2. *English Retrospect.*

Cases of Disease of the Nervous System with Remarks. By SAMUEL WILKS, M.D., F.R.S., From the "Guy's Hospital Reports for 1872."

A case of aphasia, with remarks on the faculty of language and the duality of the brain. A case of hysteria, with remarks on diagnosis and treatment, contraction, and spasmodic affection of the limbs. Intermittent tetany—chronic, spasmodic affection. Contraction of the limbs and sclerosis of the spinal cord. Tremor and paralysis agitans. Local paralytic affections. Ataxia. Importance of discovering the origin of nervous diseases. Syphilitic epilepsy.

It will be seen, from the above list of subjects treated of by Dr. Wilks, that he has had an opportunity of referring to some of the most interesting and obscure affections of the nervous system. Some of the cases and some of the subjects are very slightly glanced at, whilst others are gone into very fully, but in either case the author's clearness of ideas, precision of language, and perfect appreciation of the extent to which any general inference is warrantable from particular symptoms, give to all he says a special value. The physician to a large general hospital sees great numbers of cases of disease of the nervous system, but it has always struck us that the mental symptoms present are too often most cursorily enquired into, and but little heed paid to them. We do not mean by mental symptoms the delusion or the excitement of insanity. We believe that quite apart from such marked abnormalities of the functions of the grey matter of the convolutions, there exist, in a very large number of cases of ordinary nervous disease, quite recognisable departures from the healthy mental state. But they require to be carefully looked for and enquired into, not only from the patients themselves, but from those who have had the best of opportunities of seeing them beforehand. Such enquiries need to be conducted with much subtilty, tact, and discrimination, and involve some considerable trouble, ten times more than the usual enquiries as to the seats of pain or numbness; hence, no doubt, they are seldom made. The subtile mental (and moral) disturbances that accompany neuralgia, tetanus, paraplegia, deaf-mutism, diabetes, &c., have yet to be described, and would no doubt amply prove the unity and interdependence of the whole of the nervous system. The importance of such contributions as those of Dr. Wilks largely depends on the knowledge and grasp which the author has of the whole subject.

We do not remember to have seen the subject of aphasia and the faculty of language clearly treated within so small a compass as they are here. The case was in no way an extraordinary one, but it served to illustrate the subject.

Elizabeth H—, æt. 24, a domestic servant, admitted July 4th, 1871. A fortnight previously she went to bed perfectly well, but not rising at the usual hour, her room was opened, and she was found, as when admitted, paralysed and speechless.

There was no previous history of any illness whatever. She was a well-grown woman, very pale, and with a vacant expression of countenance. The right arm and leg were completely paralysed, the mouth slightly drawn up towards the left side when she used any muscular effort. She could move her mouth well in eating, and could use her larynx; there appeared some little difficulty in protruding the tongue. There was also considerable loss of sensation in the arm and leg. Also some loss of power over sphincters of rectum and bladder. On examination of the heart no bruit could be detected. On speaking to her she appeared to understand all that was said, but could not answer a word. Her mouth moved, and she uttered a senseless jabber. She was put on good diet, tonic medicines, and, after a time, Faradization to the right side.

In about a fortnight's time her general health was improved, although the paralytic symptoms remained as before, and then I was better enabled to test her knowledge of language. She appeared to understand written and spoken language perfectly; she read books and the newspaper, she received letters from her friends, and on one occasion a telegram; all of which the sister of the ward said she perfectly understood by her actions and gestures, since she prompted what answers to give. When any object was held before her, and the name demanded, she merely moved her mouth, or uttered an unmeaning sound, but immediately assented by a nod when the correct appellation was given, just as she would shake her head when any wrong name was purposely uttered. At the end of another month the power of the leg slightly returned, so as to enable her to sit up, but the arm remained paralysed, and I waited with expectation to see if, with a slight recovery of the limbs, the speech would also return. There did not, however, appear to be the slightest indication of improvement; at the same time, she seemed as rational as any other person in the ward. It was then attempted to teach her afresh, and the method, up to the present time, has been eminently successful. A box of letters of the alphabet, with pictures upon them, was brought her, and she was taught in the same manner as a child, or as a person learning a foreign language. On repeating to her several times the name of one of the objects on the cards, she would at length articulate the name herself. On the following day she would say more of them correctly, and forget others, or use the wrong name, just as a child might do. On one of the cards was the picture of an umbrella, and she evidently knew it was a long and tiresome word, and immediately exclaimed "butterfly," but in a moment shook her head to express her error. A butterfly was on one of the cards, and she had been taught the name. She was also taught to say other words, as "good morning," "Guy's Hospital," and her own name; all these she would suddenly bring out when I visited her on my rounds, being evidently delighted with her improvement. Although it was true that she could move the muscles of the face, yet every word appeared to be formed with an effort, as if she had never before put her mouth into shape, and much as a stammering person does when trying to give birth to a word. That an actual difficulty existed was seen in the dissimilarity to the correct sound on the first attempt to speak, although afterwards the word would be properly formed; in fact, if one has observed a child attempting to utter a hard word, and mixing the syllables together or skipping a letter or sound entirely, the exact condition of this woman may be understood. On being told to say "seventeen," the number of her bed she said "eventeen," but then being requested to make a hissing noise to precede this, she immediately did so, and so produced the correct sound. A very similar performance may be seen going on at any school where the master is endeavouring to teach French; strange grimaces and many feeble attempts are witnessed before the children can say, for example, "Donnez-moi du pain, monsieur." In this way the woman is gradually learning to talk, and, as far as can be ascertained, she has not used a single word which has not been taught her quite recently; she does not appear to have used any expression which might have cropped up from recollection or from any return of memory.

As regards agraphia, the ability to write was rather a difficult faculty to test, seeing that few persons can write at all legibly with the left hand, but I apprehend it is the same faculty which is put on trial when a number of letters of the alphabet are placed before the patient, and she is requested to arrange them into words. I doubt whether this woman would have voluntarily put letters together to form words, for she never attempted to do so; but when told to spell a common word, like "horse" or "cow," she immediately endeavoured to accomplish it, but generally spelt it wrong; there was a tendency for the letters to come right, but they were seldom placed together quite correctly. When wrongly placed she shook her

head, to express the error, and if the word was made right would accord by a nod.

I should have said, that in learning to speak she was not guided by the movements of the mouth or larynx, as are the deaf and dumb, but by the sounds through the ear; this was known by speaking the word we wished her to utter behind her back, when she was found to copy it just as readily as when she saw the face.

The patient was slowly improving, when she was removed to the north of England by her friends.

Dr. Wilks regards the case as one of true and typical aphasia, the power of expression and writing being lost, but not the faculty of language, and thinks that it is this kind of case which creates so much interest as regards the question of localizing speech in a particular part of the brain, and indeed as to the nature of language generally, together with the mental state of that person who has lost the power of communicating his ideas by signs.

Where the memory of words is entirely gone, as in the amnesic patient, the case is comparatively simple to understand, for whether we believe that speech is situated in one spot, or is intimately associated with the working of the whole hemispheres and the entire mental faculties, it is not difficult to comprehend how a violent injury might deprive a person of speech, so that he should not be able to speak or write, or even know the meaning of words. What his mental condition is under these circumstances may of course be very difficult to discover. But the case is altogether different and far more perplexing when he has an appreciation of language, but yet is unable to communicate his ideas by writing or speaking. Here we have an intricate problem, and one which some of the best minds in the profession have not yet been able satisfactorily to solve.

The difficulties of explanation are in some measure removed and the way made more clear when we attempt to analyse the faculty of language. For its production three, if not four, different processes are employed. First, the mind is impressed with ideas through the eye by means of written signs, that is, impressions formed on the retina pass through their own perceptive centres (to adopt Dr. Bastian's expressions) to the central hemispheres, where they are further developed or compounded with other perceptions. Secondly, impressions made on the ear by sounds are carried through the auditory perceptive centres, also to the hemispheres. Now, these signs conveyed by the eye and ear having nothing in common, there can be no connection between the letters which spell, for example, the word "field," written on paper, and the sound which we attach to this word; the association in our mind is one of our own constructing, and is a perfectly arbitrary one. We are compelled to this association from our earliest infancy after the following manner:—When a child is shown a certain word in his book, a certain sound is made to represent it, and thus the visual impression and the auditory impression become intimately blended in his mind. In all probability a picture of the object (say, a dog) is shown to the child, to which these visual and auditory signs are always to be attached; but this is not all, for the sound made by the master is to be imitated by the child until the latter can use its organs of speech in a particular way when the said object is presented to him. The whole complex faculty of language is thus taught through signs by the ear, by the eye, and by the organs of speech, together with a representation of the object itself. One would naturally ask what idea of language would exist if it had been taught by one or more of these processes, and I think we may get some answer to the question. Let any one who has acquired a knowledge of a language by means of a dictionary ask himself if he need have the slightest comprehension of it when spoken; not having acquired it through the ear it would be, under these circumstances, quite without meaning to him. Thus the common remark made by many persons, that they can read French or German but cannot speak those languages, is, of course, true, for they have never tried. The processes of learning through the eye and through the ear are, in fact, totally distinct, although by education we may have intimately blended them together. Then, again, when we speak, we are employing a third faculty; we are not then gaining ideas through the ear or eye, but we are communicating ideas to another person

through a totally different channel. If a child were taught the name of an object by a visual or auditory sign, and that child did not learn to make the customary sound which belongs to it, he wound understand language by reading or hearing, but he could not speak it. He might gain ideas through the eye or through the ear, but he must learn to transmit them through the brain to the vocal organs in order to communicate them, In illustration, is the following. A little boy, the son of French parents, born in England and going to the town school, speaks English like other boys, but at home the conversation is carried on by his parents in French. They speak to the boy in French, and he readily obeys all that is demanded of him, so that there is every reason to believe that he understands the language perfectly; but up to the present time he has never been known to utter a single syllable of it. He cannot yet read fluently, and, therefore, what information he might obtain from books I cannot say. Here is a case of partial education which much resembles that of our aphasic patient. We might illustrate this, although somewhat imperfectly, by the following:—An engine driver has learned the meaning of certain signals, so that he could explain their object to another person, but it does not follow that he could take the signalman's place. He might know that for a certain purpose a certain sign was to be shown, and the instrument for making the signals might be perfect in its working; but he would be quite helpless, because he had not been taught how to use it. He would be much in the position of the French child just mentioned, who understood the language, but could not use it. If he had once learned the use of the signal instrument, and then forgotten it, he would rather resemble our aphasic patient. The man who sits in a tunnel, and works his instruments without being able to see the effect on the distant signals, is like the deaf and dumb child who has learned to talk by imitating the movements of the mouth of another person but hears no sound.

That this compound of language made up of spoken, auditory, and visual signs, may be thoroughly broken up, we see to a limited extent in every-day life. For example, a considerable amount of attention is required, and expenditure of vis nervosa in continuous speaking; therefore, in an exhausted state of the nervous system, this faculty may be virtually paralysed. Let a person be prostrated from want of food or over exertion; he cannot talk, he forgets what he wants to say, he uses one word for another, but he does not forget the meaning of words which are spoken to him or which he may read. Even under ordinary circumstances, in perfect health, we lose the memory of words, and are for the time exactly like our aphasic patients; we cannot speak them nor write them, but we recognise them when written or spoken, or if a long list of names be given we immediately assent when the right one is arrived at.

He then discusses the question as to the connection between language and intelligence, concluding thus:

Most persons will state that they cannot accurately think out a subject without speaking or writing, showing that the ideas must have expression in form. What condition the mind of the truly "amnesic" patient is in, is very difficult to know; but if in ordinary life most persons' thoughts are not worth much unless put in consecutive form by means of spoken or written language, it would follow that the mind of man without language would be a blank. It, however, could scarcely be this, for with mental vision of objects before him, together with remembered sounds and odours, he would be as well off as the dog. Whether really any deeper intellectual processes can go on without language, is very difficult to ascertain.

This consideration of the nature of our present language, and that it is a mental production formed by several processes, enables us to separate these analytically, and to perceive how one of the parts may fail whilst others remain intact. If language is regarded as a simple faculty bound up with thought, it is difficult to understand how a knowledge of it can exist, and at the same time be forgotten; but if looked upon as a complex process, we can see how words can be intelligently perceived through the ear or eye, and yet cannot be spoken by the tongue; the organs of speech, notwithstanding, being all the while intact.

As there are direct channels from the senses to the cerebral centres, by which impressions become converted into ideas, the one leading inwards from the gateway of the ear, and another also inwards from the gateway of the eye, so it may be presumed that there is a third, which leads outwards from the brain, for the purposes of spoken thought: or, as there are an auditory perceptive centre and a visual

centre, by means of which sensations are carried to the hemispheres to be converted into ideas and the various mental processes performed, so between the intelligence and the vocal organs we may presumably suppose there is a centre intimately associated with the production of language. For the same reason, if a portion of brain can be injured and vision lost, but without the eye itself being affected or the intelligence dimmed, so we might suppose an injury to another part of the brain and language lost, whilst the vocal organs and the mind still remained entire. If the up line can be damaged or cut, so can the down line. That there should be a portion of the brain whose especial duty it is to rule over language seems less remarkable when we remember that the tendency of physiological opinion at the present day is to map out the cerebro-spinal centres for various and distinct purposes, and that the different complex movements of the body are prearranged and regulated by certain dominant points, either for respiration, speech, or motions of the limbs; and, moreover, that influences pass by special channels from the cerebral hemispheres to these points. It is clear, in the case of aphasia, that some powerfully presiding influence over the organs of speech has been lost, for not only is the remembrance of words gone, but the organs themselves, without being paralysed, appear to have quite lost their habit of accommodating themselves for talking.

Considerations of this kind on the analysis of speech and the compound office of the brain tend to elucidate some of the difficulties presented by such a case as that I have reported. But there are still further points of interest in this case not yet alluded to, and one is the recognition of language after it had been lost. I have no doubt the usual tacit explanation in such a case has been—that language has returned with recovery of the injured brain; but before this can be satisfactorily determined, some more rigid observations are required to show if the facts answer to the explanation. In bringing to my recollection several cases of right hemiplegia with aphasia, where there was no recovery of the limb, the speech also appeared to be irretrievably gone, and I know more than one case where patients, under these circumstances, are absolutely dumb. I have just now under my care a sailor, who was the subject of this affection seventeen years ago; he partially recovered, so as to be able to resume his employment, but his speech even now is most imperfect. In the case under discussion the woman recovered in part the use of her leg, but not at all that of her arm, and at the same time there was not the slightest appearance of the return of speech. The few words she was acquainted with at the time of her leaving the hospital she had altogether newly acquired, and there seemed no reason why she should not have learned as much French, or any other foreign language, in the same space of time. It becomes then a question whether this fact be not an argument in favour of the theory that speech is located on one side of the brain, and that when language is relearned, the other side has been educated for the purpose; in fact that the same process is going on with language as with the left hand when it is learning to write, and do what the other one had been accustomed to. If after a violent concussion all idea of language was knocked out of the brain, no argument could be founded upon the recovery of it; but when the mind is entire, language understood, and yet the power of speech gone because one part of the brain is damaged, it seems to follow that, if language again return it must come by re-education, and what more likely than that the part corresponding to the damaged one should be the seat of the training—that this should take up the lost function of its fellow-convolution? If speech was originally learned in a special way, it must be regained by the same method.

I am aware how easy it is to take up an idea and so surround it with inventive argument that it stands out before us as a grand truth, whereas all the while it is illusory and a false creation; but believing as I do that the aphasic state is intimately associated with destruction of convolution on the under surface of the left anterior lobe of the brain, as stated by Bouillaud, Broca, and Jackson, I have come to consider that the reacquisition of language by an aphasic patient is an additional fact in confirmation of it.

He argues that as in playing a musical instrument it is the nerve centres and not the muscles that are educated, so there is no absurdity in regarding the faculty of speech as dependent on a brain centre of limited extent which has been educated for that purpose.

Since the two hands cannot be interchanged in playing, it shows that each side

of the brain must have been specially educated for their particular movements. They have thus become physiologically different. At birth the two sides were alike, or only so far differed as hereditary transmission had made them to do, but they have soon become functionally unlike; they may be employed in the same class of operations, but in matter of detail each is performing its own work. Let us suppose the case of a person who communicated his thoughts by certain movements of his right hand instead of by his larynx, and these movements were called speech, it would follow that if he was struck with hemiplegia speech would be lost from disease of one side of the brain.

It is thought by some most unlikely, and I agree with them, that language should reside in one spot of the brain, seeing that it is associated with every faculty of the mind; it can reside in no special place, seeing that it is everywhere; but in most cases of aphasia, as in one reported, the language is not lost, but only the faculty of speech.

Take again the case of music; this is intimately associated with the higher operations of the intellect, so that a genius will clothe some of his subtilest thoughts in the harmonies of his own creation; these he expresses in part through the left side of his brain when he produces them with his bow in the right hand: let a clot of blood form in the brain and the power of performance is gone. If every faculty of his mind, if his whole soul be imbued and penetrated with music, we know that the concord of sweet sounds came through the small channel of the ear, and therefore it is not remarkable that it should again flow through a channel of equally small dimensions. So ordinary language, gained through impressions which have passed by the narrow inlets of eye and ear, becomes intimately associated with all the operations of the mind, and yet must again be concentrated towards one spot in order to make its exit in the shape of winged words.

In favour of the theory that the faculty of speech ordinarily resides in the left hemisphere, he argues:—

Seeing, again, that nearly all the voluntary movements of the body do take place through the action of one side or the other of the brain, it is not unlikely that the side which is most active is that which should rule over the organs of speech. The fact of several cases of left-handed men now having been reported who, when paralysed, did not become aphasic, tends to corroborate this view.

These considerations do not demonstrate anything, nor do they prove that the organ of speech is located on one side of the brain, but they show that the notion is by no means extravagant, and, indeed, far from unlikely. We must depend, of course, upon facts, but the theoretical objections against the doctrine, which some have thought insuperable, appear to be of no great moment when fairly weighed. At all events, we are enabled by discussion to see more clearly where the difficulties lie. Amongst other advantages, it leads towards the solution of the question as to the uses of the two sides of the brain. The older physiologists were much puzzled about this double organ, for although no difficulty was presented to them by the existence of two kidneys or two lungs working together for one object, they would rather have seen the brain constituting one single mass as the organ of consciousness or the "ego." Their only escape from their perplexity was the position of the pineal gland in the mesian line of the body, and here they could safely and logically find a habitation for the soul.

The next question is, how far the nerve centres for particular functions are independent.

One cannot but think that the independence of the limbs necessitates the independence of the centres which rule over them. The next question to ask is, what proof is there that the ganglia on each side are governed by their respective hemispheres, and not by the brain as a whole? There are many facts which tend to show that the former is probably the case. First of all, the fact that meningitis of one side of the brain will produce a hemiplegia, or a condition which is equivalent to it. I have already in former papers mentioned cases where an arm and leg of one side have become powerless during an attack of inflammation of the brain, and after death the surface of the opposite hemisphere has been covered with lymp; so that we must conclude that the power of volition had been affected on that side, with the consequent inability to move the limb.

There is also another instance which has the same bearing on the separate action of the hemispheres, an example of which will be found in the case of hysteria presently to be reported. The woman had hysterical hemiplegia; she did not will to move one side of the body, and yet she had a will to move the other side. It was not an impaired will, but a divided will, and thus the voluntary power failed on one side, whilst it remained powerful on the other.

The independence of the limbs on each side of the body seems to demand an independence of the ganglionic nerve-centres which rule over them, and these, again, their own distinct hemispheres to govern them. Thus, the duality of the brain is as much a necessity as the duality of the body, or rather the two are coextensive; the brain is one as far as the body is one, and double as far as the body is double. If the limbs could have been separately governed by the brain as a whole, it would probably have formed one mass instead of being double.

There will be less difficulty in embracing this view when it is remembered that the limb is an exponent of the character of the whole animal; that the movements which the hemisphere rules over are associated with its entire instincts and habits. The foot of the lion and its mechanism imply a certain condition of teeth or stomach, and the same applies to all other creatures in the world, so that the palæontologist can, from the small bone of a limb, build up the entire framework of the animal.

The word I have just made use of—*dexterous*—has become an epithet for special ability in manipulation, and is generally associated with much force of will and energy of character; it is a hand, therefore, met with in some of our best surgeons. I shall never forget the remarkable hands of two of the best surgeons of the day when I assisted them in an operation, the late Mr. Liston and Mr. Aston Key. They both had the largest and ugliest hands which it is possible to conceive, and, just in proportion as the reader can picture to himself their uncouth appearance, so may he be sure that they could be used in a manner which it was sometimes wonderful to behold.

The case of hysteria related by Dr. Wilks, with his remarks on it, have a very close bearing on problems which the alienist physician has to face every day. The symptoms which in Dr. Wilks' patient had to be overcome, consisted chiefly of muscular paralysis, which moral treatment, good hygienic conditions, and above all an education of the will to vigorous exercise were needed to cure. How many cases of insanity require just the very same means for a precisely analogous paralysis, or perversion of some mental nerve-centre! It is a means of treatment too little resorted to in lunatic asylums. In how many cases of melancholia with delusions could we not speedily effect a cure by training the patient to will that he shall get well?

Mary B—, æt. 30, a governess, admitted June 14th, 1871. Had good health until present illness, although subject to headaches. Two years and three months ago the little finger of the left hand became numbed and stiff, then gradually the whole hand became numb, and afterwards quite powerless. At the end of three months the whole arm became similarly affected. This continued for several months, when the left leg became weak in the same way, and the lid of the left eye unable to be raised. For some months she has been described as having paralysis of the left side, including the eye. She stated that a month ago she had a fit, in which she was insensible for two hours, and for three weeks after this she was unable to open her mouth, and lived, in consequence, on liquid food.

On admission she was obliged to be put in bed, being unable to move her left leg and left arm. The arm, when raised, dropped lifeless at her side. She had ptosis of the left eye, but when the lid was raised the pupils were found to be equal, and the eye movable in all directions. She was unable to open her mouth beyond half an inch. Tongue protruded straight. Sensation considerably diminished in the left arm. She was not wasted and did not look ill.

From a consideration of the history of the case, it was regarded as one of hysteria, that is, a case where there was no actual lesion in any part of the nervous tract standing in the way of a voluntary act, but that rather the voluntary power itself

was in fault; it was in fact ideal rather than real paralysis. Under these circumstances, as the object was to rouse the dormant will, and not to treat the paralysis as a physical reality, it was considered that medicine alone would be useless or worse than useless, but that rather those means should be used which could act directly on the will—in a word, moral means. She was informed that an effort on her part was essentially necessary for the cure, for if she did not exert herself she would soon become irremediably paralysed, unless, indeed, it was her wish to be bedridden for the rest of her life, and have no prospect of health and happiness before her. Such an idea she at once repudiated. She was ordered camphor water three times a day, and was told that she would, no doubt, get well at the end of a few weeks, but this could only be accomplished by a visible improvement on each of my visits.

The result of this mode of treatment was that she soon recovered, on which Dr. Wilks remarks—

This case is interesting as exemplifying the remarkable effects of moral treatment, which I believe can be far more efficiently accomplished at a hospital than at a private house. When one has the opportunity of comparing the melancholy results observed in the home of the patient compared with those which are gained in public institutions, one cannot but think of some of the disadvantages of the rich.

The hospital has advantages which no private dwelling can afford. The patient is in a ward with other people, whom she sees have real diseases, some growing better and others worse; she sees also the physician adopt a uniform plan of kindness to all, doing his best to cure and relieve, and she herself is put on a perfect equality with them; she sees, too, the nurses performing their tasks in a uniform and business-like way, having very little time or ability to speak a sympathising word to any one, and having still less inclination to heed fanciful complaints, being ready rather to exhibit their indignation at the display of any imaginary troubles. There is, in fact, no one in the ward who is ready to play the part which is necessary to perpetuate an ideal malady; everything is real around the patient, and thus the whole pervading influence of the place is sometimes in itself sufficient to cause her to forget her self-created troubles, and at once to participate or even assist in the good work which is going on around her. I know it has been said that the placing an hysterical patient with other invalids is injudicious, but I have not found this to be the case, and it is certainly to be preferred to keeping her in her solitary room at home.

It sometimes surprises me that medical men, seeing all this, declare their utter helplessness when standing by the bedside of an hysterical patient. They will confess that all means have been tried in vain, that there is no real disease to cure, that it is an imaginary or nervous disorder, and nothing can be done, when it is their own presence in the case which constitutes the very root and foundation of the malady. Let us take the case of a girl who goes to bed with an ideal paralysis of the legs, or some similar disorder. She sinks into a morbid state, and puts on a second nature; she becomes the centre of a world of her own creating; she is the interesting invalid; she receives the sympathies of inquiring friends, the care of nurses, the consolation of the clergyman (for she is usually outwardly pious), and, above all, the daily visit of the medical practitioner, who prescribes appropriate physic. This is her perverted life; this is "her little game." Now and then the physician is called in, who gives his opinion that a great deal of the malady is due to hysteria, orders some iron and quinine, and perhaps galvanism, and so the play goes on. The medical man declares that he has tried every means and failed. Does he not see the whole affair is a drama of the patient's own creation, and she the central figure of the piece? She is to be ill, she is to have her doctor, and enjoy in her morbid way all the interesting surroundings of the invalid. Does he not see that to cure her he must break into the charmed circle, and to spoil the play he must get rid of some of the performers? And does he not see that, even if he has not influence over others, he might withdraw himself? Here is a young lady who says, "I will be ill, and have a doctor to attend me." How can she accomplish this if the latter declines to obey her behests? or, if he accepts the post, how can he, in the name of common-sense, say he cannot break her of her fancy whilst he is a party to it? If he sees clearly the truth of what I have been

saying, his duty is, as professional adviser to the family of the patient, to retire, and use his influence to prevent the calling in of another medical man. I have myself seen, in several instances, where such advice has been given, and the parents have said to their child, "We will have no more doctors," that recovery has at once ensued. In one of the worst cases of hysteria I ever saw, where a young lady had been bedridden for three years, and during this time must have swallowed hogsheads of physic, and had her body covered with leeches, blisters without number, besides being well rubbed with tartar emetic ointment, the medical attendant suddenly died, when the father declared that his daughter was ruining him, and that he would have no more doctors. From that time she began to recover, and may now be seen walking about quite well.

A young lady keeps her bed for two or three years for an affection of the hip, and is seen by all the leading men in London. One day the clergyman walks in, prays over her, and she gets up and walks. The case is reported in all the religious journals as a miracle, whereupon the doctors all join in declaring that the case was one of hysteria, and that there was nothing the matter with her. Then, I would ask, why was that girl subjected to local treatment and to the infliction of physic every day for years? Why did not the doctors do what the parson did?

How strongly all this applies to many cases of mental disease need not be adverted to. It might be well to take a leaf out of Dr. Wilks' book, too, in regard to the modes of talking of the treatment of many cases. Why pretend that mere sympathy and kindness is all that is needed in the treatment of a case, when we know that a vigorous will brought to bear on it, and infect it with energy, a good rousing "blowing up," a very distinct warning that giving way to evil tendencies would bring most unpleasant consequences, would do more to produce recovery than all the sympathy in the world.

The following are acute remarks in reference to the diagnosis of such cases of paralysis from lack of will power:—

In the present case there was no falling of the face, nor any evidence of paralysis of the seventh nerve, but there was a dropping of the eyelid. Now, if this had been due to actual paralysis of the levator, from implication of the third nerve, there would also have been dilation of the pupil and an inability to move the eyeball. The case, therefore, did not resemble an ordinary case of hemiplegia, but, on the contrary, the paralysis was exactly of that kind which would occur from a simple abeyance of the will. On a little consideration it will be seen that exactly those parts were paralysed which we should expect in a case of inefficient will, viz., those which are directly under the influence of volition, whilst those parts remained unaffected over which the will has no control.

I think every one can get an idea of what might happen when his will is not sufficiently powerful to excite his muscles. After great fatigue or exhaustion from want of food he might feel his legs unable to carry him, or his arms would drop at his side, his eyelids would fall, and he could scarcely make effort to open his mouth and speak. A means of diagnosis between real and ideal paralysis may lie in the fact of muscular tension being gone in the one case, whilst it is present in the other. In facial paralysis there is a falling of the muscles on one side and a drawing up of the other. This proves to me, as it does to others, that an influence is always passing from the centres to the muscles, preserving them in a state of tension, and that if paralysis occurs this tension is destroyed. In hemiplegia, therefore, or spinal paraplegia, this tension would be absent, whilst in the hysterical form, or in any feigned form, it would be present. If we could better guage its amount by galvanism or other means, we should have a valuable test for diagnosis.

This question of the continued flow of a vis nervosa is a very interesting one, and, until demonstrated, it is useful to speak of it in a hypothetical sense. It seems that, apart from volition, our nerve centres are perpetually preserving the body in a state of tension whilst consciousness lasts, but when this is gone the muscles immediately relax. At least, this is the rule, for exceptions to it are seen sometimes in epilepsy, where the patient does not fall when losing his consciousness, and, indeed, may continue to walk; also in catalepsy, where the brain appears acting on

the muscular frame whilst consciousness is in abeyance, and probably also the same occurs in somnambulism.

Another point of interest I have already alluded to in the remarks appended to the case of aphasia—that a want of will to move the muscles on one side of the body, whilst the will is good to move those of the other side, is a fact tending to strengthen the idea of a dual function for our double brain.

Two cases of intermittent tetany are recorded, one being treated by chloral, and the other by bromide of potassium, and both quickly recovering. One may be permitted to doubt how far there is any sort of real pathological analogy between such cases and true tetanus, and if there is not, then "tetany" is an objectionable and misleading misnomer, the use of which ought to be discontinued. Some observations on sclerosis of the spinal cord follow, which, as it is a disease much talked of now, we shall quote entire.

The researches of Charcot have shown that contraction of the limbs is very often associated with a condition which has hitherto been styled chronic inflammation of the spinal cord, but to which he now applies the more distinct title "sclerosis." The advantages of a name of this kind are, no doubt, great, but at the same time it is apt to be seized upon by careless observers, and appropriated to a number of obscure disorders which seem to become clear by this christening process. Charcot means by the term sclerosis that condition where a new connective tissue is formed in the cerebro-spinal centres, destroying the nerve-fibrils, which, together with the new material, become converted into one dense mass. This adventitious matter may be met in various parts of the cerebro-spinal system. I myself have generally observed it to be of a whitish colour when occurring in the substance of the brain, and of a whitish or grey colour when met with in patches on the fourth ventricle or other free surfaces. At other times, instead of this new product being scattered, it affects one portion of the brain or cord alone, such portion generally being a strictly anatomical and physiological segment, as, for example, the antero-lateral columns of the spinal cord, or the posterior columns only. In the latter case the sclerosis is also called gray degeneration of the cord, and is the condition met with in locomotor ataxy. If the antero-lateral columns are affected, the disease is spoken of simply as paraplegia. At the onset of the disease it has been stated by Charcot that "tremor," together with nystagmus or oscillation of the eyeballs, is a very common symptom, and in consequence the complaint has been confounded with paralysis agitans. As the disease proceeds, the trembling ceases, and the limbs become rigid and closely drawn towards the body.

Three cases of contraction of the limbs, with paralysis, follow, but their connection with a sclerosis of the cord is entirely hypothetical. A very interesting case of induration of the brain is quoted from "Bright's Medical Reports," where the symptoms during life were convulsive fits, imbecility, and permanent stiffness of the muscles. After death the grey substance of the brain was found to be pulpy, and the white substance "hard, constricted and shrunk, so that it seemed to enter the cortical substance like white bands." Two cases of tremor and paralysis, agitans follow, the pathology of which Dr. Wilks inclines to think depends on "an enfeebled state of the nerve centres, and a tendency to paralysis. It is not unreasonable to suppose that it may occur in connection with degeneration of the spinal cord. It is on this theory that chorea especially, when affecting one side, is thought to be due to embolism of the capillaries of the central ganglia of the brain." The last is a theory which should be quite capable, in some cases, of pathological proof, but we are not

aware of embolism of the arteries ever having been really found in a single case of chorea, or choreic symptoms to have been present in a single case of embolism of the arteries. There are some interesting but desultory observations on "Local Paralytic Affections," with cases, one of which was a case of paralysis of one arm, proceeding to general paralysis, which is undoubtedly a rare mode of commencement of that disease, but the history of the case is not at all fully traced.

The following observations on the subject of "Ataxia" are important :—

One great difficulty in determining the cause of various forms of derangement of the nervous system arises from the fact, that nearly all those which are due to organic change may be exactly simulated by others dependent merely on a temporary disturbance of the function of the spinal cord; and herein lies one of the most remarkable and interesting circumstances in connection with nervous affections—that distinct anatomical regions, possessing their own specific functions, are selected for organic changes. It may also be remarked that a very large class of nervous diseases can be purposely simulated or imitated, and thus another difficulty in the due estimation of symptoms.

There was a period when all morbid processes were thought to be due to excessive vital forces and to the determination of blood to various parts of the body; but now we have changed all that, and believe that, from some unexplained reason, one region may become more bloodless than another. There can be no doubt, I think, that changes may occur in the nerve elements quite irrespective of blood supply, and we can imagine an exhausted state of brain or spinal cord, independent of alterations in the flow of blood. That such changes are of the most subtle kind is, no doubt, true, for they may be sufficient to kill the patient and yet be not evident to the senses. A gentleman, just dead, but quite well a year ago, had general paralysis of mind and body, and I am informed that the brain and spinal cord appeared quite healthy. I feel no doubt, notwithstanding, that every ganglionic cell in his brain and cord was altered or decayed. But recently, also, I have seen a young gentleman recover from some of the worst symptoms of locomotor ataxy. It is, therefore, for more light that we are crying.

It is a remarkable circumstance how seldom this disease is met with in women. I only remember to have seen two well-marked cases of it. One of these had occasionally some mental disturbance, which suggested intoxication, an allegation constantly made in reference to ataxic patients, on account of their awkward gait.

I believe it worthy of remark, that patients suffering from ataxia, as well as from some other chronic nerve disorders, like progressive muscular atrophy, are liable to febrile attacks, which must have some connection with their complaints. Some of these patients repeatedly have attacks, accompanied by fever, nervous excitement, furred tongue, &c.

I am under the impression that if a case be curable the continuous current is one of the best, if not the very best, means of treatment we have at our command in various forms of paraplegia; and in those cases where no good is effected there is every reason to believe that the disease is organic or a structural one.

There is a case of general paralysis with ataxia related, with apparently few mental symptoms. The occurrence of the chief bodily symptoms of general paralysis in the course of other diseases of the nervous system, or combined with other distinct nervous diseases, and with almost no mental symptoms, is an extremely interesting point in nervous pathology; but we should be disposed to question if these are cases of true general paralysis at all. There are many kinds of bastard general paralysis very like the true disease, but in reality of a different pathological species. But this subject is an obscure one, and needs "more light."