

and amongst this nuclei most intensely coloured. The structure which is most intensely coloured is farthest from, and that which is not coloured at all in immediate contact with, the colouring matter. The carmine can be made artificially to pass through the layers of formed material, unaltered by them, to the germinal matter, where it becomes precipitated, probably in consequence of the acid reaction of the germinal matter.

British Medical Journal.

SATURDAY, APRIL 27TH, 1861.

WHAT IS REFLEX PARAPLEGIA?

THE history of paraplegia, as we now read it, is quite of modern date; and it is only during the past few years that we can boast of having obtained an insight into the most important features of the disease.

Several authors, we need hardly say, have preceded Dr. Brown-Séguard in this field of research, and have distinctly pointed out the existence of the affection.

Dr. Graves, in his lectures on Paraplegia (1843), has told us—

“That a most important and influential cause of paralysis has hitherto been nearly overlooked—a cause which, commencing its operation on the extremities, and not on the centres of the nervous system, might, by a reflex action, produce very remarkable effects on distant parts.”

He gives instances of slight amaurosis resulting from exposure to a keen wind; of paraplegia from enteritis, from uterine disease, from urethral irritation, from exposure of the body to cold and wet. The treatment he recommends for the disease is stimulating liniments and blisters, not to the spine, but to the legs and thighs; with strychnia and sulphur internally.

Mr. Spencer Wells also, in a lecture in the *Medical Times and Gazette* (Nov. 14th, 1857), gives an excellent *resumé* of the subject. Dr. Handfield Jones, in a paper on Inhibitory Influence in the *BRITISH MEDICAL JOURNAL* for Feb. 5th, 1859, maintains that an afferent nerve may communicate a depressing influence to the centre, and throw it as it were out of gear.

Dr. Brown-Séguard is, however, the latest writer on the subject. He gives us an excellent account of the affection, and also a novel explanation of its nature—an explanation, however, which we fear must, for the present, remain hypothetical.* Let us see what it is that he tells us on this important subject.

The two most frequently observed and clearly defined forms of paraplegia are, reflex paraplegia, and paralysis depending upon myelitis or disease of the spinal cord. Heretofore there has been no proper line of distinction drawn by pathologists between these two varieties of paralysis; but this distinction is absolutely necessary for the important purposes of rightly directing the practitioner's treatment; medicines which are suitable in the one kind being injurious in the other.

Paraplegia depending upon disease or injury of the spinal cord has been long well understood by us all; but what is meant by *reflex paraplegia*? Is there really such a disease? By reflex paraplegia is meant that kind of paralysis of the lower limbs which results from an excitation of the spinal cord, the excitation being conveyed to the spine through a sensory nerve. For example, some part of the body, say the uterus, is irritated, injured, or displaced; the effects of the displacement, etc., are appreciated by sensory nerves, and are thereby conveyed to the spinal nervous centre, and, by the action which they there produce, cause those changes to occur which result in paraplegia. According to Dr. Brown-Séguard, the paralysis is produced in the following way. The excitation aforesaid acts either upon the blood-vessels of the spinal cord itself, or on those of the motor nerves proceeding from it, or upon those of the muscle. This is what, pathologically speaking, is meant by reflex paraplegia. Through this excitation, spasmodic contraction of the blood-vessels is produced, and consequently a deficient supply of blood is sent to one or other of the aforesaid parts.

Dr. Brown-Séguard has, however, first of all, before proceeding to speak of its treatment, etc., to answer the objections of those who deny the existence of the affection; and there are a few men of high repute who do deny the thing. The answer of Dr. Brown-Séguard is, on the face of it, the best which can be given. He leaves transcendental physiology, and asks his readers to look at a plain series of facts which he unrolls before their eyes, and which are comprehensible to the understanding of the youngest and the oldest of us. To us, we must confess, these facts demonstrative are as “plenty as blackberries”; and we cannot imagine that any one except a *tête-montée* physiologist or an absolute specialist can refuse to accept the consequences which flow from them. A female suffers from paraplegia. Her uterus is displaced. The abnormal position of it is rectified, and the paralysis disappears. Amaurosis exists in combination with irritation of the frontal nerve; the frontal nerve is divided, reflex action from the irritated spot is cut off, and sight rapidly returns. Neuralgia of external parts exists; and the patient's auditory powers are good, bad, and indifferent, according to the absence, presence, and

* Lectures on the Diagnosis and Treatment of the Principal Forms of Paralysis of the Lower Extremities, by C. E. Brown-Séguard, M.D., F.R.S.

acuity of the neuralgia. Dentition, worms, irritation of the womb, diphtheritis, etc., are at times associated with various kinds of partial paralysis; and *sublatâ causâ tollitur effectus* has been duly observed in such cases.

Now, the proof that these paralyzes do not depend upon disease of the nervous centres is this very plain one; viz., that the removal of the peripheric irritation—the worms, the displaced womb, etc.—could not in such case have removed the paralysis. And if a very hardened sceptic in these matters should still object that, nevertheless, the cures in such cases might have been more properly called rather a coincidence than a consequence—we should advise him to consult Dr. Brown-Séguard's book, and study his witnesses. The collection of cases there to be found, derived from numerous different sources, will, we fancy, demonstrate to the satisfaction of every one—except of those who, apparently for argument's sake, will on occasion deny that B follows A in the alphabet—that *reflex paralysis* is a medical fact.

In these cases it will be seen, that what Dr. Brown-Séguard calls the *outside irritation* preceded the paraplegia, and that cure of the latter quickly followed the removal of the irritation. Again, in many of these cases, the paralysis increases and decreases with the condition of acuity of the outside irritation; and no treatment has any effect in removing the paralysis so long as the irritation was left unremoved. In some of the cases, the paraplegia appeared, disappeared, and reappeared several times over with the appearance, disappearance, and reappearance of the outside irritation. "Can there," says Dr. Brown-Séguard, "be more decisive proofs that it is the outside irritation starting from some sensitive nerves in various parts of the body, which produces the paraplegia?"

Besides, if we do not accept this view of the case, we are left without any means of explanation of the paralysis in most of these cases. The idea of these kinds of paralysis being produced by, for instance, pressure of the uterus on the obturator nerves or on the sacral plexus; or by the action of poisonous matters accumulating in the blood in retention of urine, or in diphtheritis, or enteritis, is very chimerical.

But, it is objected, we cannot accept this reflex paraplegia; for it is impossible to understand how it can occur. And here the physiologist steps in, and answers without hesitation—*les pièces à la main*—that, on the contrary, it is very easy to show how a paralysis can take place by a reflex action starting from a sensitive nerve. And practitioners who pride themselves on being practical men, and *not* physiological physicians, must, we suppose, here take a lesson from the physiologist.

An outside irritation may produce paraplegia by causing reflex contraction of blood-vessels in two ways.

It is proved beyond doubt, that blood-vessels have similar relations to the nervous system, to those which muscles of animal life have to this system. Blood-vessels contract with energy and sometimes pass into a state of prolonged spasm; 1. when their motor nerves are *directly* excited; and 2. when excited through the cerebro-spinal axis through irritation applied to some centripetal or excito-motor nerve. In these contractions of blood-vessels we find the cause of paralysis. The contractions may occur: 1. In the blood-vessels of the spinal cord; 2. In the vessels of the motor nerve passing from the cord; and 3. In the vessels of the muscles themselves.

Dr. Brown-Séguard has, he tells us, seen contraction of the blood-vessels of the pia mater take place in the spinal cord, when the lobes of the kidney, or the vessels and nerves of the suprarenal capsules, were ligatured; and the contraction is generally greatest on that side of the cord corresponding with the side irritated. Paralysis of the lower limb has been known to follow extirpation of the kidney on the same side of the body. Again, reflex paraplegia may be produced by *insufficiency of nutrition*, resulting from this contraction of the blood-vessels. This explanation of the paraplegia as being a consequence of contraction of blood-vessels, must, however, at present be received as theoretical.

Another argument in favour of this view of the case is derived from the fact of the normal condition of the spinal cord—the absence of all visible signs of disease—observed in persons who have died after presenting symptoms of reflex paraplegia; as in cases of paraplegia associated with retention of urine.

Thus, then, here stand the facts touching Reflex Paraplegia:—1. There is no organic disease of spinal cord; 2. The paralysis will rapidly disappear when the source of reflex irritation is cut off; and 3. The vascular supply of cord, of motor nerves, and of muscles is under the influence of reflex action.

And now, then, we see the grand anatomical distinction between reflex paralysis, and paralysis associated with myelitis. In the first case, there is diminished, in the second, increased vascularity of the cord. In myelitis, the colour, the consistency, and the vascularity of the cord, are visibly changed. In reflex paraplegia, these qualities of the cord are found, to all appearance, unaltered after death. And here, therefore, as Dr. Brown-Séguard tells us, we have at once before us two groups of paraplegic diseases—one in which too much blood is circulating in the spinal cord, and one in which the very opposite condition of the cord exists. And then, he adds, consider the value of a right discrimination between them. The remedies which suit one group are actually injurious in the other. There are some, and he says that he can prove the fact, that diminish the amount of blood in the spinal cord; and there are others

that increase the quantity. And yet, these remedies are often blindly and indiscriminately employed in paraplegia. Mercury, ergot of rye, and belladonna, Dr. Brown-Séquard asserts, diminish the blood, and strychnine and brucia increase the blood in the spinal cord. On another occasion we will see how Dr. Brown Séquard proves this assertion; and also what he has to say of the diagnosis and treatment of this remarkable affection, reflex paraplegia.

THE WEEK.

A most desirable object was last week brought before the public—the establishment of a Lunatic Asylum for the poorer portions of the Middle Classes; and we sincerely trust that Lord Shaftesbury and the gentlemen who assisted him may succeed in their endeavours to establish such an institution. It is, indeed, high time in many ways that the good intentions of the benevolent should be turned towards the particular class of society here referred to. We have been now so long accustomed to consider the wants and miseries of what are called the poorer classes, that we have almost forgotten the existence of a class of persons, who are equally deserving of compassion and consideration with the lower ranks. Indeed, we have reason to doubt, when we hear of periodical strikes amongst mechanics, and of the enormous sums of money handed over by one set of mechanics to another set during their “outing” on strike, whether at the present moment a good deal of our charity is not very ill directed. And when we are told that the working classes of this country spend something like fifty millions sterling *per annum* in the articles of beer and spirits, and when we put by the side of this social science statement the fact, that a large proportion of our hospital patients become patients through the ill effects, direct or indirect, of drink—we surely have something like good grounds for questioning the wisdom of many of our modes of distributing charity. Medical men know right well, that many individuals of the middle classes are often as much objects of our benevolence as are the sick of the working classes; and certainly in no case can they be more so, than when afflicted with insanity. The means of the individuals to whom we refer do not enable them to compass the luxuries of a private lunatic asylum; and naturally enough their friends wish a better resort for them, than that which bears the stigma of pauperism. It is to meet this want that Lord Shaftesbury and his friends now appeal to the benevolent. An account of the meeting is given at another page.

LORD EBURY is evidently what is called a political economist. He has gathered his ideas of human nature from a creditor and debtor sort of account of

man's proceedings. To sell in the dearest and buy in the lowest market, and make the most of your goods, *per fas et nefas*, appears to be in his view the natural instinct and duty of men, who (not being noble lords) live in a commercial country. With such an estimate of man in general, and with an ignorance only equalled by its insolence, the noble lord has delivered himself of his views of the moral perceptions of those of our medical brethren who manage private lunatic asylums: “Private asylums were entirely founded with a view to the profit and loss of the principals; and when the duty of cure was on the one side and the inclination of profit on the other, it was not difficult to judge by the universal rule of human nature to which side the balance would incline.” According to this assertion, it is the natural instinct of every doctor who has a patient, to keep him ill as long as he can, or, at all events, not to do his best to cure him. We should hardly have thought that any man, who does the benevolent as a regular thing, could have uttered such an ignorant calumny on our profession; and can only regret that his lordship, in his experience of medical human nature, has been so particularly unfortunate as to have been led to such conclusions. One thing consoles us; and it is this, that we believe his lordship is in reality very ignorant of our professional proceedings. If we are not much mistaken, he is a great admirer of quacks; and indeed a great gun, often fired off by homœopaths. We, therefore, may very reasonably conclude, that it was not through intercourse with our professional brethren that he picked up his degraded notions of a medical man's honour and honesty. So we will leave him to settle his account with his homœoquacks.

SCIENCE is to be represented in the *Upper House* in Austria—its House of Lords—by Rokitansky, “the renowned Professor of Anatomy in the great Hospital of Vienna,” as the journals designate him. The besotted and benighted government of the Hapsburgs has, therefore, stolen a march upon our civilised and enlightened insular rewarders of science. Who in our profession when he reads these lines will not think of Sir Benjamin Brodie and the House of Peers? And why is Rokitansky called to the *Herr-enhaus*? Solely because his peculiar scientific knowledge may be of use to his country.

A YEAR or two ago, theological midwifery had a small agitation in Dublin. It has now had a large one in Paris; and this time in reference to *post mortem* hysterotomy. We need hardly say that, practically, the discussion has left the question where it found it. It was hardly to be supposed that, at this time of day, a medical academy could be got to back the subtleties of medico-theologians. All that can be said upon the subject of *post mortem* hysterotomy