VI.—CLINICAL AND PATHOLOGICAL MEMORANDA.

By BYROM BRAMWELL, M.D., F.R.C.P. (Edin.), Assistant Physician to the Edinburgh Royal Infirmary; Lecturer on the Principles and Practice of Medicine, and on Practical Medicine and Medical Diagnosis in the Extra-Academical School of Medicine, Edinburgh.

XXI.—Left Hemiplegia, with Paralysis of the Muscles supplied by the Right Third Nerve; the result of Cerebral Syphilis; Word-Blindness.

W. S., set. 34, a cooper, first came under my observation in the out-patient department of the Edinburgh Royal Infirmary on 10th February 1886, suffering from the effects of an attack of intracranial syphilis, and complaining of pain in the back and loins.

The patient, who looked as if he had known better circumstances, and who gave me the impression of having been both intelligent and fairly well educated, stated that he had contracted syphilis from his wife some six years ago. Four years ago, he had suffered from very severe neuralgic pains in the head, and his right eye had become paralyzed. Three years ago, he had had what he termed an “apoplectic attack,” which had been followed by paralysis of the left side of the body—face, arm, and leg. He has not been able to speak well since. He very slowly and gradually recovered from this condition; the paralysis of the face and arm
had, he stated, entirely disappeared, but the leg was still weak. He suffered from severe headache before the apoplectic attack came on. For the past four months, he has been able to follow his former employment, and to earn fifteen shillings a week as a cooper. Before his illness he was employed as a foreman cooper, and could read and write well.

The patient's memory was evidently very much impaired, but the essential accuracy of the above statement as to the previous history is confirmed by Dr John Thomson, who had seen the patient a few days after the onset of the hemiplegic attack. Dr Thomson has kindly furnished me with the following note as to the exact mode of commencement of the attack:—"The patient's friends state that, some years ago, he had an attack of inflammation in the side; he has also suffered from rheumatism, but not from rheumatic fever. For the past twelve months he has had neuralgia of the head, which was followed by paralysis. The right eye was shut for sixteen weeks, and he saw double; the rest of his face was not affected, and no other parts of the body were paralyzed. The lid of the right eye has always drooped since the attack. He has also suffered from recurrent attacks of neuralgia in the head. On Sunday morning last (26th January 1883), he choked while sitting at breakfast; he then 'took a shiver,' and was put to bed; there was some difficulty in getting his coat off his left arm. During the afternoon of Sunday, the left side gradually became more paralyzed; he spoke a little when roused, but he has never spoken clearly since. He lay in a stupid condition until Tuesday afternoon, and seemed to have pain in the throat; he was very cross and irritable, and would not swallow. On Tuesday afternoon, he spoke better, but did not move his arm. On Wednesday, he spoke quite intelligently, and was not so irritable; had a dose of castor-oil; has refused to take everything since; he attempted to get up and go out; had to be held down in bed, and was therefore brought to the Infirmary."

On examination (10th Febry. 1886), the patient was seen to be well nourished. The gait was markedly paralytic, with much circumduction of the left leg. There was some drooping of the right eye-lid, and the left side of the face seemed somewhat flatter than the right.

On more particular examination, the left leg was seen to be somewhat smaller than the right, but the muscles were nevertheless fairly firm and well nourished. The force which could be exerted by the muscles of the left leg was distinctly less than that which could be exerted by those of the right. The right arm and hand were a little stronger than the left, but not by any means more so than is often seen in right-handed people; and it is important to note, on account of the aphasic symptoms which were present, that this patient had always been
right-handed. No perceptible difference could be perceived between the strength of the two buccinator muscles; the conjunctival reflex was very active on the left side; the slight flattening of the left side of the face, with increased depth of the right naso-oral fold, may therefore have been natural to this patient; there was, in short, nothing to show that it was paralytic.

There was some ptosis of the right lid; the patient could neither rotate the eyeball upwards nor downwards; the eyeball was not rotated inwards during efforts of fixation for near objects, but it was moved inwards (i.e., to the left) in association with the opposite eye (i.e., when both eyeballs were turned to the left).

The patient says he sees double when an object is placed above the eye. The right pupil was dilated, and was twice the size of the left; its outline was slightly irregular; it contracted, but not briskly, both to light and accommodation.

Both acuity of vision and the field of vision were considerably impaired in the right eye; much less so in the left. (See Fig. 119.)

On ophthalmoscopic examination, the retina surrounding the margins of the right disc were perhaps a little hazy; the veins in the right eye seemed to be a little larger and more dilated than those in the left, and the disc itself, I thought, was a little paler (possibly, however, this was the result of better illumination, due to the dilated pupil).

The other special senses appeared to be normal.

Condition of the Reflexes.—When the patient first came under observation, a most beautiful knee clonus could be produced with the greatest facility in the left leg; the right knee-jerk was very lively, but no clonus movement could be elicited on this side. A
slight ankle clonus was with difficulty produced on the left side.

Tickling the sole produced clonic spasms in the left thigh. The plantar reflex was very lively on the right side.

The cremasteric reflex was exaggerated on both sides, being greater on the right than on the left.

The abdominal and epigastric reflexes were very lively on the right side; less so on the left.

Lumbar and scapular reflexes were not obtained.

Urination and defaecation were said to be normal.

The sensibility of the skin to tactile and painful impressions seemed normal and equal on both sides of the body, no discoverable difference being observed between the sensibility of skin in the two legs. Sensibility to temperature was not tested.

The patient was well nourished. The heart and kidneys appeared to be healthy.

Psychical Functions.—Memory seemed to be much impaired, and the mental functions generally (so far as could be judged from the statements of the patient as to his mental capacity prior to his illness) deteriorated. But although the patient’s memory was very defective, and his cerebration generally slow, he could not be termed unintelligent,—he seemed to understand what was said to him, did what he was told, and obeyed all the requests which were made during the course of the examination. His emotional faculties were under loose control; he laughed much too easily, and seemed inordinately amused at many of the tests which were applied in eliciting the foregoing particulars.

During the past fifteen months, the memory and intellect have become still further deteriorated.

Speech Faculties.—There was no motor aphasia; articulation was somewhat slow, thick, and hesitating, being not unlike the blurred articulation produced by drink.

There was no “word-deafness,” the patient understood everything that was said to him, and obeyed all requests in an intelligent manner.

I find it noted that when the patient first came under observation, he could read both type and written characters. This statement must, however, be taken with some reserve, for I have no exact notes as to the details of the examination in this respect, and when (after an interval of some months) the patient was again seen and this point was carefully tested, his reading power was much impaired.

On 2nd June 1887, he was able to read type characters from a book fairly well. The words the, on, of, by, hotel, same, each, Switzerland, were read correctly. He seemed, however, at the same date almost unable to read written words. The word the, written as in Fig. 120, he said was three figures. When asked after
a considerable interval to read the same word, he said, "It is two strokes and a nothing." The word on, written as in Fig. 120, he read correctly. The word no (see Fig. 120) he read as nothing; and the word by (see Fig. 120) he said, after some hesitation, "It is b, y; no, it is b, e; no, by."

When tested on another occasion, he was unable to read the written words the and of, while by he said was baby. While being tested on this occasion, he was obviously quite conscious of his defects, for he said, "I am like a daft man, before I spell that out now, I forget what I began with." On another occasion, he correctly read "William Sheels," "Edinburgh," and "How do you feel," but could not read the words dog and cat, when written by me.

He was also unable to write words correctly. His manipulative powers were unimpaired, but he always introduced far too many letters into his words. Even his own name, and the word Edinburgh, which must have become by frequent repetition, when he was well, thoroughly "well organized," were hopelessly mis-spelt. A facsimile representation of his signature, and of the word Edinburgh as he wrote it, are given in figure 121.

He made some mistakes in writing individual letters. At one visit the letters, a, o, c, g, t, p, and e, were written correctly, but on the same occasion he wrote v when told to write v, and v when told to write b. On the same occasion, he wrote good for God; goog for dog; tct for cat; alon for no; htee for the; and ndam for and.

The most striking defects were, however, in his power of reading and writing numbers.

He was able to read and write single numbers (1 to 9) correctly; beyond this, he was invariably wrong, and the mistakes which he made were in many cases repeated, although they were not in all cases identically the same.

On different occasions he wrote the number 10 as follows:—

10, 101, 1001, 10001, and 10101.

On the 8th of May, 11, 12, 13, 14, 15, 16, and 17, were written 111, 121, 131, 141, 151, 161, and 171.

On the 2nd of June, 14 was written 1141; and 15 was written 501.

The number 100 was written on different occasions as 1001, 10001, 100001.

The number 20 was written on different occasions as 120, 210, 200; the latter mistake was made on two separate days.
On one occasion 30 was written 300 and 310; 50 was written 1601; 60 was written 115; 70 was written 071; 80 was written 8100.

On 2nd June, the number 10 was read as 100; 101 as 10; 1001, which he had previously written as 10 or 100, was not read, but he said, "Oh, it is millions." 201 was read as 300; and before arriving at this result, he said, "That is a two and a one, that is three, that is three hundred." 20 was read as 200; 210 was read as 400; 150 was read as 155; 21 was read as 12; and 13 as 31.
On the 8th of June, 10 was read as 100; 1000 as 110; 101 as 111; and 1001 as 111. On the same occasion, all the single numbers were read correctly. He was then asked to read 15, and said, "Oh, but you are coming it too heavy on me now." When pressed to try and read it he said, "That is one and five, that is six."

In all these mistakes there is, it will be observed, the tendency to put in too many figures, and to end up with the figure 1. Some of the mistakes, such as 210 being read 400, it seems impossible to account for.

Remarks.—The chief point of interest in this case is undoubtedly the peculiar form of aphasia. It seemed to consist chiefly of an inability to correctly interpret written words, and both printed and written numbers. The mistakes in writing words and figures were clearly the result of this derangement in the sensory and intellectual side of the speech mechanism, and were not due to any defect of the way out for written speech ("writing centre").

It is important also to note that this peculiar form of word-blindness was associated with left-sided hemiplegia, and that the patient was right handed. These facts do not, however, conclusively prove that the aphasic condition was the result of a lesion of the right hemisphere. Such a conclusion would be premature, for in cerebral syphilis, as every one knows, it is no uncommon thing to meet with several cerebral lesions in the same patient. Although, then, the grouping of the symptoms is highly suggestive that the aphasia was, in this case, due to a lesion of the right hemisphere, yet, in the absence of post-mortem verification, it is impossible to be absolutely certain that it did not depend upon a lesion of the left hemisphere.

The paralysis of the third nerve was clearly due to a local lesion, probably a gumma at the base of the brain, involving the trunk of the third nerve; and there is nothing, so far as I can see, in the clinical history of the case to suggest the presence of a lesion of the left hemisphere. The left hemiplegia was probably, I think, due to syphilitic disease and subsequent blocking of the middle cerebral artery on the right side. It is possible that the gumma which involved the right third nerve, and produced the paralysis of the ocular muscles, had subsequently extended and involved the right middle cerebral artery. The fact that the paralysis of the face and arm had, for all practical purposes, completely disappeared, while considerable paralysis of the leg remained, showed that the syphilitic vascular lesion had more completely involved (i.e., more completely blocked) the branches of the middle cerebral artery which supply the motor centres for the leg, than the motor centres for the face and arm.

The form of alternate hemiplegia in which the face, arm, and leg, are paralyzed on one (the opposite) side, and the muscles supplied by
the third nerve are involved on the other (the same) side, as the lesion, is usually supposed to be indicative of a lesion of the crus cerebri (the hemiplegia being due to arrested function in the fibres of the pyramidal tract supplying the muscles on the opposite side of the body); and in those cases in which the hemiplegia and the paralysis of the muscles of the third nerve are simultaneously and suddenly produced,—in other words, in which there is reason to suppose that the lesion is a haemorrhage—such is usually, perhaps almost invariably, the case. But when the paralysis is slowly established, and more especially in those cases in which the hemiplegia and the third nerve paralysis are not simultaneously produced, the crus may not be in any way involved.

In the latter group of cases (i.e., where the third nerve paralysis on the same and the hemiplegia on the opposite side to the lesion are not simultaneously produced), the two independent paralyses may, of course, be due to two independent lesions.

In other cases of this description, and this is the point I wish to emphasise, for I am not aware that it has previously been noticed, the third nerve paralysis on the same and the hemiplegia on the opposite side are due to one and the same lesion at the base of the brain, which is situated in front of and does not involve the crus cerebri; the third nerve paralysis being due to a local lesion of the trunk of the nerve, while the hemiplegia is the result of a lesion of the internal carotid or middle cerebral artery. In other words, the hemiplegia is produced by a lesion of the motor centres or of the pyramidal tract in the higher parts of the cerebral hemisphere. Lesions which produce this form of alternate hemiplegia are, in the great majority of cases, syphilitic. While lesions which involve the crus may be acute (haemorrhagic extravasation into the tissues of the crus, for example) or chronic; in the latter case, the lesion of the crus may, of course, result from a gumma or other lesion at the base of the brain, which presses upon it from without.

VII.—A CONTRIBUTION TO THE SECTIONAL ANATOMY OF ADVANCED EXTRAUTERINE GESTATION.

By D. Berry Hart, M.D., F.R.C.P.E., Lecturer on Midwifery and Diseases of Women, Surgeons' Hall, Edinburgh; Assistant Gynaecological Physician, Royal Infirmary; Assistant Obstetric Physician, Royal Maternity and Simpson Memorial Hospital, Edinburgh; and J. T. Carter, F.R.C.S.E., F.F.P.S.G., Lecturer on Anatomy, Western Medical School, Glasgow; Examiner in Anatomy, F.P.S. Glasgow; formerly Demonstrator of Anatomy, School of Medicine, Edinburgh.

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No subject presents more points of interest to the gynaecologist than Extra-uterine Gestation. The remarkable nature of this deviation from normal pregnancy, the difficulty attending its diagnosis, the protean changes it may undergo during its develop-