Artificial Insanity, chiefly in relation to Mental Pathology. By Daniel Hack Tuke, M.D., formerly Visiting Medical Officer to the York Retreat.

(*Concluded from 'Journal of Mental Science,' April*, 1865, *p.* 66.)

Enumeration of physical symptoms (*continued*).—With regard to the contraction of the pupil which in the first instance takes place, it is doubtless due to the act of shortening the focal distance when gazing at a near object.* Dilatation succeeds, and continues even during the early stage of the nervous sleep, but after some time has elapsed, the pupils contract as in ordinary sleep. During both periods—that of dilatation and the subsequent contraction — the pupils, according to Mr. Braid, are insensible to light.

It would be easy to extend this enumeration of physical symptoms by including those of the advanced or complete stage of Braidism, but for the present purpose I am anxious to restrict myself to the early stage, as that which illustrates the object I have directly in view—the pathology of insanity.

It will be seen that the symptoms are slight; the difficulty with even these is to be quite sure that they are necessary accompaniments, and not accidental complications. Thus, there may be no acceleration, but a lowering, of the pulse in the earliest stage, prior to any general muscular rigidity, and when the eyes are but gently raised. Again, the congestion of the conjunctiva does not prove there is any cerebral fulness, but may be wholly due to straining the eyeballs. In short, I believe that a very remarkable susceptibility to suggestions may be induced without any apparent change in the bodily condition, a fact which is paralleled, sufficiently often, by the state of some insane persons.

Slight, however, as are the symptoms, there are indications of incipient or partial unconsciousness — such are confusion of thought, vertigo, headache, &c. These are early signs of ultimate loss of consciousness, just as in the approach of ordinary sleep one of the external senses becomes dulled before the others; *e. g.* we are alive to sounds when the retina is no longer sensitive to light.

Returning, then, to the question, What is the condition of the brain which accompanies the mental symptoms I have described as artificially induced? it must be confessed it is less difficult to say what it is not, than what it is. But this need not excite surprise when so familiar a condition as that of ordinary sleep remains obscurely defined and imperfectly understood. Negative knowledge

* Erratum in former communication—p. 66, line 15, *for* iris, *read* pupil.

https://doi.org/10.1192/S0368315X00226479 Published online by Cambridge University Press

is, however, sometimes only one degree less useful than positive knowledge.

It might be supposed, that in those cases in which there has been a prolonged stare, a paralysing effect has been produced upon the optic and third pair of nerves. We might refer the dilatation of the pupil to the temporary paralysis of the third pair—the radiating fibres of the iris, supplied by the sympathetic—being allowed free play.* What is the condition of the ganglionic system in the brain? Is it in its ordinary condition, or excited to unusual action, or is it likewise more or less paralysed? If we take M. Laverdant's experience as a fair type of the symptoms of a mild form of artificial insanity, we might argue that there is increased action or irritation of this system, causing contraction of the cerebral arteries—less oxygenated blood—and congestion of the cerebral veins. With this would accord the dilated pupil, as in irritation of the cervical sympathetic by galvanism. Nor does it seem very improbable that the ganglionic system in the brain is closely connected with involuntary, automatic, mental acts, when the Will, from whatever cause, becomes paralysed.

On the other hand, some reasons might be brought forward to show that a sedative influence had been exercised upon the sympathetic, causing increased afflux of arterial blood at the early stage of Braidism.

If we suppose it irregularly and partially excited to action, we should expect partial contraction of the cerebral capillaries, allowing of more vascular action in some parts of the encephalon, and less in others. All that can be safely said, in the absence of sufficient data, is that there is a certain amount of disorder of the cerebral circulation, some change in the relation between the supply of venous and

* Why is the pupil contracted in sleep? One might have expected it would be dilated, seeing that the action of the ganglionic system is not suspended. A medical friend maintains, indeed, that the pupil *is* dilated, but is forced to contract by the examiner's attempts to raise the eyelid and by the employment of light. My own observations on children, however, made with great care as regards light, convince me that contraction is the rule. Dr. Hughlings Jackson has, also, in his examinations of the eye with the ophthalmoscope, invariably found the pupil contracted. That this is not due merely to the introduction of light seems clearly proved by the fact that the pupil is often *more* contracted during sleep than when the patient is awake, subjected to the same amount of light. Dr. Jackson examined the eye of a somnambulist (a girl), and found the pupil not so much contracted as in ordinary sleep. The pupil of the other eye, to which atropine had been applied, was as large as when the patient was awake. After being roused, the girl fell into a natural sleep. The arteries of the retina became then a little smaller and the veins larger—their usual condition in sleep as observed by Dr. Jackson.

Thus, if we may take the vascular condition of the retina as an index to that of the brain, the usual opinion that there is less arterial and more venous blood in the cerebrum during sleep seems to be correct. It would be interesting to employ the ophthalmoscope to determine the condition of the cerebral circulation in hypnotism, both in the conscious and unconscious stage.

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arterial blood. Suppressed respiration, the natural consequence of fixed attention upon one object, must also have some effect in interfering with the healthy oxygenation of blood.

Whatever the vaso-motor changes may be, they are no doubt sufficient to cause or to result from partial action of the brain, involving the irregular excitement of its functions—exaltation of some mental powers, exhaustion and depression of others. That the physical part of the process adopted by Mr. Braid has some influence in *causing* vaso-motor changes, and therefore irregular excitement of the cerebral functions, is very probable; but we must think it much more generally the case that the psychical part of the process induces them—is, in fact, the fundamental condition—and essentially the first agent in the train of phenomena, the consequence being an accumulation of so-called nervous force and vascularity in one part, and less in others. Thus, a person who is sensitive, especially if he has once been subjected to the hypnotic process, may subsequently pass into the state solely from expectant attention, no physical means whatever being employed. "Those," Mr. Braid observes, "who are naturally highly susceptible, at length become so much so as to be liable to be affected entirely through the power of the imagination, belief, and habit, *i. e.* the expectant idea will produce it in such subjects when no process whatever, either near or distant, is going forward; whereas, if they are made to believe the contrary, through the requisite attention and expectation being otherwise engaged, they may not become affected by processes which would naturally throw them into the sleep."

I do not by any means deny that we may reach the same goal by different approaches—now by physical, now by psychical agents—any more than I would deny that insanity may be produced, now by a directly physical cause, as a blow on the head, now by a moral cause, as fright. The succession of phenomena is reversed, but the accompanying capillary change may be, either at first or at last, identical. We must admit, therefore, that it would be illogical to conclude that, because similar effects may be subsequently produced by expectant attention, the method first employed did not produce or *assist* in producing the same results. We do not conclude, because a bread pill taken by a sensitive patient, under the impression that it is Pil. Rhei co., acts as much as a purgative as the real rhubarb pill he took the previous week, that therefore the rhubarb did not purge. Ask a sensitive woman, who has been galvanized, to grasp the handles of a sham battery, and we know what would very probably be the result. Rogers tells the story of a gentleman who used to catch cold when he slept without his nightcap, but found that when he went out to lodge, and had forgotten to take it with him, he could prevent himself having a catarrh by simply tying a string round his head. And I have known a case similar to that which

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the same writer relates, of another curious result from expectant attention. A lady sat at dinner opposite a plate-glass window, and caught a troublesome cold, solely from the belief that it was open. But would it be logical to conclude that, because the imagination can cause a cold in the head, an open window or the casting an accustomed article of dress cannot? I am, therefore, quite prepared to guard against this fallacy when insisting, as I do still insist, upon the importance of recognising the wide influence of expectant attention—faith, fear, belief, imagination.

I incline, then, to hold that the most important element in the production of hypnotic phenomena is the psychical one—attention. In fact, it would seem impossible to separate the act of attention from any physical process adopted to cause loss of volition and suggestive susceptibility. Even in the experiment of the fowl already referred to, it may be doubted whether the effects are not simply due to an arrest of attention, consequent upon being placed in an unusual position, rather than to any straining of the eyes, the lateral situation of which may prevent the chalk line falling within the range of vision.*

In Braidism, then, or in artificial insanity, we may regard the first act as that of the Mind or Will forcing the attention upon a certain object or idea. The Will becomes after a certain time exhausted—paralysed—and the attention is left without its accustomed master and rightful lord. Involuntary action succeeds, with or without consciousness, except in regard to the ideas suggested. The controlling, regulating Will—the I—being deprived of power, the balance of the mental functions is lost, and, like the general of an army who has ordered his men to attack a beleaguered city, and finds, when too late, he is unable to call them off from deeds of blind and impulsive fury, the Will no longer possesses the power of recalling and directing the attention. What is this but the fundamental condition of insanity? Esquirol would have called it a lesion of the attention, but it looks more like a lesion of the Will, the attention being still in full though blind action, and directed automatically, by other agents, towards a certain course of thought; the succession of ideas being no longer spontaneous, but determined in artificial insanity by vocal suggestions; in non-artificial insanity by countless influences, external and internal. For example, a man loses his wife; the event is here the agent; the Will allows the attention to become absorbed in this one idea, and after a time is unable to call it away; a morbid habit of thought and feeling follows, and insanity results. In both cases—natural and artificial insanity—a certain amount of predisposition seems to be requisite.

In attempting, then, to determine the condition of the brain in

* Subsequent experiments convince me that the effect may be produced without drawing any line. I have found it impossible to influence some fowls.

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artificial insanity, it must not be forgotten that the mere act of concentrating the attention doubtless acts on the circulation. That contemporaneously with any changes in the cerebral circulation which may occur, there are others of a so-called dynamic character; that there is some alteration in the *vis nervosa* has been already intimated. It is another question whether, as is now generally supposed, this nervous force is identical with electricity. If such be the case, it may be there is some break in the electric circuit—some disturbance of the electric tension—by which one or more portions of the encephalic mass have their normal action suspended, while others remain in their usual condition, or in one of increased activity. It must, however, be added, that Mr. Braid found that the phenomena were not affected by electrifying his patients first, whether positively or negatively. May there not, lastly, be simply a change in the arrangement of the nervous cells resembling the changes in the kaleidoscope, which, in the twinkling of an eye, would completely alter the mind's perceptions, yet the cells themselves be not diseased? However, and this is the main practical fact I wish to insist upon, whether we suppose the occurrence of electrical changes, or only those of a vaso-motor character influencing the circulation, and of course necessitating slight molecular or cellular changes, the change which has taken place is what is usually called (however incorrectly) "functional." No change which pathologists are accustomed to call organic (though involving an organ, as all functional disorder must) has occurred. The change may, in fact, only differ in degree, and the part of the brain affected, from that which takes place during sleep and dreaming, which no physiologist supposes to involve anything which it would be proper to call a lesion of the nervous tissue, or any opacity of the membranes or other change to be detected in a *post-mortem* examination, either by scalpel or microscope; although there may be transient cellular or vascular changes, similar to those which doubtless occur in all mental operations whatever. The mere fact of their being transient does not affect the *kind* of change; time is not a fundamental element in the definition of disease.

In reference to the terms functional and organic, I would not deny that that condition of a compound organ in which one portion is exhausted or asleep while other parts are in action is one which may, if it is preferred, be called organic; but this is not what is usually understood by the term. One or more functions are in abeyance, and therefore many call such a condition functional. But whether we speak of functional or organic, let two things be clearly understood—first, that no functional change can occur without a material change; and secondly, that for practical purposes there are two very different classes or stages of disease, in one of which there is, and in the other there is not, structural or textural lesion.

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In the state now under consideration—artificial insanity—the whole mind is concentrated upon one idea; the brain force is intensified in one direction; some parts of the encephalon are dormant, while others are acutely susceptible to impressions.

What these respectively are must still be a matter of speculation. We may, however, in accordance with modern cerebral physiology, suppose that the sensorium is more or less healthily awake, but that the hemispherical ganglia are so far dormant that the Will is in abeyance, while they remain acutely alive to impressions from without, the ideo-motor power remaining in full force, and able to manifest itself in acts corresponding to the ideas suggested. Thus, not only may a man be made to believe his name is Napoleon, but along with this belief he will assume attitudes and act in various ways in accordance with it, precisely as the monomaniac acts, similarly possessed with a false conviction.

It will be observed that in hallucinations and illusions of the special senses, when artificially induced by *vocal* suggestions, the sensory ganglia and their nerves are not primarily at fault, but are simply overborne and misled by the false ideas infused into the mind. The senses do not deceive the mind, but the mind is unable to be affected or instructed by them.

In ordinary somnambulism we observe the sleep-walker oblivious, when awake, of what he has done when asleep. In artificial somnambulism this may be the case; but if the hemispherical ganglia are only very partially asleep, the subject remembers what has passed through his mind—his irresistible convictions and acts—as a dreamer remembers his, or much more distinctly. Dr. Carpenter ('Human Physiology,' 4th edit., p. 831) records the fact of a medical friend being partially hypnotized, and distinctly remembering afterwards his uncontrollable actions during that state, when directed by Mr. Braid. When double consciousness occurs, we see the thoughts and acts which have been artificially induced, wholly forgotten when the subject is awake, and clearly remembered again when the artificial state is reinduced. Mr. Braid states that he has had most intelligent patients, who had a minute recollection of what took place during the sleep six years before, and described the same facts many times after, *when hypnotized*, but who had not the slightest recollection of them when awake. Here, again, we see, artificially produced, the exact parallel of what occurs occasionally in asylums; patients after years of insanity (*e.g.* melancholy with stupor) emerging from that condition and remembering nothing of it, but recalling their previous life and resuming it where, so to speak, it left off.

When the illusory condition of artificial insanity is not remembered, we cannot infer, from such non-remembrance, that the cerebral hemispheres are wholly asleep, as we are perhaps justified in

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doing in pure sleep-walking. But where the mind is peculiarly alive to suggested ideas, adopts them as its own, and acts (however automatically) in obedience to them, the hemispheres must be supposed to be, in some degree, in action. That this may happen, and yet there be no remembrance afterwards, shows that ideo-motor action of the cerebrum may occur without being recalled, and finds its counterpart in some cases of mental disease. If Dr. Carpenter's view be correct, that the cerebral hemispheres are not themselves the seat of conciousness, but that we become conscious of their states through the sensorium, we can understand how the cerebrum may be sufficiently awake to respond to appropriate mental stimuli, and produce ideo-motor acts, but not sufficiently aroused to admit of memory.

Sufficient consciousness to respond to vocal suggestions without remembrance of the acts performed in consequence, is a phenomenon frequently observed during broken sleep, especially that of children, and is well illustrated in the well-known history of a military somnambulist related by Abercrombie. There can be little doubt that his condition was essentially hypnotic, the character of the dream being determined by suggestion. (See 'Inquiries concerning the Intellectual Powers,' 7th edit., p. 279.)

It would seem probable, then, that, as a general rule, in artificial insanity, the sensorium (comprising in this term the corpora striata, the optic thalami, and the nerves and their ganglia) is awake, while the hemispheres are so partially awake as only to admit of automatic action, the will being paralysed, consciousness being more or less perfect, but, in some cases, the memory of the artificial state of existence not being retained afterwards. The phenomena exhibited by hypnotized or biologized persons will of course vary, endlessly, according to the degree in which they are affected, the striking circumstance being that the outward signs may be so slight, while the internal change is (for the time) so great.

If, then, we regard the probable *kind* of change which takes place in the brain in artificial insanity, we cannot, I think, but conclude when we turn to the precisely analogous symptoms of insanity which we have not induced, that they also *may* coexist with a condition of brain similar in kind, and sometimes similar also in degree.

This is the pathological conclusion to which I am primarily anxious to call attention; at the same time, from it may flow important inferences in regard to the prognosis and treatment of certain forms of insanity.

But an obvious objection suggests itself to this proposition, namely, that the difference between the transitory phases of artificial insanity and the non-artificial state may be precisely such as makes all the difference between (so-called) functional, and organic disease; and that hence the conclusion on which I lay most stress is not a

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logical one. I at once admit that, while the facts of artificial insanity prove beyond doubt that any amount of delusion and illusion may coexist with slight, non-permanent changes in the condition of the encephalon, whether cellular, vascular, or electrical, they do not demonstrate that there are no grave lesions present in analogous states of insanity. Similar symptoms may arise from opposite pathological states.

To this objection four replies, at least, may be made.

First, we are not warranted in assigning more causes for the production of certain effects than those which are known to be sufficient to produce them. Delusions precisely similar to those of the insane can be induced in the sane, at will, under known conditions, and the accompanying changes in the brain, however open to question in regard to locality and minute anatomy, are of a *kind* respecting which there can be little difference of opinion. We are not at liberty, therefore, to suppose that the cerebral changes are different in *kind,* in ordinary insanity (with similar symptoms). Artificial insanity is of short duration, but it might be made chronic; that is to say, it would last as long as the subject was allowed or forced to remain in the condition induced by the operation.

Secondly, there can be no doubt that the most careful examination of the brain after death does, in a considerable number of cases, fail to discover any trace of disease, and in a still larger number only reveals such pathological changes as may be reasonably regarded as secondary, or as by no means peculiar to an insane brain. That no change of any kind, primary or secondary, should be found, always occasions disappointment, and, with some, surprise; but, if the leading idea of this article be admitted, why should we expect to find any change of a kind to be detected by the eye, whether with or without the aid of the microscope? It is justly remarked by Dr. Bucknill (whom no one will accuse of denying the necessity of material changes along with every functional perversion) that, "considering the vigorous and healthy activity of the mental functions most implicated in monomania, on all subjects outside the circle of delusive opinion—considering the unimpaired state of the bodily health, so frequent in these cases—and, lastly, considering the absence of pathological appearances in the brain after death, it is impossible to attribute the mental phenomena to active processes of disease existing in the cerebral organs." ('Manual,' 2nd edit., p. 435.) The facts of artificial insanity obviously assist in explaining and illustrating those cases of "chronic mental disease of a nature which leaves behind no pathological appearance" referred to by this writer (p. 439). I think they at once confirm and extend his explanation of their pathology. The anti-somatic school claims the absence of *post-mortem* change as a proof of the correctness of their position; but cellular, capillary, and even electrical changes, are

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surely as physical as any other, although they may be so exquisitely delicate as to escape detection, or, indeed, disappear in death. An east wind may make a man profoundly melancholy, but the cerebral change are not appreciable by the best microscope, yet are they physical. Indeed, I should greatly regret if anything I have advanced, should lessen our faith in the doctrine of insanity being a disease of the body, and emphatically of the brain. But in the term "brain" we must include, not only its nervous tissue, but its electricity, the minutest capillary, the vaso-motor nerves, and the chemical character of the blood.

Thirdly, whatever force the objection may possess in regard to chronic insanity, it can scarcely be regarded as of weight when the attack is recent, and agrees, in the element of time, with artificial insanity.

Fourthly, and lastly, to my mind the most striking consideration which renders the objection forceless, and points out the identity of artificial and certain forms of ordinary insanity, is the sudden and unexpected recovery of patients labouring under mental disease, which is witnessed every now and then. To see a person who for long has been the victim of the wildest and apparently irradicable delusions, retire to rest as mad as ever and rise in the morning perfectly well, forcibly directs the mind to the conclusion that no profound structural lesion has been the cause of the mental affection; and I submit that such facts render it impossible to doubt that the *kind* of change which, from a consideration of the phenomena of artificial insanity, I have maintained *may* be, *is* actually present in at least some forms of insanity. When we see a sudden emotion* cure an insane person, we may be allowed to conclude that no more tangible morbid condition attaches to the brain than that which must follow upon an attack of insanity occasioned by a similar cause.

Reverting, then, to my former proposition, I find nothing in the clinical observation of the insane to contravene, but much to confirm the conclusion, drawn from the interesting and suggestive facts of artificial insanity and somnambulism, that delusional (and some other) forms of insanity may arise from cerebral changes of a kind which are popularly called functional, and which, by whatever name we call them, have the important character of involving very slight alterations of structure, possibly almost as slight as, and similar in kind to, the physiological changes attendant upon every thought or emotion, or upon sleep, dreaming, and spontaneous somnambulism.

Such a conclusion, if thoroughly admitted into the mind of the practitioner, must, I think, sensibly affect his hopefulness as to

* The old cure of throwing insane persons into a well is an illustration. Perfect, I think, records cures of this kind. I am not, however, advocating this way of acting upon the emotions!

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recovery, and suggest the course, or perhaps rather the character, of the treatment most likely to prove successful in at least some cases of mental disease. For in regard to prognosis, I think an alienist physician is very likely to become hopeless, and not employ all the means at command, if he regards it as an indisputable fact, that serious structural lesions have taken place in the substance of the brain or its membranes; much more likely than if he bears in mind that alarming symptoms do not necessitate serious cerebral mischief.

As regards treatment, I think that the study of insanity from this point of view would, while by no means discouraging the use of physical agents, lead us to employ moral (or rather psychical) means systematically, philosophically, perseveringly. It were little more than a psychological truism to say that the primary indication would no doubt be to fix the attention in another channel than that in which it has become engaged, and to break the chain of automatic ideas which flow through the mind. But this, to be effectual, must be done *on system*. Mere desultory reading, for instance, however interesting, will not secure the object in view. Nor does travelling without somewhat of a definite aim meet the want. Books and travel, when employed, must be used with constant reference to the disordered condition of the Will and misdirected attention, and the necessity which exists of regulating the latter.

The importance of animating, arousing, corroborating the dormant Will, so long as it is directed rightly, that is, in antagonism to the automatic train of thought and emotion, is equally obvious, but equally requires systematically carrying out. Robinson Crusoe, when endeavouring to master his impulse to return to his island, generalised a little too much (as, perhaps, Mr. Barlow does in his well-known book), but he erred on the safe side. "After many cogitations," says he, "I struggled with the power of my imagination, reasoned myself out of it, as I believe people may always do in like cases, if they will; [very good, but how to get hold of the Will?] and, in a word, I conquered it . . . and particularly, as the most effectual method, I resolved to divert myself with other things, and to engage in some business that might effectually tie me up from any more excursions of this kind; for I found the thing return upon me chiefly when I was idle, had nothing to do, or anything of moment immediately before me."

Other indications might be pointed out of this general nature, but my present object is not to pursue them further, it being rather to confirm the view of the great importance of the systematic moral treatment of the insane, which is very generally entertained, but which is sometimes forgotten, or even almost doubted, in the recognition, now happily universal, of the physical nature of mental affections—a recognition which must not lead us to ignore the agency of in-

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fluences brought to bear directly upon (what we call) the mind. Indeed, one of the most difficult yet important tasks of the psychological physician is rightly to estimate the relative importance of moral and physical treatment—not to exaggerate the one at the expense of the other—but to pursue a middle course between the two extremes of forgetfulness of the organ and forgetfulness of its function, always remembering the possibility of attacking the former through the latter.

Only by recognising the two elements—the psychical and the physical—fairly and fully, while denying, as we most consistently can, the action of the one without the other, shall we avoid the mischievous spiritual theories of Heinroth and Leuret on the one hand, and the purely pharmaceutical treatment of insanity on the other—a practice which rejects what, after all, is a great reality, by whatever name we may call it—moral treatment. Leuret, in his theory and practice, too much overlooked the necessity of gaining the implicit confidence of the patient *before* forcing his convictions. This, threatenings backed by the douche could never really effect. Nor, again, can anything be more hopeless than to attempt to cure the insane by reasoning with them—a course, the natural result of the fatal theory that an insane delusion is nothing more than an error, a mistaken judgment, a false doctrine, instead of being a disease, whether we choose to call it irregular action of the mind, a morbid habit of thought, abnormal evolution of ideas, or any other fancy name—a disease *which has destroyed the power* of believing otherwise, and substituted another *ego* for the dethroned one. And, in passing, I may point out how completely the facts of artificial insanity *prove* the absurdity of the *dicta* of the judges in regard to the test of criminal responsibility.

Reflection on the means by which the symptoms of artificially induced insanity are dispelled would seem to suggest the propriety of employing, not only the general means of cure to which I have adverted (and the importance of which is acknowledged by almost all, however imperfectly acted upon), but also the more direct agency of hypnotic therapeutics.

What are the means employed to remove the delusion by which the artificial monomaniac is bound? Two courses may be adopted—the first, that of rousing the subject by a sudden shock, as a loud noise, a current of air, or by irritating the nasal mucous membrane with powdered charcoal, and thus exciting the cerebral circulation and dormant Will, the method recommended by Dr. Philips in 1860; the second, that of substituting a healthy idea or sensation for the unhealthy one, by vocal suggestions. No doubt, useful hints may be obtained from the success of the former method, and I think it deserves consideration whether the latter might not be employed; but to make vocal suggestions available, it is clear that the medical

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man who uses them must gain the confidence of the patient, and substitute his own will for the tyrannical dominant idea by which the patient is ruled, and gradually lead him to use his own. It is something to break a morbid train of thought, even for a few hours. The question is, whether the alienist physician might not, by Braidism, acquire such a command over the mind of his patient that he could exert a beneficial influence, both directly and indirectly, in infusing healthy ideas into his mind, which should overpower his delusions. If a theomaniac, constantly rapt in the ecstasy of devotion, can be made by vocal (or muscular) suggestions to dance, the fatal spell may have been broken.

It might be supposed that if, as I incline to think, the psychical condition of some insane patients is essentially the same as in artificial insanity, the suggestive treatment would prove successful without inducing a more decidedly hypnotic state of the system. But, I can understand how it may be necessary to adopt Mr. Braid's process, and thus for A to acquire power over B before he can avail himself of B's impressibility—an impressibility which, in the lunatic, is only in relation with one particular class of ideas, but which must be brought into relation with the physician's mind, and may then, not before, be played upon at will. At any rate, nothing can be lost by the careful trial, on an extensive scale, of the hypnotic plan of treatment, and large asylums for the insane present admirable opportunities for making such experiments and recording their results.* Mr. Braid briefly but clearly refers to the subject in his works. He speaks of cases of monomania, more especially, in which the patients "pass into the second conscious state of hypnotism," and says he believes that the powerful suggestion of a new idea to them is a far more speedy method of cure than any other. He adds, from his experience, that monomaniacal patients are particularly susceptible to the influence of hypnotism. Incidentally, I may refer to an interesting case he mentions, not of insanity, but of a morbid condition of the olfactory sense, which well illustrates the effect of suggestion over false perceptions or sensations. A lady, æt. 40, stated to Mr. Braid that she had been tormented for four days with the most disgusting smell, in consequence of having visited a house in which a corpse was in a state of decomposition. Sal volatile, snuff, lucifer matches, had all failed to remove it. Having hypnotized her, Mr. Braid kept her mind *constantly dwelling upon the idea* of fragrant odours, by means of auricular and muscular suggestions. "I took care," he says, "to awake her with the mind actively engaged with these agreeable ideas, and the result was that the moment she was aroused from the sleep, she exclaimed with

* [We shall be happy to record in this Journal 'Clinical Cases' treated by this method. Apart from their bearing on treatment, a clear report of the phenomena exhibited in each case would be of great psychological interest.—Eds.]

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delight that she *now* enjoyed a smell as delightful as the former had been disgusting. From that moment this patient was never again annoyed with the disgusting odour, not even when, on several occasions, she attempted, by way of experiment, to recall it."

The same plan of treatment might have given relief in such a case as that recorded by Esquirol, of a lady who was tormented with the smell of the fumes of charcoal. She concluded that certain persons wished to poison her. She fled to her friends, but the same smell pursued her. The unhappy woman, dying of phthisis, was rendered miserable, by this hallucination, till her death.

Apart from what I would call the directly suggestive treatment, I would also direct attention to the power possessed by the practitioner of stimulating, during the hypnotic state, the functions of some of the bodily organs, either by directing the patient's thoughts to them or by a skilful manipulation of the muscles. Whether thought can alter the character of the blood has been doubted, but that it can affect the velocity of the circulation no one will dispute. That it or an emotion can determine the blood to one part, and even cause hæmorrhage there, I have shown and illustrated by an example in the 'Manual of Psychological Medicine' (2nd edit., p. 173).

Mr. Braid conceived that the grand secret of his success in treating various affections by his method, lay in the control which he obtained over the circulation of the blood in a given part. "We have," he says, "an extraordinary power of acting on the capillaries, and of increasing and diminishing the force and frequency of the circulation, locally and generally" ('Hypnotism, or Neurypnology,' 1843, p. 72). He connected with this the concentration of nervous energy upon any particular function, and believed he could raise or depress mental or physical functions accordingly.

The importance of this agency in its action upon the ganglionic and cerebro-spinal systems is too obvious to require insisting upon. Mr. Braid availed himself of it in numerous affections—amenorrhœa, rheumatism, certain forms of deafness, blindness, &c. As he well points out, nervous disorders often quickly disappear on the accession of an acute attack of disease, and hence an intense excitement of the circulation induced *for a short time*, and then abruptly terminated, may change the former morbid action, and set up a new and healthy one. This view might seem merely a theoretic one, but I think no one can read the reports of this gentleman's cases,*

* Mr. Braid's works are out of print, but I am glad to find that his son Dr. Braid, of Weymouth, contemplates the collection and republication of them. In the mean time the references to the subject in Dr. Carpenter's 'Human Physiology' (fourth edition) are by far the best the reader can consult. In the preface to the last (the sixth) edition (in which these references are abridged) he expresses a hope that he may publish a separate Manual on the mind. In this he will, no doubt, work out still further the relations of artificial somnambulism and hypnotism, founded on his own experiments.

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including what Dr. Carpenter calls his "important memoir" in the 'Edinburgh Monthly Journal' (July, 1853), without being convinced that the practice was a very successful one in his hands, and might be equally so in the hands of any one with equal patience and skill.

It is no part of the object of the present essay to enter upon the therapeutic influence of Braidism as a soporific or direct hypnotic; but, before passing from the subject of treatment, I am disposed to add that trial might be much oftener made of it, in nervous irritation and insomnia, than is the case. It is one very striking proof of the restorative character of the so-called neurotic or nervous sleep, that persons who have been allowed to remain for hours under its influence, sleep better and for a longer time, instead of the reverse, on the succeeding night. There is no reason why Drs. Demarquay and Giraud-Teulon's experience of the effects of artificial sleep in certain non-mental painful affections should not be as satisfactory in asylums for the insane. "In all these cases," they report, "it is a fact which has been verified whenever hypnotism has been induced, that very acute uterine pains which tormented these unfortunates day and night, and of which they complained bitterly, were checked and suspended during this particular state of their nervous system and long afterwards twenty hours of perfect comfort being the mean duration of the solacement; and it was so real, so incontestable, so patent, that the patients demanded to be hypnotized immediately upon being visited. One young demoiselle, who suffered cruelly from neuralgic pains in the pelvis (the consequence of a violent contusion, with fracture), and which had not been relieved either by opium or by chloroform, used throughout an entire night, was calmed as by enchantment, and for a period of twenty hours, by hypnotism; and this two days in succession." ('Recherches sur l'Hypnotisme,' cited in the 'Psychological Journal,' October, 1860.)

M. Alfred de Maury observes that "animal magnetism" (by which he means no more than nervous sleep produced by *any* artificial way whatever, whether by acting on the attention by Braid's method, or by earnestly looking at the patient, or by monotonous passes)* "is a means of imparting to the nervous system a tone which it needs, or of calming an over-excitement by which it is exhausted.

* I think it is wiser, with Dr. Watson, to refer the beneficial influence of such manipulations to their *monotony* than to ignore it on the ground that an untenable theory has been connected with them. So long as the *rationale* is clearly understood and stated, and the practice freed from all unproved theory, it is a matter of secondary importance what means are employed to procure alleviation of pain or recovery. Nay, better cure by remedies, of the *rationale* of which we are ignorant, than not cure at all. The monotony system of treatment may, it is easy enough to understand, soothe an irritable brain and procure sleep upon the soundest physiological principles.

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It has been employed by many medical men as a curative means in neuropathic affections, in which ordinary therapeutics have been unavailing. It has assuaged the excess of pain; it has induced sleep, 'the sweet restorer,' after prolonged crises; in some cases it has supplied the place of anæsthetics." ('Journal of Mental Science,' 1861.)

In concluding this paper, I may observe that when the interest of the artificial phenomena to which it refers first struck me, some years ago, I was not aware that any writer had pointed out the analogy between them and the symptoms of insanity. Sir Henry Holland, Professor Laycock, and especially Dr. Carpenter, have, however, directed attention to the important bearing of these facts upon psychology. Still, I do not think that this has been *sufficiently* recognised. In conversation, lately, with a highly intelligent medical man, I happened to remark that artificial insanity, or so-called electro-biology, threw considerable light upon certain forms of mental disease. He was interested in the remark, and had not thought of the two classes of facts, as correlated, before. Subsequent observation, and a glance at the literature of insanity, have satisfied me that their relation has not been so much or so prominently dwelt upon as to leave a very distinct, or at least permanent, impression upon the reader. I have not met with any separate essay devoted to the consideration of the subject. The references to it, when they occur, are slight, and for the most part incidental; and, what is rather remarkable (and perhaps hardly creditable to our specialty), are chiefly to be found in a work not written by an alienist, namely, Dr. Carpenter's 'Human Physiology,' 4th edit. Sir H. Holland observes, when speaking of hypnotism or artificial somnambulism, in his 'Chapters on Mental Physiology' (1852), that Mr. Braid's "valuable experiments well deserve careful examination;" but I do not notice any detailed application by him of these experiments to the elucidation of morbid mental phenomena. His remarks, however, on the relation between sleep, dreaming, natural somnambulism, and insanity, are suggestive, and bear indirectly upon the subject of the present essay. Artificial somnambulism, however, offers decidedly more marked phenomena in regard to illusions, hallucinations, and delusions, than the foregoing spontaneous states do, and admits much more readily of experimentation.

It is certainly rather remarkable that in the Journal of the Association only one article has appeared on the subject of artificial somnambulism, and that this is a translation from a French writer (M. Alfred de Maury). In this excellent paper, the bearing of artificial somnambulism and artificial insanity upon mental pathology is only alluded to in very vague terms, although the import-

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ance of the phenomena classed under the terms animal magnetism, somnambulism, Braidism, or hypnotism is enforced by the writer.

Again, in the 'Psychological Journal,' while there have been several articles describing the phenomena of hypnotism and so-called electro-biology, clearly pointing out their true nature, the importance of their bearing on insanity is incidentally and superficially alluded to, rather than prominently brought forward. The common etiology of hypnotism and some phases of mental disease is, however, referred to, and in one article it is remarked that one common cause of the two states—concentration of the attention—"will in the end, we think, be brought to bear as an important therapeutic agent." (July, 1852.) In another article, on "Sleep, Dreaming, and Insanity," by Dr. Laycock, it is observed that "recent investigations [alluding to hypnotism], conducted as well by enlightened physiologists as by ignorant empirics, tend to show that we may be able to acquire such a knowledge of the physiology of attention and of consciousness generally as to apply the knowledge easily, pleasantly, and safely to the treatment of cerebral disease, more particularly as manifested in the various forms of insanity and delirium." (July, 1851.)

An article in the same Journal, for October, 1860, entitled "Braidism," refers to the more recent interest felt on the subject in France, and closes with the observation that "Mr. Braid's researches opened out a wide and highly interesting field of experimental research, which doubtless admits of further and very profitable cultivation."

I fear, however, that this line of thought has, as yet, been but too little pursued or practically acted upon, and is in some danger of being lost sight of altogether. It is in the hope of preventing this that I have here brought forward the subject prominently, as one not to be incidentally referred to, or practised in a superficial, slovenly manner, but as one requiring and deserving careful study and patient trial.

To sum up the main points of this paper, I submit—

1. That while dreaming and natural somnambulism bear considerable resemblance to insanity; artificial somnambulism or Braidism, at a certain ideo-plastic stage, is still more analogous to, if not identical with, certain forms of mental disease, and therefore offers a better field for study than the former spontaneous conditions, and is more at our command for purposes of experiment.*

2. That, in all probability, the disturbance of the brain which accompanies artificial insanity is the same *in kind* as occurs in some forms of mental disease, and does not involve structural change.

* Of course the same rule holds good here as in drug experimentation—to be careful not to injure the experimentee.

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3. That, bearing this in mind, the prognosis, in certain forms of insanity should, be more favorable than it often is.

4. That the mental condition which I infer to be present in certain forms of insanity, from a consideration of the mode in which artificial insanity may be induced and dispelled, forcibly shows the importance of the moral (or better, the psychical) treatment of the insane, and especially the necessity of acting systematically upon the attention.

5. That it is worthy of trial whether a directly suggestive mode of treatment might not be carried out, in some cases, with success the medical psychologist availing himself of Braidism to acquire sufficient control over the patient's mind to direct the current of his thoughts from morbid into healthy channels.

6, and lastly. That there is reason to think that, independently of the suggestive treatment, refreshing sleep might sometimes be procured, and restoration to health accelerated, by inducing artificial somnambulism or hypnotism.

CLINICAL CASES.

The Pathology of a Case of "General Paralysis." By G. Mackenzie Bacon, M.D.; *with a Report of the Microscopical Examination of the Brain,* by Samuel Wilks, M.D. Lond., F.R.C.P., &c., &c.

There is so little satisfactory knowledge on this, the most frequent of the fatal diseases of the insane, that even a single accurate observation of the post-mortem appearances is worth recording. My object in bringing forward the following case is simply to illustrate the pathology of general paralysis (to adopt the familiar misnomer), for there is no peculiarity in the history of the patient, unless it be the length of the period during which the symptoms remained stationary. At the time of his admission, the man was said to have been ailing only a month, and this would give the case a duration of about four years.

Had it not been for the epileptiform seizure which proved fatal, there seemed every probability of his living another year. As soon after death as circumstances would allow, I removed the brain and spinal cord, and forwarded them to Dr. Wilks for exami-

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