the liquor amnii has now escaped, and the hard head and body of the child are in direct contact with the excitor surfaces. At the coming on of each pain, a deep inspiration is taken, and during the pain, expiration is protracted as much as possible where the pains are long. They consist, as far as the respiratory system is concerned, of several sudden and deep inspirations, followed by prolonged expirations. At the height of a pain in this stage, the glottis and cardia are *closed*, the abdominal and other expiratory muscles contracted, and the diaphragm inert, as in vomiting. All obstetric writers have taught the contraction of the diaphragm during the pains of this stage; but if it be considered for a moment that the diaphragm is a muscle of *inspiration*, while the parturient action is expiratory, the fallacy of such a view will be evident. It is true that the floor of the diaphragm remains plain during the effort at expiration, with the glottis partially or entirely closed, but this is from the mechanical distension of the chest by the contained air, not from active contraction of the muscle itself.

It will be seen, that in the stage of propulsion the direction in which the motor force is exerted, is different from what it was in the stage of dilatation. The direction the head of the child has now to take is *downwards* and *forwards*, instead of backwards. It has to pass through the lower half of the pelvic segment of the circle of Carus, in the direction of the axis of the pelvic outlet. Obviously, a new direction of the motor force was necessary to effect this, and it is supplied by the addition of the expiratory action at this time. The action of the abdominal muscles urges the fundus uteri backwards against the spinal column, and assists in giving the head the proper direction while emerging through the pelvis. The mechanical adaptation of the fœtal head to this progress has often been dwelt upon. Another object effected by the expiratory action is the compression of the uterus, which is thereby excited to additional contraction

In this stage of labour, the nervous arcs concerned have their centres partly in the lower nodules of the spinal marrow, and partly in the medulla oblongata. There is this analogy between the medulla oblongata and the lower spinal marrow, that in the one are congregated the keys of the motor arcs of respiration, deglutition, and their various morbid actions; in the other, the centres of the motor arcs of parturition, defæcation, micturation, ejaculation, and conception, as far as the pelvic viscera are concerned. It cannot but be considered wonderful that the dilatation of the os uteri should only excite the nervous arc concerned in vomiting, while the dilatation of the vagina should only excite the respiratory arcs. In the stage of dilatation the motor actions are chiefly reflex; but both volition and emotion intervene in the stage of propulsion. The patient desires to press her feet against some fixed body, and to grasp with the hands, so as to increase the power of the expiratory efforts. When the pains are moderate, the woman utters only a prolonged and intermittent groan, owing to the contracted state of the glottis; but when the suffering, produced from the distention of the vagina, is excessive and unbearable, she utters a loud cry. This cry is a motor action, a powerful expiration, excited by the emotion of intense suffering; it opens the glottis widely, and immediately takes off from the uterine system all the extra-uterine pressure. Thus, the glottis may be compared to a safety-valve which is opened by emotion whenever the pressure becomes too powerful to be borne with safety.

In the next stage the child is born, and I have called this the *stage of expulsion*. The birth of the child is effected by the powerful action of the expiratory muscles, with the glottis and cardia closed, and by simultaneous contraction of the uterus and the whole parturient canal. At the moment of birth, the vagina is retracted over the head of the child by the action of the levatores ani, and positive dilatation of the sphincter ani and sphincter vesicæ occurs. The dilatation of these sphincters is partly produced by emotion, and partly by reflex action. It forms a most important provision for the safety of the perinæum. At the moment when this part is subject to the greatest amount of distention, these two sphincters suddenly relax

before and behind it. We may thus see a reason for the situation of the vagina between the orifices of the rectum and bladder. Laceration occurs generally in first labours, and at this point primiparous women often suffer from feelings of delicacy. They should always be prepared beforehand for involuntary action of the bowels at this juncture, and impressed with the propriety of not preventing it by volition which otherwise they are, from motives of delicacy, prone to exert at this time. A napkin should be placed to receive any fæcal matter that may be discharged. The regulation of the glottis by emotion is another provision for the defence of the mother from laceration at this period. At the moment of birth, the woman, affected with uncontrollable agony, gives a loud cry, which by opening the glottis widely, releases the uterus from all expiratory pressure.

This completes the process of actual labour. The phenomena which follow are so far different, that I propose to treat of them as a *supplemental stage.*

When the body of the child is born, the contracting uterus follows it in its descent, and the action of the uterus, produced by the great excitation of the vagina, is such, that in many cases it at once throws off the placenta, and lodges it in the upper part of the vagina. When this is the case, the presence of the placenta in the vagina, and the irritation of the surface, from which the placenta has been torn, are generally sufficient to ensure, by reflex action, the contraction of the uterus, and to prevent hæmorrhage. The maternal emotions also tend to accomplish this end. The sound of the child's voice affects the action of the uterus. If the placenta does not separate immediately, slight irritation through the loose abdominal walls, or gentle traction of the cord, is sufficient to cause its expulsion. Denman recommended that the placental mass should be allowed to remain a considerable time in the vagina. He supposed that coagulation of the blood, poured out at the moment of the separation of the placenta, was thus favored, and after-pains diminished as a consequence. But this plan would also act by exciting reflex action, and the permanent contraction of the uterus. At this time a bandage is applied to the abdomen, and furnishes another guarantee against hæmorrhage.

The uterus has now lost its great excitor, by the delivery of the fœtus, but it is necessary that the uterus should be stimulated for a considerable time in order to promote its return as nearly as possible to its pre-impregnated state. This is provided for in nature. The stomach has an intimate reflex connexion with the uterus at all times, but immediately after delivery this is very much increased; every thing the patient drinks now excites uterine contractions. The reflex connection between the mamma and uterus is increased to a still greater degree. The mere sight of the child will sometimes suffice to create the sensation of "the draught" in the breasts, and this re-acts upon the uterus. Drinking fluids also excites the draught, and thus the stomach exerts an indirect action on the uterus besides its proper reflex action. Still more powerful is the act of suckling the child; distinct uterine action is excited on each occasion, and when after-pains are present, a distinct pain is regularly produced every time the infant is applied to the breast. These different sources of excitation continue for some time after delivery, and are sufficient to restore the uterus to the size natural to the unimpregnated state in women who have borne children.

No one can refrain from admiring the successive order in which various excitor powers come into operation during the progress of labour. First, according to my belief, the ovaria excite the uterus, while this organ is defended from the irritation of the fœtus by the liquor amnii, a fluid of its own temperature, a medium least of all capable of exciting that reflex action of which the uterus is so susceptible. Next, the head of the child is brought in apposition with the os uteri, shielded, however, in some measure, by the liquor amnii, until the os is sufficiently dilated to permit it to pass; then, the naked head and body of the child come in contact with the highly excitor surface of the vagina and the os externum successively. After the fœtus has been expelled, the placenta takes up the train of excitation, and this is followed by the gastric and mammary succession of stimulus and action. Not less extraordinary is the gradual augmentation of motor action, from the simple equable contraction of the uterus the day or two before labour, to the grand combination of muscular actions, which marks the final throes that expel the child.

The motor power of the uterus itself, the number of motor organs involved as auxiliaries, and the different forms of muscular action brought into action during its progress, mark the act of parturition as the most comprehensive of all the motor functions of the animal economy. Taking muscular irritability as the basis, we have reflex action, emotion and volition, every power, in fact, which exists, whether for the execution of contraction or dilatation, all extensively and simultaneously engaged; the end of all being the safe accomplishment of delivery.

Well might the philosophic Denman exclaim—"Instead, therefore, of despairing, and thinking they are abandoned in the hour of their distress, all women should believe and find comfort in the reflection, that they are at those times under the peculiar care of Providence, and that their safety in childbirth is ensured by more numerous and powerful resources than under any other circumstances, though to appearance less dangerous."

THE DISSECTOR.

JULY 1, 1846.

Lateral Curvatures of the Spine.

Miss E. L. H., aged 19 years called upon us on the 15th of March, 1846, with a lateral curvature of the spine. The posterior part of the upper and principal curve in the the spine, lay under the right scapula, and its deviation there from the median line was an inch and a half. It was about eight years since the curve commenced, which was now imbedded in a veritable white swelling of the scapula, and which, by the expansion of the muscles gradually drew the spine from the median line to its present position. We prescribed the magnetized gold pills and plaster to reduce the white swelling, and directed her to go home and use these remedies, and return here on the first of June, when I would commence magnetizing the spine.

On an examination at the end of this time, we found the white swelling greatly lessened and the curve reduced one half. We now commenced magnetizing the spine once a day, and on the third day brought it up to its place, and on the fourth it passed the centre under the action of the machine, and began to curve to the left side.

We magnetized this case twelve times only when the curve being reduced to one-fourth of an inch, we directed the young lady to go home and resume the use of the pills and plaster, and to continue their use until the white swelling was entirely reduced, when the spine would resume its natural position and would be maintained there under the healthy and natural action of the muscles.

We have had more than a hundred cases of lateral curvature of the spine during the last three years, every one of which was connected with a white swelling on the posterior side of the curve.

The true cause of lateral curvatures of the spine is not understood by the profession; they are *always* cases of tubercular disease of the muscles of the spine. The tuberculations or white swellings are always on the posterior side of the curve, and produce the deviations of the vertebræ. The obvious treatment, therefore, is first to reduce the tuberculations, when the vertebræ will return to their proper place of their own accord, and the muscles thus relieved and restored will retain them in their true position. Yet the regular quacks of our profession continue to recommend that such patients be harnessed with cushions and splints; but regarding them as worse than useless, we always remove them.

The importance of the use of the magnetized gold pills and plaster in these cases will be seen in the following case which we treated and published before we introduced the use of the magnetic machine as auxiliary to the cure.

Miss E. B., of Stratford, Conn., aged twelve years. I called to see her in Dec. 1839, and on an examination found a lateral curvature of the dorsal vertebræ, a portion of which extended under and raised the right shoulder blade. The right hip was also raised above the left, and her health and strength much reduced.

Prescribed the magnetic remedies. The plaster to extend the whole length of the spine. The weight of her body was also directed to be suspended by her arms, with any simple contrivance, as by taking hold of a stick suspended from a ceiling, a few minutes, five or six times a day.

I called to see her again the last part of April, 1840, when, on examination of the

spine, it was found to have resumed its natural position, and her health and strength was perfectly restored.

Magnetic Machine--Pretended Improvements.

In answer to many correspondents who ask our opinion as to the reality and importance of the pretended improvements upon the vibratory magnetic machine, as set forth in the advertisements and puffs of certain parties, we beg to say that these alleged improvements, having no actual existence, are of importance only to the pretenders who get credulous victims to believe in them. There has been no improvement whatever made in magnetic machines, either at home or abroad, since we introduced the vibratory instead of the rotary movement in the one manufactured under our superintendance, and which maintains an undiminished reputation and unrivalled sale. If any real improvement should be discovered, our friends and patients may rest assured that we shall adopt it, at the earliest moment; but nothing of the kind has occurred or appears even in prospect. We have no doubt that our machine, which is always manufactured of superior materials, and in the best manner, conveys a greater amount of the magnetic forces into the system in better adjusted proportions, and with less inconvenience to the patient, than any other that has been ostentatiously fabricated to rival it; and the information which we are receiving, by almost every mail, of its almost miraculous effects, in a far greater variety of cases than it was originally supposed to be applicable to, fully convinces us that its sphere of usefulness is widening every day, and will extend in proportion as the instrument itself becomes known and experimentally tested.

Similar inquiries are frequently addressed to us concerning the rings, bands, and belts termed "Galvanic," and sold in connection with a bottle full of liquid called "The Magnetic Fluid!" We have already expressed our deliberate opinion of these nostrums, and now repeat that they have no other effect than that which they may derive from the genial imaginations of those who use them. These rings, bands, etc., are composed of small, thin pieces of zinc and copper, but it is well known that these metals evolve no forces until they are acted on by a corrosive acid, as in the galvanic battery. Rings of steel, permanently magnetized, and maintaining an action through the finger, arm or body, between the opposite poles, have a slight effect in highly susceptible subjects; and even copper and zinc, if connected at the same time with the two opposite surfaces of the body, namely, the mucous and serous, would also exert an action; but when both are applied to the same surface, as is the case with these rings, galvanism is evidently out of the question.

Consumption.

We would again direct the attention of the readers of this Journal to the importance of the use of the magnetic machine in the treatment of tubercular consumption, as our experience of its effects in more than 350 cases of this disease leaves no doubt but it greatly assists the action of other remedies in reducing tubercular disease of the lungs.

These cases were all distinguished by the magnetic symptoms, which *never* err; and the state of the tuberculations was often observed through clairvoyance during the progress of the treatment, as were the changes in the appearance of the tubercles from the action of the instrument.

Of 164 cases of ladies and gentlemen who visited our rooms in 1844, in all the different stages of the disease, we lost only *eleven*; and of 203 who visited our rooms in 1845, we have lost only *nine*. In two of these the tuberculations were reduced as shown by the magnetic symptoms and by clairvoyance, but both died of mucous disease, in the then feeble state of the lungs, in consequence of colds.

All the cases were from the commencement of the treatment, under the action of the magnetized gold pills in conjunction

with that of the machine, and a great majority of the cases the magnetized plaster was used at the same time. No other medicines were used in these cases except occasionally different articles to paliate the cough, and in a few cases the Hardwood Tar Syrup, or the pill composed of Hard. Bal. Copa. cubebs and Ext. Hyos, where the tuberculations were accompanied with much mucous disease, generally from colds after the tubercles had nearly disappeared.

On some Electrical Effects Developed chiefly by the Galvanic Battery.

BY GEORGE P. T. HILL, ESQ., FILEY.

On sending a current of electricity, by means of the galvanic battery, through fine metallic wires, the most refractory metals are fused with facility, and become incandescent. If thin metallic leaves be employed, they burn with great brilliancy, being dissipated into vapor. Now, on the supposition that the space between the ultimate atoms of a body, independent of the several forces that may be arranged round them are entirely occupied by heat, I think the evolution of the latter substance, as exemplified in the above cases, may be satisfactorily accounted for. As a consequence of the law, that no two bodies can occupy the same space at the same time, we may suppose that the addition of electricity to a substance causes its heat of combination to be evolved, and thus to become sensible. Otherwise, whence arises this great increase of temperature? The caloric must obviously be supplied through the medium of one or other of the bodies employed; and if we grant this, the inquiry naturally presents itself as to what causes its evolution. Suppose M to represent a body, and B the heat of combination arranged all around it. Now, if we add to this a portion of electricity, C, on the supposition that this is materia', a displacement of part of the specific heat, B, must take place or the body be considerably enlarged. We find that heat is evolved, and must, I conceive, consider the specific heat of the body to have been lessened, for any other source from which this rise of temperature could have been derived is unknown. The form of the body remains unchanged, for, as the specific heat is replaced, atom for atom, or rather volume for volume, by the electricity, no condensation can possibly take place. The evolved heat now exerts its action upon the body, which, as in ordinary circumstances, assumes the liquid form, and becomes incandescent.

In these experiments we find quantity of electricity to be the sole requisite. The large battery of Children, though capable of fusing several feet of platinum wire, had an intensity so feeble as not sensibly to cause a divergence of the gold leaves of the electrometer. This is perfectly in accordance with the above theory, for it is clear that the larger the addition of electrcity, the greater the diminution of specific heat, whether the tension be high or low. Did the evolved heat proceed from the electric fluid itself, we should of course expect that intensity as well as quantity would be required for the production of these effects. This we know not to be the case. I do not consider the circumstance stated by Dalton, that the specific heats of bodies are greater at high than low temperatures, to be any obstacle to the reception of the above, for, to use an expression of the late Dr. Turner, these phenomena "have been investigated only for matter when in its ordinary state, and probably do not apply in cases of electric excitement" On the other hand, increase of specific heat causes an evolution of electricty. Harris detected electricity, though in exceedingly minute quantity, in the evaporation of distilled water from platinum vessels, when the presence of any chemical action was out of the question. In this we have phenomena directly opposed to the former, but I think they may be considered no more anomalous than the fact, that watery vapor should be decomposed by metallic iron, heated to redness; and that the oxide thus generated should in its turn, be decomposable by a stream of hydrogen gas. I apprehend, then that there are other causes in operation which modify the effects of these most subtle and diffusive bodies, heat and electricity. In the condensation of aqueous vapor, the objects in contact with it likewise show signs of electric excitement. For a portion of vapor contains more specific heat and less specific electricity, than the same when liquid, and, therefore, before it can assume this form, it must receive electricity from surrounding objects, which thus exhibit signs of its emission.

No heat is evolved when a current of positive or negative electricity only is passed along a body, for in this case the repulsion of the particles confines the fluid to the surface alone, where it cannot influence the internal arrangements of the conductor.—*London Lancet.*

On the Successful Treatment of Ovarian Dropsy,

BY WILLIAN ECCLES, ESQ.,

SURGEON TO THE ROYAL FREE HOSPITAL, LONDON.

I have lately had a patient who had been subjected to Mr. Brown's treatment,* and, in justice to that gentlemeu, I must say that I believe he has been successful in curing her. I mention it, briefly, at this time, because public clamour appears to be directed against his doctrines; and, moreover, in common fairness he ought himself to have the opportunity of stating the case, as doubtless he will, in detail.

The patient was a married lady, about thirty years of age, who had had two children and one miscarriage. She first consulted me in the spring of last year, having previously been under the judicious care of Mr. Knaggs, of Camden Town. When she presented herself to me she had considerable abdominal enlargement, general emaciation, and great depression of spirits. An alterative course of treatment was suggested and adopted, but without any beneficial effect. Dr. Blundell was consulted, as also, subsequently, was Dr. Henry Davies The opinion of both these gentlemen was, that the disease was ovarian dropsy; but no special treatment was recommended. In the beginning of December last I was requested to meet Mr. Brown. His opinion was, that it was a case in which his mode of treatment would be successful. I confess I was somewhat sceptical upon this point; but in the absence of all experience of his plan, I could not so much as venture an opinion respecting it. The treatment, however, was forthwith commenced; mercurial frictions, diuretics, and tight bandaging of the abdomen with a flannel roller, were the means applied. In ten days ptyalism was produced, and the size of the abdomen was reduced from thirty-four and a half to thirty-two inches. I am not satisfied, in my own mind, that this reduction in size resulted from diminution of the cyst as Mr. Brown believes. I would rather attribute it to the absorption of the tissues caused by the salivation, and consequent loss of nutriment; these, however, are matters which may be passed over. Tapping was now performed, and nine pints and a half of fluid were drawn off; the abdomen was again very tightly bandaged, and the diuretic medicines continued.

The case, at this time, seems to be perfectly cured. The lady pronounces herself to be in better health than she has been in for years; she is, consequently, in high spirits, can walk about with ease, and is daily gaining flesh. I have said, the case seems to be perfectly cured; but I am not insensible that these are early days to arrive at such a conclusion. What I mean is, that at present there is not the slightest appearance of the re-accumulation of fluid. I shall watch the case narrowly, and if, at the end of six or twelve months, there should be any indication of a return of the disease, I will, if you will allow me, publish the fact in the pages of THE LANCET. I would beg leave, in conclusion, to recommend to my professional brethren the adoption of this mode of treating ovarian dropsy, so that the merits of the plan may be fairly tested. In any cases that may occur in my own practice, I shall most assuredly have recourse to it, and I will trouble you with a faithful record of the results, feeling certain that your pages will always be open to the discussion of matters of so practical a nature.—*Ib.*

*Vide Case, *ante.*

Diseases of Children.

In the January number of the *Clinique des Hopitaux des Enfans*, we find various interesting articles, of which the following is the analysis:—

M. Guersant on the Influence of Rachitis on Fractures in Children.

From statistical researches founded on a medium of eighty cases of fracture, yearly, we have remarked that about a third of the fractures which we observe, occur in rachitic children. The circumstances which predispose them to fractures are two-fold; the anatomical structure of the rachitic bones, and the great weakness of rachitic children, which exposes them to frequent falls. The structure of rachitic bones varies according to the period of the disease. In the first period the spongy tissue is gorged with blood, more especially in the extremities of the long bones. In the second stage, the vascular system is still more developed, the compact tissue softens, the medullary canal becomes larger, and the bones bend in various directions. In the third period the disease remains stationary, and improves, the cellular structure becoming less vascular, and the bones regaining a certain degree of hardness The predominant feature in these various states is extreme fragility of the bones. This fragility however, is fortunately compensated by the thickness of the periosteum in children generally, and more especially in rachitic children.

The symptoms of fracture in rachitic children are very different from those which are met with under other circumstances. There

is no crepitation, owing to the softness of the bones; often no deformity, on account of the periostic covering; and when deformity exists there is no means of distinguishing it from the curvatures that are so frequent in rachitic children. These are the only symptoms which enable us to recognise the fracture :—1st. Abnormal mobility of the bones modified by the resistance of the periosteum; 2nd. Flexibility of the limb at the seat of fracture. If the existence of fracture is not recognised, or if a lengthened period elapses before the surgeon is called in, the periosteum may be ruptured, and then the signs of fracture become more apparent. There is then deformity riding of the fragments, and even crepitation, when the general rachitic affection is not too advanced.

The symptoms of fracture persist a long while after the accident, even when it is treated properly. Fifteen days afterwards, the fragments are generally still found moveable, whereas in a healthy child at that time, consolidation has always taken place. Consolidation is thus always tardy, and the more so the more severe the general disease. In addition to the direct unfavorable influence of rickets, there are other morbid influences to which the patients are often exposed. Thus, they are frequently attacked with pneumonia, bronchial catarrh, and eruptive fevers, to which ricketty children are extremely predisposed, these diseases always lengthening the treatment of the fracture.

M Guersant reduces the treatment of these fractures to the mere application of a roller-bandage applied to the limb, and three or four small splints placed at the seat of the fracture, the whole being again kept in place by another circular bandage. The splints must not be allowed to rest on the osseous protuberances, lest excoriations should follow; this is the more important, as the extremities of the long bones are morbidly swollen. The entire apparatus must be surrounded with a piece of oil-skin, if it is one of the inferior limbs that is fractured, owing to the circumstance of very young children often wetting their bed M. Guersant does not approve of any other forms of apparatus, all kinds of padding or cushions being soon destroyed, and the starch bandage being softened, by the contact of the urine.

The general treatment ought to consist pricipally, as in simple rachitis, in a good and tonic alimentation Some writers have latterly asserted that a substantial diet is not beneficial in rachitis; but this is an error which may be explained by the circumstance of substantial food being sometimes given too suddenly to children who have previously been living on very low diet. The change should be gradual, so as to allow the stomach to become accustomed to the difference in the food.

M. Bricheteau on the Antagonism of Ague and of Pulmonary Consumption.

This question has been much discussed of ate by French medical practitioners, as our readers are well aware. M. Bricheteau, physician to the "Hospital Necker," analyzes the various communications that have appeared on the subject, including documents from different parts of Algeria, from Bourdeaux, Strasbourg, Lyons, the department of the Ain, Rochefort, Rome, &c ,—all localities in which intermittent fever is rife, —and appears to come to the conclusion that there cannot be said to be antagonism between the two diseases—that is, exclusion of the one by the other; although the circumstances which favor the developement of intermittents may be, and in all probability are, unfavorable to the developement of phthisis. M. Bricheteau thus concludes his remarks :—

"Although, on examining the etiology of these diseases, we do not find incompatibility between the causes of phthisis and intermittent fevers, it is impossible not to recognise, either in the climate of marshy districts or in the influence of marshy miasmata over the economy, conditions favorable to tubercular patients. Our knowledge of this fact is to be referred to the authors of the labors which we have enumerated. But instead of calling to our assistance some obscure antagonizing tendencies, would it not be possible to account for this kind of prophylaxy, by attributing it to the moist uniform heat which reigns in some marshy districts, and which, by favoring the development of fever, may impede that of pulmonary tuberculization. Does not this appear proved by what takes place at Strasbourg, where the climate being both damp and cold, the town is ravaged by intermittent fever and by phthisis; whereas the more southern departments of L'Ain, La Niévre, Le Var, &c , are decimated by intermittent fevers, but offer very few phthisical patients? We may also add that it is impossible to deny that in all countries intermittent fevers preserve from other affections. The Dutch appear to be aware of this fact, as Boerhaave informs us, that they are in the habit of congratulating themselves on the return of their fevers. The same Boerhaave, along with Hoffmann, Lancisi, and Sydenham,

thought that intermittent fevers freed us from various diseases, and even predisposed to longevity: 'Febres intérmittentes, nisi malignæ, ad longevitatem disponunt, et depurant ab inveteratis malis.' Some recent writers think that typhus fever is rarely met with in countries ravaged by endemic intermittents."

Abscesses in the Liver; Ulceration of the Intestines.

Mr. R. W. Smith presented a specimen of abscesses of the liver, which were not indicated by symptoms during life, at least so far as the history of the case was known. The subject was a man who had been a patient in the Talbot Dispensary, was afterwards in the Jervis-street Hospital, and lastly in the Whitworth Hospital. During the last three months he was constantly suffering from gastritis and gastro-enteritis. He had incontrollable dysentery, but voided no blood; frequent vomiting, pain in the epigastrium, but never complained of pain in the hypochondrium, nor in the shoulder; had no jaundice, no rigors, nothing which could lead to the belief that hepatic disease had existed. The dysentery resisted all remedial means. He gradually became worse; singultus came on, and death took place. On examining the abdominal viscera it was found that the great intestine was ulcerated extensively. The ulcers were of various sizes, and occupied the mucous coat in the whole extent of the periephery of the canal. Some had an erysipelatous aspect, some an ash-colored surface. In the stomach there were signs of chronic gastritis. The mucous membrane was vascular and softened. The liver was full of abscesses; a very large one was on the right lobe. This was lined with a strong dense membrane, forming the sac of the abscess. In the left lobe were three abscesses. The first of these that was cut into had no sac, but was surrounded by the substance of the liver with which the purulent matter was in contact The second also was without a distinct sac The third, which might be termed a dissecting abscess, was bounded by the diaphragm anteriorly, and by the stomach posteriorly, and had separated the peritoneal from the other coats of the stomach. The formation of abscesses in the liver, without symptoms of hepatic disease, has been lately noticed in cases of dysentery."—*Dublin Pathological Society, April*, 1844.

Sub-Cutaneous Division of the Sphincter in Anal Fissure.

M. Blandin has latterly operated in fissure of the anus by the sub-cutaneous section of the spinchter. In two cases in which he recently adopted this treatment, the operation was followed by a prompt cure.

M. Marchal (de Calvi) has lately performed the same operations on a man laboring under cancer of the rectum. His patient suffered intense agony at the time of defecation, which M. Marchal attributed as much to spasmodic structure of the anus as to the presence of the cancerous mass. The operation was followed by great relief. —*Gazette des Hospitaux.*

M. Valleix on the Treatment of Difficult Dentition.

M. Valliex relates a case in which a young girl died after suffering during three weeks from symptoms which cou'd only be referred to difficult dentition. Her constitution was strong and her health had previously been very good, but the four molar teeth which complete the second dentition developed themselves simultaneously, giving rise to intense inflammation of the gum at the angle of each jaw. M. Valleix excised the gum which covered the teeth, but only when convulsions had already appeared, and without any beneficial effect. He thinks that the operation ought to have been performed sooner, and that whenever there are many teeth forcing their way through the gums, and the general reaction is severe, it ought to be resorted to at once, without waiting for the appearance of serious symptoms, such as obstinate vomiting, abundant diarrhœa, or high fever. The pain of the operation is trifling compared to that occasioned by the teeth themselves, and when performed early it will often disperse a host of alarming symptoms. In the above case, obstinate bilious vomiting existed, and the state of the stomach soon became such that the smallest quantity of fluid was rejected. This symptom, when carried to such an extent, is always serious, and is generally followed by convulsions The appearance of convulsion was preceded during several days by general agitation, strabismus, swelling of the right eye, dilatation and immovability of the pupils. The convulsions lasted three days and ended in death, notwithstanding the most energetic treatment —*Lancet.*

M. Ricord's Treatment of Indurated Lymphatic Ganglions.

All surgeons know how difficult it is, generally speaking, to bring about the resolution of lymphatic ganglions in the treatment of syphilitical diseases; the measures usually adopted —leeches, blisters, and resolution ointments, often failing. M. Ricord employs at the hospital a much mor

energetic treatment, destroying progressively the ganglionic mass by the Vienna paste, (potassa fusa and quick lime.)

A layer of the caustic paste is first applied to the tumor. When the eschar falls another layer is applied, and so on until the basis of the tumor is approximated. The thickness of the layer must then be diminished, in order that it may not attack the subjacent parts; at the groin, for instance, a careless operator might open the crural artery. There are always patients in M. Ricord's wards undergoing this treatment. The caustic appears to act in two ways; it destroys a part of the ganglionic mass, and promotes the resolution of the rest by elevating its vitality.

M. Marchal (de Calvi) has adopted this mode of treatment at the Val de Grace, in a considerable number of cases, and with great success. When it does not appear to him applicable, he combines with the ordinary treatment by leeches, blisters, and resolutive frictions, the daily administration of from twelve to twenty-five drops of the tincture of iodine. He does not find that the iodine of potasium produces any perceptible influence on these ganglionic indurations.—*Gazette des Hopitaux.*

On the Contagious Nature of Puerperal Fever, and its Connection with other Diseases.

Under this title, Dr. Peddie details in the *Edinburgh Medical and Surgical Journal*, several cases which occurred in his practice, and which, illustrating the highly contagagious character of puerperal fever, show how unwittingly the physician may be made to scatter, in his progress, the seeds of destruction and death. Independently of the facts which are by all admitted, Dr Peddie's cases confirm the experience of a more limited number, which shows that puerperal fever may originate from the contagion of a different disease,—in this instance, erysipelas,—and they morover show that the contagion of puerperal fever may give rise to a different disease, in this instance, also, erysipelas. Mr. Storr, of Doncaster, illustrated this subject in the *Provincial Journal*, (No. 166,) and adduced a host of evidence from his own painful experience, and that of several other practitioners. The following are Dr. Peddie's conclusions. One in reference to treatment is omitted. The observations are not judicious.

"1, That a specific virus, of an animal nature, is produced under certain circumstances, and in turn generates a peculiar form of fever in the puerperal state.

"2. That that virus frequently originates from erysipelatous inflammation.

"3. That, when once generated, it may be communicated from one lying-in patient to another with extraordinary virulence, quite independently of locality, either by direct intercourse, or through the medium of a third person; and that this is more likely to happen when the predispositions of a weak body and a depressed mind exist.

"4 That it may produce disease of various kinds in non-puerperal individuals, more especially of an erysysipelatous and phlebetic character.

"5. That the principal concern of a medical man, seeing that a cure is so difficult and so very rare, should be to adopt every conceivable precaution against the occurrence of a single case of it, or to lessen the risk of its propagation, when once established. And to attain these ends, patients in child bed should either not be attended at the same period with cases of malignant or severe erysipelas, or that proper caution should be observed as to ablutions, &c., more especially after contact with any discharge from them; and that when a puerperal fever case does occur, lest it should be something more than sporadic, chlorinated ablutions and change of garments are first required; and then, should a second case occur, it would be the safest plan for the practitioner to abandon the practice of midwifery for a time—two or three weeks, if possible--and in the interim attempt by removal into the country, warm baths, and other alternative and purifying means, and by the exposure of the clothes to a free atmosphere or to a high temperature, (150° dry heat,) as Dr. Henry recommends, to rid himself of the subtle virus which adheres to him so tenaciously."

HOMŒOPATHY.

Testimony of Dr. E. Humphrys, Utica.

"After practising for more than 30 years upon the Allopathic system, and during the last 5 years having investigated and practiced the New Homœopathic System, I do not hesitate to recommend it as a most *safe*, *expeditious* and *certain* method of curing disease. And I do farther assure the public that homœopathy is no "humbug," "quackery" or "emanation of a disordered brain," as alledged by its interested and uncandid opponents—but a true science based upon a principal or law of nature, a discovery not an invention, an immutable principle, coeval with *magnetism* electricity, or the laws of vegetable life." E. Humphrys.

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TRACTS ON CONSUMPTION.

NUMBER FOUR

On the Sanability and Treatment of Tubercular Phthisis.

By J——— G———, M. D.

Hitherto it has been our chief object to point out the means—diagnostic and pathological—by which the practitioner may ascertain the condition of his patient's lungs in Consumption; and now we must endeavor to show how he may make this knowledge available to his welfare. In presenting to the notice of physicians a new principle of treatment for this almost hopeless affection, the writer trusts to be able to give such reasons for its introduction as will screen him from the imputation of empirical presumption This principle calls for a new application of remedies, in claiming more than common efficacy for which, he hopes he may not be considered under the influence of mere personal vanity. While he deems it a duty to give publicity to carefully examined opinions and the results of experience, he is anxious to escape being classed with those who are captivated with a novelty before they have examined it, and who, in their enthusiasm at a few cases of real or fancied success, place no limits in their imagination to the importance of the agents used. It is rather his wish to be considered among those who view novelties in medicine with an eye of skepticism—who examine their properties by the severest rules of reason, and who satisfy themselves of their value by numerous trials before advocating, or even admitting their utility The administration of the article of the materia medica on which he places his chief reliance did not originate with him; it has been long used with apparent success by an eminent practitioner of New York; but he has had sufficient personal evidence of its power over this intractable disease to be satisfied of its merits. Still, knowing the proneness of physicians to be deceived in regard to the virtues of a medicine that they have either introduced or advocated, and acting in conformity with the principles of medical duty above referred to, he has refrained, for several years, from urging its employment with that high toned confidence which usually accompanies a favorite and important remedy. Aware that it has heretofore been found every proposed remedy for consumption has proved unsuccessful in the hands of other physicians than those who originally used it, or a few blind admirers and followers, and unwilling to renew such a result, or to place too much reliance on his own or any single judgment, he has suggested the use of his remedy to several of his professional brethren placed above the feelings alluded to In their hands his experiments have been repeated, and with a concurrence in opinion as to their value highly gratifying to his feelings Expressing these opinions with moderation they uniformly agree that the introduction of his remedy, into the treatment of Tubercular Phthisis, is an acquisition to the healing art, since its use always produces beneficial effects—removing the disease in its early stages, and where it is too far advanced for a cure to be effected, checking the progress of tubercles, alleviating expectoration and prolonging life.

This new plan of treating tubercular phthisis is so far from superceding the general principles of medicine that it requires a comprehensive view of the whole disorder should be taken, and an adaptation of known remedies to particular modifications of it should be employed. Looking to the state of the constitution as the prime evil to be remedied, it considers the local affection a

comparatively unimportant consideration.—Correctness of diagnosis, so essential to the judicious management of any disease, is indispensible to the efficacy of this treatment because it is found to exert no salutary control over simulated consumption, or any of the ailments which so frequently accompany and complicate the genuine disease.

In a disease, which, like consumption, affects the system generally, and has many attendant disorders, it is not to be expected that the use of any medicine, or combination of medicines can afford well grounded hope of removing it under all circumstances. Useful as our remedy unquestionably is, it will be found, if administered on the principle of a specific---like all other medicaments so considered—to produce frequent disappointments. Discrimination must be used in selecting the proper stages as well as the proper cases for its exhibition; for, as in every other disorder, the nature and extent of the injury must guide us in its administration as they will form the measure of its efficacy. It has been our endeavor to show, throughout the whole tendency of our remarks, that we are not unaware of the generally inflexible and mortal character of consumption, still, we believe in, and shall aim to inculcate the possibility of continuing life under its existence, and even of effecting, in a large proportion of cases, a permanent cure. We consider that as certainly as morbific poisons act as physical causes upon and impair the functions, or induce disorganizations of tissues, so certainly do medicines, by equally physical agencies, restore the former, and put a stop to the latter. That there is within the scope and range of the materia medica, substances which act directly on the morbid process in consumption, so as to modify the constitution as well as check the increase of tubercles, is a position supported by numerous analogies, and confirmed in our opinion by a close and somewhat extensive observation.

The uniform results of this observation authorise the assertion that where consumption has not extended beyond its simple constitutional state, the principle of treatment we advocate will, in all instances, exert a salutary and permanent control over it.—And where the accompanying local injury does not extend beyond the presence of tubercles in one region of a single lung, or, as it may be illustrated, is not a greater source of irritation and suppuration than that arising from a sword thrust, or the presence of a musket bullet in the lungs, the employment of our remedies will always warrant the hope of curing the disease. Experience further justifies the belief that these remedies will frequently put a stop to tubercular growth, after the softening and destructive process has attained a considerable extent; while by their aid the system may be freed from the irritating fluid, and the patient with a diminished respiratory apparatus, be enabled to live in the enjoyment of a certain degree of health. But we do not mean to imply that when the whole organ of the lungs is extensively disorganized by the presence of tubercles—when the portion remaining healthy is not sufficient for the decarbonization of the little blood that may be left in an attenuated body—it would not be unreasonable to expect a cure. In such circumstances a favorable result ought to be as unlooked for as a restoration of sight when the organization of the eye is destroyed, or "the functions of the brain, when the substance of that organ is reduced by disease to a pultaceous mass." And yet, it is to be considered that a simple affection of the lungs, however extensive, is seldom the cause of death in consumption; there are generally superadded other organic lesions, which, though secondary, are nevertheless, often more immediately fatal than the primary affection itself. Thus, the colliquative diarrhœa, which almost always attends consumption, and is the result of tubercular suppuration and irritative inflammation in the alimentary canal, is less within control, and induces death more rapidly, than the most extensive suppuration in the lungs. The affection of the lungs may be participated in by the larynx, the mesenteric glands, and the various parenchymata, constituting a general tubercular phthisis, which, of course must be more beyond the power of medicines to subdue, than if confined to any one organ.—Each of these complications adds to the difficulty of treating the disease—increases the mortality of its character, but forms no argument against the possibility of curing simple pulmonary phthisis.

The difficulty of commanding credence for the existence, and of vindicating the title of medicaments to control so impracticable a disease as tubercular consumption is universally considered, will probably be as great as finding the remedies themselves. While the sanability of chronic bronchitis, chronic pleurisy, and the other imitations of consumption is generally admitted, it is contended that the disease on which the process of tubercular softening depends has never yet been amenable to art. And yet the researches of Laennec have shown, what the experience of every day since his time has tended more and more to confirm, that phthisis not unfrequently undergoes a spontaneous cure. Pathological examinations continually reveal the appearances of

crètaceous remains which can only be regarded as evidences of the former existence of tubercular deposites; while the investment of pulmonary cavities by new membranes, or their obliteration by cicatrices, where tubercular symptoms were apparent in life, must be looked upon as conclusive proofs of the same fact. It may, indeed, be said that in every case of chronic phthisis an attempt at cure is made by nature, and in most established, the final success of which is only limited by the extent of new disorganizations exceeding that of the reparatory process. To aid the vital recuperative powers in so desirable a proceeding it would be only necessary to apply sufficiently early, a medicament which should so neutralize the morbific cause as to induce a change in the constitution incompatible with the further progress of the disease. This may not be easily accomplished, but it ought not to be deemed beyond the reach of art.

Modern investigations of disease show that the blood, of all the constituents of the body, forms the most important part in the production and continuance of morbid changes, and they, also, prove that it can be modified in its character by aliments and other agents —both of which we are in the practice of regulating and administering with this view. Equally distinctly recognized, at this day, are the vital and plastic properties of this fluid, and, it follows, the extension of its office beyond the supply of materials for the secretions, to the production of such formations as tubercles. The knowledge of these important facts has directed the attention of physicians to modifications of the physical properties and inherent qualities—vital or electrical—of this fluid as the real causes of a great variety of diseases. Among morbid affections there is none in which the phenomena, indicating alterations in the blood, are more apparent than in consumption. Hence, there is not only no necessary reason for despairing that such a change may be produced in it, and its accompanying diathesis by medicaments, as may effectually cut off the source of tubercles, but the considerations above mentioned present much ground for hope that these effects may be easily attained. Indeed, it may reasonably be inferred, from the comparative diminution of deaths from this terrible malady, as exhibited in recent tables of mortality, that this change and a subsequent cure takes place more frequently than the public, or even the generality of physicians are aware—the latter too often regarding recoveries from reputed consumption as evidences of error in diagnosis. It is certain that if the blood be once changed, and the formation of matter checked, there is nothing in the structure of the lungs denying to the lymphatics or veins an ability to remove by absorption that previously existing, or to prevent the cavaties formed by expectoration from healing. "All that we know of the action of the absorbents leads us to believe that they are capable of removing tubercles; and that such an operation, to a certain extent, does really take place, is proved by the changes which that substance undergoes in its progress to the cretaceous formation."

It has been shown, in a previous number* that the blood, in its arterial, exists in a different electrical relation from that of its venous state, and several reasons were given for considering that the difference between them attained a higher exaltation in phthisis. In the same number † it was contended that in the process bywhich a tubercle was formed the capillaries, which pour out the matter constituting it, are enlarged from an increased expansible force, the result of a subversion of the ordinary equilibrium, or change of healthy proportion of the electrical fluid, imparting an undue preponderance of positive force. Based upon this discovery in regard to the blood, we have built up the superstructure of the electrical pathology of tubercular phthisis.

Now, it is a fundamental law of electricity, as at present understood and explained, that all bodies similarly electrified repel each other; and it is, further found that they communicate the properties they possess to intervening substances. When two currents of electricity possessing the same kind of energy are brought into contact they not only repel each other, but intervening substances, as a feather, partake of the repulsion, and each of its component fibres becomes self-repulsive, and in fact, expanded. So in magnetism, if similar poles be brought together they not only repel each other, but, there can be no doubt, that if the force of cohesion in the magnets could be overcome, every molecule would exert this repulsion to every other molecule; and it is easily demonstrable that if iron filings be interposed, they will manifest this repulsion by occupying a greater space, or as in the case of the feather, by expanding. Bodies, then, be sides being rendered inductively magnetic or electric are expanded by these forces.‡ The opposite phenomena of attraction and contraction which appear on the approach of bodies dissimilarly electrified, the proximity of opposite poles of magnets, or of the posi-

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* Number 2, page 22.

† Ibid 2, page 90.

‡ Sherwood's motive power of the Human System, page 23.

tive and negative poles of a galvanic battery on bodies having free motion, are pretty well known to common observation, or manifestly follow from the converse of the previous law. These properties are common to all kinds of matter, and can be made apparent, at least in all substances having free motion. It is, therefore, no more necessary that animal tissues should consist of any particular structure to be endowed with contracti ity and expansibility than any other matter; the arteries, for instance, may possess these properties in an eminent degree without their coats being necessarily muscular, and the muscles without their substance being elastic. Upon these universal laws we found our ideas of the origin and progress of consumption and the application of medicines to its cure.

It was also stated, in our second number, that as the elements of nutrition are supplied to the capillaries, in common with every other part of the body, by the blood, unaltered from its arterial state, it must be obvious that not only the capillaries but all the tissues must partake of the nature of that fluid The blood, again, deriving its properties from the air we breathe, and the aliments we take must be modified by the conditions of these sources of vitality. If, from the unsuitable state of these elements to the wants of our system, a redundancy of electricity flow into the circulation,the proportion which exists in the healthy state of the blood must, of course, be altered, and a corresponding effect will be produced on the several tissues to whose nutrition and various functions it is subservient. In health we may suppose, the quantity of electricity received into the system, and essential to the process by which the tissues are maintained and renewed, bears an exact ratio to the quantity discharged in the operation by which the debris of the same tissues is eliminated from the system. The molecules of matter which are deposited by, or repelled from, one set of vessels in the former process, are attracted and removed, in their turn, by another set in the latter, and thus an equilibrium is maintained. But cœtaneously with the presence of disease this equilibrium is subverted—there is either a preponderance of action on the part of the secretories or of the absorbents: though it is proper to admit that in some diseases there may be a deficiency of action in either or both of these structures. We have presented several considerations, for our belief that a change in the electrical condition of arterial blood, giving to it a higher state of positive excitation, is the first and most important link in the chain of phenomena constituting consumption. If this be true it is the necessary and obvious source of the force which gives rise to the expansion of the extreme vessels, whence tubercles spring. The general effect of this change or disturbance is to impart a preponderance of action to the function of secretion in the organs chiefly affected; and, it would seem, an increase of absorption pervades every other part of the system.

It will, probably, be considered worth while to enquire whether the condition of the capillaries implied in the last sentence be true, and whether, if true, it admits of a satisfactory explanation on our principles. There is certainly in every case of consumption a formation of morbid products in the lungs, and a general waste of every other part of the system. The whole tenor of our essay shows that we consider the former a consequence of an expansion of the capillaries enabling them to transmit more than the healthy proportion of fluid. According to our view a preponderance of electricity in the blood, acting as a morbific cause, operates to accelerate the secreting function in the organ to which it is specially attracted, and we consider this a satisfactory explanation of the first effect. But in what way is the colliquative diarrhæa and profuse sweating—forming the sources of the waste which are as distinguishing characteristics of consumption as the presence of tubercule —produced? Are they the result of the same cause, or is there a different and opposite one produced from the attraction and absorption of the electrical energy in its action on the secretory function? We shall have occasion to notice this subject again!

Another equally important though, perhaps, more explicable question is, why a particular tissue or tissues come, in preference of all others, under the influence of a cause which appears to attack the whole system through so general a channel as the circulation? This is one of those arcana of nature, belonging no more to consumption than to any other complaint, but which it has been thought as impossible to reveal as the fact is considered certain. It may, however, be supposed in explanation of it that as the blood is both the common pabulum for the supply of all the tissues, and the vehicle which conveys the cause of disease to those tissues, particular relations may arise between the agents so conveyed, and the different seats of disease. In consumption the morbific electrical blood may pass through the capillaries of various tissues in a state so far opposite, in regard to electrical tension, that no disturbance of function or derangement of properties may be produced. but when arrived at a structure with the properties of which they bear a peculiar electrical affinity they may excite a disturbance which,

commencing in a slight change of function, becomes, by long, continued action, a serious lesion of structure. But, in truth, it is not the case in consumption, nor, in any other disease, that any one tissue is affected to the exclusion of all others The glandular system and serous tissues may be more prominently involved in this disease, but the nervous power, the digestive mucous membranes, the skin, and even the bones participate in the general ruin. Still, there is a manifest preference given to a particular tissue, but no more than its chemical construction, or particular function, would cause to result from the presence in the blood of a morbific matter for which it had an affinity.

In offering this brief opinion respecting the mode of operation of actions so minute and obscure, we shall be satisfied to be considered as making an approximation to a rational explanation. The importance of the subject justifies every plausible attempt at its elucidation; for when we shall be enabled to determine the nature of the attractions that constitute disease, we shall have advanced far towards an ability to explain, with the certainty that attends a physical fact, the origin of disease, and even to predict its progress. The quantity of morbific energy required to produce disease, the actions and changes it induces, the kind and quality of an article required to cure it will follow. The sources of this knowledge have been overlooked, or have been supposed to be beyond the reach of investigation, but with the delicate and improved electrical instruments of the present day in our hands we need not apprehend failure in undertaking the analysis of the most minute physiological or pathological processes. It is a knowledge to be attained by careful, and no doubt elaborate experiments on the electricity developed by the atmosphere we breathe, and by the changes aliments undergo in the process of nutrition, and by noting their effects on the different tissues, guided in all our efforts by a sound physiology. Nor is the subject, great as it is, to be considered so vast and complicated that the genius and industry of man—of a Liebig for instance—may not be adequate to reduce all the phenomena to the simplicity of the plainest physiological facts.

If our view of the pathological state of consumption be correct, it is clear that the grand principle of therapeutics must consist in restoring a healthy equilibrium to the capillary system. While the preponderance of positive electricity continues in the blood—this constituting the prime morbific cause of the disease; no approach can be made towards this effect, it is, therefore, indispensible to a successful treatment of consumption, that this great fact should be understood and its existence counteracted. All medical reasoning proves that living parts are endowed with a tendency to relieve themselves from the operation of disease, and to repair the damage it may have effected, provided the exciting or morbific cause be removed. The whole power and scope of remedies probably consist in simply neutralizing the morbific causes of diseases, and thus enabling the affected vessels, or other structures, to recover their natural and healthy condition by having removed from them all stimulus to extraordinary action. In acute diseases this may take place very soon after the excitement is withdrawn, but in chronic ailments a long continued expansion of the vessels imparts to them new habits which may prevent their recovering their natural properties long after the cause is neutralized Consumption being the effect of a protracted and continuous exposure to a cause, in all probability constantly operating, it is evident that the disturbance of equilibrium in the forces acting upon the capillary system, must, if it cannot be checked by counteracting agents, go on, continually adding to the original evil, till it comes to a fatal termination. The vessels which form the tubercles may be the natural capillaries of the tissues, but modified by the cause which determines the character of the structure they are intended to supply, or they may be, also, a prolongation and new growth ---caused by the redundant expanding forces brought into operation; and by this modification or new growth the identity of the tubercles is preserved and nourished. The creation of these new formations forms the stage of the disease which is understood as tubercular phthisis; it posseses a character entirely different from that which constituted the disease at its origin, and which, under the term tubercular cachexia, consisted simply in derangement of the blood and other fluids, with, perhaps, a very slight expansion of the capillaries. Though occupying the secondary station in the relation of cause and effect, this stage assumes the position of the actual disease permanently established as a part of the living structure.

As the predominance of morbid action in Consumption is to the side of expansion, with its consequences of local turgescence and the deposition of new substances it is obvious that the therapeutic indication is to administer medicaments which will neutralize or annihilate a preternatural state of the blood, be attracted to the diseased parts, and there act on the capillaries as lesseners of expansible force. The same principles of treatment will apply to the new formations, because it is the character of all such depositions to be stamped with the properties

of the immediate tissue in which they originate, or rather, by the condition of the blood in the capillaries supplying that tissue. If the electrical state of the medicaments employed be one opposed to the electrical state of the blood they must, upon entering the circulation, tend to neutralize that state; and, it follows, if received into it in sufficient quantity they may change it to even an opposite condition Neutralizing or changing the properties of the original morbific agent may constitute, in fact, the sole remedial agency of a medicament; but if we conceive its action as further directed to the expanded and enlarged capillaries that furnish the matter of tubercle, we can readily understand that it must dispose them to contract, they being also in an opposite electrical state, and resume their natural size and healthy functions. By diminishing or cutting off the supply of diseased fluids to a tubercle, its growth must not only be stopped, but at the same time its constituents must be placed in a state favorable to decomposition, and thus brought within the sphere of action of the absorbents

The facts and arguments that may be adduced in support of the opinions that there are medicines which have this mode of action, and that it depends upon their electrical relation to the diseased structure, appear quite as conclusive as those brought in proof of any other explanation of the operation of medicines. We see from the action of tartar emetic in restraining hæmoptysis, and the acetate of lead in controlling uterine hemorrhage, that these salts must be carried to the capillaries of diseased organs, and there, by diminishing their expansion, stop the discharge, strengthen the tissue and cure the disease. Antimony is universally recognized, by the profession, as possessing the power of being determined to the capillaries generally, and of exerting a local effect in diminishing the turgescence of inflammation and congestion. But mercury with less evident effect on the general circulation acts, perhaps, even more on the capillaries, and with apparently greater power of determination to diseased parts. To the class of medicines which enter the circulation, and are capable, by a local determination and certain electrical affinities, of diminishing the expansion of diseased capillaries, iodine unquestionably belongs. The property by which this powerful medicament removes enlargement of the thyroid gland and scrofulous tumours, is undoubtedly by diminishing the calibre of their capillaries, and thus cutting off the supply of fluids by which the diseases are maintained. By contracting the expanded absorbents in dropsical affections, it brings them into a healthy condition, and imparts the tone that fits them for renewing the appropriate function that was lessened or suspended by their unnatural dilatation. That it is simply by restoring the natural size and healthy tone to the absorbents, and not as commonly supposed, by stimulating them to extraordinary action that iodine acts in promoting the absorption of tumors, abscesses and dropsical fluids is a fair inference from the trivial fact that many persons get fat under its remedial operation.

The evidence that medicaments exert a special effect on the capillaries has been rendered stronger by the demonstrations, recent experiments of chemists have afforded, that many of them can be detected in the blood, the urine and in the saliva of persons who have taken them. It must, indeed, be regarded as a fundamental principle of therapeutics, one on which is based the utility of the physician, that every medicine has a special action on some tissue, and this effect though modified by idiosyncracy, or some equally inexplicable circumstance, is apparent in every individual, and whether administered through the stomach, by injection into a vein, or by absorption from the surface. This general action of a medicament proves that it is not the result of mere sympathy, mechanical action or local irritation, but that it arises from a specific physical cause producing a necessary and unavoidable effect in the diseased part it acts upon. What more rational explanation of this influence can be offered than to consider that there exists an electrical affinity between the properties of the medicine and those of the capillaries or structure whose functions it is administered to modify and does modify? This manner of considering the *modus agendi* of medicines may bring together substances which have heretofore been cousidered as having no affinity of action, as well as separate such as have been closely allied. But though, if the principle were adopted, this might be a cause of temporary confusion, it will be found on examination to substitute simplicity for complexity.

This view of the operation of medicines affords a plausible if not a satisfactory explanation of that enigma in their action by which, after mixing with the whole mass of the blood, they are attracted to one organ in preference to all others. In every disease there is an inevitable change of function, or greater or less change of structure of one or more tissues or one or more organs, which change must produce altered chemical states, and consequently a different electrical relation from what existed in health, or exists in the rest of the body. Let us suppose that the extreme vessels, or the minute parenchymatous structure of a diseased organ presents a

preternatural electro-positive condition. If now we introduce into the circulation a highly electro-negative substance as a medicine, what will be its relation to the disease? Unquestionably there will be a very great mutual attraction between the diseased tissue or organ and the medicine---a strong affinity for each other, which will continue till each is satisfied, neutralized, and, if the electrical deviation from the natural state of the part constitute the disease, till it be cured. Like the special determination of the causes of disease, medicaments may pass through the capillaries of various tissues without producing any action upon them, but when arrived at one for the properties of which they have a special affinity, a new action will be set up which must be either beneficial or injurious. But when the two opposite electricities of a disease and a remedy meet in the same organ, a mutual change of electrical properties in the two species of matter must take place, which ought, upon the general principles of electricity, to be accompanied by movements tending to restore both the functions and structure of the diseased part to a state of health. This view of the state of the fluids and vessels in disease, and of the action of medicines, may be too electrical for those who imagine it to be impossible to explain the phenomena without a special power like a vital force, but it certainly accounts for the recognized and unexplained fact that certain medicines have specific determinations to diseased organs. The subject is an important one, and, as it is obviously a fruitless labor to seek for an explanation of it in the mysteries of vital action, it is worthy of further examination on our principle. When our knowledge respecting the manner in which medicines act on the different tissues becomes accurately known, we shall be able to lay down positive rules for their administration, and with a confidence that we can predict unerring results. Already has the view we have taken of their action in tubercular disease aided in laying the foundation of a more minute and accurate knowledge of its pathology, and established, in the minds of a few individuals, a more rational and consequently more effectual mode of treatment than has heretofore prevailed.

Heretofore the principle on which physicians have acted in attempting to cure diseases, has consisted, chiefly, in eliminating from the system, by gradual but highly exhausting means, the supposed morbific cause. Bleeding, in addition to some reputed, but vaguely understood properties of relieving the vascular system, is considered a powerful agent by which portions of morbific poison may be abstracted. Purging, with a similar effect on the vessels, expels it from the living body, by stimulating its excretory functions, and discharging the products of its increased action through the natural emunctories. Emetics and diaphoretics, and indeed the whole class of stimulant remedies, are viewed as relieving the system in a similar way. It is only in a few diseases, as in syphilis or psora, that specific remedies are administered with a view to neutralize a poison supposed to exist in the blood; and of their mode of operation no explanation has been offered, with the exception of one by Hahnemann and his followers, worthy of a moment's consideration.

The knowledge that these classes of medicines are capable of removing morbid phenomena has been arrived at solely by observation and experience, and, therefore, exclusively upon empirical principles. Upon these sources of information physicians are still dependent for their perception of the properties of remedial agents, and their effects respectively on the animal system. The difficulties attending the determination of the value of medicines administered on this principle are acknowledged to be great; and they are unfortunately considered insurmountable. There is nothing in the known physical qualities of substances administered as medicines which would indicate their effects on the living body; nothing, for instance, that would assure us of the purging properties of Jalap or Rhubarb; and still less that would explain the manner in which they produce this effect, or foretell the relations to the tissues by which they remove disease. Equally indeterminate must be the knowledge of the quantity of purging effect required to elimina : from the system the noxious poison constituting a disease. But if we satisfactorily ascertain that disease consists essentially in an extraordinary electrical state of the blood, or of a particular tissue, there can be little difficulty in determining *a priori*, upon the general electrical relation of a substance, the action it will have on the blood, the particular tissue, and the whole animal economy. Looking at this subject with the greatest amplitude of view, it comes within the probable range of science to be able to subject the whole phenomena to calculation, and to fortell the precise quantity of a given substance required to cure a disease.

In the arbitary division of the elements of matter into electro-negative and electro-positive, adopted by chemists, nearly every medicament, which has been found or even thought to be useful in the treatment of tubercular consumption, belongs to the former division. It must be regarded as a strong confirmation of our view of the electro-positive character of the disease, and of the action of remedies, that simple experience or

chance should have directed physicians to this choice. The whole subject of the empirical treatment of consumption offers such momentous strength to the positions we have assumed, that it is desirable a survey of the facts that can be adduced in their support should be taken, and we shall, therefore, devote some space to an examination of the more important articles, belonging to the class of negative electrics, which have been administered as remedies in consumption. It is proper to remark that some of the articles are considered negative electrics from the negative character of their chemical elements rather than from its having been experimentally ascertained that that is their true condition.

Oxygen. Pneumatic medicines are a class from which, reasoning *a priori* we should be disposed to look for considerable benefit in phthisis; and, accordingly they have been much employed. At the head of the list, and of electro-negative substances, is oxygen gas. As the respiration of an impure atmosphere is the grand cause of tuberculous disease, so the respiration of oxygen gas would seem to be the natural remedy. In practice, however, it has not been found advantageous, and consequently its employment has long since fallen into disuse. Administered alone, or even largely diluted with common air, it has proved so uniformly too stimulant, and so much increased some unfavorable symptoms, that though it has seemed to occasion relief in others, its use could never be persevered in a sufficient length of time to determine all its effects on the disease. From the general qualities of the gas and the use it is known to subserve in the function of respiration it might reasonably be inferred that it would excite inflammatory symptoms in the lungs of consumptive patients already too rapidly consumed under the natural process of respiration. In conformity with this reasoning it is found, experimentally, that the most obvious effects of its respiration are increased activity in the aortic and pulmonary circulation, succeeded by languor and extreme debility. Although it is necessary in phthisis to moderate the positive-electrical state of the blood, it seems also equally necessary that its general arterial qualities should be lessened, or be desanguified, and it is obvious that this latter effect is not to be obtained by the inhalation of oxygen gas. The respiration of pure air is indispensable to the treatment of consumption but it would seem that increase in the quantity of oxygen does not impart this purity; and hence the inference that no more ought to be used than exists in the natural state of the atmosphere. Freeing this element from extraneous impurities, in the manner we have explained under the head of "Cause and Prevention of Consumption,"* but retaining its usual proportion of oxygen, and its other respirable constituents, is the best way of purifying the atmosphere and affords the best form in which oxygen gas can be taken into the human system. Atmospheric air, rendered artificially pure, and modified in temperature to the wants of the patient, in the way we have described would, undoubtedly, be in the most favorable state for preventing the disease, as well as be a powerful auxiliary to remedial means. It is probable much advantage might be derived from the administration of oxygen into the stomach, in a form which would admit of its free evolution after entering the circulation.

Chlorine.—This gas, like oxygen, has of late years, frequently been administered in consumption, and, apparently, with a larger promise of advantage than any other remedy of this character. Its inhalation, largely diluted with common air, generally relieves the dyspnoea, and not uncommonly allays the cough; but it is subject to the objection which has caused the abandonment of oxygen, of often irritating, instead of soothing the enfeebled and excitable bronchial apparatus But its occasionally injurious application, though an argument against persevering in its improper use, is none against its trial where it may probably be beneficial. The diversity in its properties and action, does not admit of its taking the place, vicariously of oxygen in the function of respiration, and requires that it should be administered with great caution. Like oxygen it might have, and indeed, has been found to exert a better influence over consumption when administered through the stomach in a solid form, in combination with a substance for which its affinity is so weak, that it can be easily disengaged after entering the circulation.

Iodine,—The inhalation of iodine, in the gaseous form, has been found to have the advantages and disadvantages of chlorine. Its action in consumption as an alterative, through the circulation, will be considered hereafter.

Bromine from its analogy to iodine, was early tried in the diseases in which the latter had been found efficacious, and the result has demonstrated that it possesses value as a therapeutic agent. Like iodine it has a marked alterative action, and acts, in cases adapted to its use, by imparting contraction and healthy tone to the vessels of the lymphatic system; and thus promoting absorption, which it is thought to do with more energy. It does not appear that it has been

* Number 3, page 137.

employed in consumption, but having been found useful in bronchocele, scrofula, hypertrophy of the heart, and other congeneric diseases, it would probably prove a valuable adjuvant in that complaint.

Arsenic has been employed in phthisis in the way of inhalation. Its relation to other bodies as a highly electro-negative substance would have caused it to be spontaneously suggested, to one holding the opinions of the writer, as probably useful in consumption, and it has been found on other views, to be decidedly advantageous in the disease. M. Trousseau, who advises its employment, does not pretend that it will absolutely cure pulmonary tubercles, but he thinks the general symptoms may be so far modified by it, as always to produce improvement in the condition of the patient.

It may be remarked of arsenic, as of the whole class of substances used in inhalation that unless they enter the circulation and assimilate, or, at least, mix with the blood like oxygen, they can have but little influence over a disease of so general a character as consumption. However useful as local medications in laryngitis, and the various affections of the air passages, they for obvious reasons, can have little salutary influence, over parts with which they do not come in contact. Most of them are so repulsive to the respiratory apparatus that they cannot be admitted to the lungs, unless largely diluted with common air, and thus reduced to quantities too minute for any beneficial effect over such a disease; and, besides, there is no evidence that any of them, with the exception already set forth, are capable of entering the circulation. For these reasons we have forborne to notice many articles that have been employed in consumption, though most of them are electro-negative in their chemical characters—such as fumigation with tar vapour, watery and medicated vapors of various kinds—because they have not been found sufficiently efficacious to prevent their falling into disuse.

Hydrocyanic Acid.—This powerful sedative has been given in phthisis. Like many other of the remedies employed in this destructive disease, it seems to have failed to obtain desired, perhaps unreasonable results, and after a few trials by eminent men in various countries, it has been generally proscribed as too dangerous from its poisonous qualities, and too inert in its medical action. But its acknowledged eminently sedative qualities, its influence in diminishing irritability, its power of reducing the pulse, and of calming many of the symptoms of fever have prevented its falling into entire disuse. Its use is certainly indicated in those complications of phthisis which are attended with an excessive or morbid sensibility, and those depending on a highly irritable state of the nervous system. Granville considered it almost a specific in tracheal phthisis; and in chronic bronchitis undoubted proofs of its efficacy have been recorded. Magendie asserted that he employed it with success in all cases of morbid irritability of the pulmonary organs; and Elliotson says he has almost invariably succeeded in allaying the troublesome cough of a great number of pectoral affections. Dr. Frisch of Denmark has been quoted as successfully employing the remedy in several cases of phthisis; and finally, Magendie asserted and maintained that with prussic acid he had cured individuals, having all the symptoms of incipient phthisis, and even those in a more advanced stage. Amidst the conflicting testimony regarding its properties, we cannot consider it as entitled to any extraordinary reputation in pure phthisis pulmonalis, yet it has been so often supposed to act beneficially in the hectic connected with it, at the same time moderating the force of the circulation, suspending the night sweats, and diminishing the hardness and frequency of the cough, that we have no doubt it may be advantageously used as a general palliative in almost every case of the disease.

Cod Liver Oil.—Independent of the electro-negative character of the principle constituents of this article, it has been found to contain appreciable portions of iodine and bromine. It has long been popularly used in Europe, in scrofula and consumption, but has only within a few years attracted the general notice of physicians either in Europe or America. It has been much lauded in Germany and Switzerland as a remedy in these diseases, and has been given in this country, it is asserted with advantage.

Naptha—has been lately brought forward with a good deal of confidence as a remedy in consumption. Its introducer reported that he had successfully treated a number of cases by its means, but like every other remedy for consumption, it has failed in the hands of other persons. Though upon some chemical considerations a hope might be indulged that it could effect other results, yet, upon others, we can hardly feel surprised that it has failed.

Digitalis.—We have classed this powerful article of the materia medica among electro-negative bodies, but whether accurately or not, we are at present unable to determine. Concerning its virtues as a remedy in consumption, medical writers have differed more than in regard to any other medicine; some, even, having gone so far as to

assign to it the properties of a specific in this dreadful disease, while others have denounced it as pernicious. Equal diversity of opinion has existed in regard to its mode of operation; it having been considered by some a direct sedative, and by others a powerful stimulant; though little doubt exists, among the generality of practitioners, at the present day, that it belongs to the former division. Its utility in hæmoptysis, in the febrile excitement, and in the nervous irritability that accompany and complicate consumption is generally acknowledged. The testimony is so general in favor of its freedom from any injurious effects on consumption, that there are few cases, especially in the advanced stage of the disease, in which its sedative virtues may not be applied as a means of reducing increased action of the heart, thereby tending to abate inflammation of the lungs, and lessen a general excitement of the system; while in all cases it may be occasionally used advantageously as a palliative.

Antimony.— According to Dr. Good,* some pathologists had, at the time he wrote, lately adopted the practice of giving very small doses of antimony, in its soluble preparations, dissolved in a very large quantity of water, and continuing it for an almost indefinite period of time. Viewed as an electro-negative, or alterative in its action, and administered in doses to produce a corresponding effect on the system, instead of an emetic or nauseating operation, it is probably worthy of a high consideration. "The once celebrated anti-hectic of Poterius, consisted of oxide of antimony, and tin." Where fever runs high, or bronchial inflammation is a concomitant of consumption, antimony administered on ordinary principles, may be considered a valuable adjuvant to more important means of correcting the tubercular diathesis; but it ought to be given in minute doses, on account of its tendency to produce depression of the vital powers.

Quinia—The analogy between the remissions and exacerbations of consumption and those of malarial fevers long since suggested the propriety of giving peruvian bark in the former as in the latter disease. Quinia possessing all the anti-intermittent power of the bark, and at the same time concentrating its general negative electric qualities, may be better capable of exerting all the peculiar influence of that medicine as an alterative and tonic, as well as a neutraliser of electro positive morbific influence, and therefore be better adapted to the treatment of consumption. Administered in a suitable stage, at proper times, and in appropriate doses, there is no medicine more efficacious in strengthening the organs of respiration, and in counteracting the debility induced in the animal economy by the long continued irritation of diseased lungs. Numbers of physicians have reported cases of consumption which they believed have been cured by this medicine simply conjoined with nutritious diet; and it accords with our observation to allege that several cases have been arrested, and even cured, in very advanced stages, by alternating quinia with hydrocyanic acid and some other medicines that will be hereafter mentioned.

Cicuta.—The value of small doses of narcotics, frequently repeated, in all chronic ailments is well known to the profession. They are peculiarly important in all affections of the lungs of this character, and they act upon this organ with a particularly kindly influence, for the well known reason that the respiratory nerves are more affected than any others of the system by them. It seems too, that, at least, some of them have a more sensible electric effect on the animal frame than any other class of medicines; for when acetate of morphia is administered in full doses, the patient is attacked with shocks like those from an electrical machine.* In the inflammations of the cellular and parenchymatous substance of the lungs, in chronic pneumonia, and in the phlegmasia of the mucous membranes, which, as in chronic bronchitis, sometimes accompany tubercular phthisis, narcotics are indispensible. The exhausting irritation occasioned by the tubercles themselves, demands some narcotic which may diminish the sensibility of the nervous system, allay pain and promote sleep. By lessening the morbid sensibility in the ulcerated surfaces connected with the tubercles, as well as in the membrane of the bronchia, narcotics aid the alterative, tonic, and other action of the remedies in which we place our chief reliance for the amelioration and cure of the former, as well as the operation of the appropriate remedies directed to the latter. Of this class of medicines the salts of morphia have the best effect in a number of cases, but we have generally preferred the cicuta, partly on account of its supposed efficacy in allaying irritation and curing ulceration connected with a scrofulous taint, and partly because it seems to relieve the pain better, and diminishes the discharges of phthisis

*Study of Medicine, Vol. 2, p. 510.

*Cyclopedia of Practical Medicine, Vol. 3, p. 367.

more than any other narcotic, while it is free from a constipating, and some other of their bad effects. Administered with due regard to the stage of the disease, habits of life, temperament and idiosyncracy of the individual it has none of the uncertainty in its operation which has been frequently assigned to it, while it exerts a very salutary effect in diminishing the force and frequency of the pulse and allaying the violence of the cough. It may be safely said that if we ascertain by experience the condition of the system in which cicuta has no untoward effect, and keep it in view, we shall be able to prescribe and continue the use of it in consumption with a generally useful effect.

Mercury is the lowest in the list of electro negative substances, for which any well founded claim of efficiency in the treatment of tubercular phthisis can be established. In the form of the chloride, the occasional use of mercury enables us to relieve the bowels from the morbid accumulations which so frequently collect in tuberculous cases, and to restore to the liver the healthy action from which it has such a constant tendency to deviate in this disease. In that variety of phthisis in which it is complicated with an enlarged and indurated liver, and perhaps of other abdominal viscera, and which is known by Dr. Wilson Phillip's term of dyspeptic phthisis, it may have been found a valuable remedy. Mercury was much employed and strongly recommended by Dr. Rush and some other physicians, in every form and stage of the disease. In recent times there are no decided testimonies in proof of its success; and though it may promise relief in the cases referred to by Dr. Phillip, yet even in these, except when a purgative is required, a much better effect may be obtained from the article we are about to mention.

Gold.—The medicines which experience has shown have the most decided effect in diminishing the expansion of the extreme vessels—particularly those of the glandular system—and therefore promise the greatest advantage in tubercular phthisis, are the preparations of gold.

The oxides and salts of this mineral have experienced the influence which caprice and fashion exercise over medicines; for they have been alternately employed with high popularity, and dismissed as undeserving of any reputation. Like countless numbers of therapeutic agents, they have been brought into notice by high encomiums on their value in disorders, over which they either had no influence, or one no more powerful than cheaper and more available means, and, consequently, after an ephemeral reign, they have passed into neglect. Properties have been attributed to them of which they are quite devoid, while, on the other hand, they are endued with therapeutic virtues which they have not been considered to possess. As in the use of every other medicine, which cannot lay claim to the character of an absolute specific, the activity of the preparations of gold depend, greatly, on the condition of the system into which they are introduced. Besides, in examining the properties of a remedy, it must be remembered there is no one that, however useful in the majority of individuals, may not, from what is understood by the vague term idiosyncracy, (but which should rather be called a misunderstood relation between the remedy and the affected tissue) be inactive or even injurious in the smaller number; and this is sometimes the case with the medicine we are now examining. Manifesting a salutary, peculiar and decided effect in ninety-nine cases, a hundredth would occur which would seem to be unsusceptible of its remedial action. Moreover, the expense of the material has been always a weighty objection to its use, and a frequent source of failure; for it induced the fraudulent to announce preparations as containing gold, which had none, and thus the absence of effect was assigned to the inaction of the remedy. Notwithstanding these difficulties, the deductions of science, confirmed by the observations of several physicians, have revealed to us that gold possesses qualities for subduing complaints, in which its fitness has been wholly overlooked, or considered as presenting but feeble claims upon our attention. This has been found the case in the terrible disease which forms the subject of these tracts. The important truth conveyed in this declaration we do not expect to be at present acknowledged. Until the evidence in relation to the therapeutic properties of gold becomes generally known to physicians it is not probable it will receive that fair and public trial to which its promise of utility in phthisis, and its congenerie class of affections, acknowledged to be beyond the control of any other remedial agent, intitles it.

We are indebted to Dr. Chrestien of Montpelier, as the earliest among modern physicians, for inviting the medical faculty to a re-investigation of the properties of gold as a remedial agent. He, however, limited his enquiries to its applicability to the treatment of syphilis, and a few other lymphatic disorders. Since he published his essay, the attention of the medical public has been called by Eberle, Neil, Legrand and other physicians to a more extended applicability

of the salts of Gold to the treatment of diseases. They show, with much reason, that the preparations of this mineral may be used with great advantage, not only in the diseases in which it was employed by Mr. Chrestien, but in the treatment of scrofula, particularly when it affects the soft parts of the human frame, as the skin, the serous membranes, and more especially the lymphatic glands both external and internal. The analogy between tubercular depositions and scrofulous consolidations could not fail to suggest to a philosophical mind that there was probably some common agent which would be found possessed of properties calculated to modify the state of the blood from which both diseases arise. And the discovery of the efficacy or gold in the latter class of ailments would, naturally, upon reasoning on the fact, based upon experience, that the medicines which have been found the most successful in their control, afford the best groundwork for the treatment of phthisis, give rise to the belief that it might be serviceable in that disease. Accordingly it has been introduced, with this view, by Dr. H. H. Sherwood of New York. Physicians in this country, are much indebted to him for the diffused notice he has given of its efficacy, administered on electrical or magnetical principles, in the treatment of the whole class of tuberculous ailments, and more particularly of tubercular phthisis.*

The general effects of the preparations of gold, in moderate doses, are to improve the appetite, produce a sensation of warmth in the system, and give increased fulness without adding to the frequency of the pulse. In addition to these a prominent effect appears to be an increase of the various secretions; commonly the urinary discharge is largely augmented, as well as the cutaneous transpiration, and there is an increase of the intestinal and salivary secretions. From the decidedly styptic taste of most of these preparations, the sensible and peculiar impression they produce on the fauces and salivary glands, they must be regarded as astringents. When introduced into the system, whether by application to the gums, an abraded surface, or through the stomach, they seem to be specially determined to the glandular system, and if their capillaries are expanded, give them tone to contract; possibly not unlike, regarded either in cause or effect, the operation of a simple astringent applied to an external sore.

The salts of gold are all, in large quantities, decidedly poisonous. According to the experiments of Orfila, when given to animals with this object, their deleterious effects are manifested by a direct action on the lungs.† He found that a very small quantity of the chloride of gold injected into the sanguiferous system proved speedily fatal from its action on that organ;—death being preceded by difficulty and rattling in breathing, cough and symptoms of suffocation. On dissection immediately after death, the lungs are found injected, and the arterial blood of a brownish red, almost black color —shewing that it is in fact desanguified and analogous to the effect produced on it by diminishing or cutting off the volume of air respired. Bichat found in experiments undertaken with this object, that while the trachea was left open, the blood of the carotid artery, laid open, flowed of the natural vermillion color; if half closed it became brownish; if wholly stopped black. Thus under the moderate use of gold, we may expect the blood to assume the appearance and character of that in an animal, which does not breathe a sufficient quantity of air, and in excess to induce as complete asphyxia as if deprived of air. The effects of agents so potent, when pushed too far remedially, but short of absolutely poisoning, are, besides those on the blood, oppression in the region of the stomach, nausea, vomiting, pains in the abdomen and diaphragm, a metallic taste in the mouth, augmented secretions of saliva, excited pulse and oppressed breathing; all affording evidences of local determination to particular organs. There may exist,

* Dr. Dickson the vain and egotistic author of a novel and ingenious publication on the theory and practice of medicine, which he calls the chrono-thermal, claims, as "exclusively his own, the electrical doctrine of medicinal agency." When this writer first made and gave his discovery to the world we do not know, but the republication of his work in this country, affords no evidence that it was anterior to 1836. Now, it may be safely said that there has not been for the last forty years, a reflecting physician in either Europe or America, who has not surmised, at least, that the action of medicines depended upon their electrical properties; and, for a large part of that period, Dr. Sherwood has expressly taught, in numerous publications, the importance of considering the action of medicines on the human system as exclusively dependant on the evolution of their magnetical or electrical forces, (See Motive Power of Human System, by H. H. Sherwood, M. D., Page 52.) Besides, it appears to the writer, there is nothing in Dr. Dickson's application of his exclusively electrical doctrine, different from what has been for many years, explained in Treatises on Therapeutics.

† Toxicologie Generale.

besides, inflammation of some organ, commonly the lungs; and a general irritation and true febrile condition may be developed —indicating that it is capable of a general action on the system.

The consideration of the way in which a medicine, entering the general circulation, acts upon one tissue in preference to all others has been already referred to, and weil be reverted to hereafter. But as it is regarded as one of the enigmas of medical science, the cause of which admits of no more satisfactory explanation than that of the motions of the planets in their orbits, we shall be excused for taking some notice of it on the present occasion Embarrassing as this important secret has been to physicians in all ages, it appears to admit of the following simple solution—at least in regard to gold administered in phthisis pulmonalis. It has been a principle object of our labors to show that tubercles arise from an expanded state of the capillary vessels causing their engorgement, and a deposition of albuminous fluids.* This condition, we have contended, is dependant upon an increase of electro-positive excitation in arterial blood. The administration of a medicine in an electro negative state, must obviously tend to neutralize the state of any part or any fluid in the human body, in an oppositely electrical condition. Now, according to the division of the elements of matter by Berzelius, already referred to, gold stands at the bottom of the electro-positive class, and united with chlorine, as it commonly is in medicine, it occupies a still more decidedly negative position. The condition of the blood and the pulmonary capillaries, in a phthisical patient are, then, in an opposite relation to that of the remedy, and therefore, it must be clear to every reflecting mind, they must attract and neutralize each other. Admitted into the circulation, the electro-negative gold must alter the opposite state of the mass of the blood, and thus counteract the diathesis in which the disease arises: and its approach to the organ or tissue in which the capillaries are expanded and diseased, must, upon recognized electrical principles, cause a tendency in them to resume their natural and healthy action. Perseverance in a remedy, acting upon this principle, and administered with a proper consideration, in regard to quantity, to the living structure it has to act upon, must, sooner or later, bring the blood and the capillaries to the standard of health, and thereby afford the circumstances that are not only favorable to, but, if fatal disorganizations have not taken place, will certainly admit of the natural recuperative process repairing the local injury.

It is not intended to limit the action of gold to its electrical operation, or to deny that it may have what is commonly understood by an alterative effect. While exerting the special effect due to its electrical energy, it probably has some separate general action on the various parts of the animal economy. That it has an influence independent of its electrical relation to the diseased structure is further probable from the consideration that its salutary effects are greater than that of substances of higher electro-negative powers. If there be such a class of medicines as the alterative, the influence which the preparations of gold exert over many of the secretions and excretions, and over the nervous system itself, constitute them one of a most efficacious kind. In no disease is there more need of a means of altering or checking actions, because if suffered to pursue their natural course, they must certainly produce structural changes inevitably terminating in death. Examined on the common principles of therapeutics, the MODUS OPERANDI of no article of the materia medica promises more towards effecting these results in phthisis, than the oxides and salts of gold, and their combination with other substances to be hereafter mentioned, having a similar mode of operation.

Notwithstanding these admissions, it is proper to remark that we are not satisfied gold, in any of its forms, has any other effect on the blood in phthisis, than to change its electrical state; nor, perhaps, is any other needed;—the undue positive state of that important fluid constituting the essential feature of the disease.

Equally beneficial is the action of this medicine over some of the forms of disease that are considered independent of, but frequently complicate tubercular phthisis.—Though it is not our intention to notice in detail these various affections, yet there is one, in which the use of gold as a remedy has so salutary an effect, that it would not be proper to pass it wholly unmarked. This consists in a depraved condition of the digestive organs, and particularly of the alimentary tube. It is not only a complication of extreme frequency, but exercises so great an influence over the progress of tuberculous phthisis, that it is considered almost as important to recovery that it should be removed as that the lungs themselves should be healed. The colliquative diarrhœa which is its final consequence, may be considered as inducing death more rapidly than the most extensive suppuration of softened

* Tract No. 2, page 91.

tubercles in the langs—the complication, indeed, constitutes the galloping consumption of the public, and the acute or rapid consumption of medical writers. Though considered by some physicians nearly as frequent a cause of phthisis, as the affection called tubercular cachexia, and it may precede it, still it is almost always secondary to the tuberculization of the lungs. At whatever time it may originate, it is an almost certain indication of tubercular disease of the glands in some portion of the digestive tube; of the upper portion, as of the stomach and duodenum, when the symptoms are those of common dyspepsia; of the lower, as of the ileum and colon, when diarrhœa is present. The evidence of this condition of the intestines may be found by pathological examinations, but it is equally certainly known during the life of the patient, by the constant supervention of the peculiar spinal sensibility, (which we have described as the great diagnostic symptom of tubercular disease,) over the regions of the nervous ganglia, which inosculate with the roots of the great sympathetic arising in the various digestive organs.

Our view of this intestinal affection is not new, but it has been so slightly recognized by medical men, while it is so important to any plan for curing consumption, that it should be attended to, that it is not improper to give it a full consideration. Indeed, its importance is so great, that it may be said, while simple tuberculization of the lung is a comparatively curable disease, its complication with severe irritation and depraved functions of the stomach and bowels, is almost certainly mortal. Over this form of disease of the digestive apparatus—and whether existing with or independent of pulmonary affection—the preparations of gold have an influence which must be looked upon as one of their most precious attributes. This control is almost certain and facile; and being exhibited over a frequent concomitant of consumption possessing a form which by interrupting nutrition, and prostrating strength exercises a most fatal influence on its progress, it entitles the medicine to a high consideration.

The preparations of gold are very uniform in their medicinal properties, and nearly equally active in the same dose; and, therefore, the observations proper for one preparation will apply to all. In all, their operation in the proper doses, is slow, and requires a considerable time and perseverance for their full development; they are, on this account, the better adapted to constitutional chronic ailments, and such whose removal depends rather upon an alteration of the whole system than a sudden arrest of disease. The affinity of gold for larger proportions of chlorine than for any other electro-negative element renders this combination less easily decomposable, while its medicinal properties for the object in view, are more active, and therefore, it, or the similar preparation of the ter-chloride of gold and sodium, is the form we have most commonly employed. We are aware that the diversity of opinion exists as to the activity of the ter-chloride of gold; one writer, at least, contending that it is not more powerful than the mild chloride of mercury, and others that it is more virulent than the corrosive sublimate. We have inclined to the latter opinion, because on that view, however inappreciable may have been its sensible effects, we have always found its persevering use possessed of sufficient energy; and, therefore, have never given it in larger doses than the eighth or tenth of a grain. To allay the irritation which, in phthisis, as in all diseases, accompanied with new formations always prevails, the addition of cicuta, or some other narcotic may be useful, on the principle of checking the disturbance of the nervous system—the removal of which disturbance is of secondary importance, only, to the alterative action of the gold on the morbid structure itself. But when gold is administered with the object of obtaining its exclusive effects we have made it into pills according to the following formula:—viz:—

℞

Ter Chloride Auri.—grs. ij
Chloride Sodii,—ϑ j
Amyli,—ϑ ij
Gum Arabici,—ϑ j
Aquæ distillatæ q. s. m

The mass is to be divided into 16 or 20 pills, one of which may be given two or three times a day, and gradually but slowly increased. On account of their tendency to deliquescence and decomposition, they must be kept in a well stopped vial, and in a dry place.

(TO BE CONTINUED.)

ADDITIONAL REMARKS ON PROF. SEUTIN'S STARCH BANDAGE.

More Particularly in reference to a "Certain Modification of it."

BY ALFRED MARKWICK, SURGEON, LONDON.

If I have been guilty of leaving a blank in my paper "On the Use of the Starch Band-

age in the treatment of Fractures,"* in consequence of not having alluded to Mr. Christophers' "modification,"† I fear I shall be considered equally culpable by MM. Velpeau, Mayor, Laugier, Lafarguede, St. Emilion, and Van Meerbeck, for having taken no notice of theirs.

My communication was intended to point out the importance and advantages of Professor Seuten's Bandage, and his alone in the treatment of fractures, believing as I do, that all modifications of it, or additions to it, are both useless and unnecessary, and open to far more weighty objections than have at any time been raised against the original. It will not be necessary for me to substantiate this statement inasmuch as Mr. Christophers has himself already done so in that portion of his paper taken from Dr. Pigeolet's "Esquisse Historique sur le Bandage Amidonne."

It is true, no objection has been raised, either by Professor Seutin or Dr. Pigeolet, to Mr. Christophers' "Indian-rubber straps," and therefore I ought, perhaps, in this gentleman's opinion, to have made some allusion to them. I would have gladly done so had I considered that they were in any way essential or indispensible to the construction of the bandage amidonne. Had they been so, M. Seutin would have been the first to immediately avail himself of them. Now I can confidently assert that during the whole time I was in attendance at the Hopital St. Pierre, at Brussels, I never once witnessed their application, and I may refer, for confirmation of this fact, to Professor Seutin's writings subsequent to the publication of Mr. King's paper in the *Medical Gazette*, in which Mr. Christophers' "modification" is made known, for in these we find that no mention whatever is made of them. I may however, for this gentleman's satisfaction, quote the following paragraph from Dr. A. Didot's article in the *Abeille Medicale* for July, 1844, p. 155; Et je dois avouer que je ne vois pas le moindre inconvenient a ce que leurs idees, (those of Messrs. King and Christophers,) soient adoptees dans le traitement des fractures lorsque l'opportunite se presentera. But this does not show that the "straps" are an indispensible addition to the perfection of the bandage in question; and I can but think that had they been of that importance, Dr. Pigeolet would have done more than merely mention them. He would undoubtedly have characterized them as a valuable innovation, free from objection, and would have recommended them as an effectual means for remedying a defect which the starch bandage certainly (but for a very short time only) possesses.

These "straps" are intended to enable the apparatus to adapt itself to all the variations in size which the injured limb is liable to undergo. But it appears to me, that in employing them, we avoid Scylla to fall into Charybdis, as I shall by and by attempt to prove. And, moreover, we possess more effectual means (those recommended by Professor Seutin himself) for obviating the evil.

In his reply to the following objection to his bandage, made by M. Mayor—namely, that "it forms a case so resisting that it can neither dilate nor contract on the limb during its alteration in volume," Dr. Seutin says, (p. 195, *loc. cit.*,) "How is it that after all I have said in order to show that the starch bandage is remarkably *dilatable*, and that it may be *drawn in* at pleasure,—that after having proved that its application permitted of the parts being daily inspected with the utmost facility, when such an inspection became necessary,—how is it, I say that after all this, my bandage is represented as a kind of case which must invincibly preserve its primitive form, without being able to adapt itself to the development or the diminution in size of the contained organs? I can only account for this singular circumstance by admitting that M. Mayor has not read the different memoirs which I have published on my method of treating fractures, and by afterwards supposing that the cases he has seen have given him a false idea of the true principles by which my invention has been directed." * * * * * * "If an apparatus would permit us to constantly maintain the fragments in the same position, from the commencement to the end of the treatment, and is also capable of being tightened or slackened and will enable us at the same time to inspect the soft parts, and apply to them such remedies as their condition may require,—if, I say an apparatus permits all this, we shall then be at liberty to state that it fulfils all the indications that are furnished by sound therapeutical notions on the subject of fractures." "These are precisely the qualities by which my bandage is distinguished."—At pages 141 and 142 of the same work, he says, "One of the greatest advantages of my starch bandages, and one which decidedly distinguishes it from the apparatus of the French surgeon, (alluding to Larrey,) consists, then, in my opinion, in the facility one has notwithstanding its employment, for following step by step, as it were, the progress of the injuries of the soft parts, with-

* June Lancet, page 541.
‡ July Lancet, page 44.

out the coaptation in the least degree suffering. Strong scissors which I have had constructed expressly for this purpose, enable me to cut, without difficulty the anterior surface of the apparatus, which for this reason I take care to render of as little thickness as possible. I thus obviate the defects of slight compression if it is badly exercised; I suppress it if it appears to augment the local stupor, or if it cannot overcome the violent reaction which ensues; on the contrary I continue it if I find on inspecting the limb, that the patient's complaints arise either from his pusillanimity or apprehension. If local therapeutic remedies are thought necessary, I make use of them, and then, in some cases apply a piece of linen on the internal surface of the apparatus in order to prevent it from being soiled by the applications employed; I afterwards bring the two valves together by means of an unstarched roller. By removing this every day, the dressings can be applied as often as it is thought necessary." * * * * * "When the incision is made and the limb is found to require no topical application, the two valves are united by means of a starched roller, and the original solidity thus becomes restored. When the swelling has disappeared, and the bandage has, in consequence, become too large for the member, I remove with my scissors, from its anterior part, a longitudinal band of greater or less width. After moistening it a little, I mould the pasteboard on all the inequalities of the limb, by the aid of a starched bandage."

In another place, (see *Abeille Medicale*, for August, 1844,) when speaking of its advantages in cases of compound fracture complicated with delirium, he says, "If the modus operandi of our bandage is known, the security it gives under these circumstances will be understood. By its methodical compression it puts a permanent obstacle to the contraction of the muscles; by forming with the leg, the thigh, and the pelvis, a continuous whole; and by exactly and firmly embracing these parts, it prevents the movements of the rest of the body from being commuicated to the solution of continuity, and if we have that, it cannot become deranged; we shall have the principal conditions for securing such a state of immobility of the fragments, that should the patient by chance get out of bed and walk a few paces on the injured limb, few, if any, accidents would be the result." Again, "It (the starch bandage) compresses the muscles throughout their whole length, and momentarily deprives them of the greater portion of their contractile force. By embracing the whole extent of the limb and its sinuosities, it affords to every part of it resisting surfaces which prevent the displacement that is likely to be produced by the remainder of the muscular action, and the natural elasticity of the tissues, and keeps up a degree of extension and counter-extension, which, in opposition to that of other apparatus, we will call passive. In short, by its circular contentive action, it forms resisting splints, which encircle the pelvis, extend over the limb in every direction, and cannot allow of any displacement either in its natural direction or in its diameter." "Its compression is less than in any other, *cæteris paribus*, when it is intended only as a contentive means, because it is more in harmony in its distribution with the physiological and pathological conditions of the organ, and because it more directly counteracts those forces which tend to destroy coaptation, and moreover, there is economy in its employment. It is graduated—that is to say, that in twenty-four hours after the application of the bandage, this is transformed by the longitudinal section into an exact mould of the limb, which is at once suppple, elastic and resisting, and of which we are always able to determine the degree of compression."

In alluding to the space left between the limb and the internal surface of the bandage by the desiccation of the latter, M. Deroubaix makes the following remarks: "Nothis so common as to see the inconvenience that is sometimes caused in certain parts by the compression of the newly-applied apparatus, insensibly disappear at the end of twelve or twenty-four hours. These facts seem to deprive the bandage of one of its prerogatives, by showing its compressing properties to be at an end the moment it becomes completely dry. But M. Seutin has had the ingenious idea of constructing it in such a manner as to make it represent a kind of bivalve apparatus, the sides of which though firmly united may nevertheless be brought nearer together by certain means, until their primitive relations become completely re-established. This modification appears sufficient to restore to it the properties which its desiccation has caused it to lose, and to definitively maintain its efficacy until the end of the treatment. The manner in which the starch bandage effects the restoration and the retention of the fragments in their proper relative positions, may be considered as composed of two very distinct modes of action: the first comprehends the compression of the ruptured bones; the second consists of a double effort of extension and counter-extension. The compression of the fragments presents an adaptation of the remedy to the evil—a security in

its results which would be sought for in vain in the other apparatus to which I have alluded. It is no longer as is the case with splints, that vague and uncertain property of producing coaptation that is assigned to one or more solid bodies which appear to cause the disappearance, on one side, of the abnormal bony projections, only to allow them to reappear in another. Neither is it, as in the method 'a suspension,' that contentive force attributed to a flat surface, which is to support a round body in an invariable position, and which, as it does not act itself, cannot maintain the reduction any longer than during the time the limb remains in contact with it by virtue of its own weight. On the contrary, its action is uniform, regular, and constant, adapted by its circular quality to the shape of the organs which are about to receive it, and produced by a force which seems to have calculated all possible displacements in order to oppose them on all sides at once." * * * * * "The projections and depressions are alike under its influence, because the starch bandage is able to present depressions to the former and elevations to the latter. The muscles being compressed on all sides with the same intensity, and in a perpendicular manner, experience an obstacle to their contraction, which would tend to produce displacements, and yet cannot in any way avoid the action of the compressing means. They remain motionless because they can find no place towards which to direct themselves, in order to exercise their functions with more freedom."

MM. Simonart and Pourcelet make the following observations, bearing on this point. "If the shrinking of the fractured limb has left too large a space between it and the bandage, (a fact to be ascertained by percussion of the starched case producing a clear sound, by inspection, and by the introduction of the finger between the soft parts and the apparatus, &c.,) or if the vacuum is trifling, the portions of the bandage intervening between the pasteboard are to be softened with water, and then by well-directed manipulations, to be adapted to the shape of the parts; assistants contribute with their hands to the contraction, which the surgeon completes, and maintains by means of a starched roller more or less tightly applied. If, on the contrary, the diminution in the size of the limb is considerable, the longitudinal section of the bandage ought to be preferred; in that case remove from one or both valves a piece corresponding to the hollow that exists, or else bevil off the borders, each in an opposite direction; moisten with warm water the parts of the apparatus intervening between the splints, and make the thinned edges lap one over the other. The solidity and even the immobility of the bandage may, if necessary be restored by applying a starched roller round the hardened case, after it has been covered with a coating of starch."

In Dr. Pigeolet's "Exquisse," we find the following paragraph, quoted from a thesis by M. Thomas: "Sur la compression de l'appareil inamovible."—Perfect contention of the fragments, immobility continued until the cure is completed, solidity in the apparatus, by which the patient is enabled to move about, simplicity in its composition, economy in time to the surgeon, and expense to the patient—such are the advantages of the appareil inamovible amidonne.—In simple fracture unattended either by laceration of the integuments or injury to any important vessels or nerves, if the bones are not comminuted, and the soft parts are not reduced to a pulp, one of the best means for preventing the inflammation, or for arresting it at its commencement, is an uniform compression of the injured part."

These extracts will, I think, be sufficient to prove the importance and the capabilities of the starch bandage, and to show the facility with which it can be made to fulfil every indication.—*Lancet.*

Effect of Electro-Magnetism on the Action of the Heart,

Let an electric stream, by means of a magnetic-electric rotation apparatus, pass through the medulla oblongata of a frog, when the palpitations of the heart will cease as long as the rotation is in action; and it will begin again, in the same way as before the experiment, a few seconds after the rotation has ceased. This experiment produces, in fact, tetanus in the whole of the body. When any other part of the spinal marrow is exposed to the same electric stream, tetanus is equally produced; but the heart continues its movements without interruption. Finally, when the whole skin of the frog is subjected to this stream, so that one wire lies close to the heart, tetanus in the whole body is produced, but without affecting the heart. Directing the stream upon the ramis intestinalis nervi vagi, lying before the lungs, produces the same effect as upon the medulla oblongata.—*Lancet.*

On The Treatment of Chronic Diseases of the Skin.

BY THOMAS HUNT, ESQ., M.R.C.S. ENG., HERNE BAY.

Order VII.—Tubercula.

THIS order comprises nine genera, six

of which— viz : *Phyma*, (boils,) *Verrucca*, (warts,) *Molluscom*, (a very rare disease,) *Vertiligo*, *Elephantiasis*, and *Frambæsia*, (diseases of foreign climes)—require no farther notice. The three remaining genera—namely, *Acne*, *Sycosis* and *Lupus*, deserve a separate consideration.

Acne.

Acne is is a disease of the sebaceous glands, consisting of a process of sluggish inflammation in these organs, tending slowly to suppuration. It commences with clusters of small elevations, or pimples, with conidal summits, which, having slowly completed their suppurative course, discharge their contents, die away, and give place to others. Willan speaks of four varieties—*Acne Simplex*, *Acne Punctata*, *Acne Indurata*, and *Acne Rosacea*. The first three more correctly describe the different stages of acne complex than different species. The latter (acne rosacea) has a distinct character.

Acne Simplex commences with small elevation in the cutis of a red color, on an inflamed base, which slowly secrete a purulent matter. Clusters of these pimples, with conoidal acuminated summits, varying in color, red, yellow, or black, are often seen disfiguring the face of young persons at the age of puberty. The disease is generally confined to the face, neck, and shoulders, and is most common on the forehead and chin.—The eruption, if left to itself, gets better and worse, but generally lasts from two to seven years, commonly disappearing at mature age, but occasionally continuing for several years beyond. Nor has it always been found an easy task to arrest the progress of the unwelcome visitor. Lotions of a stimulating kind, such as a weak solution of the bichloride of mercury, appear serviceable for a time, but rarely prove of permanent benefit.

The perils attending the usual mode of administering arsenic have hitherto presented a sufficient objection to its use in a disease attended with no danger and little inconvenience. But a long experience of the absolute safety of decreasing doses, and of the power of the medicine over cutaneous affections generally, suggested to the writer, a short time ago, the propriety of testing its efficacy in acne simplex. The few opportunities of trial which have since presented themselves have inclined him to the opinion that acne may always be cut short by persevering in small doses for a few months, provided the system be otherwise in health. The following cases will afford a sample of the general results:—

Case of Acne Simplex on the face, Cured by Arsenic.

A. B———, a pretty servant girl, aged nineteen, has been for the last three or four years disfigured by an eruption of acne simplex, in its various stages, on the forehead, chin, upper lips, and cheeks. Her general health is excellent. Arsenic was prescribed for her on the 30th September, 1845.

October 21st, 1845.—She has taken five minims of the liquor potassæ arsenitis thrice a day with her meals, steadily for three weeks, and her face is now quite clear of pimples, excepting one or two, which have not had time to run their usual course. No fresh elevations have appeared for a week. The conjunctiva is not affected.

Case of Acne Indurata on the Shoulders, Cured by Arsenic.

Miss N———, aged twenty-one, has an extensive eruption of solid elevations, surmounted by black points and pustules, answering to the appearance described by Willan as marking the variety called acne indurata, on the skin covering the deltoid muscle in each arm, and extending partially across the back. The pustules are occasionally sore, and irritated by the dress, and are always unsightly. The disease has existed nearly seven years. She is in good health. The face is clear and the complexion healthy.

November 25th, 1844.—The eruption is copious on both shoulders. Five minims of the solution of arsenic were prescribed to be taken three times a day with the meals, with an occasional purgative, her bowels being constipated. This was persevered in for three months, without inconvenience on the one hand, or visible improvement on the other.

March 10th, 1845.—She has now taken the medicine for three months and a fortnight; and a great improvement is visible during the last fortnight. No new pustules have formed, and the old ones look indolent and fading. The conjunctiva is inflamed. The arsenic to be continued in reduced doses, and a lotion of birchloride of mercury applied sparingly.

May 6th.—She continues to improve.—The pimples are small, and appear to partake more of the character of enlarged papillæ than of pustules.

July 2nd.—Quite well ; the shoulders are as smooth as other parts of the surface.

The appearance of acne in young females has been supposed to indicate some abnormal condition of the uterine secretion. The experience of the writer has not tended to

confirm this opinion. In both of the cases above detailed, the menstruation was perfect and regular throughout, and the first appearance of the discharge seemed to have no influence over the eruption.

Acne Rosacea.

Acne rosacea is an inveterate form of acne simplex, but it differs much from that disease in some particulars. Instead of appearing at the age of adolescence, it belongs rather to the decline of life, commencing at the middle period; and instead of spontaneously disappearing after a time, it usually gets worse and worse, unless checked by medical treatment, till death. The locality of acne rosacea is also peculiar. Instead of appearing in the forehead and chin, its seat and centre is almost invariably the point, or, more rarely, the alæ of the nose, from which it radiates laterally, gradually extending over the cheeks, and affecting the adjacent skin in all directions. The point of the nose first becomes redder than natural, especially after meals, or on exposure to cold or heat; the veins of the part become visible, then pustules form, and slowly progressing through their stages, leave the skin permanently thicker than natural, and puckered with small cicatrices. In its advanced stages, the disease sometimes disfigures the face to a frightful extent; and being, in a few cases, the penalty of dram-drinking, it becomes particularly afflictive to the temperate, in whom however, it is at least as common. Like other forms of acne, it attacks both sexes, and occasionally occurs as a degeneration of acne indurata of long standing. But the subjects of acne simplex are more generally exempt from acne rosacea.

The treatment of acne rosacea has been hitherto unsatisfactory in its general results. Rayer says, the disease "almost always returns after medicines are abandoned, with a rapidity and regularity that induce dispair,"* This is strong language, and from a man of Rayer's experience, most discouraging. Indeed, so general is the impression that it is incurable that patients rarely seek medical advice for this disease, and still more rarely do regular practitioners undertake the cure in a methodical or persevering manner. Certainly, among the numerous and ill-defined varieties of this disease there are two, the recovery of which cannot be reasonably expected. 1. The disease is in some cases hereditary, and, perhaps, likewise congenital. Early in life the nose is slightly affected by the disease, and by degrees becomes incurably hypertrophied and deformed. The writer has more than once known it complicated with an irritable condition of the rectum and with chronic hœmorrhoidal affections, the irritation oscillating from one extremity of the intestinal tube to the other. These disorders can be *alleviated* by medical treatment, but there is something originally wrong which probably can never be rectified. 2. The acne rosacea of the drunkard, connected frequently with visceral disease, is placed by the habits of the patient out of the control of medical art. With these two exceptions, the varieties of acne rosacea present nothing which justifies an unfavorable prognosis, much less despair.

The following "very instructive case," as Dr. Chambers described it, furnishes a proof, which cannot be impugned, of the therapeutic powers of arsenic in this disease.

Case of Acne Rosacea in a middle aged lady, Cured by Arsenic.

Mrs. N———, a lady of temperate habits, clear complexion, and good general health, had been complaining for some weeks of languor, lassitude, headache, hysterical globus, and chronic diarrhœa. These symptoms were treated variously, but with little success for a time. At length, on the right ala of the nose a small number of accuminated pustules appeared elevated upon an inflamed base, and having the genuine character of acne, but more closely crowded together than they usually are in that disease. These soon became covered with a purulent incrustation; other pustules appeared in the neighborhood, until at length the whole ala, with a continuous portion of the cheek, became occupied by the disease, and presented an ugly and hypertrophied appearance. As a portion of the crust became separated, other pustules appeared underneath, and a second crust was formed, which, when detached, discovered other formations, on a larger base and involving a deeper portion of the subcutaneous tissue. There was no pain or itching, and, except on approaching the fire, no sensation of heat. The crusts were surrounded by a small areola of a dull red color, rather inclined to a brown shade, but never exhibiting the livid color of lupus, which disease it nevertheless, in some respects resembled.

Dr. Chambers saw the case within two or three months of its commencement. He pronounced it acne rosacea, gave a guarded prognosis, and prescribed arsenic, of which the first dose was taken on the third of January, 1844, and continued on the plan de-

* Rayer's "Treatise on Diseases of the skin." English Translation, p. 476.

tailed in the preceding cases, for three months, by which time the disease had entirely vanished, and the hypertrophied cellular tissue was reduced to its normal condition. Any doubt which might have been entertained concerning the agency of the arsenic in the cure would have been dissipated by the ultimate history of the case. The patient now left her home "for a week"—was actually absent five weeks, neglected her medicine, and returned home with another tuberculous incrustation, which, commencing on the original spot, had now spread more horizontally over the cheek, and seemed to take a more superficial hold of the integuments than the former attack.

May 10th.—The arsenic was now resumed, and taken steadily till the middle of July. Before the end of May, however, the disease had again disappeared. The medicine was persisted in for two months subsequently, with a view to prevent a return; notwithstanding which precaution, the disease was only kept at bay for twelve months, not radically cured; for in the following July, (1845,) the old enemy reappeared, evidently, however, in a milder form than heretofore; for now the arsenic put him to flight in ten days, and was steadily persevered in for two months afterwards. At present there appears no probability of a relapse. A considerable indentation, like a bad variolous scar, was left by the first attack; the latter attacks left no scar.

The diarrhœa, headaches, and hysterical affections, retired as soon as the arsenic had hold of the system; and the patient has enjoyed excellent general health since the termination of the first course. The conjunctiva became affected as usual, synchronously with the subsidence of diseased action, both local and constitutional. No external application was used, nor any potent internal medicine, after the first exhibition of the arsenic.

The reader's attention is particularly solicited to three observations suggested by this interesting case:—1. The decline of the disease, on three distinct occasions, under the steady use of arsenic alone, independent of external applications, changes in diet, or other circumstances of regimen; its repeated relapses after neglecting the medicine for a few weeks, and its (probably) final disappearance after such a protracted course of reduced doses as seemed to destroy the very tendency to mobid action: these circumstances demonstrate the absolute control which this wonderful medicine exercises over tubercular diseases of the skin, and holds out a strong encouragement for its lengthened trial in cases of longer standing. 2. The morbid condition of the nervous system, and the extreme irritability of the intestinal canal, in circumstances which would generally be held interdictory of the use of arsenic, were, in this case, not less clearly relieved by the arsenic, than the cutaneous affection itself. 3. The resemblance of this case to lupus, both in the locality primarily affected, and in some similarity of general appearance and history not easily described, seems to suggest, if not establish, some relation between this disease and certain forms of acne rosacea, and if it throws no light on their cause and origin, it indicates a morbid condition of the general system, susceptible of successful treatment by a similar alterative plan. The writer has further the satisfaction to state that he has had an opportunity of carrying out this indication with the most entire success, in a case of lupus exedens, of many years' standing.

The two varieties of acne which have now been discussed belong properly or principally, to two distinct and distant periods of life, respectively—viz., acne simplex, to puberty; acne rosacea to the meridian or decline of life. There is a third species, pertaining to the intermediate years, and seldom met with either in the morning or the evening of human life. And whereas the principal seat of acne simplex is the forehead, and of acne rosacea, the nose, the variety now under review occupies only those parts of the face which in the male subject are covered by the beard. It is known by the name of

Sycosis, or Mentagra.

This disease has all the characters of acne. It is described as confined to the male sex; but the affection, is, in fact, more commonly met with in the female, being in the fair sex generally described as acne. It is usually more severe in men, for obvious reasons. The irritation constantly inflicted by the razor, and often mistaken for the original cause, the augmented development of the hair follicles in men, which become implicated in the disease, and the incrustation resulting from the adherence of the discharge to the beard, which becomes an incidental source of inflammation,—all these circumstances contribute so much to the severity of the disease, that it often becomes truly formidable, presenting a hideous mixture of pustules, tubercles and incrustations. "Arrived at this stage," says Rayer, "sycosis is always an obstinate disease, the cure of which is never obtained but with great difficulty." Compared with this, it is mild in the female, but, nevertheless very annoying and disfiguring. The description already given of the rise and progress of

acne simplex applies accurately to sycosis, excepting that the latter disease is confined to the chin, cheeks, upper lip, and submaxillary region, and the resolution of the pustules is usually attended with a feeling of heat and tension in the parts they are to occupy. The writer has not been able to meet with any recorded case in which arsenic has been administered in this disease. Indeed, it is generally regarded as originating in external causes; the cure has therefore been attempted by local means alone, of which the most essential is the plucking out of every single hair of the beard in the affected parts. This is surely a mistake. The cause of sycosis is always constitutional, although its aggravations may be dependent upon local sources. Arsenic rightly administered will rectify the constitutional disorder; and if, at the same time, the local disease be treated with that attention to cleanliness and external management recommended by all writers on the skin, the disease will prove as tractable as the other varieties of acne. The following cases illustrate the sufficiency of arsenic alone when the disease occurs in the female:—

Case of Sycosis in a lady, complicated with Neuralgia; both affections cured by Arsenic.

Miss S——, aged twenty-five, (or upwards,) a brunette, of naturally clear complexion, had suffered from frequent attacks of neuralgia in the facial nerves. Early in the summer of 1844, she experienced a return of her old malady, which destroyed her rest except when procured by opiates. The chin and lower part of the face generally became affected with a sense of heat, tension and pruritus, which sensations were in a day or two succeeded by an eruption of small red points, tending to suppuration somewhat more rapidly than usually occurs in acne simplex, but yet presenting an appearance exactly similar to that disease, the dark points appearing here and there, and the subcutaneous integuments being very sore, and more or less involved in the inflammatory process. The forehead and the nose wholly escaped the disease.

June 21st, 1844.—The eruption has existed about three months, and has continued by successive crops to this time, gradually getting more troublesome. The patient is weak and thin, and is suffering from extraneous causes of anxiety; but the general health is otherwise good, and there is no interruption of any natural function. She this day consulted the writer on account of the neuralgic affection. No external application was used, but the following medicine was prescribed—viz., Fowler's solution, one drachm; distilled water, seven drachms; mix Forty minims to be taken thrice a day in the beverage usually taken at meals.

June 30th.—The pain has left her. She sleeps well, and is looking better. The eruption is fading, and the skin is paler and less occupied by red points. Slight conjunctivitis. The dose of arsenic was reduced to four and afterwards to three minims of Fowler's solution.

August 1st.—The eruption has quite disappeared. She has had no relapse of the neuralgic pain, and is in perfect health.

Case of Sycosis in a female, complicated with Dyspepsia; both diseases yielding to Arsenical treatment.

Miss T———, aged twenty-seven. The eruption in this case was so exactly similar to the one just described, (exeept that it was confined to the point of the chin,) as to render further delineation unnecessary. The dyspepsia was treated with aperients and alkaline tonics for a fortnight, and a diluted solution of bichloride of mercury applied to the face, without any amendment becoming apparent in the eruption, and with but little improvement in the dyspeptic symptoms.

The arsenical treatment was commenced on the 11th of Augnst, 1845, and in little more than a week the stomach had resumed its healthy tone, and the skin was nearly well; but she neglected the medicine, and before the following Christmas, both complaints returned, and are again yielding to arsenic.

Both of these patients were of mature age, and had been free from the cutaneous affection at the age of puberty. The skin of the forehead was sound, and the disease was somewhat more acute in its character than acne simplex. It commenced too early in life for acne rosacea; besides which, the nose escaped entirely. The disease was therefore mentagra, or, more probably acne menti. In both cases the disease, with its respective complications, yielded readily to arsenic. Not a doubt can be entertained of the constitutional origin of this disease; and calm reflection on the primary characters of sycosis in the male sex, will lead the observer not only to identify the disease with acne, but to perceive the necessity of prescribing an alterative course in connection with local applications. The writer regrets that he has not as yet had an opportunity of giving this kind of treatment a trial in that aggravated form of the disease which is peculiar to men, but he cannot entertain a doubt as to the issue.

Lupus.

Lupus is the next genus in the order tubercula. This disease has many names; and the cognomen Lupus is applied by authors to two or three very different diseases. Rayer describes two varieties—namely, *lupus exedens* and *lupus non-exedens*, to which M. Biett adds a third—*lupus with hypertrophy*.

The first of these ulcerates from the surface inwards, and leaves deep excavations; the second spreads and ulcerates horizontally; the third rarely ulcerates at all. The two latter are tubercular diseases and are comparatively rare in this country. The former, *lupus exedens*, or *noli me tangere*, is a frightful disease, difficult of cure, and when cured, leaving behind it more or less of deformity. To this disease the writer will at present confine his observations. He is disposed to agree with Mr. Plumbe in doubting whether this form of lupus is strictly of tubercular origin. It is, in fact, a chronic cutaneous inflammation of a peculiar character at once indolent and irritable, but often for a time devoid of pain; of a livid color, commencing generally in a small portion of the ala of the nose or the circumference of the nostril, and speedily tending to phagedenic ulceration. The ulcers are covered by dirty-looking adherent scabs, which on desquamation, discovered a surface moistened by a glutinous exudation, soon drying into a new scab; and this, on its separation, disclosing deeper excavations, until not only the sub-cutaneous tissues, but eventually the cartilaginous structure, of the nose is eaten into. The disease commonly extends to the upper lip, and the gums of the upper jaw. The whole of the nose, upper lip, gums, and incisors of the upper jaw, and even portions of the bone, have been known to be sacrificed to the ruthless invader. The lower eyelid and the commissures of the lips are sometimes respectively the seat of lupus exedens, the ravages of which produce suffering and deformity not less deplorable than lupus of the nose.

The causes of this horrible disease are utterly unknown. Its subjects are commonly young and previously healthy women, from the age of sixteen to thirty. The diagnosis is not difficult; but through the too general neglect of the study of cutaneous diseases, and the consequent ignorance of the symptoms of well-defined and specific diseases, the repulsive malady has very often been most inexcusably confounded with syphilis, and the disease has been aggravated by mercurial salivation. In syphilis there can always be traced, at least, a concatenation of secondary symptoms previously developed, and the disease usually commences from within, the cartillages suffering first; and the ulceration, when it appears, has a character of its own, quickly appreciated by the experienced eye. In lupus, on the contrary, the disease appears in persons who have generally enjoyed good health, and in whom neither primary nor secondary symptoms have ever appeared: it first appears in the skin, which is not copper-colored, but livid. The prognosis is generally as melancholy as the disease is horrible. The writer has sought in vain, both in books and hospitals, for a single case in which its ravages have been actually and permanently arrested; although here and there, allusions to cures are found in books. Precepts for its treatment are sufficiently plentiful; but demonstration of their utility is lacking.

The following case will show, however, that the disease may not only be arrested and reproduced at pleasure, during a certain time, but permanently and radically cured:

Case of Lupus exedens of nine year's standing, Cured by Arsenic.

Mrs. S———, aged thirty-two, the wife of an agricultural laborer, had been the subject of lupus exedens for nine years, when she first requested the advice of the writer. The disease had probably been mistaken for syphilis, for she had twice been salivated, (of course without benefit,) and had submitted to escharotic applications, and a variety of treatment, both in hospital and private practice, without the slightest advantage. She had been under the care of Mr. Earle, in St. Bartholomew's Hospital, for twenty-two weeks, and reports that she was treated with sarsaparilla and caustic.

Jan. 5th, 1837.—The tip, both alæ, and a part of the septum of the nose, are already eaten away. A portion of the upper lip and of the gums of the upper jaw have disappeared, and the four incisors of the upper jaw have been sacrificed to the voracious enemy. The remaining portion of the extremity of the nose, the upper lip, frænum, and gums, are in a state of ulceration, and the parts exposed to the air are covered with a dirty, dark-looking incrustation, the edges of which are of a dull livid color. The breath is offensive, indicating deep seated mischief; she has a nasal tone of voice, and there is reason to suspect the existence of a greater extent of disease than is obvious to the eye. She complains of severe burning pain in the seat of the disease, and is "troubled to get any rest." She is emaciated and weak, but otherwise in good health. The parts were ordered to be dressed with a pledget of pure fresh spermacet

cerate, thinly spread upon fine lint, simply to protect them from the oxygen of the atmosphere, and from sudden changes of temperature, no other application being used. Five minims of the liquor arsenicalis were ordered to be taken with the meals, thrice a a day, which dose was persisted in with exact regularity for three months, when the conjunctiva became affected. The dose was then and afterwards reduced as occasion required. This plan was uninterruptedly pursued for two whole years, the disease meanwhile, advancing as heretofore, but she at length experienced some alleviation of the pain. The action of arsenic is slow but sure.

January 30th, 1839.—She has now lost all pain, has regained her flesh, spirits and good looks, and has undisturbed rest, but there is no appreciable improvement in the ulcerated surfaces. The disease has committed visible ravages since the commencement of the arsenical treatment, but the patient fancies it has been "at a stand still" for the last few weeks.

January 12th, 1840.—She has now steadily persevered in the arsenic for three years. The conjunctiva has been more inflamed "latterly," but the skin of the nose, lips and gums, is perfectly whole and sound. No traces of ulceration or scaliness are visible, but there are ugly cicatrices and scars, with great loss of substance, and the contaminated breath suggests the idea of disorganized cartilaginous structure.

March 2nd.—There is no visible trace of existing disease in the nose, lip, or gums, but the breath is still offensive. She thinks she has taken cold, and complains of a pain in the chest, dyspœna, and hard dry cough. There is a croupy hoarseness, as well as a nasal intonation in her voice. Pulse 96, firm; skin hot and dry. Fourteen ounces of blood were taken from the arm; aperients, salines, and low diet; discontinue the arsenic.

April 10th.—Quite well, with the exception of foul breath, and nasal tone of voice. No medicine prescribed.

August 3rd.—She has taken no arsenic for five months. There is a slight return of ulceration in the right side of the nostril, but the livid apearance of the skin, and the foul unhealthy character of the ulcer, are not so obvious as before. A small tuberculous elevation also appeared on the left cheek near the nose, which healed over after being touched with lunar caustic. The arsenic was now resumed in small doses, and continued regularly for a month.

Sept. 5th.—The skin is again healed, and has a normal surface.

January, 1841.—She has continued in excellent health for four months, and taken the arsenic to this time. It was now considered safe to dispense with it altogether.

July.—She has taken no arsenic for the last six months. Slight return of ulceration in the nose. Resume the arsenic in doses of two minims of Fowler's solution three times a day. The ulcerated portion of skin healed in ten days, and the arsenic was ordered to be taken for six months longer, which order was faithfully obeyed.

January, 1844.—She has now abandoned the arsenic for nearly two years. There is no return of the disease, but the breath is still offensive.

September, 1845.—She remains well; less fœtor in the breath,

After this patient had taken the arsenic about twelve months, a brown, dirty, and mottled appearance of the rete mucosum was observable, first, on the legs and thighs, then, at the end of the second year, on the trunk of the body, and ultimately on the arms and neck, the face only escaping. This disappeared gradually without desquamation, after the medicine was abandoned. The writer is not aware that this effect of arsenic has ever before been recorded.

In this extraordinary and highly satisfactory case, the controlling power of the arsenic is so perfectly demonstrated by repeated experiments,—the disease uniformly advancing when the medicine was withheld, and as uniformly receding under its influence, until the very tendency to diseased action was absolutely destroyed under its continued use,—that no comment can add any force to the facts. The concurrent testimony of writers on the skin to the improvement of the ulcers of lupus under the topical use of arsenic, is worthy of notice, in connexion with this case. The object for which arsenical applications are recommended is to check the destructive process of the ulceration by exerting a new action on the surface. Is it not more probable that the temporary benefit derived from the dressing is attributable to the absorption of arsenic? Mr. Plumbe seems to be aware of the influence of the internal use of arsenic in lupus, but he does not tell us that he ever succeeded in curing the disease by it. The cause of his failure is unconsciously confessed in the following sentence: "It is proper to *increase the dose gradually*, till some manifestation of tendency to disorder of the stomach and bowels occurs, when it should be *entirely withheld*, and purgatives, with opium, substituted, till such symptoms

have subsided."* I have marked in italics certain words in the preceding extract, to indicate the rock on which practitioners generally split in the administration of this medicine. The writer has administered arsenic in hundreds of cases, but has never observed the slightest tendency to disorder of the stomach or bowels, because he has invariably reduced the dose before it has done any mischief; and probably mixing the medicine with the food has protected the stomach and bowels from injury. It is strange that some writers advise it to be taken on an empty stomach. It may not be unadvisable to repeat that the curative properties of arsenic will always be found to reside in doses too small to be mischievous.

The diseases comprehended in the eighth order of Willan, *maculæ*, (if diseases they may be called, being simply deviations in color,) do not fall under our notice.

Concluding remarks.—In reflecting upon the uniform success which has attended the right use of arsenic, in the treatment of a great variety of diseases, apparently so unlike, one is naturally led to inquire—how does the medicine act? and, what points of coincidence are apparent in this motley group, which may be supposed to indicate uniformity of treatment? To those questions full of interest as they are, the writer does not feel himself in a position to hazard a reply. His present object is to direct the attention of the profession to a series of facts, rather than risk their value on the hazard of a speculative theory. It is certain however, that there must be something in all these cases constitutionally wrong, which the arsenic has the power to rectify. In several of them there was no manifest deviation from health, functional or structural, in any organ save the skin. It may therefore be inferred, as a corollary from the above results, that local diseaes may and often do, indicate a cachectic condition of the circulating fluids, where there is neither any apparent deviation from healthy vascular action, nor any palpable abnormal tone in the nervous system. Beyond this it is difficult to carry our enquiries. It is hazardous to deduce pathological conclusions from therapeutical facts, especially from those which are limited to a confined range. But the field is open for further experiment. It may turn out, at last, that arsenic, though all-sufficient, is not essential to the cure of these diseases. There are other alteratives, probably of equal power, if not of equal promise, which have never yet been tried methodically, or with sufficient care to test their value. To this end it is necessary to try a medicine alone, rejecting the aid of external applications and artificial diet. Without this there can be no advance in our knowledge of the materia medica, whatever we may learn of the general principles of pathology. Our very natural and laudable anxiety to do the very best we can for the relief and restoration of our patients too often tempts us to a course of conduct, which, on the first appearance of difficulty, finds us at fault. If a man would know the value of a remedy, he must use it as he would an instrument determined to try its power and temper, and to operate with it unaided and alone,—not heroically or regardless of danger, but mingling discreet vigilance with a resolute determination not to abandon it.

It is now many years since the writer resolved to try what could be accomplished by arsenic in the treatment of the more unmanageable disorders of the skin, and he confesses himself astonished at the result. He has little acqaintance with other remedies beyond his knowledge of their general inefficiency. He has abjured medicated baths, ointments, and lotions, and excepting for the purpose of reducing inflammatory action where it existed he has placed no restriction upon diet. Moreover, he has, in almost every protracted case, allowed the arsenical course to be interrupted again and again, and generally found he could check the disease, or allow it to advance at pleasure. In this way he has had the satisfaction of establishing the value of this one medicine beyond the possibility of doubt and the reach of cavil, and by illustrating the efficacy of small doses, and thus securing for the medicine an innocuous operation, he has removed the only valid objection to its use—namely, its dangerous properties. Still nothing would give the writer more pleasure than to hear that any one of his brethren had discovered by sure induction, a remedy less objectionable than arsenic, but equally potent in its control over these disorders. This, however, is scarcely to be expected. A medicine, which besides being almost certain in its operation, is safe, cheap, and tasteless,—which can be taken at meal times, through a whole life, if necessary, generally without creating disgust or nausea,—which interferes, in curative doses, with no healthy function,—which gives no pain and inflicts no inconvenience,—has surely recommendations which are not easily surpassed.

There are two or three circumstances connected with the history of the preceding cases which ought not to be overlooked.

1. Especial care should be taken to en-

* Plumbe on Diseases of the Skin. Third edition, p. 55.

sure the purity of the medicine. The necessity of attention to this point is more palpable than may appear at first sight. One would think that a medicine so cheap as arsenic would scarcely be adulterated, and that its well known poisonous properties would always secure a careful and accurate preparation of its formulæ. It is a fact, however, that the arsenous acid, (oxide of arsenic,) sold in powder, is very commonly adulterated with sulphate of lime, and although it is difficult to make the Fowler's solution of such materials, (inasmuch as the gypsum being insoluble in the solution of carbonate of potash, the former will always appear as a precipitate;) yet, that the solution is sometimes prepared in this way, or otherwise adulterated, is more easy to believe than that such enormous doses are taken with impunity as are said to have been administered.* The solution used in all the preceding cases was procured from Apothecaries' Hall, and its operation has been found, at least, as uniform as that of medicines in general.

2. The cases were, for the most part, treated by the sea-side. Whether the influence of a marine atmosphere, or of mere change of air, may account in part for their successful termination, must be left an open question, to be decided by future experiment; but it is right to mention that most of the patients were so circumstanced.

Lastly. Having pointed out an eligible method of bringing to a happy termination these annoying and loathsome maladies, the author feels that there is yet an ulterior and very momentous question to be decided, before these results can be contemplated with entire satisfaction.

There prevails in the profession, as well as among the public at large, a *suspicion*, (to say the least) that some of these diseases cannot be *safely* cured at all; that morbid affections of the skin, though severely afflictive, sometimes exercise a salutary influence upon the system at large, acting as wholesome and natural drains, or safety-valves, to the vascular apparatus, and thus by their timely or continuous action preventing the accession of still more serious forms of disease, probably involving the vital organs and sometimes even endangering life. It is impossible to do justice to the merits of this really important and somewhat knotty question, in the limits allotted to this paper; but with the editor's permission, the point will be fully discussed in a future number.—*Lancet.*

* Since the above was written, the writer has ascertained that it was formerly very common for wholesale druggists, in making Fowler's solution, to meet with a precipitate of white powder, which was supposed to be a residuum of arsenic remaining after the saturation of the solution. The practice was to pour off and bottle the clear liquor, and throw away the residuum. Whether, or to what extent this practice prevails at present, is a question to which her Majesty's ministers are probably very indifferent, albeit their lives may one day depend on it.

From the London Lancet.

Liabilities of the Muscle in Disease.

Of epidemic influences that disturb the general health, the voluntary muscles take early and constant notice; for of life, in all its varieties of of action, they are the truest, readiest, and most delicate exponents.—Rheumatism, influenza, diarrhœa, illness, of whatever kind, that is "going about," prevail, by acknowledged symptoms in the locomotive structures of the body. All the animal blights, electrical, contagious, or miasmatic, are necessarily muscular in their development. Observe your patient, then, from first to last, as he stands, walks, sits, or lies; note well his changes of posture; see what he does with his hands; watch his features at their several periods of action and repose; compare them in their separate play. Nothing, be assured, is more truly clinical than such indication, by impaired contractility of disorder in the flesh. Remember, without disparagement of the medicine that works by dissection, analysis, and the microscope, that, while engaged in the contemplation of these muscular symptoms, we have before us nothing less than the actual visible operations of disease. Observing them, we have under our wide, natural eye, not the mere segments of perverted, fast decaying structures, not the shadowy, lenticular spectra of a discharged and damaged fluid, but organs, living and complete, in active relation, through their function, with the blood and all else that is vital in the body. Here, in the Queen's ward, is a woman, (Mary Mc B——,) who tells us plainly, though not in words, of fast improvement and recovery. Near-sighted as I am, I see already, as we approach her bed, that since yesterday, she is better. I see it, and at once in the shape of her features; I know it by the very "wag of her eyelid." In this case, the buccinator and the levator palpebræ muscles express as much of encouragement as could be spoken by the mouth and larynx. Try and remember this patient as we knew her on March 11, when she was first admitted, scarcely conscious, ex-

hausted, inarticulate,—how she lay, and whined, and stared. Day after day we found her stretched, as if by palsy, on her back; her knees were never bent; her hands moved but seldom from her side. In this unnatural repose of all voluntary muscles, we could not fail to recognise the character and intensity of the disorder. The influence that operated to the prejudice of the contractile function, was, in this instance atmospheric, and of the season. It is a case, now convalescent, of the spotted epidemic fever. J. A. W.

A late number of the *Dublin Hospital Gazette* contains an interesting lecture, by Dr. O'Ferrall, on

Abscess with Fistula in the Female Breast Treated by a simple method of Compression.

The single superficial abscess is a matter of daily occurrence, and requiring but little management for its successful treatment. The cases to which Dr. O'Ferrall applies his remarks are very different, and are thus described by him :—

"The breast is enlarged, discolored, and disfigured by a number of fistulous openings, discharging purulent matter. The magnitude of the part is different in different cases, but is sometimes such as to exceed two or three times that of the opposite breast. Its figure is irregular, presenting numerous prominences and depressions, giving to the organ an unsightly and mis-shapen appearance The color of the integuments is unequally distributed, patches of a reddish hue appearing irregularly mingled with the natural tint of the skin. A number of fistulous openings are visible on the surface, each discharging purulent matter. I have counted as many as fifteen distinct orifices in a case of this kind. The pus discharged is generally what is termed healthy—that is, uniform in color and consistence. Occasionally a tinge of blood is mingled with the discharge, if the part has been subjected to much handling or pressure. The orifices near the nipple have, in some instances, yielded a milky fluid mingled with the pus."

The pain is generally very distressing. Pressure made in particular situations immediately causes an increased discharge, and a probe may be passed to a great depth, indicating the existence of sinuses in various directions. The treatment hitherto pursued has been,—1st, that recommended by Mr. Hey—namely, to lay open the different fistulous canals, a most painful and often a formidable operation; and 2ndly, that by pressure directly over the breast, or antero-posterior, as called by the author. He objects to this proceeding, on the ground that many of the sinuses become obstructed by the pressure thus made, and that new and more extensive burrowings take place. He adopts, and with apparent success, the following method instead :—

"Having carefully pressed out the matter from all the fistulæ, direct your assistant to grasp the breast gently in both hands, and draw it forwards as far as possible without causing pain. A breast greatly enlarged, will, in this manner, admit of a remarkable degree of elongation. While the organ is held in this position, you are to pass a strap of brown soap plaster, an inch and a quarter broad, round the part nearest to the chest, beginning underneath, and making the straps cross each other on the chest. Other straps of plaster are to follow in succession each covering a portion of the one preceding until you reach the anterior part of the mamma, where a space is to be left for the discharge of the matter through the fistulous openings. You are next day to apply small compresses over the situations where you had previously felt depressions corresponding to the depots within; over these compresses a few more straps of plaster are to be applied.

"You now take a double headed roller, and pass it from below upwards, so as to make it cross on the chest, and passing under the arms, return over the shoulders to the breast again. This roller is not to be applied with any degree of force. It is a sling—a support to the elongated mamma, and, when properly adjusted, affords immediate comfort to the patient. When speaking of it in the hospital, I term it, in contradistinction to the antero-posterior mode, circular compression of the breast. The breast is compressed in the manner so often beneficial to the limbs."

COMPARATIVE PROPORTIONS OF NUTRIMENT IN ORGANIC AILMENTS.

Messrs. Schlossberger and Kemp, adopting the views of Liebig as to the distinction between the elements of food used for reproduction or growth, and those for respiration, have prepared a table, which exhibits the nutritive power of different alimentary substances, the test of this power being the quantity of nitrogen which those substances respectively contain. The proportion of this element contained in human milk dried at 212° Fahrenheit, being taken at 100, the degree of nutritive power of other ailmentary substances may be expressed by the numbers placed next to them. We select a few of the principal.

"*Vegetable.*—Rice, 81; potatoes, 84; rye, 106; wheat 119 to 114; maize, 100 to 125; oats, 138; white bread, 142; carrots, 150; brown bread, 166; peas, 239; haricot beans, 283; beans, 320.

"*Animal.*—Human milk, 100; cow's milk, 237; oyster, 305; yelk of egg, 305; cheese, 331 to 447; eel boiled, 428; porkham boiled, 807; salmon boiled, 610; portable soup, 764; white of an egg, 845; skate, boiled, 956; herring boiled, 808; haddock boiled, 816; pigeon boiled, 827; mutton boiled, 852; veal boiled, 911; beef, boiled, 942.

"*Purified muscular fibre from various animals.*—Fibre of eel, 908; of salmon, 982; of herring, 914; of haddock, 988; of pigeon, 775; of lamb, 916; of sheep, 928; of calf, 993; of ox, 935; of sow, 893.

"*Proximate principles of animals calculated from the quantity of nitrogen, as determined by Mulder.*—Pure proteine, 1006; pure albumen, 996; pure fibrine, 999; pure caseine, 1003; pure gelatine, 1128; pure chondrine, 910"

It should be observed, that this is a purely chemical way of considering the question. The facility with which these different substances submit themselves to the digestive process, dependent on various circumstances, must greatly modify the nutritive power.—*Edin. Med. and Surg. Journal.*

ON THE USE OF ERGOT OF RYE IN UTERINE HÆMORRHAGES.

At a late meeting of the Dublin Obstetrical Society, Dr. Beatty, read a communication on the subject.

"Having stated the beneficial effects of ergot given after hæmorrhage had set in, he alluded to the injury likely to be produced by the indiscriminate and premature administration of opium in these cases, and pointed out the different times at which the ergot of rye and opium are to be given with advantage, the former in the early stage, when we want to induce uterine contraction; the latter in the last stage, when we wish to restore the exhausted vital powers and nervous energy. He recommended the employment of ergot in cases where there is reason (from experience in former deliveries) to expect hæmorrhage, so as to prevent the occurrence of this formidable accident. He prepares an infusion of one drachm of ergot in four ounces of boiling water: when the child's head has cleared the external orifice, he gives one half of the dose, including the powder, and when the child is entirely expelled, the remainder is given. Dr. Beatty gave the details of several cases in which this practice was followed by comple success. The placenta was thrown off in all without any difficulty, and in none did hæmorrhage appear, although in former labors the greatest danger to life had been experienced.

"He alluded to the power possessed by the ergot of restraining after-pains, and mentioned some cases in which he had given the medicine with this view, and with the best effect.

"He concluded by bearing strong testimony to the value of this medicine in cases of very obstinate menorrhagia when given in doses of five grains three times a day; and he mentioned having witnessed on some occasions, when the medicine had been thus given, the production of severe cramp-like pains in the hips, and upper part of the thighs,"—*Dublin Hospital Gazette.*

RECURRENCE OF MENSTRUATION AT AN ADVANCED AGE.

MM. Murynck and Klutsens relate two cases in which menstruation recurred several years after it had ceased, and continued to a very advanced age. The subjects of both cases were nuns. In one, menstruation had ceased at the age of fifty-two, recurred at the age of sixty-two, and continued when the case was recorded, at the age seventy-three, with perfect regularity. What is curious, the patient was attacked on the cessation of her menstrual discharge with gastralgia, which persisted in spite of various remedies, until the recurrence of the discharge, when it left her and her health became perfect. In the second case, the menstrual discharge ceased at the age of fifty-two also; it recurred at the age of sixty, and had continued up to the date of the report, when the patient was ninety years of age. This patient was attacked on the cessation of the menstruation with violent colics, followed by tic douloureux, which resisted all treatment, but ceased on the recurrence of the menstrual discharge, and the patient at the age of ninety, was in the enjoyment of health with all her faculties perfect, and with the tastes and ideas belonging to youth."—*Dublin Hospital Gazette.*

THE SHAPE OF THE EXTERNAL EAR IN RELATION TO MENTAL DISEASE.

Dr. Conolly, in one of his admirable letters on French lunatic asylums, makes the following remarks:

"M. Foville has made curious, and, I believe original observations on the shape of the ear in different forms of insanity, and has noticed an analogy or resemblance between

the development of different portions of this organ and the brain of the patient. Of these views he was so obliging as to give me some explanation, illustrated by an extemporaneous diagram, and afterwards by corroborative examples. In some of the cases of dementia, or of the lowest degree of intelligence, the flatness and defective form of the helix, anti-helix, and tragus and the disproportionate enlargement and pendulosity of the lobe of the ear, and rounded clumsy shape of the outer edge of the auricle, were very striking. Subsequent observations have led me to believe these views to be exact as well as curious; and they exemplify the abundance of external evidence available to the physician in relation to internal disorder."

In support of the view here proposed, he relates the following anecdote:

"Not very long ago, M. Foville was called upon by an intelligent and philanthropic person who appeared to take much interest in the management of lunatic asylums; and he was greatly struck with a conformation of ears in this gentleman which he had never previously observed, except in cases of mental irregularity or disorder. I happen myself to know that the individual who was the subject of this observation has had several attacks of insanity, and although now at large, and exhibiting considerable mental activity, has repeatedly been in confinement; circumstances of which M. Foville had no knowledge when he remarked what seemed to him to be an anomalous peculiarity."—*British and Foreign Review.*

THE AGE AT WHICH INSANITY IS MOST PREVALENT.

"To determine the period of life which furnishes the greatest number of insane persons it is sufficient to bring together the records made up under different circumstances. One of them, made at the Bicetre, where poor poor men only are received; another, at the Salpetiere, an hospital destined for poor women; the third, at an establishment devoted to the wealthy. From these reports we may conclude:—1st, that the age which furnishes the greatest number of insane, is, for men, that from thirty to forty years; whilst for women, it is that from fifty to sixty years; 2nd, that the ages which furnish the least, are, for both sexes, childhood, youth, and advanced age; 3rd, that among women, insanity appears earlier than among men—indeed, from twenty-nine to thirty years of age; 4th, that the rich are afflicted, in comparison with the total number of insane persons, in a greater proportion than the poor."

THE SYMPTOMS AND DIAGNOSIS OF ANEURISMS OF BONES.

Symptoms.—Sometimes the pain and uneasiness of this disease is long in establishing itself, but for the most part it comes on suddenly, with a sense of cracking near the joint. After continuing two or three months, a tumor is perceived. This is at first very small, and may escape notice; but after a while becomes prominent, the skin over it then becomes violet colored, and transparent, so as to exhibit the numerous sub-cutaneous veins. On examining the tumor we find it connected with the bone, and presenting different degrees of consistency at various points. Frequently, on pressing the more resisting portions, we are sensible of a sensation which has been compared to the crackling of parchment, or the breaking of an egg-shell, a sign dependent upon the depression and re-elevation of the thin osseous shell of the bone. One of the most characteristic symptoms consists in well-marked pulsations synchronous with those of the heart, and which are suspended when the principal vessel leading to the part is compressed. There is no *bruit de soufflet.* The disease has always been observed in young persons or adults, and has, in different cases, been attributed to various acts of external violence, although, doubtless, the changes in the bone had already commenced. The progress of the disease is generally slow. There is no authentic example in which rupture has occurred, for the ulcerations and hæmorrhages spoken of by some authors probably arose from pulsating cancerous degenerations.

Diagnosis.—An aneurism of a bone may be confounded with one of the soft parts, the symptoms of the two being so very similar; and before post mortem examinations had explained the true nature of these cases, the mistake was inevitable. In the cases treated by Pearson, Scrapa, and Lallemand, the disease was supposed to be an aneurism of the articular arteries of the knee, or of the anterior tibial. The osseous aneurism forms one body, as it were, with the subjacent bone, a thin shell of which imparts a sense of crepitation; when the tumor is reduced by slow pressure, we perceive the loss of substance in the bone.—The aneurisms unconnected with the bone are more mobile, and impart the *bruit de soufflet* to the ear. A malignant pulsating tumor is distinguished with greater difficulty. The chief points are, that it cannot be partially reduced by pressure to the same extent as an aneurism, while it usually gives the *bruit de soufflet* in auscultation."—*Medico-Chirurgical Review.*

REMARKABLE CASE OF

ABSCESS OF THE HEART.

Pain in the Leg the only Symptom of disease during Life.

BY T. HOWITT, ESQ., SURGEON.

Observing in the Lancet* the history of a "rare case of abscess of the heart," by Mr. Chance, I am induced to send the particulars of the subjoined case. I have transcribed it just as it was entered in my note-book at the period it occurred. I still possess the morbid specimen; and as it appears from Professor Owen's statement to Mr. Chance, that there is not one similar in the museum of the College of Surgeons, I purpose to deposit it there.

On November 18th, 1833, at eight P. M., I was requested by my lamented friend, Mr. John Merriman (then house surgeon to the Lancaster Infirmary) to visit Samuel P——, eight years of age. I found him suffering from most acute pain, which he described as deeply situated towards the centre of the calf of the right leg, having commenced suddenly about twelve hours previously. So far as we could learn, it had not been produced by any external agent, he having had neither blow nor fall. Upon a careful examination of the part, we could detect neither swelling nor redness, nor any symptom indicative of inflammation, neither was there any spasmodic action of the muscles to account for it. Occasionally the pain remitted in severity. When he complained of violent throbbing, our examination did not appear to cause any increased pain; his bowels had been relieved by a dose of castor oil exhibited by Mr. Merriman this morning; no headache, no pain in the chest or abdomen, no thirst, pulse 110;—in fact, this pain in the leg was the only complaint the boy had to make.

Supposing, from the history, that matter might be about to form under the periosteum, we directed six leeches to be applied over the seat of the pain, and small doses of calomel and opium every four hours.

19th.—Nine A. M. No relief; the pain as acute as yesterday, yet no swelling or redness, except around the leech bites, which had bled pretty freely. Having during the night voided two large lumbrici, he was ordered a turpentine injection, and the calomel and opium to be continued; pulse 120.

20th.—Nine A. M.: The pain in the leg still continues; his general condition is much the same, but he appears a little dull and stupid, not answering questions very readily, though quite correctly; pulse 130, more feeble. The mouth not being at all affected by the calomel, we imagined the dulness he evinced to be the effect of the opium, and mercury with chalk, combined with rhubarb was substituted for the calomel and opium. The bowels had been twice relieved by the turpentine enema, and three more lumbrici voided.

21st.—Nine A. M.: No mitigation of the pain in the leg, nor any further evidence as to its cause; the limb preserves its natural heat and size. I directed it to be well rubbed with hot turpentine, and then enveloped in a warm poultice. In other respects, little variation from yesterday. Pulse 130, feeble.—Eight P. M.: Decided symptoms of coma now making their appearance. Pulse 140; pupils contracted; the patient lying upon his back, constantly moaning; with difficulty roused, but when roused, quite sensible, and still complaining of his leg.—Ordered a small blister to the nape, and a teaspoonful of wine to be given occasionally. Bowels relieved by an enema.

22nd.—Nine A. M.: Rallied a little; less stupor; perfectly sensible, and answered questions more readily; blister discharging; pulse 130. No cessation of the pain in the leg. Wine to be continued.—Eight P. M.: Much the same, but in addition he complains of pain in the bowels, which have been relieved, and are soft upon pressure.

23rd.—Nine A. M.: Considerably more stupor; when roused he answered a question correctly, but instantly relapsed. From this time he gradually sank, becoming quite insensible to all stimulants; tongue and mouth dry; lips, gums, and teeth, covered with sordes; he lay upon his back, constantly uttering a low moan; his legs and arms occasionally convulsed until the evening of the 24th, when, death closed the scene.

The case being one which had interested me a good deal, and being anxious to make out, if possible, the origin of the severe pain which, throughout, had been the only symptom of any disease whatever, until the supervention of coma, with some difficulty I prevailed upon the parents to allow an inspection.

Post-mortem, sixteen hours after death.—Our attention was first directed to the seat of the pain—the calf of the right leg, where we could discover nothing abnormal, there not being the slightest alteration in any of the tissues, nor any indication of inflammation in the bone, periosteum, nerves, vessels, or muscles. Abdomen: the intestines free from any trace of disease; kidneys and bladder healthy; but all the mesenteric

* August No., p. 153.

glands considerably enlarged, some of the largest, when cut into, containing a cheesy matter; the mesenteric vessels gorged with dark venous blood; pancreas indurated; liver and spleen healthy. Upon opening the chest, the pericardium instantly attracted our attention as appearing very much distended; and, on cutting into it, there gushed out, as near as we could guess, a pint of grumous fluid and pus, containing a number of curdy flakes, the whole interior surface being lined with a layer of cheesy, scrofulous-looking matter, apparently soft, coagulated lymph, one-sixteenth of an inch in thickness. The pericardium investing the heart was covered with the same matter, and to the same degree of thickness. On examining the external surface of the heart more particularly, we discovered a rounded eminence, situated just at the junction of the right auricle with the right ventricle, and which was darker in color than any other portion. Upon making a crucial incision into this prominence, there flowed out about a tea-spoonful of ill-conditioned pus, with a few curdy flakes. This small abscess communicated, internally, by a small, ragged opening, with the right auricle, which contained a mixture of pus and blood; there was no communication with the sac of the pericardium; the lungs were perfectly sound. Head not examined.

The above case has frequently been named by me to many of my professional brethren, as a most anomalous one; yet in many respects it bears a striking similarity to the one detailed by Mr. Chance. The publication of such cases, although, perhaps, leading to no very useful practical result, (in the present state of our knowedge,) demonstrate to us what very formidable disease may be progressing in a vital organ, even to the rapid destruction of the life of an individual, without the manifestation of any symptom likely to lead to the detection of so fatal and insidious an enemy—a fact I have several times seen exemplified in disease of the brain. Are we in the present case to consider the pain in the leg as sympathetic of the diseased heart?—*Lancet.*

REMARKABLE MESMERIC CURE.

At a lecture given at Derby, on Wednesday week, Mr. S. T. Hall related the following remarkable case:—It is that of a young lady of whose mind and disposition, to say the best I could, would be no compliment; but whose bodily powers were so worn down by a grievous internal disease and a natural delicacy of constitution, that some years ago, she was unable properly to balance herself when walking, and so fell from the top to the bottom of a flight of stairs, severely bruising the back of her head, and various portions of her spine, step after step, during the entire descent. From the description I have heard, the paroxysms and tortures to which she became subject, must have been most awful. Notwithstanding her previous debility, so powerful were the convulsions she afterwards for some time underwent, that it often required the efforts of two or three strong men to prevent her being thrown by them off the bed. To the relief of these, nature came at length with an attack of paralysis, which entirely prostrated her, and for nearly three years she lay unable to help herself, as it was even with difficulty she could be helped by others, since the slightest application of a camel hair pencil to the region of the spine, was sufficient to occasion the most excrutiating pain. The best advice that could be obtained, afar or near—every remedy that medical authority could suggest to her kind and anxious friends —had been tried, and had left her little better than it found her; and when I was first introduced, she was not only suffering from exceedingly acute pain, but appeared to be as weakly and as inert as an infant. The results of my visits have since been attributed by some of our opponents, to the effect of a powerful imagination. But as ever since the cessation of her convulsions, one of the young lady's legs had become permanently foreshorted, so that when she was made able to stand, she could not bring the heel within two inches of the ground; and as this physical, and not imaginary contraction, has now been entirely removed—further, as a constant and anxious medical friend of the family had such faith in the patient's integrity and sound judgment, that he had declared long before, if mesmerism could prodnce any effect upon her, he should fully believe her report of it—such an interpretation is as preposterous and pitiful as the spirit that dictates it. Whatever the agent between my passes and her frame, or whatever name it may be called by—and 'the rose by any other name would smell as sweet'—this truth is clear to all who know her, and though her sufferings had been all and more than I have described, up to the commencement of my present series of visits to Derby, and though my treatment has been without the aid of drugs of any kind, she is not only now comparatively free from pain, but goes freely about the house, enjoying the society of her delighted friends, and occasionally walks, unsupported, in the garden, gathering flowers with her own hands, and

thankfully reaping additional health from such a renewal of her acquaintance with nature." We believe, says the Derby Reporter, that we are perfectly in order, in saying that the patient thus far restored, is Miss Longdon, of Friar gate, well known in Derby as a kind and intelligent member of the Society of Friends, whose parents, and others of the family connexion, were present at the lecture, and concurred in all that was advanced in relation to the case by Mr. Hall. —*Bath Herald, England.*

The Treatment of Chronic Enlargement of the Bursa Patellæ.

Dr. Adams submitted to a recent meeting of the Dublin Pathological Society (Dublin Hospital Gazette) several casts and specimens illustrating the pathology and treatment of this troublesome affection. Much condensed, his observations are to the following effect:—

"E. B——, aged twenty-two, was admitted into Richmond Hospital, under the care of Dr. Adams, having a chronic enlargement of the bursa over the right patellæ, from which she experienced so much inconvenience, that she was anxious to be relieved of it by any means thought advisable. The tumour was about the size of a hen's egg; the skin covering it had a natural appearance; fluctuation was evident, and small foreign bodies could be distinguished in the fluid.

On the second day after her admission, Dr. Adams opened the tumour by a free longitudinal incision, extending from above downward, throughout the whole extent of the enlarged bursa. A fluid of an oily appearance escaped, carrying with it numerous small pipin-shaped bodies of a whitish color. The interior of the cyst was examined, and some few small bodies were found adherent by slender pedicles to the interior of the cyst; these were detached from the lining membrane of the bursa and removed: an oiled dossil of lint being introduced; light compresses and bandage were applied. On the eighth day suppuration was established and a poultice applied. No inflammation nor constitutional disturbance whatever were excited. Granulations were thrown out from the bottom, and the cyst gradually became obliterated. On the twentieth day the granulations were so much raised to the level of the skin as to need the application of nitrate of silver. She was discharged on the twenty-fifth day from that of the incision having been made, and for the last ten days she has been walking about without feeling any inconvenience.

Excision of the bursa, which is situated over the patella, when in a state of chronic enlargement, has been recommended as the best mode of proceeding. Dr. Adams has known this to have been done; and although he admitted that there might be some cases in which such an operation may be judicious, still he believed that such cases should form the exception, and that, as a general rule, the operation by a free incision was preferable. He has observed the dissection to be a very painful proceeding, and in very large tumours, if not conducted with caution, the knee-joint might be endangered. For example, put a case in which the enlarged bursa measured in its circumference thirteen inches, projecting from the patella seven inches, and consequently completely covering it above, below, and laterally. Dr. Adams remarked, that while a free incision from above downwards could be made in a few seconds, with but little pain to the patient, and without any immediate danger of injuring any of the subjacent parts, excision of such a tumour would be a most severe operation, and it is quite possible that the synovial membrane of the knee-joint might be opened; whereas the incision is quickly and easily done, is infinitely less painful, and in those cases Dr. Adams had lately under his care, quite satisfactory—the deformity which might be supposed to remain after the operation of the incision, from the thickened cyst which remains, being found by experience to be really nothing. He prefers the operation of free longitudinal incisions to punctures, injection or seton; because although these last means may excite sufficient inflammation, so as to produce a radical cure, they are by no means so certain; and he thinks that any operation which leaves foreign bodies behind, is likely to fail in radically curing the disease, because when these foreign bodies are pressed upon while the patient is kneeling, new irritation and inflammation arise, with a consequent recurrence of the disease.

Another great advantage is this, that there is no constitutional disturbance following the operation. There is less novelty in the practice here recommended, than justice in the argument by which its propriety is urged.

Calculi of the Prostate Gland.

A discussion which occurred recently at the "Societe de Chirurgie," on prostatic calculi, and which is reported by the Gazette des Hopitaux, elicited the following remarks on the subject:—

M. Lenoir stated that a patient, fifty-five years of age, had been addressed to him by a provincial surgeon, under the impression that he was laboring under vesical calculus. On introducing the sound, he found an obstacle which gave a clear sound, and which he thought was a vesical calculus, but on examining digitally by the rectum, he failed to recognise its presence. On exercising pressure, however, on the prostate, he caused the escape of about fifteen small calculi. They were of a dark yellow color, and presented facet surfaces; burnt, they gave a decided animal odour. The patient, who, when he entered the hospital, had all the symptoms of serious vesical catarrh, left nearly well. A few months later he was again sent to Paris, under the idea that he was laboring from vesical calculus, and a number of small stones were again emitted, by pressure of the prostate. Vesical catarrh was present as on the first occasion. M. Lenoir thought that the calculi were formed in the ejaculatory ducts, and that it was because they occupied the orifice, that these produced, when touched with the sound, the sensation of a stone in the bladder.

M. Nelaton had met with a case at the Hotel Dieu, similar to the one of M. Lenoir. The friction of the sound over a hard substance in the region of the prostate had led him to recognise the presence of prostatic calculi. He managed to withdraw several by means of lithotritic instruments, and the patient left apparently cured. Two months afterwards he returned with the same symptoms, indicating prostatic calculi, and, in addition, with a vesical calculus. He was not able to lay hold of the latter, in order to crush it, and was obliged to perform the operation of lithotomy. On scratching the surface of the incised prostate with his nail, he managed to make several calculi fall, similar to those described by M. Lenoir. The patient was cured. M. Michon, M. Guersant, and M. Laugier, thought that prostatic calculi were not rare; M. Malgaigne was of a contrary opinion.

Case of Ulcer, Accompanied with Varicose Veins of the Leg,

Treated with Cajeput Oil.

John C———, aged 32, admitted an in-patient, under the care of Mr. Hancock, 5th March, 1845, with ulcer on the right leg. States that he has had a sore on the right tibia since 1831; he had it first in Jamaica, where he was in the habtt of drinking largely of rum. He has had varicose veins of the leg for three years. When admitted the ulcer was two inches long by one inch wide, and the surface of the sore without any appearance of granulation; above the wound was a considerable swelling, caused by enlarged varicose veins. He suffered so much pain that he could not put his heel to the ground. Ordered, cajeput oil, twenty-four minims; syrup, two drachms; distilled water, eight ounces, Mix. An ounce three times a day. Sore to be dressed with water-dressing, and patient to remain in bed.

March 9th.—Swelling has disappeared; sore granulating veins much diminished in size: quite free from pain; passes more urine than usual. Says, that although he has frequently rested the limb before, he never observed such a diminution in the size of the vessels.

20th.—Has gone on improving up to this date; the ulcer is now very nearly healed. The veins have resumed the natural size, and the swelling above the ulcer, caused by the collection of varicose veins, has entirely subsided.

Discharged cured.

ON THE

Use of the Starch Bandage in various Surgical Diseases.

BY A. MARKWICK, ESQ., M. R. C. S., LONDON.

In a paper lately published in THE LANCET, I called the attention of its readers to the use of the starch bandage in the treatment of fractures, and attempted to prove that its advantages were due to the great solidity and support it gave to the fractured limb; to its preventing the displacement of the bones; to the facility with which it can be split open, for the purpose of examining the state of the injured member, and applying such remedies as the case may require; and though last, not least in importance—to its enabling the patient to leave his bed, and move about from place to place, and attend to his accustomed avocations, without either risk or danger, in the majority of cases: his strength being by this means kept up, while those cachectic and debilitated states of the constitution consequent on a prolonged decubitus are prevented.

In the present communication, I propose adverting to its application in those cases in which, as in fractures, the chief indication is to keep the part motionless. These are—dislocations, sprains, and other injuries of the joints; diseases of these parts; ruptures of the muscles and their tendons; re-sections

of bones; necrosis and caries; certain deformities, either congenital, or acquired, or from vicious cicatrization; aneurisms; varicose veins; hernia; indurated testicle, &c. I shall consider each of these in the order in which they are here given.

It is not my intention to enter into a full description of every species of luxation: I shall continue my remarks to the subject of treatment, and more particularly to that portion of it which more directly concerns us in this paper.

There are some dislocations in which it is almost impossible to prevent a repetition of the displacement by the ordinary means—as, for instance, in the dislocation, forwards, of the sternal end of the clavicle Now with the starch bandage we can effectually overcome this difficulty.

The indications in this accident are, to keep the shoulder outwards and forwards, and the sternal end of the clavicle in its proper situation. The best apparatus for fulfilling these indications is a starch bandage, consisting of a combination of a portion of Dessault's bandage for fractured clavicle and the anterior figure-of-8-bandage. The former, which should only be sufficiently starched to prevent it from getting slack, will keep the shoulder outwards by means of the axillary pad, while the latter will bring it forwards and keep the sternal end of the bone in its place by its firmness and solidity—properties that are due to the starch with which it should be abundantly covered, especially over the sterno-clavicular articulation. Should more firmness be required to effect this object, a piece of paste-board or stiff leather, previously soaked in warm water, and starched, may be applied, and secured by a second figure-of-8 bandage. The arm is then to be supported in a sling. As the axillary pad, by pressing on the vessels of the arm, has a tendency to produce œdema, it is always advisable to commence by passing a roller round the limb, from the fingers upwards.

This example will, I think, sufficiently show the importance of the starch bandage in the treatment of luxations. I may, however, state that it does not, as in fractures, constitute a distinct apparatus; on the contrary, the contentive means and mode of treatment, in each particular case, remain the same, the only difference being in the starch with which the bandage is covered, for the purpose of increasing its solidity and strength, and preventing it from becoming loose.

Sprains and other injuries of the joints constitute the next class of cases. When called to a case of sprain immediately after it has happened, the first thing to be done is to elevate the limb, and place it in the most easy and comfortable position for the patient, and then to adopt such measures as are calculated to prevent, if possible, the occurrence, or, at all events, to check the violence of the inflammatory action. The immediate application of cold, and persevered in for a sufficient length of time, seems to be the most effectual means of preventing the afflux of the fluids towards the part upon which the inflammation depends. When the inflammatory period has passed, no time should be lost in placing the joint in a starch bandage, which is to be applied in the manner directed in the first paper, with or without the pasteboard splints, as the case may be. This apparatus, by accurately moulding itself on all the inequalities of the articulation, forms for it a continuous, permanent, and immovable splint, which not only keeps it perfectly free from all motion, but likewise gives it that support by which the patient is enabled to get about much sooner, and with far greater safety, than he, by possibility, can do when a *moveable apparatus* is employed. If, instead of being sent for immediately after the accident, as I have supposed to be the case in the foregoing paragraph, we do not see the patient until some time afterwards, when there is considerable tumefaction and ecchymosis, the same precautions are necessary with respect to the perfect quietude of the joint; but the employment of cold, which was so beneficial in the preceding instance, is here more injurious than useful. Recourse should, in these cases, immediately be had to either general or local blood-letting, or both to the extent required by the severity of the injury, and the size of the joint affected, followed by warm, emollient, sedative fomentations, and poultices, and then, when the inflammation has been subdued by these means, the application of the starch bandage should be forthwith proceeded with. If the case has become chronic, and there is effusion of serum into the synovial membrane, together with considerable stiffness and weakness of the articulation, then the remedies recommended as applicable to the preceding stages must be replaced by others of a stimulating character, such as friction with camphorated and ammoniated liniments, blisters, &c., with a view to promote the absorption of the effused fluid, and the joint placed as quickly as possible in a starched bandage, which will, in the majority of cases, be found the most powerful and effectual resolutive means. In this stage, the ligaments are considerably relaxed and weakened, and, in order to regain their strength and firmness, require

to be kept perfectly quiet and well supported. Nothing can be better suited for this purpose than the starch bandage, from the uniform pressure it produces, and the solidity and immobility it possesses.

Pulpy thickening of the synovial membrane.—From the nature of this affection it is evident that perfect rest must constitute the only means upon which we can at all calculate for producing any benefit. Mr. Scott employs for this purpose strips of plaster, but they are not sufficiently efficacious, and, moreover, are not free from disadvantages. One of these, is their great tendency to produce excoriation, and hence to necessitate their frequent removal; and another, if possible, still greater is, that when abscesses are present, they prevent the free escape of the matter, and become filthy and offensive in consequence. The starch bandage is an admirable remedy in these cases, as it can be so applied as both to produce the effect desired, and to allow a free discharge of all purulent matter, and, at the same time to check its further accumulation.

Ulceration of the cartilages.—As ulceration cannot be put a stop to, but on the contrary is aggravated by friction, it is clear that the only means by which we can arrest or check its progress is to keep the joint in a most perfect state of immobility. This constitutes the most important part of the treatment, and must not be neglected. By adopting this course, we sometimes succeed in entirely curing the disease, provided we are called upon to treat it at a sufficiently early period. But if our advice has not been sought until the process of destruction has farther advanced, and caries has, in all probability, commenced in the heads of the bones, then we have but little if any chance of effecting a perfect cure; and we must endeavor, by every possible means, to stop the further progress of the disease, so as to bring about ankylosis. The starch bandage is the best apparatus that I know of for restoring the joint in the first stage, and for arresting the ulceration, and securing the termination by ankylosis in the second. It may be applied either entirely round the joint, or openings may be left in it, for the purpose of applying such remedies as the nature of the case may require, or for the escape of the matter from the various sinuses. Nothing can be more congenial to the patient, or more likely to produce beneficial results, than the moderate but equal pressure which this bandage produces on all parts of the joint. "It will," as Sir B. Brodie says, when speaking of pressure in scrofulous diseases of the joints, "promote the healing of the sinuses, and by more completely preventing the motion of the joint, will lessen the chance of fresh suppuration, and favor the union of the ulcerated bony surfaces."

*White Swelling.**—This disease has its origin in the concellated structure of the bones, consequently is generally met with in those situations in which this tissue is the most abundant—viz., in the knee and elbow joints, and in the small bones composing the tarsus and corpus. The tarsus and the knee are the most frequently affected.

The treatment in this affection is much the same as that required by the last-mentioned disease, the indications at the commencement being, to arrest the progress of the ulceration and prevent the other structures from becoming affected; and, at a more advanced period, when these have become diseased, and abscesses have formed, to endeavor to save the limb by promoting ankylosis. Absolute repose, therefore, of the affected joint is of the utmost necessity, as the slightest motion irritates the diseased bones, accelerates the ulceration in them, and hastens its extension to the adjoining parts.—The starch bandage will prove an invaluable apparatus to the surgeon in these cases. It readily admits of the application of external remedies, such as issues, blisters, or other counter-irritants, and also of the free exit of the discharge produced by these, or resulting from the abscesses that may have formed; while at the same time it gives to the joint the necessary support, and prevents all motion between the articulating surfaces of the bones. In cases where large abscesses have formed, it will be found of great service, by the uniform pressure which it produces, in dispersing the purulent matter which they contain, and in suppressing its further secretion, and by this means bringing the parts into the condition necessary for the production of ankylosis.

For the therapeutic treatment of the diseases of the joints, I must refer to the various surgical works, and especially to Sir B. Brodie's elaborate treatise, in which it is fully described.

Rupture of the muscles and tendons.—As the perfect restoration of the use of the limb will depend on the close approximation of the lacerated parts, it follows that in the treatment of these injuries, the member must

* White-swelling is a term that has been applied by various authors to very different diseases, such as inflammation of the synoval membrane, pulpy thickening of the same, ulceration of the cartilages, and caries of the heads of bones. It is, however, to the last that it is the most applicable, from the circumstance that the color of the skin remains the same.

be placed in such a position as will perfectly relax the ruptured muscle or tendon, and bring its several extemities in close apposition, and a suitable apparatus must be employed to maintain them in this condition. The starch bandage will be found the most efficacious one for this purpose. It retains the limb in the requisite state for the perfect coaptation of the ruptured surfaces, and prevents the contraction of the muscles, upon which a separation frequently depends.

Let us take, by way of illustrating its advantages, one of the most serious of this class of accidents—viz., a case of rupture of the tendon of the rectus femoris muscle. In this, there is generally considerable subsequent weakness and lameness of the limb, owing to the inability of the ordinary remedies to keep the parts in a necessary state of extension. Now if a starch bandage be employed, it will overcome every difficulty, and fulfil every indication. During its application, the limb must be completely extended, and the coaptation made, by depressing the upper portion of the muscle, and raising the patella by means of graduated compresses. The starch bandage will also be found of great service in cases of spasmodic affections of the muscles, as in chorea, &c.

Re-section of the heads of bones.—This operation is had recourse to when we wish to remove the disease in them without sacrificing the limb. It must therefore be performed before the surrounding soft structures become implicated, and before the patient's health is seriously affected. After the operation, when the wound has nearly or quite healed, the joint requires to be confined in a certain position, and kept perfectly quiet for some time, during the formation of the fibrous tissue, by which the bones eventually become united The starch bandage in these cases is a very useful apparatus.

In caries and necrosis of the bones also, and in the inflammation which precedes them the firm and equable pressure which this bandage produces will be of great service in checking the accumulation of matter, and in securing the perfect repose of the limb, by which means a considerable degree of irritation will be prevented.

Congenital Deformities.—The first of these that I shall mention is spina bifida.—The treatment consists in evacuating the fluid of the spinal tumor, then replacing and maintaining the protruded membranes within the vertebral cavity. The advantage of pressure and puncture in these cases was fully exemplified by the success the late Sir Astley Cooper obtained from it in two instances.*

Alhough I have not had an opportunity of witnessing the effects of the starch bandage in the affection under consideration, I can but think, that if properly applied, and care is taken to protect the integuments, covering the tumor with some soft material, in order to prevent inflammation and excoriation, it would prove an exceedingly useful and effectual apparatus. It certainly recommends itself for trial.

Another frequently congenital deformity is club-foot, of which there are three varieties. In these cases, the object in the treatment is to overcome the inordinate contraction of the muscles, by which the different varieties are produced. This can be effected in many instances, when the child is not too old, by apparatus, which both restrain the further action of the muscles, and tend forcibly to bring the foot into its normal position. In some cases it is necessary previously to divide the tendons. Most of the mechanical contrivances that are employed for this purpose are costly, and consequently beyond the reach of the poorer classes.—In the starch bandage we have a cheap and convenient remedy, one equally efficacious, and therefore equally, if not more valuable.

There are certain other non-congenital deformities, produced either by the permanent contraction of the muscles or by the shortening and rigidity of the fascæ, or by the gradual contraction of the cicatrices, resulting from burns or extensive ulceration, for which the starch bandage will be equally applicable, after an operation has been performed, for the purpose of overcoming either the contraction of muscles or of the cicatrices, or counteracting the gradual shortening of the faciæ. To this class belong contracted fingers and various kinds of spurious alkylosis, as of the knee and elbow joints.

The deformities arising from burns are frequently very considerable, and often perfectly irremediable. Thus the bones have been known to be dislocated, the joints firmly flexed or bent backwards, the head drawn on one side, the chin united to the integuments covering the sternum, and the thigh to the abdomen. It is always advisable to prevent these sad results as much as possible, by the application of bandages during the process of cicatrization, so as to keep up a constant extension in the opposite direction to that in which the deformity is about

* For a detailed account of these cases, see the second volume of the "Medico-Chirurgical Transactions," and Cooper's "Dictionary," article, spina bifida.

to be produced. I know of no apparatus that will be found so effectually to attain its object, and with so little inconvenience to the patient or the practioner, as the bandage under consideration. It may be applied over the ordinary dressings.

In aneurisms and varicose veins it is extremely useful. In the former, its even, but firm pressure, equalizes the circulation through the limb, and by lessening the impetus with which the blood is sent into the aneurismal sac, prevents its dilatation, and promotes the coagulation of its contents, and its subsequent obliteration. In the latter, the support it gives to the limb prevents any undue accumulation of blood in it, and enables the dilated and distended veins to contract on their contents, and propel the blood onwards towards the heart, while its firm and unyielding nature effectually secures them from all external injury.

In umbilical and ventral hernia there is no more certain means of preventing the protrusion of the bowel than the starch bandage. It is applied in the following manner:—The little patient being suspended in the air, in the horizontal position, by two assistants, the surgeon proceeds to return the intestine into the cavity of the abdomen, and having done so, places over the hernial aperture the apex of a graduated compress, upon which firm pressure is made by an assistant. He then takes up a fold of the integuments on each side of the graduated pad, while another assistant passes round the body a linen band, six or seven inches wide. The whole then is firmly secured by a well-starched roller.

The application of this bandage may be extended to other herniæ, both in children and in adults.

In indurated testicle its advantages are very apparent. It produces much more firm and equal pressure than any strapping can do, and does not cause that painful excoriation of the skin which this does invariably.

I might mention several other cases in which it would be beneficial; but I have already given sufficient examples to show its value and importance.—*Lancet.*

PRACTICAL REMARKS

On some points of Trichopathy and the Chemical Pathology of the Human Hair.

By Thomas Cattell, Esq., M. D., M. R. C, S. E., &c., Braunston.

No reply having yet been furnished to the wish of a subscriber expressed in the Lancet of March 28th last, as to the ingredients used, and the practices adopted, in dyeing the hair," I am induced to enter upon some consideration of the subject.

In this are necessarily involved, tricho-dyschroia, decoloration; tricho-crosology, coloration; and the general pathology of the hair. The only other trichopathical affections to which I shall here refer are, allopecia, canities, and calvities, or balduess, hoariness, and fall of the hair.

Tricho-dyschroia is a pathological condition of the hair,, which may arise from constitutional changes induced by inadequate diet, or disease, the influence of emotions or passions, hereditary influences, &c. There is, however, no cause so manifest as that of chemical reagency in decolorizing the hair; for example, if the hair of a person be for some time exposed to gaseous chlorine, its natural color disappears, and there is perceived the presence of a bitter adhesive compound That systematic changes, ushered in by the constant use of a diet, deficient in the elements of the hair may alone, or associated with physical affection, stand as the proximate cause or tricho-dyschroia, is a point, to say the least, which theory justifies us in supposing. In corroboration of the supposition, that tricho-dyschroia is often induced by the direct and powerful influence of emotions and passions, there are not wanting the record of many striking coincidences.

It is, I beleive, generally admitted, that old age is an essentially proximate cause of tricho-dyschroia and canities. But to establish the hypothesis, it is necessary to prove that such is uniformly the case. To suppose otherwise, is to suppose this essentiality no essentiality, which is a contradiction. We cannot speak of the cause of a physical change as essentially proximate, unless we admit the uniformity of this cause. To affirm, therefore, that old age is the proximate cause of either tricho-dyschroia or canities, is to affirm what is directly contravened by the evidence of numerous facts; still, it is perplexing to offer a solution of the absolute cause of that change which so often occurs in the extremes of apparent juvenility and real decrepitude. We are, however, confident that the effect is the same, whether it occur in the ascension, meridian, or declination of life, as the chemical pathology of each will give us no room to doubt. It is scarcely necessary to observe, that hereditary influence greatly modifies the color of the hair.

With this slight reference to the causes which operate in producing changes, varieties of color, and conditions of the hair, it is here incumbent that we should inquire

what, in a chemical view of the case, constitutes the nature of such changes, varieties, and conditions.

Vauquelin asserts, that the varieties in the color of the hair depend on the presence of a colored fatty matter; but such notion appears to be controverted by the fact, that black hair chiefly recognises for its color the existence of iron in a state of sulphuret. If this colored fatty matter be the proximate cause of all the varieties in the color of the hair, then it is evident that of what color soever this fatty matter is, so must be the color of the hair. Besides, the supposition is opposed to too much factorial evidence. For example; if we take hair, exhibiting the different varieties of black, auburn, red, or brown, and by chemical reagents deprive it of its sulphur or iron, we deprive it of these colors or varieties. How could this be, if the color in all its varieties depended entirely on the presence of the fatty matter. Again, if we apply to the hair stains of lead or silver, or silver with iron, we immediately recognise a change of color. What is the cause of this change? If it be dependent on the fatty matter, then must this fatty matter assimilate the new color, and produce such a change. But such cannot be the case, though we suppose the sulphur which combined with the metalic oxide existed in the fatty matter.

It is, then, I think, the existence of sulphur in the hair, and not the presence of any supposed colored fatty matter, that may be considered the cause of all the varieties of its color. And this probably not on the mere fact of the existence of sulphur in the hair, but from a variation of its quantity in different hair.

Besides, this opinion may receive additional corroboration from evidence negative as well as positive—that is, suppose we deprive the hair by any means of its sulphur, or suppose the sulphur non-existent in the hair. of what color would it be, or of what utility would it be, to apply in any case stains of silver, lead, or silver with iron?

The supposition, that the relative quantity of the sulphur of the hair to the metallic oxide constitutes the proximate cause of all its natural varieties of color, is moreover, warranted by the fundamental principles of chemistry; for if all substances combine in definite proportions, and if the color of the hair be dependent on the presence of a metallic sulphuret, may we not rightly pronounce, that in proportion to its relative quantity and diffusion will be variety or degree of color?

Tricho-crosology is a compound Greek term, which I have devised appositely to express the chemical processes employed in reducing some of the unseemly varieties of color to which the hair is subject, to a supposed standard or standards of natural or ideal beauty. These embrace the formation of paste, pommade, and liquid.

I.—Phumaform hair dye.

1. Oxide of lead, three ounces; carbonate of lime, two ounces; mix into a proper consistence with hot water, and apply it to the hair, enveloped in oil-skin.

2. Carbonate of lead in the place of oxide of lead, and proceed as in the other case. The efficacy of this stain depends on the formation of a plumbite of lime.

II.—Steariform hair dye

Nitrate of silver, a drachm; nitric acid, two drachms; iron filings, two drachms: mix. After the lapse of a few hours, pour the supernatant liquor on two drachms of oatmeal. Lastly, well mix with three ounces of lard.

III.—Chulosiform hair dyes.

1. Silver, two drachms; iron filings, half an ounce; nitric acid, one ounce; water, eight ounces: mix. When the metallic substances are dissolved, pour off the supernatant liquor which constitutes the dye.

2. Nitrate of silver, eleven drachms; nitric acid, a drachm; distilled water, twenty ounces; soap, (*sap. viridis,*) three drachms; gum-arabic, a drachm: well mix.

3. Nitric acid, a drachm; nitrate of silver, ten drachms; soap, (*sap. viridis,*) nine drachms; mucillage, five drachms; water, thirty-seven ounces and a half: mix. This differs from the foregoing only in proportions.

4. Lead filing, two ounces; hartshorn shavings, an ounce; oxide of lead, two drachms; camphor, a drachm; water, a pint. Boil for half-an-hour, and when fine, pour off the supernatant liquor on di-acetate of lead and rosemary leaves, of each one drachm. Again boil, and when sufficiently fine, pour off the supernatant liquor which constitutes the dye.

Of these preparations, as stains for the hair, none claims so decided a preference as the last. It can produce injury to neither the hair, skin, or brain, and possesses the advantage of communicating a beautiful color and curling property to the hair. Whatever objection there may be to the use of dyes containing the nitrate of silver, from their liability to darken the skin, still I regard them preferable to the employment of caustic earths, owing to the depilatory action of the latter.

Before the application of any liquid stain, it is necessary that the hair be freed from all greasy matter. A close brush and a comb are all the requisites in staining the hair.

Connected with the general pathology of the hair, the only two points to which I shall now refer are allopecia and calvities—baldness and the fall of the hair.

Allopecia may arise from any cause destroying the vitality of the bulb of the hair—as, various fevers, the wearing of silk hats, the existence of what, in common parlance, is called worm at the root, neglect in cleansing the head, &c.

Calvities follow precisely analogous causes, and merely differ from allopecia in degree.

To remedy these affections, it would appear, by our daily advertisements, that every advertiser had discovered some secret process—had, in fact, ransacked the whole arcana of science. But leaving these, and the victims that use them, I will mention a general remedy or two which will be found uniformly efficacious, and infinitely more satisfactory in their results than bears'-grease, Macassar oil, or any other advertised preventative or curative:—

1. Rosemary, maiden-hair, southern-wood, myrtle-berries, hazel bark—of each two ounces. Incinerate, and with the incinerated substance make a strong ley, with which to wash the hair at the roots every day, Keep the hair cut short.

2 Carbonate of potash, (perlash,) two drachms; water, a pint: use as the preceding. The efficacy of both these remedial applications depend upon their alkalescent character.

But where a greasy substance is required for the hair, I would suggest the substitution of the elaine of olive oil; though expensive, it will, in many cases, well repay the use, as it never thickens, engenders scurf, or in any way produces detriment to the hair, like common oil or pommade.

The only other greasy matters which I would suggest as substitutes for the elaine are ox-marrow, well agitated in a mortar, and castor-oil, freed from all its adhesive matter.

I trust that, for the future, professional men, and not nostrum-mongers, will take charge of the diseases aud affections of the hair.—*Lancet.*

Cases of Varicocele treated by Pressure with Observations.

BY T. B. CURLING, LECTURER ON SURGERY, &C., LONDON HOSPITAL.

The author states that, three years ago, a case of varicocele, cured by the application of pressure to the spermatic veins, came under his notice, and being struck with the peculiar adaptation of this plan of treatment to counteract the injurious effects of the dilated veins, he determined to give it a trial. He has since treated many cases of varicocele by pressure, and as a sufficient period has now elapsed to enable him to form a just opinion of the value of this plan of treatment, and of its advantages over other methods, he ventures to submit the results of his experience in the management of this complaint to the consideration of the fellows of this Society.

The author details three cases of varicocele cured by pressure; the first, at the end of nineteen months; the second at the end of seven months; and the third a case of double varicocele, in ten months. He also alludes to four other cases, in which this plan of treatment was successful in curing the disease. He remarks, that in these cases the dilation of the veins had taken place at a comparatively early period of life, was neither excessive nor of long duration, but was productive of inconvenience and uneasiness, which could be only partially remedied by the suspender; they were precisely the cases in which it was presumed that pressure, by relieving the veins of the superincumbent weight of the blood, would enable their coats to recover their proper size and tone.

Two other cases are related in which great and immediate relief of the distressing symptoms occasionally attendant on varicocele was afforded by pressure, but the patients had not remained under treatment a sufficient period to enable him to judge of the ultimate results.

The author remarks, that little attention is paid to constitutional treatment on varicocele which is commonly regarded as exclusively a local disease. In the class of cases in which the benefit derived from pressure is most apparent, the patients are persons between eighteen and thirty years of age, of weak frame and constitution, and subject to dyspepsia, and whose venous system and circulation are feeble. In these cases the operation of local remedies may be aided materially by general treatment.

After noticing the liability of this disease to relapse, and for this reason recommending the continuance of the truss for some time after all symptoms of the affection are removed, the author adverts to another class of cases, in which the application of pressure is capable of giving considerable relief, though not of curing the disease. They are cases met with at a somewhat advanced period of life, in which the plexus of dilated veins is of large size and of long standing, but productive of only slight inconvenience,

which may be remedied by the suspender. The application of pressure, however not only removes the slight uneasiness but also counteracts the tendency to further dilatation, and prevents the wasting of the testicle, though the enlargement is too great to admit of the vessels being reduced to their former size.

From these observations, the author considers the treatment by pressure to be applicable, either for the cure or relief of the majority of cases of varicocele occurring in practice, and its simplicity, freedom from all risk, and efficacy, in his opinion, render it superior to every other method of treatment that has hitherto been tried. In all the cases which he has treated, he has employed the mocmain-lever truss, which seems better adapted to make the necessary pressure at the abdominal ring than any other instrument that he knows of. In general the truss need be worn only during the day. When the scrotum is pendulous, or the plexus of dilated veins considerable, he advises the addition of the silk-net suspender.

Mr. Lloyd was always able to relieve varicocele without employing a truss. Dilatation of the veins alone in varicocele did not cause pain or inconvenience, any more than a simple varicose condition of the veins of the leg produced suffering. It was when inflammation came on that the pain and inconvenience were experienced. Allay that inflammation, and you relieved your patient.

Mr. Curling in answer to a question, said that he had seen one case in which the use of the truss had been discontinued for four months, and there had been no return of the complaint. In answer to Mr. Lloyd, he observed, that the treatment recommended in the paper had reference only to those cases in which the patient really suffered from the disease. These sufferings might exist independent of inflammation, as the sense of weight &c., experienced by patients in this disease, and the means taken to prevent it, would testify.

Mr. Solly referred to the case of a hard-working smith, who, after wearing a truss for six months had been cured.

Mr. Coulson, though he had not employed a truss in his own practice had known instances in which varicocele had been relieved by such application. When varicocele became troublesome, he was in the habit of drawing the scrotum through Wormald's "scrotal ring," by which means the testicle was drawn up close to the abdominal ring, and this with a suspender, succeeded in affording relief. The apparatus was removed at night.

Mr. Partridge had seen a gentleman who suffered from varicocele complicated with a hernia, which it was difficult to return, and in whom the scrotum was so painful that he could not bear even the pressure of a suspender. The hernia was so difficult to return, that he was ordered to lay in the recumbent position for six months. The hernia was then reduced; he wore a truss, and the varicocele had since much diminished in size.

Mr. Streeter alluded to the remark of Sir C. Bell, to the effect, that he had known varicocele much relieved, when, having been mistaken for hernia, a truss had been applied to it.

ON THE INTERNAL STRUCTURE OF THE HUMAN KIDNEY, AND ALL THE CHANGES WHICH ITS SEVERAL COMPOUND PARTS UNDERGO IN "BRIGHT'S DISEASE." By Joseph Toynbee, Esq., Senior Surgeon to St. George's and St. James General Dispensary.

This paper contains the result of the author's researches into the structure and into the nature of Bright's disease of the kidney, since 1838, during between two and three years he was engaged in pursuing investigations in conjunction with Dr. Bright, but as a variety of circumstances prevented the publication of a work, the result of their joint labors, the author details but the principal facts which have been elicited. Feeling how much is due to the assistance and cooperation of Dr. Bright, at whose expense the greater part of the extended series of drawings elucidating the paper were made, the author states, that it is not without some degree of diffidence that he prefixes his name to the communication.

In the division of the paper on the "Anatomy of the Kidney," the author successively describes minutely the result of the examination into the parenchyma, the tubuli uriniferi, the arteries, veins, and nerves of the organ, in each of which departments views are advanced, varying considerably from those of modern and former anatomists.

In the pathological observations, the author adheres to the opinion advanced by Dr. Bright, and lately so ably advocated by Dr. G. Robinson, that a congested condition of the organ precedes the important changes which subsequently occur in the three stages of disease. The author then proceeds to demonstrate that the arteries first become diseased and that the tubuli veins and parenchyma of the organ follow.

The three stages of the disease are illus-

trated by an elaborate series of drawings in which the various successive changes are indicated, and the paper concludes by pointing to the various plans which should be carried out for the prevention of this disease at present so formidable in all classes of society.

Dr. C. J. B. Williams said that at that late period of the evening, and of the session he would not intrude long on the attention of the Society; but before noticing the subject of the last paper, he could not but express his regret at the *embarras de richesses* with which they had been overwhelmed to-night; almost each one of the interesting papers, of which only either abstracts or the titles had been read, might have afforded a sufficient scope for an evening's digestion and discussion; as it was (no doubt unavoidably), the subjects were scarcely intelligible, and the valuable pathological drawings and specimens were rendered useless.

The last paper treated of a most important subject; and admitting as he did the great value of Mr. Toynbee's researches, he would not lose the opportunity of expressing dissent from the concurrence which Mr. Toynbee expressed with the views of Dr. Johnson, as conveyed in a paper read at the commencement of the session. He (Dr. Williams) not only did not consider that fatty deposit in the kidney to be the first stage of Bright's disease, but he could not admit that it is an essential part of the disease at all. Further he would state as the result of careful microscopic investigation by Dr. Richard Quain, confirmed by his own examination of numerous specimens, that the deposit in this disease is not confined to the uriniferous tubes, but appears on their exterior interstices between the vessels. This corresponds with the views which he had long held and published on the subject, that the deposit consists of albuminous matter like that effused from vessels affected with inflammation or a certain amount of congestion, and may, like such fibrinous effusions, present considerable varieties in its mechanical and chemical condition. This deposit mostly consists of granular matter; but the granules in one case are contained in cells, resembling exudation corpuscles rather than the proper epithelium cells of the uriniferous tubes, and are seen without the tubes as well as within them, and therefore cannot be a multiplication of these cells. The distinction may be further seen on contrasting a healthy kidney with one diseased; but here he begged to observe, that it is a rare thing to find a perfectly healthy kidney in the dead body in this metropolis. A change of structure, the extreme of which constitutes Bright's disease, is in slight degrees exhibited in a large majority of the kidneys of adults examined in hospitals. But if we contrast the healthy kidney of a young subject, we see in its beautiful regular, oval, nucleated epithelial cells, an appearance quite different from the large round granular cells which stuff the tubes, and block up the parenchyma in the early stages of Bright's disease. It is this stuffing and obstructing that interrupts the function of the kidney, and eventually alters its structure. In the more advanced forms of the disease, the granular matter is seen without its cell walls, and sometimes interwoven with filamentous tissue. The facts which he (Dr. Williams) would adduce against the notion, that the deposit is of a fatty nature, are derived from its optical and its chemical properties. Although, occasionally, fat globules in considerable numbers may be seen in it, this is an exception rather than the rule. The granular matter, in most instances, is far less refractive than oil globules are, such for example, as are commonly seen in the cells of the liver, as may be made obvious by comparing them in the same field. The chemical reaction of the matter also differs from that of fat, for the granules resist the action of caustic potash and of æther, separate or combined, whereas, acetic acid partially dissolves them, a fact mentioned in the abstract of Mr. Busk's paper read to-night. He (Dr. Williams) was aware that Mr. Gulliver and others entertained the opinion that the molecular base of all nucleated cells is of a fatty nature, but that was a subject foreign to the present question, which was whether or not the morbid deposit in Bright's disease is chiefly fat, like that in fatty degeneration of the liver. This question he would answer in the negative, and conclude by the additional argument, that it is by no means low in specific gravity.

On the action of Imperceptible Agents on the Living Body

BY PROFESSOR D'AMADOR.

The above is the title of a paper read by the distinguished Professor of Pathology in the University of Montpelier, before the scientific Congrès at Nîmes. Professor D'Amador though occupying the Pathological chair in an Allopathic University, is a declared adherent of Homœopathy; and the European reputation which his profound learning and brilliant talents have gained him, render peculiarly interesting any thing proceeding from his pen. Want of space forbids us giving more than a brief analysis

of the memoir whose title we have given above; but a careful perusal of the original, which is to be found in the 2nd vol. of the "Bulletin de la Societé Homœopathique," p. 131, will amply reward all who take an interest in the truly scientific developement of Homœopathy.

The author commences by asserting, that all actions and impressions whatever in a living body are entirely vital or dynamic. Hence, food, poisons, viruses, miasms, and all the different kinds of stimulants that are applied to the economy, as well internally as externally, cannot have, and, indeed, have none other than a dynamic action; and hence, almost all that has hitherto been attributed to absorption, is destitute of foundation, and on examination is found to be false.

In proof of this assertion he cites various facts from the domains of hygiène, physiology, toxicology, and pathology. It may be said that light, heat, water, and oxygen, —that is to say, all that is most subtle, most ethereal, and least material in creation, are the true aliments of life. Not to mention those extraordinary but authentic cases where life has been prolonged,during months and even years of total abstinence, other and more familiar examples of this fact are not wanting. The developement of the chick, strictly secluded from all external influences; the production of a beautiful flower from the bulb, which receives no other nourishment than the vapour of water; the growth of vegetables, on cloth, in well washed sand, in litharge, in flowers of sulphur, in unglazed leaden shot, supplied with no other nourishment than distilled water; but, nevertheless, presenting on analysis all the constituent parts of the same vegetables growing in the richest soils, as shown in the experiments of M. Braconnot, are striking illustrations of this fact; and the observation of them drew from M. Braconnot this remarkable expression: "Oxygen and hydrogen—that is, water aided by the heat of the sun, appear to be the only elementary substances whence the universe was formed."

The function of digestion, apparently the most material and most chemical of all functions, is the most purely vital in its causes. Hence it is that the quantity of the nutritive substance is often the least important part, and that attention should be more particularly paid to its exciting quality and stimulating power. The dynamic effect of fluid aliments is still more evident, their result is rapid, often instantaneous. Set before a person worn out with fatigue, the most substantial viands, he will scarcely touch them, and will not at first experience any benefit from them; but give him the smallest quantity of brandy, and in an instant he feels its beneficial effects.

The subject of fecundation furnishes our author with a fruitful source of illustrations for his doctrine; and the experiments of Spallanzani with the ova of the frog, the impregnation of women where the hymen was still perfect, the observations of Harvey, with respect to the fecundation of bitches and rabbits, in whose wombs no trace of semen could be discovered, are successively adduced,

"And again," he asks, "what are relative greatness and smallness in the case of the seeds of vegetables, but a mere *lusus naturæ?* Who could believe that invisible seeds of plants are continually suspended in the atmosphere?—that those of mosses, fungi, of lichens elude our eye, and float invisible in the circumambient air? Who could believe, if experience did not prove it to us every day. that within the case of a seed, which, from its minuteness, cannot be perceived by the microscope itself, there is contained the power which shall one day produce a vegetable? Who could believe, in fine, that in the embryo of the acorn there exists, in infinitely little, the largest tree of the forest, which only stands in need of developement? According to Dodart, an elm can produce, in a single year, 529,000 seeds; Ray counted 32,000 on a stalk of tobacco. If all these seeds should come to perfection, it would only require a few generations, and a very small number of years, to cover the whole surface of the habitable globe with vegetables. If, then, atoms can produce an entire being, why should we tax them with impotence when the question is about merely modifying a being? If an atom gives life, is it more difficult to conceive that it may change the mode of being? When *the greater* exists and starts up before us in the processes of nature, why should *the less* be declared impossible?

From the department of toxicology the learned Professor instances, in support of his views, the violent effects of a drop of prussic acid; the arsenical preparation celebrated in the 16th and 17th centuries, under the name of *Aqua toffana,* which killed with the rapidity of lightning; the poison of the wasp, hornet, and bee, the smallest atom of which placed on the tongue burns it as severely as the most concentrated mineral acids; the virus of the scorpion, of certain spiders, and of serpents; the fresh water polypus, which, of all poisonous animals, possesses the most active venom. The experiments of Fontana show that the *thousandth part of a grain* of the poison of the viper, inserted in a muscle, suffices to kill a sparrow. Some plants furnish poisons which surpass in their effects

the most corrosive metallic poisons. De la Brosse in his *Voyage aux regions intertropicales*, has these words:—"There arrived seven or eight negroes in palanquins, the principal personages of Lowango, who presented their hands to be shaken by the French and English officers. These negroes had previously rubbed their hands with an herb, which is so extremely poisonous that it takes effect in a moment. They succeeded so well in their nefarious designs, that five captains and three surgeons fell dead on the spot." De la Brosse does not mention how the negroes preserved themselves from the effects of the deadly poison they had in their hands.

The effluvia exhaled by certain plants, the dew or drops of rain that fall from the leaves, can produce injurious effects, as is said to be the case with the mancinilli and the rhus toxicodendron

From pathology the Professor cites the following facts:—The minute quantity of matter from the malignant carbuncle, and of saliva from the rabid dog, which are sufficient to transmit these diseases; the imperceptible nature of the miasms, which produce respectively syphilis, small-pox, the plague, cholera, and the instantaneous manner in which they infect the organism; for although the morbid state is not manifested, it may be, until after the lapse of a consieerable time, this only proves that internal disease requires that time to ripen and fructify, in the same manner as the flowering of the vegetable announces its maturity, or the development of the fœtus shows that conception has taken place.

The comparison of thedisease to the flowering of a plant has given rise to some useful practical reflections by Professor D'Amador, which we shall here quote:—

"An individual is affected to-day with some morbific germ, but the products of the infection do not appear externally until after the lapse of four, six, eight, fourteen days, or even a month. The interval which elapses between the moment of infection and that in which the disease manifests itself, is the period of the germination and growth of the inoculated germ: it corresponds exactly to the latent and unnoticed stage during which the seed buried in the earth undergoes a fecundating incubation. The eruption and all the other symptoms are but the development of the morbid germ, as the flowering and fructification of the plant represent the visible evolution of the germ.—Hence I affirm, that what modern pathology regards as the root of diseases—*e. g.*, the exanthemata, is the veritable, the sole cause of the terrible ravages they commit on mankind. What should we say of the agriculturist who in order to modify the life of the tree, should direct his attention to the flowers and fruit, and neglect the roots? The therapeutists of the present day do this; and I shall leave it to your sagacity to say what will be the ulterior consequence of such conduct.

In truth, the destruction of its flowers or fruit does not cause the death of the vegetable; and thus it is with syphillis, and psora, and other eruptive diseases. To cauterize, dry up, or otherwise forcibly destroy chancres, is but to give new strength to the disease; as plants acquire fresh vigor from being pruned, and in the following spring shoot forth more luxuriant flowers. After the material destruction of their external signs, which may be regarded as the product of fructification, they send forth new flowers, which medical men have the simplicity to regard as a new disease."

The above is a brief outline of the facts presented to our attention in the paper of Professor D'Amador; but its chief interest lies in the conclusions to which the author arrives, which although somewhat opposed where theoretical, to our own physiologal faith, can hardly fail to attract the attention and convince the understanding of the numerous adherents of the Montpelier or dynamic schools, which boasts of following out the principles of Hippocrates, and whose ablest exponent finds in the writings of Hahnemann the complement of the doctrines of the sage of Cos.

After adducing the well known facts of the chemical purity of the air in localities where ague, the plague, the cholera, or epidemic diseases are committing their ravages; after observing that the contents of the poison-bag of the viper resembles in chemical composition sweet almond oil; that the pus of the pestiferous bubo, the lymph of the vaccine pustule, differ not, save in their effects, from ordinary pus and lymph; he infers that the material we subject to our analysis is but the vehicle in which an immaterial ethereal virus resides, analogous in this respect to the vivifying principle of the organized being. But we shall give his own eloquent words:

"What, gentlemen, can we conclude from all this, but that pathology resembles other branches of our science? what can we conclude, if not that a morbid cause is always, and under all circumstances, the product of a force, and that a material form in which it presents itself to our view, is but the gross covering that conceals it from us: that external forces only act on our organs when they meet with forces in us on which they can act: hence the invisible, the instantane-

ous character, the celerity of pathogenetic actions, whether of contagious, or of epidemics, or of the natural or artificial inoculation of diseases. In all cases it is forces which meet, combat, combine, repel, neutralize each other, or mutually regulate one another. Our health, disease, death, our very existence, is but the result of these forces. Thus it is that nature, in the immense scale of being, has sketched, as it were, an entire system of forces, and that passing from forces which are not precipient to those that are, from inanimate to living forces, she has, by gradually progressive shades, at last developed in man the supreme type of forces, and the most elevated degree of existence. In man, indeed, life does not exist solely in sensible and irritable organs, in the involuntary motions they execute, nor in the connected chain produced and maintained by the combined actions of life. In man true life consists in thought, in that intellectual something which gives us consciousness of our existence, and in that power of will which renders us masters of ourselves. Such is life at its culmniating point, force *par excellence*, the greatest, the most profound, the most inexplicable of all mysteries. Life, which not only gives us the enjoyment of ourselves, but which attaches us to all that surrounds us. It is by means of it that the grand spectacle of nature attracts our attention, that our ideas dart from pole to pole more rapidly than lightning; it is by means of it that thought embraces in its grasp in a moment of time the whole expanse of worlds, all the vast extent of the universe, and loses itself in infinity.

"There is, then, in every science, and particularly in medicine, both sensible facts which are seen, and invisible facts which can only be conceived, both demonstrable and inductive facts, both facts which are apparent, and such as are more concealed, which, without being seen, regulate and govern the other facts. It is these invisible and only essential facts that alone are important, for they are the generators of other facts; and in every case that which is not seen governs that which is visible. These facts are the various forces of nature. These forces are at the bottom of all visible phenomena, they produce them, they modify them for good or for evil, and, since they are the true causes, if we modify them we shall modify the phenomena themselves. 'For the true springs of our organization,' as Buffon remarks, 'are not those muscles, those veins, those arteries, which are described with such exactness and care. There exist in organized bodies internal forces, which do not follow the gross mechanical laws we imagine, and to which we would reduce everything.' This thought has been expressed in different terms, by a man as great in the astronomical, as Buffon was in the physical sciences, whose name corresponds in France to that of Newton in England. 'Beyond the limits of this visible anatomy,' says Laplace, 'commences another anatomy whose phenomena we cannot perceive; beyond the limits of this external physiology of forces, of action, and of motion, exists another invisible physiology, whose principles, effects, and laws, it is of greater importance to know.' And, we may add, that beyond the limits of these material and voluminous therapeutics, there are other therapeutics far more important to know, and far more useful to practice.

"Thus the greatest men, of whom the sciences usually opposed in spirit to medicine can boast, are unanimous in the admission of a vital dynanism; and I imagine, gentlemen, I have a fair title for obtaining your assent to this great dogma, by placing it under the ægis of these illustrious names.

"I have thus, I conceive, proved to you that the most active agents in nature are imperceptible entities, which, like electricity, magnetism, heat, and light, have neither odor, savor, color, volume, dimensions, determinate shapes, nor definite proportions; which pervade all things without being any where perceptible; which govern all things without being seen themselves; which penetrate every where, but whose essence we cannot penetrate. Agents of life, of health, of death, and of disease, nature has disseminated them every where throughout the immensity of space, under the graceful form of flowers, in the fluids which are appropriated or rejected by animals and plants. To these invisible agents, to these forces we owe our earliest breath; to them also is due our latest sigh; from them alone is derived the continuance of our existence, and they are the source of the derangements we are subject to. Physiology, hygiene, toxicology, and pathology, in other words, the sciences of life, of health, of death, and of disease, are all dependent on the same principle; for it is a force, a breath, that creates, kills, preserves us, that produces our diseases, and occasions our sufferings.

"It remains to be proved, gentlemen, that the therapeutics are, and ought to be, similar to the other departments of our art,—that it is also a breath, a force, that cures and relieves our disorders. It remains to be proved, in order to trace the complete scientific circle, that the therapeutics of forces, the dynamic therapeutics, the vitalist therapeutics, (for they are all the same,) are like-

wise, of all possible therapeutics, if not the only true, at least the speediest, the surest, the most appropriate, and, in the vast majority of cases, the most efficacious of all therapeutics; that they are the most rational in theory and the most successful in their practical application; that they alone ought to be, that they alone are, able to realize the three grand conditions that Celsus, even at the early period when he flourished, demanded of all useful therapeutics, to cure diseases quickly, certainly, and agreeably. In a word, it remains to be proved that if there be a dynamical, a vital physiology, hygiene, toxicology, and pathology, there ought to be therapeutics of a similar character."

After quoting some facts from Allopathic observers to prove that such is the case, among others the experiments of M. Lafarge, who has always succeeded in producing an eruption of a specific character by the inoculation of the most minute portions of laudanum—1-500th, 1-1000th, 1-2000th of a grain, and the observations of M. Soubeiran with respect to the efficacy of extremely minute doses of a certain furruginous preparation, our author goes on to say:

"But it will be said, these facts may be true, but they are repugnant to common sense. Gentlemen, if the action of imperceptible agents is opposed to common sense, that is as much as to say that experience is opposed to it; but as common sense and experience are not, and cannot be contradictory, if common sense refuses to believe in the action of imperceptible agents, common sense stands in need of a thorough reform, which experience will be able to effect.—Science, which is nothing else than the reflection of experience, has, in this manner, reformed common sense several times. Common sense believed for centuries that the world was fixed, and astronomical science corrected common sense, and brought it to its own way of thinking. The virtue of vaccine was repugnant to common sense, at the period of its discovery: but, now-a-days, experience has so completely demonstrated it, that any one who doubted it would be held to be destitute of common sense. In fine, common sense rebelled and with some reason, against the frightful doses of the Italian school. It could not be comprehended how twenty grains of tartar emetic would not produce vomiting, when two grains caused copious evacuation; but here again, as elsewhere, science—that is to say experience, has advantageously put common sense to rights.

"And should we, with this before us, treat with contempt a system of the therapeutics which is but the application of one of our most certain maxims? To the diseased vital forces let us oppose the forces of natural substances, but divested of all material covering; these forces will thus be brought face to face; they will act directly on each other, without any interposing agent; and hence will ensue more rapid, more certain, and more agreeable cures. * * * * * * Observe, finally, gentlemen, that the vital therapeutics of which I speak are to medicine what the study of electricity and the imponderables has been to chemistry, —what the study of motive powers has been to mechanical art. * * * * * * Far from overthrowing Hippocratism, or the true vitalism of Montpelier, our modern therapeutics confirm, complete, extend, and apply it, add what was wanting to it and supply its deficiencies. The Divine Old Man bequeathed to us, so to say, the code of medicine, in which its great laws were laid down, its principles registered, its fundamental dogmas established; the work of ages is and ever shall be to deduce from these premises the most remote consequences; to bring all the great facts which subsequent discoveries may reveal and produce within the Hippocratic domain. Some of these discoveries have been already gathered in, and can never more be lost; others have been sown, and as yet exist but in the germ; but nought can blast this germ; on the contrary it will grow, and the tree will yield its fruit io us and to all posterity."

Cases of the Pathogenetic Action of Sulphur and Cantharides.

The following two interesting cases were observed at the Liverpool Homœopathic Dispensary:

CANTHARIDES.

F. T., aged 17, had been all day engaged in making the "Emplastrum Cantharidis" of the shops. He had been standing over the pan in which the material was boiling, but toward the close of the day he was affected with the following symptoms: Great dimness of sight, attended with smarting and burning round the eyelids, and round the balls of the eyes; constant lachrymation; the eyes turned towards the nose; twitching of the eyelids; he could not close his eyes without great pain, from smarting of the lids chiefly; there was considerable redness, and an apparent distress from the inflammation of both eyes.

On hearing how he had been engaged, the

suffering was at once attributed to Cantharides; but, whether he had been affected by the mere effluvium, or any particles of the powder had got into his eyes, he could not tell.

Some drops of the strong camphor tincture were at once given him.

The next morning every thing appeared to him to be yellow. The nose was also considerably affected; some swelling with redness and heat, within as well as without, with the appearance of suffering from very severe coryza. He took spirits of camphor every hour.

The third day his eyes were quite well; the dimness and haziness of sight had given place to the usual clearness of vision; slight appearances of the affection of the nose only remained. The day following he returned to his usual occupations.

SULPHUR.

John Kerney, aged 21, had severe tooth-ache; and having read in a newspaper that smoking Sulphur was a certain cure for tooth-ache, he smoked three pipesful in rapid succession; he then went to bed, and fell asleep, but awoke in an hour in great fright and distress; his symptoms were dyspnœa to a sense of suffocation, with severe constriction of the chest, extreme faintness, vehement palpitation of the heart, and horror of instant death. There were universal tremors; his head seemed to him distended, with loud noises in the ears; he distinguished especially a boring pain over the left eye; his bowels were obstinately obstructed for four days, and no action could be produced by various aperients which he took. The day after smoking the Sulphur he had intolerable itching over the whole body; this was followed in a day or two by the appearance of reddish blotches over the trunk and extremities; he had severe pain across the loins.

He was seen, as a dispensary patient, for the first time, on the 18th September, 1845. At that time, his face was very pale, and collapsed with an expression of great anxiety; there was still vehement palpitation, the pulse feeble and very irregular; considerable dyspnœa, with sense of constriction; intense head-ache, with sensation that his head and ears were stuffed; loud noise in the ears; tremor of the limbs, with considerableitching of the arms and legs, but no eruption was to be seen; he complained of pains throughout the body. Pulsatilla 3 was given every four hours, and this medicine was continued through the treatment, (with the exception of a few doses of Aconite.)

September 27. No symptoms remaining, except a very slight uneasiness on taking a deep inspiration. He was allowed to return to his employment.

THE DISSECTOR.

NEW-YORK, OCTOBER 1, 1846.

The Principal Articles in the Present Number.

In this number of the Dissector, we have the pleasure of presenting our readers with several articles of unusual interest and value. In the three original "Tracts on Consumption" which have enriched the previous numbers of the present volume, we now add the fourth and most practically interesting. These remarkably able and learned papers have commanded great attention and won for their unobtrusive author a high degree of respect from many minds of an exalted order. They are distinguished not less for the originality, completeness and cogency of their method of investigation, than for the perspicuity and general terseness of composition. The reader will be gratified to perceive that they are to be continued into a portion, at least of the next volume of this Journal.

Among the other articles which we consider worthy of special consideration is the one extracted from the British Journal of Homœopathy, "On the Action of the Imperceptible Agents on the Living Body."—The paper does not assume to be an elaborate and thorough development of the subject, and it would not be difficult to furnish a multitude of additional and more striking illustrations even of its main positions. But it affords most gratifying and exhilarating evidence of the curiosity which this most profound and comprehensive—nay, substrative field of philosophy is enkindling in intellectual Europe.

With this number of the *Dissector* closes its third volume. The friends of untrammeled inquiry into the principles and practice of medicine and the collateral sciences, which this Journal was established to exemplify and promote, will be gratified to

learn that, even in the utter neglect of the usual artificial and business efforts to ensure the success of a new periodical, and notwithstanding the professional hostility which it has rather courted than evaded, it has acquired a support and influence which justify its continued publication under prospects of increasing its sphere of usefulness to a most flattering extent. And the Editor ventures to hope that the improvements which he contemplates making in the diversity and originality of its matter, will render it more deserving of the unwonted and truly cordial support it has received.

Mesmeric Surgery.

On Tuesday morning last, at 40 Hudson street, a boy nine years old, was put in the mesmeric sleep, and the operation for *strabismus* performed, without his evincing any sensibility, until nearly through, and then but in a very slight degree. During the operation, the boy was lying on the table without any restraint, and made not the slightest movement, and after waking up, was wholly unconscious of the operation having been performed.

The boy was put in the mesmeric state and operated upon by Bro. Dr. James Ashley, before quite a number of gentlemen.

Another Mesmeric Surgical Operation.

We have been rather sceptical, heretofore, regarding those mysteries of mesmerism, but expect now a strong disposition to believe. An operation for *strabismus* (squinting) was performed on Monday, 14th inst., at 40 Hudson street, upon a girl, while in the mesmeric sleep, with admirable success.—She knew nothing of the operation until it was over. Several medical gentlemen were present who appeared to be much gratified.

The operation was performed with admirable science and skill, by Dr. James Ashley, a young physician and surgeon of great talent and industry, and ardently devoted to his profession. His office is No. 40 Hudson street.—*Golden Rule.*

We were present at the last of the above operations, and although the girl knew nothing of the operation until it was over and she was informed of it when in her natural state, yet she retained her sensibility in the magnetized state as many others do, and felt the operation severely in that state.

HOMŒOPATHY,

The following case is extracted from the American Journal of Homœopathy, of Aug. 15, 1846, p. 101.

A CASE.

Mrs. B., aged 55, of a sanguine, nervous temperament, had been sick for three years. One year ago a record was made of her case, and seemingly the most appropriate drugs administered, with only an occasional partial mitigation. The attacks became severe, and were wearing out one of the best constitutions. This lady is intelligent and one of the firmest advocates of Homœopathy, notwithstanding she could, herself, procure no relief from it. The *law of cure* she knew to be true: but the remedy was wanting.

Lately another record was taken of this case, which was as follows:

Pain on the top of the head in the morning, swimming in head when stooping or rising, cloudiness of the eyes, soreness of mouth and throat, dry cough in the morning, attacks of tearing pain, sometimes stinging and sharp, commencing in the stomach and extending to the sides, and shoulders and nape of the neck, with stiffness; distress in stomach like a weight, mitigated by eating; sense of fulness in stomach; wind on stomach, eructations; cannot bear the pressure of even light clothes. Pain in the bowels, bearing down or pressing pain; pain in the left side, as if something adhered to the lower ribs. Constipation; sense of dragging and falling in abdomen; pain as if in the bones, like rheumatism; jerking of the feet in the evening. Numbness of the arms, with pricking in the fingers. Sleep disturbed, frequent wakings; pain in the stomach at night. Fatigue from walking; excessive debility; sufferings aggravated on change of weather. The pains are tearing, stinging, pressing and shifting—sometimes on the left, and sometimes on the right sides; and then on both sides at the same time; some of them aggravated by movement, and others mitigated by lying down and rest.

The attacks had occurred daily at five o'clock, P. M., and almost invariably at night, awaking her from sleeping, there had been no intermission for months.

As I had been trying *rhus radicans* on myself for some weeks, I was struck with the

peculiar stinging, pricking pains of this case as corresponding to those I had experienced in my own person by the above drug. On the 26th of June last, at 4 o'clock P. M., I gave her three globules of the third dilution of *rhus radicans*. She had no attack that day, nor has had any since;—her health improved, and it is now good.

S———.

The above is a plain case of chronic tubercula of the muscles, (chronic rheumatism) and is invariably distinguished in an instant by the pain produced by pressure with the thumb and fingers on the back of the neck. This would not, however, answer for the homœopathist. He must make a minute record of every old astrological symptom he can find in each case, and then commence a search in his books for the medicine which is homœopathic to them, or produces the same symptoms in a state of health. It will uniformly require from three to four hour's search to find the medicine, and in the meantime the wind has often changed, and the symptoms of which the doctor has made a record have also changed entirely with the wind, as every old woman knew they would, before the record was made, and this was the reason why the "seemingly most appropriate drugs were administered with only an occasional partial mitigation." The doctor, however, had fortunately been trying *rhus radicans* on himself, and was struck with the peculiar stinging, pricking pains of this case, as corresponding to those he had experienced on his own person in a healthy state, by the above drug, and gave the lady *three* globules of the third dilution when the disease disappeared—"her health improved, and it is now good," or in other words the disease was cured with *one* homœopathic dose of *rhus radicans*.

On reading this case, we sought for, and luckily obtained a few doses of the precious drug, and soon prescribed it in ten cases of chronic rheumatism, with the "peculiar" or "stinging and pricking pains." In six of these cases the symptoms were apparently palliated temporarily, but in the other four cases, no effect whatever was observable.

We could give a great number of cases of chronic tubercula of the *organs*, and also of chronic mucosis of the organs and muscles, which have been under the treatment of the most distinguished homœopathists from three months to three years, with no other effect than that of an occasional partial mitigation of the symptoms. Yet the homœpathic treatment of diseases is greatly superior to the old allopathic practice in curing acute, and mitigating the symptoms in chronic diseases.

BIRMINGHAM LYING-IN HOSPITAL.

Medical and Statistical Report.

BY J. M. WADDY, M. D.,

London, M. R. C. S., Senior Surgeon to the Hospital.

Before entering on the following statistics, it is well to remark, that as the benefits of the charity are limited to married women, many injurious complications of labor are to a great degree avoided; but the class of patients attended upon are, for the most part, poorly fed, clothed, and lodged, and many of them are employed in manufactories, and exposed to circumstances, of a moral and physical nature, extremely detrimental to their health and comfort.

The early age at which some marriages appear to have taken place, will strike the reader; but the freedom of intercourse between young persons of both sexes employed in factories, especially at meal times, and after work is over in the evenings, tends to the early development of sexual inclinations, and often induces early, ill-assorted, and compulsory marriages. These early marriages are extremely prejudicial to health—are embittered by constant disappointments, and are often associated with extreme poverty and wretchedness. No wonder, then, if in persons thus circumstanced, labor should often prove tedious, difficult and dangerous, and the offspring weak and sickly, having in birth the germ of future ill-health and premature old age, and the promise of an early grave.

The marriage of factory girls with apprentices, whose low wages are scarcely sufficient to procure subsistence for themselves, and which are quite inadequate to the support and proper maintenance of a family, produces very often scenes of misery

and wretchedness, surpassing, in their cold reality, the woes of fiction. Such scenes rarely leave their victims untainted in morals, never unprejudiced in health; and it is a subject worthy the attention of the statesman, to find a remedy for a system so burdened with social evil, and which, whilst it continues, must in many instances constitute an almost impenetrable barrier to the reception of moral and religious truth.

In Manchester, and in many other of our large manufacturing towns, the nature of the employment, together with the great number of hands employed, are such as to admit of a system of strict moral discipline being enforced, with a proper separation and classification of the sexes. This however cannot be done to any great extent in the number of small manufactories with which Birmingham and its neighborhood abound. The following are some of the results which presented themselves in the practice of the hospital during the last year:

TABLE I.

Age of Marriage.—Of 528 females, 1 had married at fourteen years of age; 4 at fifteen; 13 at sixteen; 44 at seventeen; 85 at eighteen; 81 at nineteen; 97 at twenty; 76 at twenty-one; 55 at twenty-two; 36 at both twenty-three and twenty-four; and 33 at twenty-five; beyond which age the number of marriages greatly diminished, and only 1 married respectively at the ages of thirty-two, thirty-four, thirty-seven and thirty-eight.

Of 574 males in Birmingham, it was also ascertained that 1 had married at fifteen years of age; 3 at sixteen; 12 at seventeen; 28 at eighteen; 42 at nineteen; 84 at twenty; 52 at twenty-one; 60 at twenty-two; 52 at twenty-three; 51 at twenty-four; 44 at twenty-five; 34 at twenty-six; and 31 at twenty-seven; beyond which period there was a material diminution; and only 1 married respectively at the ages of thirty-nine, forty, forty-two and forty-four.

TABLE II.

Age at the commencement of menstruation.—Of 623 females, in 1 the catemania occurred at nine years of age; 2 menstruated at ten; 15 at eleven; 46 at twelve; 87 at thirteen; 130 at fourteen; 115 at fifteen; 105 at sixteen; 67 at seventeen; 43 at eighteen; 10 at nineteen; and 2 at twenty.

TABLE III.

Ages of 708 women registered for attendance during confinement, (at the drawing out of the table.)—One at sixteen years of age; 2 at seventeen; 4 at eighteen; 6 at nineteen; 27 at twenty; 21 at twenty-one; 33 at twenty-two; 36 at twenty-three; 45 at twenty-four; 37 at twenty-five; 38 at twenty-six; 35 at twenty-seven; 41 at twenty-eight; 34 at twenty-nine; 52 at thirty; 28 at thirty-one; 27 at thirty-two; 39 at thirty-three; 40 at thirty-four; 31 at thirty-five; 23 at thirty-six; and 26 at thirty-seven; beyond which age a marked diminution in the numbers took place, except that at forty years 21 women were registered.

TABLE IV.

Previous labors.—Of 641 of the above women registered, 38 were primiparous; 104 had had one child; 94 two children; 70 three; 75 four; 77 five; 53 six; 28 seven; 43 eight; 25 nine; 20 ten; 7 eleven; 3 twelve; 2 thirteen; 1 fourteen; and 1 sixteen children.

TABLE V.

Previous abortions.—Of 268 women, 32 had aborted at two months; 139 at three months: 48 at four months; 22 at five months; 12 at six months; and 15 at seven months.

TABLE VI.

Intervals between deliveries.—Of 275 women, 3 had an interval between their confinements of ten months; 1 of eleven months; 51 of a year; 100 of a year and a half; 156 of two years; 87 of two years and a half; 51 of three years; 16 of three years and a half; 19 of four years; 6 of four years and a half; 5 of five years; 3 of five years and a half; one of eight years; and 2 respectively of ten, twelve and thirteen years.

TABLE VII.

Duration of labor.—Of 470 labors, 10 had terminated in an hour from their commencement; 32 in two hours; 34 in three hours; 63 in four hours; 51 in seven hours; 26 in eight hours; 28 in nine hours; 18 in ten hours; 17 in eleven hours; 27 in twelve hours; 17 in thirteen hours; 8 in fourteen hours; 12 in fifteen hours; 2 in sixteen hours; 2 in seventeen hours; 3 in eighteen hours; 5 in nineteen hours; 3 in twenty hours; 3 in twenty-two hours; 8 in twenty-four hours; 1 respectively in twenty-three, twenty-seven, thirty-three, and forty-four hours; and 5 in forty-eight hours.

TABLE VIII.

Presentations.—Of 487 presentations, 468 were of the vertex, in six of which the face was towards the pubis; in five, prolapse of the funis occurred, in three of which the children were still-born, and the hand presented with the head in two instances; six were shoulder or arm presentations, in which

cases four of the children were still-born; sixteen were breech-presentations, in which cases five children were still-born, and five were footling cases.

The vectis was used once, and the forceps twice—once in impaction of the head, and once in a retarded labor.

TABLE IX.

Time of expulsion of the placenta.—In 334 cases, this happened in five minutes after the birth of the child; in 22 in eight minutes; in 85 in ten minutes; in 51 in fifteen minutes; in 18 in thirty minutes; in 4 in forty minutes; in 3 in an hour; in 1 in an hour and a quarter; in 2 in an hour and a half; and in 1 in four hours, (this patient died with puerperal mania.)

Four placentæ were decomposed; five adherent, of which one was extracted in half an hour; two in an hour and a half, without hæmorrhage; and two in three hours, with hæmorrhage.

TABLE X.

Intervals between menstruation and confinement.—In 11 cases, there was an interval of six months; in 6 of seven months; in 42 of eight months; in 110 of nine months; in 70 of ten months; in 2 of eleven months; and in two of twelve months. Ten patients had not menstruated since their previous confinement; three menstruated up to the period of quickening; and two menstruated during their entire pregnancy.

In one case, in the first year's practice of the hospital, convulsions took place three weeks before labor; the patient was relieved by bleeding, &c., and did well.

Puerperal convulsions occurred in two patients.

Two cases of monstrosity occurred, and a child was born with but one ear.

Death took place in one child from hæmorrhage from the funis, which had been carelessly tied by a midwife.

Severe hæmorrhage occurred in four cases; hour-glass contraction in one instance.

Slight hæmorrhage in three patients; hæmorrhage before birth in one.

A child was suddenly expelled, and labor quickly terminated by a severe rigor.

One patient died a few weeks after childbirth, from the combined effects of hæmorrhage and starvation; from being an affectionate mother, she gave her children what she ought to have had herself.

One patient walked to the hospital, a distance of four miles, during her labor, and was safely delivered within ten minutes after her arrival.

One female has had seven preternatural presentations, and only one cranial. Two of her sisters lost their lives by cross births.

Labor commenced in one instance, with a severe rigor, lasting two hours; rupture of the membranes cured the rigor, and the child was born with one long continued pain. This woman has had six children, all born in the same manner.

In one case, a tumor occupied the pelvis; but receded prior to the birth of the child. In another case, a tumor situated apparently in the uterus, was attached to the parietes of the abdomen. Both women did well.

One woman suckled three months; another four months; and a third during the whole term of pregnancy; but in the last case the infant was very feeble, and died within a few hours of its birth.

One woman had great obliquity of the uterus, and the pains were suspended for twenty-four hours after its full dilatation.—Ergot was given, and the labor terminated rapidly and favorably.

Among the deaths were, one from phthisis; one from typhoid pneumonia, during the presence of which delivery took place; one from puerperal mania, (this patient had previously been afflicted with insanity;) and one, as mentioned above, from the effects of hæmorrhage and starvation.—*Lon. Lancet.*

MEDICAL SOCIETY OF LONDON.

MR. DENDY, PRESIDENT.

MAY 4, 1846.

Remarkable Case of Purpura.

Dr. Clutterbuck had lately seen an extraordinary case of purpura, which, from the extent of the disease, might almost be called "morbus niger." The patient was a Belgian, 19 or 20 years of age, and a few days before the appearances on the skin presented themselves, was afflicted with pains in the limbs; the surface then became studded with purple spots, which spread over the entire surface of the body. The patient was inclined to dose, but was sensible when roused. The affected parts were painful to the touch, but gave no evidence of increase of heat, and there was no swelling. There had been nothing in the habits or mode of life of the patient to explain the unusual disease which presented itself. He had never been so attacked before. The mouth inside was affected with livid spots. The treatment at first had been that usually employed for scurvy, as vegetable acids, &c.; but this failing to afford relief, and free acid being found in the urine, alkalies were substituted and he (Dr. Clutterbuck) believed with good effect. He had, however only seen the case

for a few minutes, and could not speak more authoritatively respecting it; he had seen it merely as a curiosty, which it certainly was. In a subsequent part of the evening, in answer to various questions, Dr. Clutterbuck said that the disease began in the legs and more distant parts; it first appeared in the shape of elevated, hard, inflamed pimples, about as large as peppercorns, and these spread laterally, until the entire surface became one black mass. The pulse was feeble, the patient lay prostrate, and exhibited the usual symptoms of low spotted fever.

The President remarked that the headache in this case tended to show that the disease was associated with venous congestion, as supposed by Dr. Hartry and others. Upon this principle, that practitioner had employed bleeding and drastic purgatives with the best effect. Connected with this congestion, no doubt there was some change in the circulating fluid itself, the crasis of which had been broken up, so that it became like the mere *liquor sanguinis.*

In reference to the nature of purpura generally, Mr. Hilton had recently found it associated with a low condition of the system, and reduced quantity of the blood. Treatment to improve this condition was usually beneficial. He had seen, however, one or two cases in which there was a large quantity of blood in the system. These were benefited by depletion, generally, but were exceptions to the rule.

Mr. Roberts did not believe there was any analogy between purpura and scurvy; in purpura there was no sponginess of the gums.

Mr. Dendy made some remarks to show that apparently opposite modes of treatment, as adopted by various practitioners in this disease with equal success, might be explained by the facts of these modes tending to produce the same result—viz., an improved state of the secretions, by which the general health was improved.

A member mentioned some cases that were cured by small repeated bloodlettings, which tended to show, as the President had formerly remarked, that the disease depended on congestion.

Dr. L. Stewart mentioned a case of malignant small pox which proved fatal in thirty-eight hours. The pock did not maturate, and the entire surface assumed a purple hue like that present in purpura,

t Mr. Barlow believed that facts were against he suggestion that purpura depended on venous congestion, inasmuch as anasarca and other results of obstructions to the veins were not associated with purpura.

Tubercular Meningitis.

Dr. Willshire laid before the Society portions of white matter of each hemisphere of the brain of a young girl, containing a tubercle, and made the following remarks upon the case. When first seen by him, she complained of great pain at the top of the head, the suffering often being very intense; pain also along the neck, left side, and at the epigastrium; the hands hung listlessly at her side, and she was continually sighing; every now and then she was seized with violent trembling; the countenance was exceedingly anxious, and expressive of much suffering. The tongue was foul, the bowels were costive, the pulse was feeble, and the child somewhat emaciated. There had been vomiting also. On inquiry of the mother, it appeared she had sought advice for her child a week before, as she then had diarrhœa and severe cephalalgia; she was told that the girl had slight fever, of which she would soon recover. In her opinion however she had been daily getting worse. The head was now ordered to be shaved, and rubbed night and morning with compound iodine ointment; a blister was applied behind each ear, and dry cupping at the nape of the neck. She was directed to take eight grains of aloes, and five of the sulphate of potash, night and morning; and one-sixth of a grain of iodine, with two grains of iodide of potassium in distilled water every four hours.—From this period until the day of her death, nineteen days afterwards, though gradually getting worse, the symptoms constantly remitted; stupor, slight delirium, dilated pupils, apparent blindness, difficulty of swallowing, coma; slight convulsions, however, finally closing the scene. In addition to the therapeutic measures already alluded to, it was found necessary to blister the scalp which was afterwards dressed with tartar, emetic ointment, and the iodine being omitted, nitrate of potash was given in medium doses instead; injections of turpentine and castor-oil were ordered to be administered. On inspection of the contents of the cranium, twenty-four hours after death, the following pathologic conditions were observed: Slight congestion of sinuses and veins, very distinct flattening of convolutions and raising of the sulci; on pressure the brain felt very firm. Along the edges of the convexities of the hemispheres lymph was deposited, along with numerous yellow granular tubercles. No increased vascularity, no congestion of the pia-mater, or of the cerebral substance itself. In the white substance of each hemisphere, rather superficially, was a tubercle of the size of a pea, in a soft cretaceous condition, surrounded by a sort of cyst. Ven-

tricles much distended, containing not less than eight ounces of fluid, perhaps more. No softening of the central portions of the brain. At its base, from the junction of the medulla spinalis with the pons varolii to the commissure of the optic nerves, was a considerable amount of yellowish-green gelatiniform serosity. At one part of the edge of this latter were numerous granular tubercles. The skull was not symetrically developed round its axis. Dr. Willshire remarked that the case offered the following points of interest:—1st. The cephalalgia not being frontal, as is usual in tuberculous meningitis, but felt at the vertex. 2nd. The disease putting a stop to the diarrhœa, and costiveness supervening as illustrative of some cases recorded by Gerhard, Pilt and Green, in which diarrhœa was arrested by the supervention of meningitis. 3d. In agreeing with the statement of Rilliet and Barthez, that tubercles of the brain proper are more frequently found in the hemispheres. 4th. That yellowish-green gelatiniform serosity in tuberculous meningitis is more common at the base. The great trembling, the sighing respiration, the peculiar expression of the child, denoting severe cerebral disorder, the absence of certain lesions of motility, which in these cases are common, were also alluded to as points for discussion.

Dr. G. Bird inquired whether, previous to death, the lungs had been examined in this case, and if so, whether there were dulness under the clavicle, or any other sign of tubercular disease. Such sign was often a valuable assistance in our diagnosis of tubercle of the brain; dyspnœa, or even orthopnœa, was often present in these cases; was it so in the present instance? He inquired also as to the presence of reflex action.

Dr. Willshire alluded to a peculiar sighing present in this case, and analogous to the "cerebral breathing" of Dr. Graves. There were no reflex phenomena. He had examined the chest, not with the view of determining the presence of tubercular disease, which in general was not sufficiently advanced to aid us, by its physical signs, in diagnosticating tubercular meningitis, but rather with the view of determining whether pnuemonia were present. There was however no sign of that disease.

Mr. Barlow enumerated three circumstances which were observable in this case, and which led him at once to suspect serious mischief of the brain. The first was the peculiar character of the pain, the second repeated sighing, and the third an extreme distress of countenance.

Some discussion afterwards took place between Mr. Linecar, Dr. Bird, and others, respecting the connexion which the tubercular deposit bore to the symptoms, and whether it was really a cause or effect of them.

May 11.

Copaiba in Inflammation of the Mucous Membranes.

Mr. Robarts related a case of nephritis, in which, after bleeding, and the ordinary treatment of that disease, some inflammatory symptoms still remaining, and suppression of urine more particularly, he exhibited copaiba in ten drop doses three times a day, with the effect of restoring the secretion.

Dr. Willshire regarded the practice in this case as a fresh fact in favor of the use of balsams. In America it was given with good effect in the acute stage of gonorrhea; eminent surgeons had given it in sub-acute cystisis. In Dublin, turpentine was administered with benefit in cases of chronic inflammation of the air passages.

Some discussion took place respecting the use of balsam of copaiba in the acute stage of gonorrhœa.

Mr. Linnecar never employed it until after antiphlogistic remedies had been resorted to, as it had a tendency to produce a metastasis of the inflammation to the neck of the bladder, owing, as he believed, to its extreme diuretic power.

Mr. Middleton remarked that there was no doubt the balsam, when given in the acute stage of the disease, immediately relieved the pain; but whether the practice was a good one, was another question.

Some conversation afterwards took place respecting affections of the air passages in which several members took part.

May 18.

Ovarian Disease; Colloid Matter in the Cyst.

Dr. Waller detailed the particulars of a case of ovarian disease occuring in a woman fifty-two years of age, in which all the symptoms and signs of the affection were well marked. It was eventually determined to draw off the fluid, but on introducing the trocar for that purpose, no fluid whatever came away, and only a small quantity of a substance resembling calves'-foot jelly. It was evident that the tumor was full of this substance. It was agreed, after a consultation with Mr. Walne, to remove the tumor entire—a proceeding not before contemplated in consequence of the very depraved state of health of the patient. Before this operation, however, could be resorted to, inflammation of the cyst and peritonæum came

on, and the patient died. On examination after death, the cyst filled almost the entire abdomen, and contained a jelly-like fluid, in a quantity so large, as to fill a pail. There were adhesions to the left side of the abdomen, but none above or below. Would this patient have survived an operation earlier performed? He (Dr. Waller) believed that she would not, and was glad no such step had been resorted to.

Dr. G. Bird had seen more than one such case, and several had occurred in the practice of his brother, Dr. F. Bird. The mass filling the tumor was of colloid character and pinkish hue, intersected by a thin, hyaloid-like membrane, containing a jelly similar in substance to the vitreous humor of the eye. There were no means of distinguishing this substance from the fluid whilst in the abdomen. Dr. F. Bird had a notion that this class of cases was peculiarly adapted for operations, and that they usually did well. He (Dr. G. Bird) referred to a very interesting case of the kind lately exhibited to the Society, and reported in The Lancet.

Dr. T. Thompson made some remarks on the treatment of ovarian dropsy by medicines, and believed that he had seen benefit in this disease from the administration of alkalies in long and continued doses. He briefly referred to two or three cases in which during the use of the solution of potash, ovarian tumors disappeared. He thought the potash did not act simply as a diuretic, but had a specific property in these diseases.

Dr. Waller and Dr. G. Bird believed that no kind of medicine had any effect in ovarian disease.

Dr. Theophilus Thompson gave some particulars of a case of cancer of the lung, in which all the signs and symptoms of the disease were clearly doveloped, but no post-mortem examination could be obtained.

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May 25.

Statistics of Consumption.

Dr. Theophilus Thompson gave a short report of some particulars which he had observed, during the last twelve months, as visiting physician to the Hospital for Consumption and Diseases of the Chest.—The number of patients treated by him during the year was 760, of which 286 were phthisis, in various degrees of advancement. Amongst seventy-seven cases of advanced phthisis, fifty-six were men, only twenty-one women; but of the cases of incipient phthisis, the number of males and females was nearly equal—a fact leading to the conclusion that the apparent preponderance of the former was attributable to the unwillingness or inability of women to leave their homes under circumstances of advanced disease. He remarked on the importance of prolonged expiratory murmur, when unconnected with bronchitis or emphysema, as an early indication of phthisis, and a sign, which, when once established, rarely disappears. He also particularly noticed, as a phenomenon of great interest and practical importance, the "inspiration saccadee" of some French authors—not the jerking respiration of spasmodic asthma, nor the interrupted inspiration of diffused pleurisy, but the division of the inspiratory murmur, as though the entrance of the air into the cells required several successive efforts. He had occasionally observed this sign at the back, as well as the front part of the chest. It sometimes disappeared under treatment; but there was reason to think it characteristic of a condition of the lungs which frequently immediately proceeded, or accompanied, tubercular infiltration. It was remarkable that of ten cases recorded during the year, the phenomenon had been in nine instances confined to the left side. He had during the last twelve months, taken notes of eight cases in which a murmur was heard in the second intercostal space, on the left side only, and was probably referrible to the pulmonary artery. In two of these patients the murmur disappeared under the use of iron; but in most, it was succeeded by more or less distinct manifestations of tubercular disease. He deferred any comments on cases of heart disease, bronchitis, and other pectoral affections, and concluding by mentioning the results of his observations regarding cod-liver oil, which he had administered in thirty-seven of the recorded cases. In three, the medicine was discontinued in consequence of the distressing nausea which it occasioned; in twelve, the reduction of strength appeared to be slightly retarded; in twelve, there was no perceptible effect; in ten, the increase of strength, plumpness, and energy was remarkable. When the fattening process was established, it generally became obvious within a fortnight. The author did not attribute to the oil any specific influence on the local disease; but believed it to be singularly efficacious in promoting nutrition. He had found it most useful to the pallid and phlegmatic, and, in private as well as public practice, had observed more decided amelioration under its employment than could be referred to any other remedial means with which he was conversant.

This being the last night of the session, the Society adjourned, after a short address from the President, until September next.

From the Transcript.

HUMAN MAGNETISM.

Mr. Editor:—As this all-absorbing theme appears to be the order of the day at present, we hope it will not be out of order to submit a few thoughts upon the subject, for public consideration, through the medium of your paper, together with some facts which occurred a few evenings since under our own observation. A number of young gentlemen of this city, on one evening of last week assembled for the purpose of witnessing, privately, an exhibition of some of the wonders of the above science. The experiments were conducted by a Mr. Keely, who has been engaged for the past week in public lecturing and demonstrating on Human Magnetism. Mr. K., by the way appears to be a man of considerable intelligence, and much of a gentleman in his deportment. Each of the gentlemen assembled, was requested to submit to a trial of the process by which the Professor brings about this mysterious influence. After consent had been given the magic coin was distributed, one piece being placed in the hands of each individual, and his eyes fixed closely upon it according to direction. He only succeeded, however, upon two of the persons present, one a resident of this, and the other of a neighboring city. Upon the latter of whom I shall endeavor to give briefly the results of the experiments, which were truly astonishing, and looked upon with a great deal of interest.

The gentleman in question was a firm believer in the truth of the science, in its early and more undeveloped forms, as presented by those who first agitated it. He has also been frequently operated upon by clairvoyance demonstrators, but averred most positively his conviction, that he could not be operated upon in the manner proposed by Mr. K., assigning as a reason that his manner of operating was in direct opposition to an established and fundamental principle of the science, viz: That the natural senses of the subject (while under the influence) were entirely destroyed, and that he only saw, heard, tasted, &c., through the senses of the operator, consequently the subject could not see any person or things, which the operator did not first picture vividly in his imagination.—After gazing, however, a few minutes upon the coin placed in hand, Mr. K. pronounced him fully under the magnetic influence. He requested him to rise to his feet and observed, that when he (Mr. K.) counted two, he would be compelled to open his eyes, and that he would be fully aroused mentally, but that his physical system would remain entirely under his control, which effect took place immediately after counting. He then went through his usual course of experiments, illustrating the fact that he thus held such control; such as requiring his hands to be thrown upon his head and fastening them there, until he willed their relief, and numereus other experiments of the same character. Mr. K. then wished to know if he desired to see any friend, he replied he did, and named two relations, both of whom were brought immediately before his imagination, and a near one who had been absent for five years. The scene which opened up at this imaginary meeting was indeed thrilling, we shall not attempt to describe it, as it would occupy too much space. The subject was then aroused but still avered that he was not convinced as to the point in controversy, i. e., that Mr. K. could not bring vividly to his mind any person or scene, unless he (Mr. K.) first pictured clearly and distinctly such person or scene in his own (Mr. K.'s) imagination he was not convinced from the fact that Mr. K. knew his relatives. Mr. K. then requested him to give his consent to be placed again under the influence, declaring that he would convince him beyond the possibility of a reasonable doubt. The gentleman refused at first, assigning as a reason, that he felt unwell and that he did not wish to go through the first process of looking at the coin as it was very fatiguing. Mr. K. remarked that although he felt perfectly relieved and fully aroused, yet his physical as well as mental powers were still under his control, here another controversy arose, and to settle the point, Mr. K. requested him to look him fully in the face; when he should command his hand to be fasted upon his head, and in spite of all the power and resolution he could sum up to resist it. He did so. He then required that after he should have counted four the subject should pass fully under the influences—which he did, closing his eyes. He then required that his eyes should be opened and fixed upon his, which was done forthwith. He then asked him if he had any friend in any quarter of the world that he desired to see. He replied he had, and after naming him was immediately introduced to one of the company as that friend by Mr K., who declared very impressively as he introduced him, that it was the person named. He immediately approached him shaking hands in the most familiar manner, exhibiting most strikingly and true to nature, all those agreeable emotions awakened by the unexpected meeting of the warmest friends after a long absence. He conversed freely and familiarly for perhaps fifteen minutes, passing all the usual congratulations upon such occasions, made numerous enquiries in relation to his business—wished to know if he had seen any old friends while absent, the individual replied he had not. However in the course of the conversation, the name of an old friend was mentioned as the subject, upon which Mr. K. immediately draws his attention and introduced him to another person as such friend. He approached him in the same manner and conversed as before. These experiments were repeated with the most perfect satisfaction, until he had introduced him to every person in the room. He expressed the utmost pleasure and satisfaction at meeting so unexpectedly the many friends that surround him. There were, I think, twelve gentlemen in the room. Then in conclusion as a cap sheaf to the entertainments, Mr. K. was requested to draw his attention from the crowd for a short time, and see if he could be brought back into it, and single out each individual by their respective names, as he had been introduced to them. Mr. K. remarked that he was not absolutely certain that the result would be perfectly satisactory, as it was a class of experiments new to him, as well as to us, but that he was well convinced that satisfaction would be given, merely from inductions from well ascertained facts and other experiments, in the course of his practice, it was tried and the subject succeeded in every instance to the satisfaction of all.

AN INVESTIGATOR.

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