Original Communications.

SOME REMARKS ON THE CAUSATION OF NON-ORGANIC PARALYSIS.

By C. Handfield Jones, M.B., F.R.S., Physician to St. Mary's Hospital.

In a paper on the physiology of the spinal cord and brain, in the *Journal de la Physiologie*, Dr. Brown-Séquard adduces some important facts, which go to show that irritation of sensitive or excito-motor nerves produces, for a variable time, a diminution of the vital properties and functions of the part of the spinal cord to which they proceed. Two of the most striking are the following:—4. The application of a ligature on the hilus of one of the kidneys, or suprarenal capsules, or, in other terms, the irritation of the nerves of these organs, determines very often the same effects as section of a lateral half of the spinal cord. 6. If, after having rapidly exposed the cord in the dorsal region, without having produced paralysis or anæsthesia of the posterior limbs, we excite the posterior roots of a pair of nerves on both sides, we observe immediately paralysis and anæsthesia in the posterior limbs; and if we irritate several pairs, these results increase in proportion to the number of pairs irritated and the degree of irritation.

In a preceding paragraph, Dr. Brown-Séquard states his intention to demonstrate "that it is by a reflex action on the blood-vessels of the nervous centres that irritation of centripetal nerves (sensitive or excito-motor) determines the alterations of nutrition, as the result of which are produced very often paralysis, anæsthesia, and different forms of convulsive affections (hysteria, epilepsy, catalepsy, chorea, tetanus, cramps, contractions, tremblings, etc.)"

Now, as the paralysis from irritation of centripetal nerves is said to occur immediately, it seems to me difficult to believe that any notable amount of alteration of nutrition can occur so rapidly, at least, as the result of mere anæmia. Animals after decapitation, when the circulation must be well nigh abolished, manifest reflex movements perfectly; anæmia is therefore insufficient to account for the loss of function of the cord. Dr. Brown-Séquard's own reply, in the same paper, to some objections against certain other experiments seems conclusive on this point.

"It is true that the cord loses one of the sources of its supply of blood when the roots are divided; but, on the one hand, the quantity of blood which the cord ceases to receive after the section of seven or eight pairs of nerves, is not very considerable (?); and, on the other hand, the entire suspension of the circulation after the removal of the heart allows the properties and functions of the cord, not separated from its roots, to remain during one or two minutes, whilst the section of the roots annihilates or diminishes immediately these properties, and as quickly abolishes, or renders less active, the exercise of its functions."

It seems, therefore, to me incontestable that we must look to some other cause than local anæmia for the paralytic phenomena in these and like cases. If we look to the two chief kinds of non-organic paralysis; viz., that termed reflex, and that which I have called simple, or neurolytic, we see that in the first the palsy, to all appearance, depends on some morbid impression conveyed to the centre, ceasing on its removal; while, in the other, the nervous centre appears to be directly enfeebled, as by the action of some poison, or obscure influence, on its tissue; and the "juvantia" are not, as in the other case, the removal of an irritation, but stimulants. Amaurosis from dental irritation, paraplegia from a stricture, are examples of the first; influenzal and malarious paralysis of the second form. In the latter affections, the signs of general debility are often so *prononcé*, as well as the effects of tonics and stimulants, that we can hardly err in regarding the condition of the nervous centre implicated as one of debility. We are then entitled, it seems to me, to assume the occurrence of a form of paralysis depending on temporary functional disorder or exhaustion of a nervous centre. Some minute alteration in the cells of the gray substance, or in the connected axis-cylinders, would easily arrest the free passage of nervous force. Now, if this may occur from the direct influence of some poisonous matter in the blood, it seems at least probable that it may also occur as the result of some morbid impression on the periphery of a centripetal nerve. That the paralysis is in some way dependent on the morbid impression we know; that anæmia from contraction of blood-vessels will not account for it we have admitted; there remains, therefore, so far as I can see, nothing but to assume some interference with, or derangement of, the minute molecular changes, which occur normally during the active state of nervous tissue. In the foregoing I have assumed, and I suppose fairly, that the morbid condition termed reflex paraplegia is closely analogous with that produced in the experiments above cited.

FOREIGN OPINIONS OF THE NATURE OF SYPHILIS.

Collected by M. Berkeley Hill, F.R.C.S., M.B.Lond.

IV.—Diday of Lyons.

M. Diday published, in the *Gazette Hebdomadaire* for June 21st, 1861, a summary of his views on syphilis, entitled *Histoire Naturelle et Thérapeutique de la Syphilis*. He says that, between March 1855 and June 1861, he has had under his care two hundred cases of constitutional syphilis, both primary and secondary in its affections, of which he has detailed notes of one hundred and thirty. He takes this mass of observations as his basis on which to found his conclusions.

The course of syphilis was sometimes severe, but generally light, in these cases.

Origin. Acquired and not inherited syphilis always commences by more or less ulceration, which ulceration has two varieties—1, the indurated chancre; 2, the chancriform erosion. This latter is identical with the "parchment chancre" of Ricord, and has been described under different names by other authors. The disease may be communicated by either of these, or by secondary eruptions. When by the latter, the chancriform erosion is the primary sore resulting. The chancriform erosion propagates most syphilis, because it is more indolent than the indurated chancre, and better permits friction against its surface; it also is more contagious than the secondary lesion, whence it fails less frequently to communicate the infection.

Severity. This depends on—1. The source. When the contagion comes from a primary indurated chancre, the syphilis is generally severe; also, if the infection be hereditary, less so when the inoculating lesion is chancriform, and least so when from a secondary affection. The more recent the chancre which gives contagion, the more likely is the disease to be severe. 2. The state of health of the patient, the degree of his observance of the rules of hygiene, etc., have also their influence. The tertiary affections are no longer contagious. The immunity of a syphilised person is regulated—1, by the source whence he was infected; 2, by the distance of time since he was inoculated. For example, a man recently inoculated by an indurated chancre is quite safe; but a person for whom several years have elapsed is possibly re-inoculable.