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(We feel it our duty to present our readers with some interesting facts in support of the views which we have advocated in our leading articles. These facts are taken from Sir George Smith Gibbes on Life. In due time we shall present our readers with a solution of our fourth proposition.)

SIR GEORGE SMITH GIBBES ON LIFE.

It appears from well-established experiments, that all the animal tissues are resolvable, on decomposition, into minute bodies, which, in water and under the influence of the sun, possess life and activity. These animalcula, or, more properly speaking, these ultimate points of vital activity, cannot be further decomposed, except by the agency of fire, when they become subject to chemical laws, and assume the state of gas.

By the aid of the microscope, and with a little management, it may be clearly seen that many of the processes of life depend upon these minute animals, and that the ordinary laws of matter, or the laws which regulate the material world, are totally out of the question in explaining the phenomena presented by these, the apparent rudiments of vitality.

The vitality and activity of the animalcula infusoria depend upon the influence of the sun, under which every pool becomes tenanted by myriads of them all displaying, when examined by the microscope, the most unequivocal proofs of life.

The sun, the source of life as well as light, supplies this vitality in all the endless variety of organized and living action; and modifies matter, in all these processes, in a manner totally different from all physical and chemical principles. We might as reasonably compare a scar-

let color with the sound of a trumpet, as the phenomena of life and organization with any of the subjects, or any of the laws, of the material world.

The most subtle fluids, as heat, light, electricity, magnetism, &c., present phenomena which every new discovery brings nearer in affinity to the material world. Life, on the contrary, is wholly independent of all these, opposing the laws of matter in every instance, and defying, in all its combinations, those laws of affinity and attraction which form the foundation of the physical science. Organized bodies are endowed with properties totally different from all others, and no portion of such bodies is subject to the ordinary laws of nature, until every vestige of life be extinct.

Although in the dissecting room the human subject be dead as regards the creature then under consideration, yet the vitality is not lost, for every part of the organized structure resolves itself into new arrangements, and myriads of vital rudiments re-assert their rank in the living world. Thus manures supply them to the growing vegetable, and digestion prepares them for the use of animals. Built up as the human fabric is by innumerable myriads of living rudiments, we easily admit the fact, that every portion of it possesses vital powers : powers, in every possible view of them, wholly differing from the laws which regulate every subject of the material world.

About thirty years ago, I instituted a series of experiments respecting this very curious subject, which appeared then, as they now do, quite conclusive as to the essential purpose which the animalcula infusoria perform in the growth of vegetables. It was from considering the opinions of Ingenhouz, Priestly, and others, on the nature of the green matter which forms on water, that I was lead to examine very carefully with the microscope the animalcula infusoria, and to observe this matter, and the fibrillæ of the roots of other vegetables, whilst growing in water. Myriads of animalcula may be seen around the extremities of such vegetables, and it appears that these minute living bodies agglutinate themselves together, and *absolutely themselves become the added part;* so that the fibres seem to be nothing more than a congeries of these animalcula, forming the growing part. They may be seen like bees entering a hive, and making up, where fixed together, the fibre itself.

The whole substance of the conferva rivularis certainly appears to be nothing more than a condensed congeries of the animalcula infusoria.

If a basin of water be half shaded from the sun whilst the other half is exposed to its rays, we find the shaded water to be without the animalcula, whilst they swarm by myriads in the exposed portion.

If a sprig of mint be placed in this water, the fibres of the roots extend and grow in the illuminated portion, but they make no advance in the dark part. The animalcula are seen to be supplied on the one side, and to fix themselves on the ends of the fibres, and to increase them longitudinally; on the other side, the animalcula being absent, the roots do not grow. The increase of the several parts of vegetables seem entirely dependent on the supply which they receive of these animalcula by the roots, leaves, &c.; for the leaves and blades of corn, even when growing in a room, are terminated by drops of water evidently supplying these monades, which arrange themselves according to the necessities of the growing vegetable, and according to the impulse originally given, and continually supplied by the seed of the plant.

The whole history and nature of compost and manure lead to the conclusion, that, by certain decompositions of animal and vegetable matters, these first rudiments of life are again set free to become, under new arrangements, subservient to the growth of the renewed vegetation.

Although from a great variety of observations and experiments, which at various times, during upwards of thirty years, I have made on the animalcula infusoria,—although, from these experiments, I have been convinced of their importance in explaining many of the phenomena of animal and vegetable life, yet I never should have ventured to make my opinions public, until I saw that others had led the way in the same line of inquiry.

The subject having, however, been brought forward, I feel at liberty to detail some experiments corroborative of the opinions that have thus been promulgated.

If it be admitted that there exists a totally different series of laws which regulate the vital and the material world, it must be of importance to trace those laws in each instance.

There is no division of inorganic matter by which we can arrive at an ultimate living particle. In organized bodies we find a terminating rudiment evidently endowed with a power of spontaneous activity, beyond the simplicity of which we cannot go. This is the *monas termo*, so called for that reason.

Some recent and most highly interesting views of the animal economy

have appeared, wherein the composition of the human body is portrayed in a very novel and most curious manner.

"All the tissues of the animal body are shown to be ultimately resolvable into minute globules, as they are succesively disengaged from the mass, exhibit distinctly a power of spontaneous activity, moving about rapidly in all directions. In short, they become animalcula, possessing the power of locomotion, and have been named monades. It appears that these bodies are capable of existing as animals or vegetables, and of forming elementary parts of either.

"Thus, according to the above view of the subject, we arrive at the singular conclusion, that the human body, with all its organs, is built of animalcula, and that it is a congeries of countless millions of organized beings, each capable of living in a separate state, and perhaps exercising some of the functions of individual life, whilst incorporated with our system. It is not certain, but it is at least probable, that these monades form the last link in the chain of organic life, and that beyond them there is nothing but the ultimate gaseous elements.

"They are the units, we may reasonably suppose, by the addition or subtraction of which all the parts of the body are daily enlarged or diminished.

"The process of digestion, perhaps, consists merely in the operations necessary to separate these monades from the combinations in which they existed in the animal or vegetable substances which form our food; and that of assimilation, in the mode of conveying them to, and depositing them in, the various parts of the body for whose nourishment they are destined."

In my last communication I described the observations I had made on the part these animalcula perform in the growth of plants. In conformity with the object of the present paper, I shall describe some further experiments illustrative of the above view or the subject.

The green matter which spontaneously forms itself in vessels of water which are exposed to the action of the air, bears a strict analogy with the conferva rivularis and the tremella nostoc. If the property of producing oxygen gas during life and growth belongs only to vegetables, it would appear, from the experiments of Dr. Ingenhouz that there exists, in the three above mentioned vegetables, an insensible change from the animal to the vegetable kingdom, and *vice versa*.

Water which has been boiled, enclosed in an inverted vessel over mercury, does not produce the green matter, however exposed it may

be to the light; whilst spring water, on the contrary, generally produces it under the same circumstances.

Boiled water then exposed to the air and to light, will produce the green matter.

Boiled water enclosed in a vessel inverted over mercury, will produce the green matter, if any vegetable or animal substance be added to it, as blood, flesh, fish, bile, potato, indigo, &c. At first these substances are decomposed, the water gets turbid, and a mixture of hydrogen gas, azote, and carbonic acid, is disengaged; the water at length becomes green, and, in place of these airs, nothing remains but oxygen gas, in a state of very great purity. If this water be examined with a good microscope, when it becomes green, we see a great number of animalcula, which move freely about it. In following our observations with these animalcula, we see them after a time relent in their movements, and unite together, forming the green matter.

If this green matter be suffered to dry, and be broken to pieces, and, if the broken pieces be placed in water, animalcula, absolutely similar in form to those which had united themselves in the green matter, reappear, and move about freely in the water.

In observing this curious fact, which can be easily done by a drop of water being placed in a concave glass, and covered over with talc to prevent evaporation, the round bodies, which are the animalcula, observe at first a perfect immobility; after a time, they acquire an oscillating motion, which increases, and at last assume the activity and vivacity that they had previously to their forming the green matter.

After this, the animalcula unite, and again form the green matter, which produces oxygen gas when exposed to the light.

From following these experiments with Dr. Ingenhouz, and in watching the progress of vegetation under a variety of experimental management, I have long since felt the conviction that vegetables acquire their growth under the instrumentality of the animalcula infusoria; and that the preponderating influence which either the animal or vegetable exercises seems to determine the *monas termo*, or its combinations, towards the formation of one or the other.

Although we may combine, in numberless ways, the elements of almost all food, oxygen, hydrogen, carbon, and azote, by chemical means, yet we never can produce that composition which will nourish animal life. That power belongs elsewhere, and must be sought for in the knowledge of the laws of vitality.

ANIMAL MAGNETISM.

(*Concluded.*)

§ VIII. *Magnetism in our own Times.*

Somnambulism, of which the Ant-D. de Jussieu had obtained some glimpse in the practice of Eslon, but which was entirely overlooked by Mesmer and the magnetisers of that day, is at the present day the prominent fact of magnetism, and all that is required to resolve definitely the great question connected with it, is to make known and demonstrate the existence of the phenomena which constitute it. We shall see presently what the state of public opinion is on this point, and more especially the opinion of medical men. But first, not to anticipate, let us continue our simple relation of facts.

The first cases of artificial somnambulism were observed by the Marquis de Puysegur, at his estate of Busancy. He wrote as follows, 8th of March, 1784, to one of the members of the Societe de l'Harmonie.

"I feel great pleasure, sir, in communicating to you some experiments in which I am engaged at my estate. I am so agitated myself, I may even say so transported, that I feel I stand in need of some repose and relaxation, and I hope I shall find it in writing to one who is capable of understanding me. When I censured the enthusiasm of Father Hervin, how far I was from understanding the cause of it! Even now I am as far from approving it, but I excuse it. More fire, more heat of imagination, than probably I possess, have carried him away. Would that I, as also those who, like me, shall be engaged in animal magnetism, would contribute to restore composure to the mind of those who witness our extraordinary experiments, and that by our own composure. Let us, however, after Mesmer's example, make efforts to restrain ourselves; and, certainly, powerful efforts are required to prevent ourselves from being exalted to the very extreme point, when we see all the surprising and beneficial effects which a man with a kind heart and a desire to do good may produce by means of animal magnetism. I enter then on the subject, and with no inconsiderable ardor.

"After ten days' rest at my estate, without attending to anything but my repose and my gardens, I had occasion to enter into the house of my steward. His daughter was suffering from a violent toothache; I asked her in jest if she wished to be cured; she, of course, consented.

I had not been ten minutes magnetising her, when her pain was completely gone; and she felt no return of it after.

"Another woman was cured on the following day of the same affection, and in as short a time.

"This slight success made me try to do some good for a peasant, about twenty-three years of age, who had been keeping his bed for four days in consequence of inflammation on his chest.—I went to see him: it was last Tuesday, the fourth of this month, at eight o'clock in the evening; the fever had just become lighter. I made him get out of bed and magnetised him. What was my surprise to see, at the end of half a quarter of an hour, this person *fall into a tranquil sleep* in my arms, without pain or convulsion. I urged on the crisis, which caused him some giddiness in the head: he spoke aloud of his ordinary affairs. When I thought his ideas must affect him disagreeably, I arrested them, and began to inspire him with others of a more pleasant and more lively turn. It required no great effort on my part to accomplish this. Then I saw him quite happy, fancying that he was dancing at a *fete*, &c. I cherished these ideas in him, and thereby I *forced* him to move himself with considerable activity on his chair, as it were to dance to an air which, by singing *mentally*, I made him repeat quite loud. By these means I made the patient sweat profusely from that day. After an hour's crisis I quieted him, and left the room. A drink was now given to him, and having ordered some bread and broth to be brought to him, I made him on that same evening eat a considerable quantity, a thing which he had not been able to do for the last five days. He slept all that night, and the next day, not remembering my visit of the evening, he informed me of the improved state of his health. I gave him two crises. Wednesday and Thursday I had the satisfaction of seeing him affected merely with a slight shivering. Every day I had the patient's feet put into water for the space of three hours, and gave him two crises a day. To-day (Saturday) the shivering lasted a less time than usual, his appetite was kept up, he enjoyed a good night's rest; in fine, I had the satisfaction of seeing him perceptibly better, and I expect that in three days more he will resume his usual employments, etc."

Many facts of a similar nature have been published by M. de Puysegur since this letter; and since this period, cases of artificial somnambulism have been so multiplied, that there is now scarcely any person who has not had an opportunity of collecting some. This novel order

of phenomena must necessarily modify the first ideas formed of magnetism; every thing is now changed in the processes, as in the theory.

A *nervous fluid* has been substituted for Mesmer's *universal fluid;* but this modern hypothesis scarcely deserves mention, for in the natural sciences the facts alone are more or less immutable, and the explication given of them depends on the turn of mind, and the degree of knowledge of the men who observe them. But it cannot be disputed that the question of animal magnetism has really changed soil since the discovery of Puysegur; and that when M. Foissac proposed, in 1826, to the Academy of Medicine the examination of a case of somnambulism, the object was by no means to resume and reconsider the observations of 1784, but rather to observe a something altogether new. Messieurs, the members of the Academy, charged by their colleagues to avail themselves of the opportunity of a new commission, expressed themselves in the following terms:

"1. The decision formed in 1784 by the commissioners charged by the king to examine animal magnetism should not, by any means, sanction you in dispensing with examining it *de novo*, because in science no decision whatever is absolute and irrevocable.

2. Because the experiments, on which this judgment was founded, appear to have been conducted without the simultaneous and necessary assembling together of all the commissioners, and also with moral dispositions, which, according to the principles of the fact which they were appointed to examine, must cause their complete failure.

3. Magnetism, thus judged in 1784, differs entirely in theory, processes, and results, from that which close, attentive, and strict observers, and which enlightened, indefatigable physicians, have studied in later years.

4. It is to the honor of French medicine not to remain behind German physicians in the study of the phenomena, which the enlightened and impartial favorers of magnetism declare to be produced by this new agent.

5. In considering magnetism as a secret remedy, it is the duty of the Academy to study it, to subject it to trial, finally, to take away the use and practice of it from persons quite strangers to the art, who abuse this means, and make of it an object of luore and speculation.

After all these considerations, your Commission is of the opinion, that the section should adopt the proposition of M. Foissac, and appoint

a special commission to direct their attention to the study and examination of animal magnetism.

(Signed) ADELON, PARISET, MARC, BURDIN, sen., HUSSON, *reporter.*"

After long debates, these conclusions were adopted by the Academy, and the commission called for in October, 1825, was at length formed in May, 1826; consisting of MM. Leroux, Bourdois de la Motte, Double, Magendie, Guersant, Husson, Thillaye, Marc, Itard, Fouquier, and Gueneau de Mussy.

Almost immediately after their nomination, the commissioners commenced their task, and continued it up to the middle of the year 1831, at length, at the sittings of the 21st and 28th of June of the same year, communicated to the Academy, through M. Husson as their organ, the results of their observations.

M. Husson's Report, remarkable in more points than one, will always form an epoch in the annals of magnetism; and it would be difficult for us to give our readers a more distinct and authentic idea of the existing state of the science, than by transcribing for them literally the conclusions of this Report.

§ IX. *Conclusions of M. Husson's Report in* 1831.

1. The contact of the thumbs or of the hand, frictions or certain gestures made at a short distance from the body, and called *passes*, are the means employed to connect, or, in other words, to transmit the action of the magnetiser, to the magnetized.

2. The means which are external and visible are not always necessary, since, on several occasions, the will, fixedness of stare, have sufficed to produce magnetic phenomena, even without the knowledge of the magnetised.

3. Magnetism has acted on persons of different sexes and different ages.

4. The time necessary to transmit and communicate the magnetic action has varied from one hour to a minute.

5. Magnetism does not act, in general, on persons in good health.

6. Neither does it act upon all who are sick.

7. During the process of magnetising, insignificant and momentary effects manifest themselves sometimes, which we do not attribute to magnetism alone; such as slight oppression, heat or cold, and some other nervous phenomena, which may be accounted for without the in-

tervention of a particular agent, namely, through hope or fear, prejudice, and the expecting of something strange and new, the *ennui* occasioned by the monotony of the gestures, the silence and calm observed during the experiments, and, finally, through the imagination which exercises so great a dominion over certain minds and certain organizations.

8. A certain number of the effects observed have seemed to us to depend on magnetism alone, and are not reproduced without it. These are well attested physiological and therapeutical phenomena.

9. The real effects produced by magnetism are very varied; it disturbs some, tranquilizes others; most usually it causes the momentary acceleration of the respiration and circulation, temporary convulsive movements of the fibres, resembling electric shocks, stupor more or less profound, somnolence, and, in a small number of cases, that which magnetizers call *somnambulism.*

10. The existence of some one character proper to make known, in all cases, the reality of a state of somnambulism, has not been ascertained.

11. However, we may conclude, with certainty, that this state exists, when it occasions the development of new faculties, which have received the denominations of *clairvoyance, intuition, internal prevision;* or, when it produces great changes in the physiological state, as *insensibility, a considerable and sudden increase of strength,* and when this effect cannot be attributed to any other cause.

12. As among the effects attributed to somnambulism there are some which may be simulated, somnambulism itself may sometimes be simulated, and furnish charlatanism with means of deception. Also in the observation of those phenomena which still present themselves as isolated facts, which can be connected with no theory, it is only by the most attentive examination, the most strict precautions, and by numerous and varied trials, that we can escape illusion.

13. Sleep brought on with more or less readiness, and established to a degree more or less profound, is a real but not a constant effect of magnetism.

14. We are satisfied that it has been excited under circumstances where those magnetised could not see, and were entirely ignorant of the means employed to occasion it.

15. When once a person has been made to fall into a magnetic sleep, there is not always a necessity to have recourse to contact and to passes

in order to magnetize anew. The look of the magnetizer, his will alone have the same influence on the person. In this case, one may not only act on the person magnetised, but even put him completely into somnambulism, take him out of it without his knowledge, out of his sight, at a certain distance, and through closed doors.

16. There usually occur changes, more or less remarkable, in the perceptions and faculties of those individuals who fall into a state of somnambulism by the effect of magnetism.

A. Some, amid the noise of confused conversations, hear only the voice of their magnetizer; several answer with precision the questions put to them either by the latter or by the persons near them; others hold conversations with all the persons around them; however, they seldom understand what passes around them. Most of the time they are entirely strangers to the external and unexpected noise made in their ears, such as the sound of copper vessels forcibly struck, the fall of any heavy substance, &c.

B. The eyes are closed: the eyelids yield with difficulty to the efforts made with the hand to open them. This operation, which is not without pain, allows one to see the eyeball convulsed, and directed towards the upper and sometimes towards the lower part of the orbit.

C. Sometimes the sense of smell is, as it were, abolished. One may make them respire hydrochloric acid of ammonia, without their being inconvenienced by it, or without even suspecting it. The contrary occurs in certain cases, and they are sensible to odors.

D. Most of the somnambulists that we have seen were completely insensible. One might tickle their feet, nostrils, and the angle of the eyes by the approach of a feather, pinch their skin so as to produce ecchymosis, prick it under the nails with pins put into a considerable depth, without their evincing any pain or being at all aware of it. In a word, we have seen one person who was insensible to one of the most painful operations of surgery, and whose countenance, pulse, or respiration, did not manifest the slightest emotion.

17. Magnetism has the same intensity, it is as promptly felt, at the distance of six feet as of six inches, and the phenomena developed by it are the same in the two cases.

18. The action at a distance does not seem capable of being exercised with success, except on individuals who have been already subjected to magnetism.

19. We have not seen that a person magnetized for the first time fell

into a state of somnambulism; sometimes it was not till the eighth or tenth sitting that somnambulism declared itself.

20. We have constantly seen ordinary sleep, which is the repose of the organs of the senses, of the intellectual faculties, and of the voluntary movements, precede and terminate the state of somnambulism.

21. Whilst they are in a state of somnambulism, the magnetised persons we have observed retain the exercise of the faculties which they have whilst awake. Their memory even appears to be more faithful and more extensive, since they remember what has passed during all the time, and on every occasion that they have been in the state of somnambulism.

22. On their awaking they say that they have entirely forgotten all the circumstances connected with the state of somnambulism, and that they never remember them again. With respect to this we can have no other surety than their own declarations.

23. The muscular strength of somnambulists is sometimes deadened and paralyzed; at other times their movements are but constrained, and somnambulists walk or stagger like persons intoxicated, and without avoiding, though sometimes carefully avoiding, the obstacles which they meet in going along. There are somnambulists who retain in fact the exercise of their powers of moving; some are seen to be even strongre and more active than in the state of being awake.

24. We have seen two somnambulists distinguish with their eyes shut the objects placed before them; they have told, without touching them, the color and value of the cards; they have read words traced with the hand, or some lines of books opened by mere chance. This phenomenon took place even when the opening of the eyelids was accurately closed by means of the fingers.

25. We met in two somnambulists the power of foreseeing acts of the organism more or less complicated. One of them announced several days, nay, several months before hand, the day, the hour, and the minute, when epileptic fits would come on and return; the other declared the time of the cure. Their previsions were realized with remarkable exactness. They seemed to us to apply only to acts or lesions of their organism.

26. We have met but one somnambulist who described the symptoms of the disease of three persons with whom she had been brought into contact. We instituted researches, however, on a considerable number.

28. To establish with any accuracy the relations of magnetism to therapeutics, it would require to have its effects observed on a great number of individuals, and to have experiments made on the same patients for a considerable time and every day. This not having been done, the Commission must restrict itself to saying that which it has seen in too small a number of cases, without pronouncing anything.

28. Some of the patients magnetized have felt no benefit; others have experienced a relief more or less marked, viz: one the suppression of habitual pains, the other the return of strength, a third a retardation for several months in the recurrence of epiletic attacks, and a fourth the complete cure of a severe paralysis of long standing.

29. Considered as an agent of physiological phenomena, or as a therapeutical mean, magnetism must find its place in the *cadre* of medical knowledge; and, consequently, medical men only should practice it, or watch and superintend its employment, as is done in the northern countries.

30. The Commission has not been able to verify, for the want of opportunity, other powers which magnetizers have declared to exist in somnambulists; but it has collected and communicated facts sufficiently important to induce it to think that *the Academy should encourage the researches on magnetism, as a very curious branch of psychology and natural history.*

The Commission having arrived at the termination of its labors before the closing of this Report, asked itself whether, amid all the precautions with which they had surrounded themselves to avoid surprise; whether with the feeling of constant distrust with which they had always proceeded; whether in the examination of the phenomena observed by them, they had scrupulously performed their duty? What other course, said we to ourselves, could we have followed? With what distrust more marked or more cautious could we have been influenced? Our conscience, gentlemen, has answered us aloud that you could expect nothing from us which we have not done. Then have we been honest, accurate, faithful observers? It is for you who knew us for so many years, for you who see us constantly either in public life or in our frequent meetings, to answer this question. Your answer, gentlemen, we expect from the old friendship of some of you, and from the esteem of all.

Certainly we do not presume to make you share our conviction re-

garding the reality of the phenomena observed by us, and which you have neither seen, nor followed, nor studied with us and as we did.

We do not, then, claim from you a blind credence in all that we have reported. We conceive that a considerable portion of these facts are so extraordinary, that you cannot grant it to us; probably we ourselves would presume to refuse ours, if you came to announce them at this tribunal to us, who, like you, had neither seen, observed, nor studied any of them.

All we require is, that you judge us as we should judge you; that is, that you would be convinced that neither the love of the marvellous, nor the desire of celebrity, nor any interest whatever has guided us in our labors. We were animated by motives of a loftier character, more worthy of you—by the love of science, and by the necessity of justifying the hopes which the Academy had entertained of our zeal and our devotion.

"(Signed) Boudois de la Motte, *president;* Fouquier, Gueneau, de Mussy, Guersant, Itard, J. J. Leroux, Marc, Thillaye Husson, *reporter.*"*

The report of M. Husson produced a great impression on the Academy. However, if it awakened some doubts, it produced few convictions. No one could question the veracity of the commissioners, whose good faith, as also their great knowledge, was undeniable; but they were suspected of having been dupes. In fact there are certain unfortunate truths which compromise those who believe in them, and those especially who are so candid as to avow them publicly. Magnetism is among the number of these truths. But let magnetizers console themselves and take courage; posterity has done justice to Galileo; in their turn posterity will render them justice. The past answers them for the future; for if they open history, they will there see that at all times the academies were as they are at the present day, barricaded citadels against all innovation. Truth penetrates them only by stratagem most frequently, but sometimes also it enters there by force, when, after having successively attacked all understandings, it assails the walls of the sanctuary by its boisterous waves, and, finally, forces them to crumble.

Here our historical notices regarding animal magnetism terminate; for the academical discussions of the following years, the prize propo-

* MM. Double and Magendie, not having been present at the experiments, did not deem it right to sign the report.

ued in 1837, and Gerardin's Report in 1838, do not seem to us to constitute any new phases in this history.

With respect to ourselves, our profession of faith is, that animal magnetism will have acquired, after a little, the right of being enrolled among the discoveries which do most honor to the human mind.

DE OBFUSCATIONIBUS.

(*Concluded.*)

* * "I wish, now, to point out the *signs* by which those who are *rightly possessed* by the gods may be known. They either *subject the whole of their life as a vehicle or instrument* to the inspiring Gods; or, *they exchange the human for a divine life;* or they energize with their own proper life about divinity. But they *neither energize according to sense*, nor are in such a vigilant state, as those who have their senses excited from sleep (for in sleep they do not apprehend future events,) nor are they moved as those are who energize according to impulse. Nor, yet, *are they conscious of the state they are in*, neither as they were before, nor in any other way; *nor*, in short, do *they convert to themselves their own intelligence, or exert any knowledge which is peculiarly their own.*

"The greatest indications however are the following; that many, through divine inspiration, are not burned when fire is introduced to them, the inspiring influence preventing the fire from touching them. Many though burned, do not apprehend that they are so, because they do not live an animal life. Some, though transfixed with spits, do not perceive it; and others that are struck on the shoulders with axes; and others that have their arms cut with knives, are by no means conscious of what is done to them. Their energies, likewise, are not at all human. Inaccessible places become accessible to the divinity inspired; they are thrown into fire, and pass through fire, and over rivers, like the priest in Castabalis, without being injured. But from these things it is demonstrated that those who energize enthusiastically are not conscious of the state they are in, and that they neither live a human nor an animal life according to sense or impulse, but that they exchange this for a certain more divine life, by which they are inspired and perfectly possessed."

There is more of this in my author, scattered through some hundred and fifty 8vo pages; but here is enough to afford an inference that strange facts must have existed before so elaborate an explanation of them could have been devised and published. That many of these facts coincide with those of mesmerism no one need be told who has given the least attention to this *modern* science.

But a *Sadducee* might ask—if there be anything real in all this—why is it that the world has been ignorant of it so long? and why have not men in different ages been found to assert the existence of these phenomena, from time to time?

If it be not admitted to be a reasonable answer to say, that all history represents the world as progressing, not *visibly* in a regular order, but in *periods* or *cycles*, and that remarkable men only appear at intervals of time, embracing whole centuries;—as, in the physical world, we see that comets have very unequal orbits, the great comet of 1680 requiring a period of some 500 years to complete its circuit; then, let it be maintained, and perhaps it can be easily established, that some of the mysteries connected with the phenomena of Mesmerism *have always found advocates in the world.*

Who does not know the long, very long period during which Magic was believed in? Magicians have been in the world since long before they contended against Moses in the presence of Pharaoh. During many hundred years of what are called the dark ages, history is full of accounts of condemnations, confessions and burnings of Magicians, *together with their books*, so that we of this age cannot ascertain *from their own books what those Magicians asserted, practised and died for*, but must depend upon a few fragments preserved *by their enemies.* To those who look into this subject, it will be matter of astonishment that, in almost every case where anything is known of the character of those accused of Magic, they were men of great genius and learning, far beyond that of their age. I will here throw in a few notes from Bayle's Dictionary alone. *Roger Bacon* was himself accused of Magic, and yet his admirers in this age are discovering or pretending to discover that he anticipated almost every remarkable invention brought to the "benefit of man" since his day—even that of steam power itself. He preceded his great name-sake, Sir Francis, and it is stated that he held books on Magic in great respect, and gave the opinion that they ought to be preserved, assigning as a reason that the time was approaching when the world would be obliged to peruse and consult them on some

occasions." It is no great piece of extravagance to say that the time is now—not for the purpose of reviving astrological fictions and other similar fooleries, but to see what *facts* have been recorded, and to turn them to the proper interpretation of nature.

Henry Cornelius Agrippa is called "a great Magician." He was born in Cologne in 1446. Bayle says, "it cannot be denied that he was a very great genius, and had a very extensive knowledge of languages and things." He was at one place persecuted by the Monks—had to leave another place because he protected a countrywoman who was accused of witchcraft. He met with persecution everywhere, equally for a work on the Vanity of the Sciences and one on *Occult Phylosophy*, and died, some say, in the Hospital at Grenoble, 1533. He is said to have been "miserably enchanted to the most cunning and execrable magic that can be imagined, and of which he made such evident profession, in the sight, and to the knowledge of every one, that it is impossible to deny it by palliations or disguises." Some said that, "by magic art, he griped his enemies with his crooked and gouty hands, in such a manner that many valiant Captains would not do the like with the clashing of their arms and a furious fight." One may reasonably wish to know what *fact*, if any, lay at the bottom of such a story as this. In his occult philosophy, he is represented as saying, that we must look for the principle of the operations in ourselves—and talks of "communicating from one spirit to another;" and he afterwards speaks of the understanding as the key to this philosophy, but insists that it is necessary "to be united to God, freed from matter, dead to the world, to the flesh, to all the senses, and to the whole natural man."

Alchindus, about the 11th century, is said to have written a work entitled De Theorica Magicarum Artium, which induced all the Demonographers to represent him as a dangerous magician; and yet it is said that his sole view was to account in a natural way for all that is attributed to good and bad angels; and it is mentioned, as one of his opinions, that sublunary things depend wholly on heavenly, and that they mutually receive their properties from each other, and that each receives from the whole, by means of certain *effluvia*,—you remember the extracts from Plutarch,—which, passing from the least to the greatest, are the cause of all the phenomena of nature. Who, in this age, can say what is contained in the Theorica Magicarum Artium?

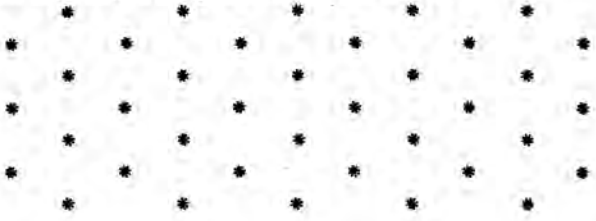
Peter Aponus was born in 1250, near Padua, and is said to have been one of the most famous philosophers and physicians of his times; but

he was "*suspected of magic*, and "prosecuted on that account by the Inquisition." He also, it is said, endeavored to account for the wonderful effects which often happen in nature, without attributing them to angels or demons, and to have laughed at sorcerers and their nocturnal meetings." Who, in this age, knows what is contained in his "*156th Disputation of his Conciliator*?" The answer may be, not only that no one knows, but that no one cares;—very well, but how can any one deny that Mesmerism may find proofs there? The argument against Mesmerism, I am supposing to be, that the world has known nothing of this subject in ages gone by; and yet who can assert this and say at the same time he neither knows nor cares what ingenious men have written upon the mysteries of nature in untold ages past?

Who, in this age, knows what is contained in a tract entitled De Incantationibus, written in the 15th, or beginning of the 16th century, by Peter Pomponatius, who was born at Mantua, 1462, and who is said to have been "endowed with excellent parts, and accounted one of the greatest philosophers of his age?" Some of the books of this man were burnt under a persecution, and the man said to have been an "infamous magician, who vented some impious things about the occult virtue of sorcery and imagination;" yet it is said of him "that he believed nothing of what is said about magic and witchcraft." Bayle says "he lays great stress on I know not what virtues that some men have had, whereby they produced extraordinary effects, and alleges many instances of it; but his adversaries do not allow that they are true, or free from magic." And again, another writer says "that Pomponatius brings many examples to prove that there is a special and individual virtue in some men to perform wonderful things, particularly in the cure of diseases," &c. This was some 350 years ago, long before Maximilian, Holt, or Mesmer, were heard of in the world. Who can suppose this allusion of Pomponatius to a mysterious virtue 'in some men,' by which they effect cures, can have been utterly without foundation? Yet what is it but a sort of anticipation of the Mesmeric theory or practice, so far as the power of effecting cures enters into that theory?

But I have not undertaken to advocate the theory. I only say there are some facts reported long since, incidentally,—so far as Mesmer's theory is concerned,—which seem to favor it; and, if the Mesmeric doctrine could be established from independent sources, then these facts

would undoudtedly be placed in direct relation with it, and the two would mutually throw light upon each other. After reading these extracts, let me know what you think of the matter.



SWEDENBORG'S ANIMAL KINGDOM.

(*Continued.*)

The blood is the product of the whole organic system. The brain and lungs give it soul and spirit; the abdominal viscera, by means of the food, supply it with body or embodiment; wherefore each globule is an image of man inasmuch as it has both a soul and a body. Every viscus contributes a distinct share to its generation and regeneration. The animal spirit is its organizing principle. The blood consists, in the language of Swedenborg, of mere simples; that is to say, it contains the primal unities of all the series in the body, and being readily resolvable into each, can give origin and seed to all its possible compounds, whether they be solids or fluids: Nothing exists in the body that did not pre-exist in the blood. As it is distinctly compounded of a triple order of substances, so during each round of the circulation it is distinctly decompounded or resolved into each. Its spirit, spiritous lymph, and bodily portion are sundered as often as it circulates; the former is claimed by the cortical substances of the brain; the lymph is rendered back to the blood in a circle by the lymphatics; and the embodiment, by the veins. The reason why it undergoes this revolution is, that thereby, when its simples are disengaged, it gives birth to all the vital fluids, and renovates all the solids; and moreover submits itself to perpetual purification, self-examination, or lustration. Those portions of it which are no longer of use are thrown out of the system by various excretions, the loss thus occasioned producing that sense in the little veins all over the body, which in the aggregate we term hunger and thirst.

The blood of the jugular veins which has been de-spirituated in the brain, is vivified afresh in the lateral sinuses, by a spirituous lymph sent forth from the pituitary gland, which is the conglobate gland of the cerebrum. Thus the effete spirit of the brain unites with its effete blood, and both together serve as menstruum, medium, or saliva for introducing the new chyle into the sanguineous system. It is for this reason that the thoracic duct is inserted at or near the bottom of the jugular vein. But the circulation of the blood, although it may be considered by itself, yet like all things in the body, is but a part of a more universal order, termed by our author the circle of life; and which involves in one the circulation of both the blood and the spirits.

All the fluids of the body institute circulations after the image of the circulation of the blood. Such may be readily seen to be the case with respect to the saliva, the bile, the fat, &c., &c.

The circulation of the animal spirits, supplied to the brain through the corporeal fibres from the ethereal media of the universe, as well as by the blood of the carotid arteries, and elaborated in the cortical substances, is not a simple circle, like that of the blood, but a transcendent circle, leaping from series to series, omnipresent in all things and conjoining all. For the spirit is propelled by the cortical substances or "corcula cerebri" through the medullary and nervous fibres; by the nervous fibres into the arteries, where it is inserted into the globules of the blood, and constitutes their life and soul; and it is carried back in the blood by the carotid arteries to the same cortical substances, there to be purified, conjoined with fresh spirit, and begin its circle anew. The animation of the brain is the first moving cause of the circulation of the spirits; the respiration of the lungs the secondary or corpereal cause, which operates by a general traction upon the external membranes of all the organs, vessels, and fibres of the body. For the brains give the universal or most internal life of the body, and in this respect, as propulsive causes, represent the capillaries or distinct corcula of the nervous circulation; the lungs, the general, or most external life, and represent the one heart of the same.

The above doctrine may conveniently suggest the idea, that points of analogy are not points of sameness or identity, but in reality, of harmonic difference. The circulation of the blood is one thing, and images tha of the spirits; but notwithstanding the circulation of the spirits is quite another. Each fluid has its own peculiarities, and its circle is applicable only to its own sphere. It is an abuse of analogy if we use it to

destroy and not to reconcile differences; and if so abused, it becomes a childish and paltry instrument, totally inadequate to guide the mind through the labyrinths of nature. To revert to the present case, it has been attempted to be shown, that the circulation of the animal spirits is a simple circle, precisely like that of the blood. But for the purposes of analysis, it ought to be paralleled with what is higher than itself, and not with what is lower. Let us take as illustrative the grand circle involved in generation; for "all things that involve an end constitute a circle." In this example, the male and female conspire to generate a new being; the male fluid is propelled out of the body into the body of the female, or from one series into another; here it is developed or embodied, and is again propelled from the maternal series into that of the external universe; afterwards it is developed inwards from the body to the mind, and when its circles of education and information are completed, it returns as a member of that society from which it proceeded, to commune with the principles that gave it origin in the parents, to amplify their sphere, and enlarge their amount of social life. The circulation of the spirits is more like this of generation, than like that of the blood; for being a universal it belongs to the sphere of universals, and is but poorly imaged in particulars, which are, indeed, but portions of itself.

We have already treated of the limits of the circulation considered as proceeding from the heart, and have had occasion to hint at the attraction exercised by the several organs. The truth is, that the latter demand different and varying quantities and qualities of blood at different times, according to their different states as determined by and determining the state of the body; and that the heart and aorta, as a propulsive power, can have no share in apportioning these. Hence an attractive force is given to the viscera themselves, whereby all the commodities in the body are placed at their disposal; or as Swedenborg says, "they are enabled to summon what they require, from the universal mass of the blood." For each organ, and each part and particle of each, is an individual member of a perfect society, possessing the form of a stupendous rationality whereby to discern its wants, and of an equal liberty to enable it to supply those wants from the community, on the condition of reciprocation of use: not the smallest intrusion upon its individuality by the common powers is permitted for a moment; for should this take place, disease is the inevitable consequence. But let it not be imagined that the attraction exerted by the organs is of a violent character, or that their movements are other than gentle and tranquil. It is

unnecessary that such should be the case; inasmuch as there is always a propulsion or incitation corresponding to the attraction or invitation, so that what the organ demands is immediately supplied. For when the unities or leasts of an organ expand to draw in their blood, their vessels contract to propel it; and by virtue of the simultaneous expansion of the unities and contraction of the vessels, the size of the organ is scarcely altered, and its motion is almost imperceptible.

The motions of the organs of the body are an important subject in Swedenborg's theory; occasionally seen in glimpses by many writers, among whom may be instanced our own philosophic Glisson,* yet not recognized by them as a necessary law. It has been remarked before, that the lungs and the brains give each organ a universal motion, at once internal and external. But it would be an error to suppose, because the motion communicated is one and the same, that therefore it is not received and appropriated differently, in other words, modified, by the organs themselves. So truly is this the case, that the motion takes place in every instance in accordance with the geometrical form of the organ, as made up of lesser and least parts, and these forming axes, diameters and circumferences, general, specific, particular, and singular. Always indeed it is expansion and constriction, these being nature's own motion, and pervading the universe, elemental, material, and organic. Nevertheless it is an expansion and constriction proceeding according to the form of the organ. As a general rule, the most fixed point of every organ is its centre of motion, from which its expansion and constriction begins, to which it returns, and in which it terminates. For each organ is an individual, made up of an affinity of lesser individuals, whereof one and all live their own lives, exercise their own forces, and perform their own actions, and only rely upon the general system for supplies, which they can convert to use in their own way, and according to their own essence: and this, no matter whether the supplies be supplies of blood and fluids, or supplies of motion. The material always comes from without, but the disposal of it from within. These motions convert the organs from powers into forces; so that it may be stated as a law, that the heart and the blood generate the body; but that the brain and the lungs make use of it, and wield it as an instrument of action. As a rude illustration of this, we may instance the case of human machines. The fabrication of a steam engine by artificers in the workshop is one thing, and analogons to the formation of the body by

* Glisson is well worth consulting on the motion of the liver; see his "Anatomia Hepatis," pp. 62, 63, 67, 68, 69; 12 mo., Amsterdam, 1659.

the blood, the vessels, and the heart; but to make use of the same engine requires altogether a different series of powers,—fire, water, steam, and a new order of workmen, analogous to the brain, the lungs, and their motions.

As motion is a necessary condition of actual life in the whole body, and all its organs and their parts, so likewise is sensation. For without sensation the organs would not be able to exercise their attractions and repulsions with benefit either to themselves or the system. The cerebrum is our general sensorium, in which we are conscious of all the impressions that rise from the external sensoria, of sight, hearing, smell, taste and touch; which sensoria occupy the circumference of the body: but the cerebellum takes cognizance, apart from our consciousness, of all the impressions that are made in the interiors of the body; namely, of every contact,* in general and in particular, between the solids and the fluids. Therefore, the cerebellum is aware of the whole state of the kingdom of the body in its minutest details, and disposes and governs it agreeably to the ends for which corporeal life is instituted. Now, the human frame, unlike that of other animals, is co-ordinate with the *whole* external universe; it is an organization co-related and responsive to the entire series of the natural creation. The brain is a form of the elemental kingdom; the lungs, of the atmospheric world; and the abdomen, of the terraqueous globe. Nothing less than this can be the case, inasmuch as the body descends from the highest sphere to the lowest, and, by the heart and its vessels, reascends from the lowest to the highest, and thus doubly draws with it the order of the universe. Each degree of the body involves a sensation of its external co-ordinate. Of the external senses specifically, sight is co-ordinate with the ether, and apprehends its modifications; hearing, with the air, and perceives its vibrations; smell, with the effluvia of matter; taste, with the essences of body; and touch, with body in its ultimate or concrete form. The first two senses therefore are atmospheric senses; the latter, material, and may be fitly regarded as different forms of touch. There are then three grand genera of touch. The first genus prevails all over the circumference, and constitutes touch proper: the second prevails in the innermost parts of the body, beginning from the

* It is suggested to the medical reader to consider, whether Swedenborg's theory, that the sense of touch, and its organism and accidents, pervade every particle of the body, lends any support to the remarkable view taken by Hahneman, that seven eights of the chronic meladies afflicting the human frame are forms of psora, and that *all* such maladies are referable in some sense to three types of skin disease.

tongue; namely, in the œsophagus, the stomach, the intestines, and all the viscera of the abdomen, and at the threshold of this series is called taste: the third genus prevails likewise in the innermost parts of the body, but beginning from the nares; namely, in the trachea, the larynx, and the lungs, or in the viscera of the thorax, and at the entrance to these is called smell. The sense of taste again is divided into as many species as there are viscera of the abdomen, and these species into as many particular differences as there are unities in each viscus. "From the variety of the particular sensations of one viscus, a common sensation arises; and from the variety of sensations of many viscera, a still more common sensation arises. And from all and each of these sensations conveyed by the fibres to the cerebellum, the soul, by means of this sense, here apperceives specifically the states of chylification, sanguification, and purification; in a word, of nutrition; and according to the perception, disposes those viscera to the conservation of the whole and the parts, which is the effect and use that this sense produces." The villi on the internal surfaces of the abdominal organs are the papillary sensoria of the above sense.

Surgery and Mesmerism.—On Tuesday morning last we beheld one of the most interesting exhibitions which it has ever been our fortune to witness. We allude to an operation for strabismus (squinting,) performed by Dr. Ashley, No. 40 Hudson street, on the person of a youth some nine years old. The lad was first placed in a magnetic sleep by the Doctor, which process occupied about five minutes, after which, aided by an eminent medical professor, the otherwise painful operation was performed of cutting the contracted muscle of the eye, and restoring that organ to its appropriate equilibrium. We are told that when this operation is performed, while the patient is awake, two or three persons are required to hold him in the proper position; but in the present instance, not a muscle was moved, and the boy lay as still and composed, as if he enjoyed a gentle slumber.

There were present during the operation, several highly intelligent members of the medical profession, besides gentlemen of the press and others, the scepticism of several of whom was entirely removed by the interesting experiment, among which class we are ourselves included. The old saw says, 'seeing's believing,' and in an instance where there could be no possible collusion, we do not feel at liberty longer to doubt the practicability of rendering mesmerism subservient to the difficult practice of surgery in almost every case.—[Golden Rule.