RECENT PROGRESS IN PATHOLOGY OF THE NERVOUS SYSTEM.

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Cerebral Concussion. — In the last report,[1] certain reasons were given for believing that in so-called cerebral concussion a vascular paralysis occurs inside the cranium, the blood collecting in the larger veins and sinuses, as it does in those of the abdomen in cases of shock, leaving the brain-substance essentially in a condition of anæmia; and that it is to this that the symptoms are due. More recently some experiments have been reported by Koch and Filehne[2] in which this condition of concussion was produced experimentally in animals by rapping the head with a light hammer, care being taken to entirely avoid causing hæmorrhages. Under these circumstances they found reason to think that not alone the vaso-motor, but all the other cerebral centres as well, suffered mechanical injury.

Post-Paralytic Chorea.[3] — It has long been known that chorea in children is often associated with, or followed by, a more or less well marked hemiplegia, and Hughlings Jackson has used the fact as an argument in favor of his view that, as a rule, the usual form of chorea is dependent upon a lesion (minute emboli) in the anterior part of the hemisphere of the brain. According to Dr. Mitchell, it happens also that a one-sided awkwardness of movement, even so marked as to suggest incipient chorea, "is sometimes the precursor in children of a hemispasm." The reverse sequence, the choreal disorders following on hemiplegia, has hitherto not been distinctly acknowledged as something of frequent occurrence, although, their attention being once called to the point, many physicians can no doubt recall cases like those described by Mitchell. He claims "that on adults who have had hemiplegia and have entirely recovered power, there is often to be found a choreal disorder, sometimes of the leg and arm, usually of the hand alone; that it may exist in all degrees, with partial loss of power, and with full normal strength; that it may consist in mere awkwardness, or exist to the degree of causing *involuntary* choreoid motions of the part;" further, "that the younger the person when paralyzed, the more probable is the occurrence of choreal developments, so that in many cases of infantile deformity the choreal troubles remain as the chief difficulty long after there has been a restoration to full muscular power;" and moreover, that there is "reason to believe that some of the general and prolonged choreoid disturbances which we see now and then from birth are due to, or rather are in some fashion related to, intra-uterine palsies which have either wholly or in part passed away."

[1] Boston Medical and Surgical Journal, xci. 114, July 30, 1874.

[2] Archiv für klinische Chirurgie, 1874, xvii.

[3] S. Weir Mitchell, M. D., American Journal of the Medical Sciences, October, 1874.

It is plain that these facts, if they are such, lend further support to the theory proposed by Hughlings Jackson, mainly on theoretical grounds, that the involuntary, localized, movements of chorea and the unilateral convulsions associated with it are produced by the irritation of the central portion of nerve-tracts corresponding with definite groups of muscles, and are analogous to the contractions and convulsions occurring in the well-known experiments of Fritsch and Hitzig. As Mitchell says, the above propositions, if true, indicate "that choreoid affections may be owing to gross organic lesions, and that, under certain favoring circumstances, the same lesion which occasions a palsy may in itself, or in the disturbances it causes, also bring about chorea."

It is also interesting to remark in this connection, as further evidence of their cerebral origin, that the choreal movements observed in these cases were sometimes of a truly coördinated order, and thus again, analogous to the movements in some of the experiments of Hitzig and others. Thus one patient used to "rub continually the right leg with the right hand, so as even to wear out the pantaloons." In another case the arm was alternately flexed and supinated, and in another it would swing across the body, but only while the patient walked, the fingers being firmly flexed at each step. Hughlings Jackson has reported recently the case of an epileptic who went regularly through the motions of twirling his mustache, in complete unconsciousness.

As regards their clinical history, these cases of post-paralytic chorea are very obstinate, but improvement is not out of the question, especially under persistent and careful gymnastic training of the muscles affected, by a competent teacher.

It is now several years since Dr. W. A. Hammond first described a disease, called by him athetosis, which though not identical with chorea is certainly analogous to it, consisting in perpetual, slow, powerful, totally uncoördinated movements of the fingers and toes, their muscles becoming hard and large under the constant exercise, and this also there is some reason to regard as an affection of cerebral origin; at least in both the cases given in the author's Diseases of the Nervous System, there was other evidence of cerebral disease, epilepsy in one, aphasia in the other, associated in both with failure of the memory and intelligence.

Circulation in the Encephalon.[1] — We would simply refer by title to this work, which does not admit of a brief summing up, on account of its great practical value. It consists of a description of the exact distribution of the cerebral vessels, and promises, in the light of a more advanced knowledge of the functions of the different parts of the brain itself, to aid us greatly in the exact localization of embolic inflammations, and help to further physiological results.

[1] Par H. Duret, Archives de Physiologie, vi., 1874.

Localized Inflammation of the Anterior Cornua of the Spinal Cord. — No doubt can now be entertained of the propriety of recognizing the occurrence among adults of a disease closely resembling, in its pathology and clinical history, the so-called essential or spinal paralysis of children, although in certain details the two are different. The following group of symptoms is given by Seguin[1] as characteristic.

"Dysæsthesia and slight temporary anæsthesia, paresis and akinesis, both these symptoms affecting the extremities, and in rare cases the face, eyes, tongue, and throat; not affecting the respiratory muscles nor those of the back and abdomen, nor the bladder, nor the sphincter ani. Muscular atrophy in the paralyzed parts. Loss of electro-muscular contractility (to faradic current) in the atrophied muscles. A strong tendency to spontaneous retrocession of the palsy and to spontaneous cure.

"The important negative characters of this affection are: Absence of palsy of bladder, or of sphincter ani, or of respiratory muscles. No bed-sores. No great and extensive anæsthesia. No spinal epilepsy" (all signs of acute diffused myelitis).

The pathology of the disease is essentially "granular degeneration of the ganglion-cells of the anterior horns." The treatment resembles that of infantile paralysis.

A case of muscular wasting from localized inflammation of the anterior cornua, though perhaps not belonging fairly to the class of diseases just discussed, is reported by Prevost and David,[2] where the sole symptom was atrophy of the muscles of the thenar eminence on the right hand, and the nervous lesion atrophy of the eighth spinal nerves on the right side, atrophy and sclerosis of the right anterior cornu, involving the large, motor nerve-cells of the lateral group alone, through a space of about one inch in length, the maximum of disease lying opposite the eighth nerve. The patient was sixty years old and had died from some surgical injury, the muscular atrophy having existed, apparently unchanged, since his childhood.

Two remarkable cases, one of elevation, the other of depression, of the general bodily temperature in connection with spinal injury have been reported in England. The first,[3] observed by Mr. Teale, of Scarborough, apparently under every precaution, was that of a young lady who was thrown from her horse while hunting, sustaining a fracture of two ribs and an injury of some sort to the spine at the level of the

[1] For excellent summaries of our knowledge on this subject, with original cases, see Considérations sur l'atrophie aigue des cellules motrices, par Petitfils, Paris, 1873; Spinal Paralysis, by E. C. Seguin, Transactions of the New York Academy of Medicine, 1874. See also this journal for March 25, 1875, a paper by Dr. D. F. Lincoln, of Boston, and Bernhardt, Archiv für Phsychiatrie und Nervenkrankheiten, iv. 2.

[2] Archives de Physiologie, vi. 595, 1874.

[3] Lancet of March 6, 1875. See also this journal for April 8, 1875.

sixth dorsal vertebra. During the attack of meningitis which followed, the temperature, measured both in axilla and in the rectum, rose repeatedly to 122° Fahrenheit, and perhaps higher, no thermometer being at hand which would record above that point. During nearly two months it remained above 110° Fahrenheit. The case ended in recovery.

The other case[3] was that of a man who fell from a considerable height, dislocating the first dorsal vertebra, and causing a red softening of the cord at that level, with complete paraplegia. When first admitted into the hospital he had a temperature of 95.2° Fahrenheit, and from then until his death, which took place on the eleventh day, it continued to sink gradually, reaching 80.8° Fahrenheit, its lowest point.

Phosphorus in Nervous Affections. — It is well known that Thompson,[2] as well as Broadbent[3] and others, have been praising highly the efficacy of phosphorus in neuralgia, and a number of other diseases, mainly of the nervous system. Although the number of their cases is not yet great enough, and their observations have not yet been sufficiently controlled, to justify us in definitely accepting their conclusions, yet those who wish to test them will do well to observe certain precautions, recommended especially by Thompson, as the incautious use of the drug is attended with great danger. Phosphorus has generally been administered either in pillular form, where it exists either dissolved in suet, wax, resin, bisulphide of carbon, or a menstruum similar to these, or as reduced phosphorus, or in the shape of phosphide of zinc; or else in solution in alcohol, ether, or one of the vegetable or animal oils.

According to Thompson, the solutions in the vegetable (almond and olive) oils should be strictly avoided, since annoying and serious results have occasionally followed their use in the hands of several observers, probably because a portion of the phosphorus is converted (by the limited quantity of oxygen dissolved in the oil) into hypophosphorous acid, which is irritating to the stomach and very poisonous when absorbed. Theoretically this change would not take place if the oil had been superheated, and the contained air driven off; careful clinical experiments upon this point have, however, it is said, not yet been made. The author thinks it is the result of the use of this preparation that have served largely to give phosphorus its bad reputation among the profession.

The pills containing phosphorus dissolved in bisulphide of carbon are also objectionable on account of the poisonous character of the menstruum as well as because there is reason to think that the latter tends to counteract the effect of free phosphorus. The pills made with wax and resin are objectionable on theoretical grounds on account of their

[1] British Medical Journal, February 8, 1873.

[2] Free Phosphorus in Medicine, J. Ashburton Thompson, London, 1874. See also a review of the work in this journal for January 21, 1875.

[3] Practitioner for April, 1873, and January, 1875.

insolubility, but the latter, so far as they have been tried, have proved sufficiently efficacious.

Pills of undissolved free phosphorus are dangerous unless special precautions be taken, in their manufacture, to subdivide the element thoroughly, and at the same time to prevent it from becoming coated, by oxidation, with the inert phosphoric acid, and this is not usually done. Even then each pill should be carefully protected, and given on a full stomach, in order that the oil in the food may help dissolve the drug, which otherwise is in danger either of being partially converted into hypophosphorous acid, or of remaining undissolved, to be absorbed suddenly at some future time in accumulated amounts, when a quantity of oily food happens to come into contact with it.

The pills made with suet are theoretically unobjectionable, but have not practically proved so good as some other preparations, of which the best are the solutions in cod-liver oil,[1] alcohol, or ether, and the pills of phosphide of zinc. Of these the second can be made the most palatable,[2] but the former is to be preferred. Phosphide of zinc, in sugar-coated pills, is a good preparation, especially for children, but as it decomposes only with the aid of a weak acid each dose should be followed by a draught of an acidulated tonic or of lemonade, lest the drug should accumulate in the intestine.

℞	Phosphorus	gr. j.
	Cod-liver oil	ʒ iss.
	Oil of peppermint	♏ j.
℞	Tincture of phosphorus (a saturated solution in absolute alcohol dissolved with heat and agitation)	ʒ iij. ♏ x.
	Glycerine to	ʒ iss.
	Spirits of peppermint	♏ v.

A full dose of phosphorus for short periods is one twelfth of a grain of the solution in alcohol or cod-liver oil every four hours, or one third of a grain of the phosphide of zinc every two hours; but for prolonged use one fiftieth of a grain of the former is enough. There is no absolute reason to believe that the effects of the drug are cumulative, but under the slight uncertainty it is well to make a pause every two or three weeks. It is said that with these precautions phosphorus may be given with perfect safety, but in view of some of the cases of poisoning that are reported, and of the fact that our knowledge of its chemical and physiological relations is confessedly a little insecure, the physician could hardly be too watchful while using it, especially since according to Thompson no antidote is known which will neutralize the effects of the drug after it has entered the circulation. "The slightest symptom of dyspepsia should lead to its instant intermission," and the patient should be examined for tenderness at the epigastrium or right hypochondrium, and for enlargement of the liver, as signs premonitory of danger.

[1] Formula No. 6. [2] Formula No. 10.

Monobromide of Camphor. — The use of this drug, warmly recommended by Bourneville [1] as a hypnotic and sedative, on the ground of physiological and therapeutic experiments, is not favored by Lawson,[2] who on fair trial found it less efficient than some other drugs of the same kind, and difficult to take in efficient doses without causing gastric irritation.

WILKS'S AND MOXON'S PATHOLOGICAL ANATOMY.[3]

In 1859, Dr. Wilks published his lectures delivered to the students at Guy's Hospital during the two preceding years. The scope of the book may in part be inferred from the preface, wherein it is learned that the original plan was that of a sort of syllabus, accompanied by references to specimens in the hospital museum. Further explanation seeming necessary, the lectures were published as delivered. Such was the first edition, one of unquestioned originality, the work of a sagacious observer, and representing an epoch in the progress of the study of its subject in England. Though nominally a series of lectures, it furnished a fund of material, both of fact and of suggestion, which made it of very general value. Not to be considered as a text-book, it might rather be regarded as a sort of supplementary catalogue of the museum, calling attention to the variety of specimens there contained, many of which have owed their preservation to some of the most eminent of England's medical worthies.

The student of pathological anatomy in 1875 in some respects almost literally hears a different language from that used in 1857; the demonstration of specimens takes place in a different way; points upon which stress was then laid are now overlooked, or are treated with relative indifference. Experimental pathology and its results, still more its possibilities, have opened a field which seems to have no limit, yet one which must be entered by a broad though well-defined way.

We should therefore object to the desirability of retaining in the second the general aim and character of the first edition.

If originality is preserved, it appears in such a form as to be less impressive. We think the student of the book cares less for the ideas of the writer than for his statement, critical if need be, of those of others. Above all he wishes to be taught how and what to observe, and requires in addition a manual, to which he may refer when in doubt, or when desirous of further information.

If he may thus become a worthy seeker, the merits of originality will be more thoroughly appreciated hereafter.

In looking over the section on bone, we are somewhat surprised to find that Dr. Moxon regards a node as a circumscribed formation of lymph beneath

[1] Practitioner, August, 1874.

[2] Ibid., November, 1874; April, 1875.

[3] *Lectures on Pathological Anatomy.* By Samuel Wilks, M. D., and Walter Moxon, M. D. Second Edition. Philadelphia: Lindsay and Blakiston. 1875.