A LECTURE ON CERTAIN PHENOMENA OF HYSTERIA MAJOR.

*Delivered at La Salpêtrière on November 17th, by
PROFESSOR CHARCOT.*

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PROFESSOR CHARCOT, addressing his audience, said:—You will not be surprised if your attention be again occupied by the study of the great neurosis which I have termed hysteria major. This, it should be remarked, is not the common and mild type of hysteria usually met with elsewhere and in private practice; but it is that most common in this hospital, especially under the form of hysterо-epilepsy. In the first place, we find that, though the hysterical fit is transient, there may be permanent accidents left as marks of its presence; among these are anæsthesia, hyperæsthesia, and visual disturbance. Permanent contracture of certain groups of muscles is also a consequence; and, before concluding this lecture, I shall show how similar contraction can be produced in patients when thrown into a peculiar state, to which the term hypnotic has been applied. This, you are aware, is to tread upon forbidden ground, because animal magnetism or hypnotism was excluded from further discussion at the Academy some years ago. Nevertheless, whatever be the discredit attaching to animal magnetism, an enlightened physician, moved by the true scientific spirit, cannot feel himself absolved from investigating any pathological cause. His motto should be, "*Je suis médecin, et rien de médical ne doit m'échapper*".

Anæsthesia, in hysterical cases, presents itself under two aspects. In the first place, we have hemianæsthesia, where one half of the body is affected; and this is the more frequent form. Again, we have total anæsthesia, where the whole of the body becomes insensible. But it should be remarked that not only is general sensibility diminished or destroyed over the surface of the region affected, but the organs of special sense are likewise subjected to change. Thus, in the case of a hemianæsthetic patient, one-half of the tongue loses the sense of taste, one nostril that of scent, and one eye becomes stricken with amblyopia. In fact, hysteria is capable of producing groups of symptoms similar to those produced by lesions other than dynamic of the central nervous system. It is to be noted that the region in which the anæsthesia occurs is the same in which the other accidents make their appearance. If the anæsthesia be unilateral, then ovarialgia shows itself on the same side; the aura likewise is noticed there, including its cephalic symptoms, namely, whistling in the ear and tapping or beating in the temple. If contracture supervene, its manifestation follows the same rule. On the other hand, if the anæsthesia, instead of being unilateral, be double, then the phenomena referred to are doubled and show themselves on both sides, though they are often somewhat more strongly marked on one side than on the other. It has been said that, in cases of hemianæsthesia, the left side is most usually affected. That, however, is a point on which I have no definite information, the patients who have come under my notice being as frequently affected on the right side as on the left.

With these remarks, I will call your attention to the patients now brought before us. One of them is affected by total anæsthesia, not merely by analgesia, where touch, though not pain, is perceived. In her case, though the whole body is affected, the phenomena dominate on the left side. Ovarialgia, for instance, is more felt there. The special senses are likewise affected. Thus, if we test the gustatory power of the tongue by a little colocynth, the patient perceives no unpleasantness, or but slightly, on the right. In fact, all the membranes of the buccal cavity of the pharynx, larynx, and glottis, are anæsthetic to such a degree that, as you see, it is possible to put the finger down her throat as far as it will go without inconvenience. Two of the other patients are hemianæsthetic on the right side, and two on the left. When we test the gustatory power here, you will observe that no effect follows the placing of colocynth on the half of the tongue corresponding to the affected half of the body; whereas, when it is placed on the other half, repugnance is very plainly evidenced. You will

also remark that it is possible to bore through the interdigital web, and prick the hand, arm, or side of the head of the affected region, without causing the slightest pain, even though the blood may trickle down. No evil effects follow from these experiments, though they would, no doubt, seem monstrous to the lay mind. There is one thing about which I have to warn you, and that is that, when the patient happens to wear a thimble and is sensitive to the metal of which it is composed, you will find a small region of local æsthesia there; and, if you chance to prick the flesh in this place, you will cause pain at once. This curious fact, which was discovered accidentally and quite unexpectedly, may serve to corroborate the doctrine of metallotherapy. The next patient, who may be termed a veteran amongst hysterо-epileptics, was stricken at an early age, and has remained subject to the malady all her life, and she is now tolerably advanced in years. Though her menses ceased ten years ago, the ovarialgia remains, thus showing that the pain is not necessarily connected with the active function of the organ. In her case, she being totally anæsthetic, the pain is felt on both sides, the whistling is heard in both ears, and the beating or tapping is perceived in both temples. The anæsthesia, however, dominates on the right, the left side being analgesic. If the hysterical paroxysm seized her now, you would have before you a terrifying spectacle; for the form her malady assumes makes her resemble one possessed by a devil, a veritable demoniac. Her attacks, however, have become unfrequent, not coming on oftener than once a year. It is eight months since she had her last fit, and, as she remarks, she feels nothing at present. This is an observation with a meaning; for these patients are rarely taken by surprise, and consequently do not fall in the streets like epileptics. Premonitory symptoms give the alarm a considerable time in advance. This patient says that, fifteen days before the fit, she feels her legs grow weak. When the early symptoms of the aura show themselves, these patients, who are generally employed in minor duties connected with the hospital service, keep within their wards or close by, for obvious reasons. You will observe from her remarks that her intellect remains what it was—never very powerful, indeed, but still untroubled, in spite of fifty years of hysterо-epilepsy, which would certainly not have been the case had the disease been true epilepsy.

Foci of hyperæsthesia, on the other hand, are also to be found in such patients; and these foci have this singular property that it is possible, by pressing on them, to cause the production of the hysterical fit. These may be termed *points épileptogènes*, or rather *hystéro-épileptogènes*, and their existence will remind you of the experiments of M. Brown-Séquard on the guinea-pig, where pressure on a particular part, after the operation, gave rise to a paroxysm which he terms epileptic, but which I would willingly regard as hysterо-epileptic. All our patients have these points, but all do not have them in the same place. You will understand that they have sometimes been discovered by chance, sometimes by the revelations of the patient, who generally preserves the secret and protects the part. One of these patients before you, for instance, was observed always to carefully face the physician and others, and it was found that she had a sensitive zone in the back, between the shoulders. It was sufficient to rub this area once or twice with the hand to cause the production of the fit. In another, the sensitive zone is situated below the axilla and behind the breasts, on both sides; whilst in a third, it is placed lower down, a little above the waist. As you have already been made aware, pressure on the ovary produces the same effect. No evil consequences follow such fits, as you may have anticipated, remembering that hysterical fits often succeed each other in rapid succession many times in the forty-eight hours, without leaving any other trace than the sensation of fatigue, and even that to an extent not so great as one might expect it to be after so much violent muscular exercise. In hysteria, in fact, we have a great deal of noise for nothing.

The question of the disturbance of visual perception in hysterical patients has attracted attention before now. Briquet knew that there was diminution of visual power. It was, however, M. Galezowski who first remarked that the notion of colour was perverted, some hysterical patients seeing all colours as grey, or only preserving the notion of one or two of them. This has been named hysterical achromatopsia, and may be either partial or complete. You must recollect that, as regards the normal eye, the visual field is not the same for all persons and for all colours. It varies in different individuals. M. Landolt, who has made a scientific investigation of this subject, in examining the range and colour-perception of the eye, found the following series. Blue was observed to have the widest extension; then came orange, yellow, red, green, and violet. There are, however, varieties; for some of our patients the red has the widest extension; hence I have classed into two categories the "blues" and the "reds". In the latter class, the colours are arranged thus: first comes red, then follow yellow, blue, orange,

green, and finally violet. Violet, you observe, is always in the centre; its visual field is the least extended. Next to it is green. Now, when the disease first shows itself, or is in its first stage, it is often found that the patient has no perception of violet. This circle narrows and disappears, and the others next to it may also narrow, without quite vanishing; in such a state, the person is achromatopsic for violet and dyschromatopsic for the others. In the second stage, or degree, the green also disappears, and the patient has become achromatopsic as regards these two colours. This process may go on until the achromatopsia is almost complete. When the colours have disappeared to this extent, and return of perception takes place, they are found to reappear in due order from the periphery to the centre, violet coming last of all. There are many hysterical patients, as you may find in private practice, who have lost all power of distinguishing violet; they cannot recognise its existence. Several, in fact, lose both the violet and the green.

You will observe that the arrangement of colours, in these series, is not at all the same as the arrangement of colours in the solar spectrum. This supplies us with evidence that the patients do not deceive us; for, if it were possible to conceive that they had studied the arrangement of colours in the solar spectrum, and could shape their report accordingly, it is impossible to suppose that they could devise a uniform series, differing from any they had ever seen, to which they would constantly adhere.

The recovery of visual perception accompanies the return of sensibility to the side affected, in hemianæsthetic patients. Its several phases can be examined with facility. We may employ either the magnet, brought into proximity with the surface; or a plate of that particular metal to which the patient has been found sensitive may be applied to the skin. You have here examples of both methods in operation; and you remark that, in the course of a few minutes, a distinct change takes place. Thus, up to a certain moment, you can prick the hand of the affected side, and the patient shall feel nothing; a little afterwards, she withdraws it, with an expression of pain. But observe that, whilst this is occurring in the right side in such patients, the exact contrary is taking place in the left. Here, a few minutes ago, the slightest pricking was acutely felt; now, as you see, one can pierce the interdigital web, or prick the hand, neck, or temple, and the patient feels absolutely nothing. A transfer has thus been effected, for the hemianæsthesia has changed over from right to left. This transfer is complete, or, in other words, it affects the special senses as well as the general sensibility. Thus, with respect to the right eye, the recovery of colour and perception occurs in the same ratio and order that it is lost in the left; and, fortunately, the process goes on sufficiently slowly to enable us to study its phases. The patient will call out the colours as they begin to appear to her, from the circumference to the centre, the left eye being closed. Now, of these concentric coloured rings before you, she perceives, as she tells you, only the outer red circle; all the rest is grey or white. After a little, comes the yellow, next the blue, now the green, and lastly the violet. She has at present recovered complete colour-perception in the right eye, which was previously affected; whilst exactly as she regains this power in the right eye, she loses it in the left, which has contemporaneously become achromatopsic. We can obtain further information as to the mode in which perception is regained, by placing before the eye a simple coloured sheet of paper; thus, she tells us (as they all do), that she begins to see the colour at the outer edge, whilst the centre continues to appear grey or white: this centre gradually narrows, as the power of vision increases, until the whole of the sheet is seen of its proper hue. But—whilst the right eye has been progressively recovering until she can distinguish all the colours, even the violet—when we close this eye, and examine the condition of the previously normal left eye, we find that she no longer sees anything of the concentric colour-circles save an outer red ring, enclosing an apparently white centre. As an illustration how colours may disappear from our cognisance, and to enable you to realise to some extent the pathological visual condition of patients so affected, my assistant has added a salt of sodium to the gas-flame; the prismatic colours, you observe, grow less and less distinct, until the eye seems to become almost completely achromatopsic: on the other hand, under a beam of the electric light or the natural light of day, they rapidly reappear.

The transfer of such phenomena from one eye to another is not permanent, but temporary. When the metal plate is removed from the temple, or the magnet withdrawn, all things return to their former condition, after a little time. They do not, however, remain constant. Curiously enough, after this first transfer and return, a series of oscillations follow, which could not have been anticipated. Again and again, perception of colours is renewed in the right eye, and this may take place several times in the course of an hour or two. We have counted ten such oscillations in the course of an hour and a half; then

they ceased, and the primary condition was resumed. Though we note these phenomena, it does not follow that they are to be immediately explained. When Claude Bernard witnessed them, he confessed that he could not comprehend them, adding that all this proved one thing, and that was, that we are not yet very strong in the physiology of the nervous system. Pathology, however, has the right to observe even those phenomena which cannot at once be explained by existing facts or theories; and it is its duty to place them on record, even though their novelty and the difficulty of immediately accounting for them may give rise to hostile comment.

Finally, we have to consider the permanent accident of contracture, with which some of our patients are affected. This contracture may, as you are aware, completely cripple them for years, so that they shall be unable to move without assistance. It may occur suddenly; and, after a greater or less lapse of time, as suddenly disappear, occasionally, as has happened, on the occurrence of some strong moral emotion or contrariety. To-day, we will take a patient who has no contracture, and cause in her the production of that peculiar state in which contracture occurs; for artificial contracture can be produced, and is producible, more or less readily in all our cases, speaking generally and from my own experience; by gazing fixedly into the patient's eyes, you can produce that state which has been called "*sommeil nerveux*", or "nervous sleep", but which I prefer to term "*lithargie provoquée*", "induced lethargy". [The patient, to whom the experiment was manifestly not welcome, and who at first averted her eyes, finally consented to it, and in a few moments suddenly fell back in a profound lethargy.] This state, continued Professor Charcot, you can observe, is not a natural sleep, and differs distinctly from it by certain peculiarities. Thus, you heard her faint cry which notified its advent; then you remark the tremulousness of the eyelid; and, finally, when she is awakened, a little froth—two or three bubbles—always appears between the lips.

The patient is now completely insensible; she feels nothing, thinks of nothing, so far as we can determine, and remembers nothing when she awakes. Now, we can produce some singular results, which may also serve as tests to prove that we are not deceived. Evidently, it cannot be supposed that this patient, especially in such a condition, is aware of the anatomical distribution of the facial nerve, or can tell what muscles it animates. Yet you will observe that, when I stimulate it to action, and to do that I have only to press upon its trunk at the ear, the muscles which it serves in the face contract at once. Again, the sterno-cleido-mastoid is a muscle whose physiological action, as you must be well aware, is difficult to be realised, and is manifestly a thing beyond the range of this patient's experience. Nevertheless, when I touch this muscle, stroking it slightly, the muscle contracts and the correct attitude always follows. In the same way, availing ourselves of the researches of Dr. Duchenne (de Boulogne), we can study the action of the various muscles. (Contracture of the hand and arm was then induced by touching, or rather stroking, the appropriate muscles.) If the patient be awakened now, the contracture disappears, as you perceive; in order to have it persist, she must be thrown into another, but a kindred, condition, which is that of induced catalepsy. To accomplish this, you must first awaken the patient, cause her to fix her attention on yourself, or some bright object, for a few moments; then, as you perceive, she passes at once into the state of induced catalepsy. In this condition the contracture remains, and a very remarkable transfer may take place under the influence of the magnet. If you place the poles of this horseshoe magnet close to the right arm, for instance, when contraction has been induced in the left, you will see it gradually disappearing from the latter to make its appearance in the right. Nor can there be any deception in the matter. These patients evidently can have no knowledge as to what is the cause of the influence of this instrument; the convex end should plainly affect their imaginations as much as the other, yet, though we have often tested them by approaching the convex end, the result has been constantly negative.

This phenomenon of transfer of contracture, caused in a patient under the action of the magnet, whilst in a state of induced catalepsy, supplies us with an exact counterpart of what took place in the case of one of our patients suffering from hysterical contracture. She is the hospital sister here present, and came up to us from the provinces with contracture of the left hand and arm. With a view to counteract this condition, the magnet was applied to the other arm; and then we did, indeed, find that the left upper extremity became free; but, to our surprise, the right became contracted. This disappeared after faradisation, and then the contracture returned in the left. This alternation could be reproduced at will; but, whilst at first there were some vasomotor phenomena—the arm becoming violet and cold—which diminished afterwards and disappeared, the tenacity of the contracture, on

the contrary, increased. The patient now objects to the experiment, apprehending that a time might come when we should be no longer able to master the induced contraction, and naturally not desiring to return to her own locality with a contracture of the right arm, after having come here with contracture of the left. That certainly would not be worth travelling to Paris for. However, for your instruction and the good of science, she consents to another experiment, and you can observe the change I have described taking place before your eyes. The right arm has now become contracted and rigid, so that it is difficult to stir it; this state, however, will disappear after half an hour's faradisation; but it would be obviously inadvisable to persist with such experiments, lest her apprehension should be justified. Her treatment in hospital has had this effect: that contracture has almost completely disappeared from the left arm, where we find now a certain degree of paresis; still, on placing your hand in hers, you find that she can press it with some little strength.

For this case, then, we have a parallel in that of the previous patient, and the fact of identical phenomena supervening under the condition of induced lethargy gives us a clue to their mode of causation. Here, however, it is not necessary for us to have recourse to faradisation to put an end to the contracture. Let her be now awakened, and the contracture will persist for a considerable time; but we shall throw her into her first state of induced lethargy; then stimulate the antagonistic muscles exactly as we stimulated the flexors, and now you observe that the tension relaxes, and the whole arm becomes free and flexible.

The state of catalepsy can be immediately induced by causing the patient to fix her attention on some object, such as a bright light. Thus, if she gaze for a moment at the electric light, she passes, and now has passed, into a cataleptic condition, when her limbs remain in any position in which you choose to place them. The patient can now be made to assume any posture, however inconvenient, and will retain it as long as you please. In this condition, you can study the influence of attitudes on the expression of the physiognomy. Thus, if we bring her arms and hands together, a smile appears, raising the corners of the mouth; on the contrary, if you place them in an attitude indicative of horror or denunciation, the physiognomy becomes solemn. (At this moment, the assistant unexpectedly stopped the electric light, and the patient suddenly fell back into her chair in a fit of lethargy.) The extinction of the light has sufficed (continued Professor Charcot) to cause her to pass at once from catalepsy into lethargy, which is not, as I have already remarked, a state of sleep, but rather a somnambulistic condition. She is now, in fact, in that state of suggestion or subjection which causes her to follow and obey. This is the condition into which animal magnetisers plunge hysterical persons, and, during its persistence, they cause them to perform mystical acts, such as working in the dark, describing absent persons, distant places, and the like. From this condition our patient can be brought round by one of two methods: by pressure on the ovary, for instance, or by blowing suddenly upon the ophthalmic region. She does not immediately resume complete consciousness and freedom, but may remain in a benumbed state for a quarter of an hour or more; this, however, soon disappears, especially in the open air, and the patient recovers her normal condition.

[Professor Charcot then concluded his lecture amid well merited applause. A singular incident then occurred. As the crowded audience, composed of physicians and students of different nationalities, separated, one of them seized the occasion, whilst close behind a patient whose case has been described above, to press with his hand upon the sensitive area in her back. Possibly, he was sceptical of the fact related; but, if so, the result must have convinced him of its reality. The patient fell immediately upon the tiled floor of the corridor in a state of lethargy. The reckless culprit escaped in the confusion; but his act, which naturally caused great annoyance in an institution where every care is taken to guard against accidents, remains to prove the reality of the phenomenon he appears to have disbelieved. —G. S.]

PROFESSOR VON LANGENBECK of Berlin completed his sixty-eighth year on November 9th. His pupils crowned his portrait with laurel on the occasion, and a deputation waited on him to express their good wishes. It is now thirty years since he succeeded the celebrated Dieffenbach; he still, we are glad to learn, preserves his vigour.—Professor Du Bois-Reymond entered on his sixty-first year on November 7th, on which occasion he was presented with a richly bound photographic album, containing the portraits of those who had worked in his laboratory.—The Order of the Iron Crown of the third class has been conferred on Professor Späth of Vienna.

EXCISION OF THE RIGHT ANKLE-JOINT FOR CARIES.

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AS a contribution to the statistics of articular excisions, I trust the following case, as an unit, will prove of sufficient interest and importance to justify the publication of its history, progress, and result.

Private R. H., 2nd Battalion, 13th Regiment, aged 20; service $1\frac{1}{2}$ years, of which 7 months were spent at Malta; an extremely strumous-looking lad, whose family history appeared to be good, and he stated that he had always been healthy. His illness dated from the 10th of November, 1877, at which time he was stationed at Malta, where he was admitted with acute inflammation of the right ankle-joint. He first noticed a dull pain, which came on gradually and was followed after a few days by swelling. There was a history of slight rheumatic pains in the arms on three or four occasions, but no history of injury. A few days after admission to hospital, the inflammation became so severe that he was unable to stand or walk; and there being no prospect of his being benefited by remaining at Malta, he was invalided to Netley, where he arrived on March 3rd, 1878. He was then in a pale anæmic condition; his ankle was very much swollen, but not to say painful on pressure, and there was no appearance of suppuration having taken place in the joint. Rest for the joint was at once enforced by means of a plaster-of-Paris bandage, which enabled him to move about with ease; and from being able to enjoy fresh air, and with the use of tonics, he appeared to improve.

On the 28th of March, there was considerable pain in the joint, when it was found necessary to remove the plaster-of-Paris bandage. Suppuration had taken place in the soft parts over the lower end of the fibula; and, on examination, it was found that a probe could be passed through a sinus under the soft parts at the back of the ankle anterior to the tendo Achillis, and be felt on the back of the joint, but no exposed bone could be detected. Free incisions were made on each side of the joint, which were kept open by means of drainage-tubes, and the limb was well supported. After this, he again appeared to improve greatly, but, about the beginning of May, the ankle-joint became much swollen and painful. It is remarkable, however, that there was no increase of pain when the articulating surfaces of the joint were forcibly pressed together. This may have been due to the fact of the bones (especially the astragalus) being denuded of cartilage, as was observed when the joint was opened at the operation. A probe could now be passed under the fibula, but still no exposed bone could be detected; it was, however, apparent that the joint was extensively implicated, and that some operative measures were necessary. It was decided to excise the ankle, the man's youth giving to the operation every prospect of success.

On the 13th of May, I performed the operation by two lateral incisions, as recommended and practised by Mr. Hancock, the limb being rendered bloodless and the patient under the influence of ether. After the operation, the wound was freely irrigated with iced water, and then sponged with a solution of chloride of zinc, thirty grains to the ounce of glycerine. When Esmarch's elastic bandage was removed, there was not a single vessel that required any interference, and, by exposure of the wound to the air, all active oozing was checked. Several horsehairs were placed in the back of the wound for the purpose of establishing drainage; and both lateral wounds, except at their depending angles, were closed with sutures of silver wire.

The limb was put on a light wooden back-splint, with a foot-piece; and in front a strong wire anterior (Smith's) splint, the whole enclosed in cotton-wool, and secured with a plaster-of-Paris bandage, so arranged that the wounds could be dressed; when dry, it could be suspended from a parallel bar placed over the patient's bed. There was slight oozing from the wounds for about twelve hours, but he progressed most satisfactorily, there being very slight increase of temperature or surgical fever, all functions remaining normal.

On the 28th of May, I removed the splint for the purpose of cleaning it, when the wounds were found to be healing steadily, and no inconvenience had occurred from the long-continued pressure on the heel, the back splint having been hollowed out to receive it.

On the 5th of June, I removed the horse-hair drainage, as it appeared to be causing considerable irritation, and replaced it by a fine tube, which was more comfortable.

The plaster-of-Paris splint was removed on the 15th of June, and a light wooden side-splint substituted, which gratified the patient very much, as it enabled him to shift his position in bed and to be moved into the open air.