of a harpoon I removed specimens from both gastrocnemii. The microscope exhibited a vast increase of connective tissue elements, especially of the white fibrous tissue. The muscular fibres had, for the most part, lost their transverse striation. Here and there the tranverse striæ were visible, but more generally they were indistinct, and still more frequently absent. There were numerous fat globules in the connective tissue and on the sarcous particles, but it was clearly made out that they were exterior to the sarcolemma, and that the muscular element had not undergone fatty degeneration.

I think it unwise to call this state of things Duchenne's Paralysis. Confusion is likely to result, in consequence of Locomotor Ataxy being frequently so designated. Better, I think, to use the term *Pseudo-hypertophic Paralysis* as combining all we at present know of it, clinically and pathologically.

Since the above remarks were written, I have met with another less advanced case among my out-patients at the London hospital, and in which I have failed as yet in detecting any well-marked determining cause for the malady.

Two Cases of Atheroma of the Blood Vessels at the Base of the Brain, with remarks upon the symptoms, diagnosis, prognosis, and pathological condition in that affection. By J. T. Sabben, M.D.

In publishing the following cases, recently under my charge, of mental derangement dependent upon atheromatous deposit in the coats of the larger cerebral arteries, without any apparent disease of the brain substance, I desire, if possible, to define the symptoms of that condition during life, so as to enable them to be distinguished from those of general paralysis, with which I believe them often to be confused.

Case I.

Atheroma of the blood vessels at the base, dilatation of and effusion into the lateral ventricles, thickening of the dura mater, with slight effusion into the arachnoid.

A gentleman, æt. 50, a merchant, married, with several children, whom I first saw August 22nd, 1868.

History.—Till within a month of this date he had always enjoyed good health, with the exception of occasionally suffering from slight

headache and biliary derangement, which was generally removed by aperients. He is stated to have been a most energetic and prosperous man in his business, and extremely sober in his habits, never showing the slightest symptom of anxiety with reference to mercantile or family matters. About two months before his attack he had entirely lost sexual power.

Symptoms.—I found him in his bedroom alone, he having driven everybody out by threatening them with the poker. He was engaged in washing furniture and various articles, some of which he had in a bath, and was stirring round with a stick. Upon my entrance he became extremely annoyed and excited, and it was with some difficulty that he could be persuaded to allow me to assist in his occupation; his face was very much flushed, the skin dry, the pupils slightly contracted and equal, and the pulse 120. He could not give me his reason for being thus employed, but constantly repeated "that he was receiving a million telegrams in a minute." His body was robust, with a tendency to corpulence, and of the hæmorrhagic diathesis.

Progress of the Case.—He was admitted into Northumberland House on the same day (22nd), and the excitement continuing he required the services of two attendants. There was great difficulty in persuading him to take food, not from any delusion with reference to it, but on account of his rapid talking. He began with half drachm doses of bromide of potassium with drachm doses of tincture of hyoscyamus twice a day, which had the effect after a fortnight of making him decidedly quieter. He continued this medicine until November 6th, when he took $\frac{1}{16}$ gr. of strychnine three times a day, but only for the period of a week, as it produced a return of the excitement, and it was thought advisable that the bromide of potassium and hyoscyamus should again be given. Under its influence he went back into his former quiet state, becoming daily stouter. On February 4th, 1869, he returned to his home with an attendant, being sufficiently well to take a drive each day. He was never at this time violent, and was attached to those around him. No perceptible alteration took place until the 8th of January, 1869, when, as he was rising at about 9 a.m., he was seized with giddiness and fell down in a state of unconsciousness, the whole of the body being convulsed. He remained in this condition for a quarter of an hour, when he recovered consciousness, but had partially lost the power of speech. During the day he was seized with a series of the same attacks, occurring at intervals of about an hour, each fit lasting from ten to twenty minutes, and increasing in intensity. He took small quantities of beef tea with port wine, and the bromide of potassium was given in drachm doses, which had the effect of entirely stopping the fits. He slept for ten minutes at the time through the night, and in the morning it was discovered that the power of speech had entirely gone. He could only with the greatest difficulty swallow the smallest quantity of nutrition. He remained in a semi-conscious state until 3 a.m. on the 12th, when he died from pure

exhaustion, it being utterly impossible to get any nourishment retained. He was to some extent conscious to the last, and would grasp the hands of those who were with him as a mark of recognition when spoken to.

P. M. Examination 60 *hours after death.*—Dr. Tuke, Mr. Solly, Mr. Kesteven and others were present.

Morbid Appearances.—On removing the skull cap the dura mater was of its normal colour, much thickened, especially over the right hemisphere; the arachnoid contained a small quantity of fluid—the capillaries of the pia mater were full of dark blood. Upon slicing the brain from above downwards the substance was found to be firm, and did not show the slightest appearance of degeneration. Upon opening the ventricles from two to three ounces of fluid escaped; the walls of the ventricles were perfectly firm and of their normal colour. Upon removing the brain the blood vessels at the base showed extensive atheromatous deposit, and when pressed between the fingers a gritty substance could easily be felt. The vessels most affected were the basilar and meningeal arteries, and in fact almost the whole circle of Willis was atheromatous.

Microscopic Examination.—The different parts of the brain were minutely examined, and no degeneration of nerve substance could be detected. The minute capillaries did not show the slightest appearance of puckering, and it was only as we proceeded towards the longer blood vessels that any change in structure could be observed. When a small portion was broken down and placed under the microscope a large number of fat cells were seen with dark opaque substances, which were evidently of a mineral character; possibly carbonate of lime.

Case II.

Fatty degeneration of the blood vessels at the base of the brain, with slight atheromatous deposit; extensive effusion into the arachnoid; slight adhesion of the dura mater.

A gentleman, æt. 41, a wine merchant, married, with three children. Came under my notice November 21st, 1869. For the history of his case I am indebted to his brother, who stated as follows:—

History.—That he had the usual illnesses of childhood, but never suffered from anything of a serious nature until May, 1868, when it was observed that his memory failed, and he became greatly confused with reference to certain accounts and payments. At this time he begged everyone with whom he came in contact to place him in an asylum, saying "that he was sure he was becoming insane." He was then removed from his wife, and resided with his father. At about 11 a.m. on November 1st, 1868, he was seized with a fit of an epileptic character, losing consciousness for only five minutes; his articulation was slightly affected, but was again perfectly clear after a

sleep of three hours. From this time until March 28th, 1869, he appeared to be recovering, and his friends had great hopes that he would be entirely restored to health. At about five o'clock in the afternoon of that day, on returning from a walk it was noticed that his manner was heavy and strange, and he soon after had a series of epileptic fits, which lasted about three hours, and resulted in a loss of consciousness for three days. He quite recovered from this attack, and remained tolerably well until the 2nd of August, when, having been in the country for some days, on his return to London he had another series of epileptic fits of about the same duration as the last. This time he remained unconscious for 10 hours. It was soon discovered that this attack had left him stone deaf; he was unable to hear even the loudest noise, and it became necessary to write down any questions, which he would answer tolerably coherently. He remained at home until November 12th, when, observing that he grew more excitable in manner and his answers to written questions less coherent, he was placed under my care.

Symptoms.—When I first saw him (Nov. 12th), the day of his admission into Northumberland House, he appeared perfectly at ease, and rambled on in an unconnected manner, going from one subject to another. When questions were written down he answered them quite correctly, and upon a dose of medicine being given him he would drink it with the greatest relish, saying "that it had not been in bottle long," imagining, I presume, that he was tasting wine in his professional capacity. The skin was perfectly dry, pulse 96, both pupils were equally contracted, and his power of hearing had entirely gone. (For my own satisfaction, on December 10th, I got Mr. Harvey to examine the ears, and he came to the conclusion that there was not any obstruction or malformation). There was no appearance of paralysis in any part of the body, the tongue being quite intact.

Upon the slightest irritation in the external meatus he would go into epileptic convulsions, lasting only during the time that the irritation was kept up, and without losing consciousness.

Progress of the Case.—From this period he had at intervals slight epileptic attacks, never thoroughly losing consciousness; they generally occurred as he went to bed. The urine was passed involuntarily at night. He took nutrition well, and walked alone in the grounds the greater part of the day. I gave him at this time 20 grains of bromide of potassium three times a day. He continued in this condition until January 13th, when at about 10 a.m., after breakfast, as he was standing in the smoking room, with his back to the fire, he was seized with a violent epileptic fit, which recurred about every twenty minutes, until about eight o'clock in the evening. He remained in a comatose state, with stertorous breathing during the night. On the 14th, the following day, he appeared to be quite conscious, but the power of articulation was destroyed. There was extensive paralysis

of the throat, and he was utterly unable to swallow more than a few drops at a time.

The bromide of ammonium was given in half drachm doses, which prevented any recurrence of the fits. He grew gradually worse, and was fed by enemata until the 19th, when he sank at 3 p.m., remaining conscious to the last.

P. M. Examination 27 hours after death.—Morbid Appearances.—Upon removing the skull cap the dura mater was observed to be of its natural colour and thickness. There was an adhesion of the dura mater at the top of the right hemisphere, extending about half-an-inch, the three membranes having become firmly attached to each other. Upon removing the dura mater a large quantity of fluid escaped —I should think about two ounces. Upon slicing the brain it appeared perfectly sound; the ventricles contained about two drachms of fluid. The blood vessels at the base were considerably atrophied and fatty, many of them presenting the same appearance as in the last case, and the gritty condition was easily detected.

Microscopic Examination.—Every part of the brain was minutely examined, and in no part could degeneration or rupture be detected. The large blood vessels were crowded with fat cells, and small particles of mineral matter were scattered among them.

Commentary.—These are instructive and characteristic cases of that form of mental disease dependent upon an alteration in the structure of the blood vessels at the base of the brain. At the early stage it would be very easy to be led into the belief that there was disorganisation of the nerve substance, for the first symptoms are delusions of an exalted character, though the patients do not allude to dignity of position or excess of wealth; but by carefully considering the progress of each case, and the pathological appearances after death, there will be no difficulty in arriving at the conclusion that the malady was entirely owing to the condition of the arteries.

With reference to the symptoms, it will be observed—

1st.—That the pupils had a tendency to contract, and were always equal.

2nd.—That there was no paralysis of speech, and the tongue could be protruded with the greatest ease.

3rd.—That there was no deficiency of voluntary power, and the muscles of the face did not loose their expression.

Upon minutely examining the brains with the microscope, not one of the following appearances could be detected:—

1st.—There was no evidence of exudation or infiltration into the actual nerve structure having taken place.

2nd.—There was no mechanical breaking up caused by extravasation of blood from the capillaries.

3rd.—There was no fatty degeneration of the nerve cells independent of exudation.

In both instances there was a considerable amount of effusion; in the first, the ventricles were enlarged and distended, and in the second, the fluid was on the surface and at the base. This dropsical condition was evidently caused by the loss of volubility and diminution in calibre of the arteries. The thickening of the dura mater in the first case, and the slight adhesion in the second were owing to some primary inflammation at the commencement of the disease, possibly upon the first effusion being poured out.

Epilepsy seldom takes place until just before death, as in the first case; but this depends upon the position of the effusion, which in the second case was at the base as well as the circumference.

This gentleman had four positive epileptic seizures at about five months interval; the first was in November, 1868, the second in March, and the third in August, 1869; the last occurring just before death, on the 13th January, 1870. After the third fit it was discovered that he was stone deaf, and he remained so until he died.

There is one circumstance in this case worthy of notice; that upon irritating the external meatus he was thrown into epileptic convulsions, not thoroughly losing consciousness, the convulsions lasting only as long as the irritation was kept up; this was particularly observed by Mr. Harvey during his examination. A most minute microscopic investigation was made of the auditory nerve, from its origin to its entrance into the internal meatus, but nothing abnormal could be detected.

With reference to the prognosis in similar cases, little can be said except that the ordinary course of atheroma, dating from the first symptoms of insanity, does not extend over two years, when the patient suddenly sinks, either from the rupture of a vessel, or as above stated, from effusion.

In concluding this commentary, I venture to make the following remarks:—

1st.—That the persons most liable to atheroma are those who have a tendency to develop fat, and of the hæmorrhagic diathesis.

2nd.—That it will not be found to occur until after middle life.

3rd.—That the first pathological change is exudation into the walls of the blood vessels, and the formation of fat.

4th.—That the fat cells and granules become mingled with calcareous amorphous salts.

5th.—That the diminution of the calibre and elasticity of the large blood vessels causes a slow circulation and increase of venous blood in the cranium, which is followed by dropsical effusion, either upon the surface or into the ventricles.

6th.—That thickening or adhesion of the membranes is owing to some primary inflammatory action at the commencement of the dropsical effusion.

7th.—That the mental derangement and epileptic seizures are caused by the effusion and abnormal circulation.

OCCASIONAL NOTES OF THE QUARTER.

The New Chancery Visitor in Lunacy.

It will be known to all the members of the Medico-Psychological Association that the Lord Chancellor has appointed Dr. Lockhart Robertson to succeed the late Sir C. Hood, as Chancery Visitor of Lunatics. We are glad to express in these columns our sincere gratification at Dr. Robertson's appointment, and to believe that we may, on the part of the members of the Association, offer him hearty congratulations, and wish him health and strength long to enjoy the honour which he has so well earned by his continued efforts to promote the advancement of medical psychology, and by his labours as a successful asylum administrator. The writer of these lines, while thus giving utterance to the general feeling, cannot forbear the expression of a deep sense of personal loss in being deprived of the valuable co-operation of one with whom he has been so long associated in editorial work. It is a matter of deep regret to him that the responsible official duties now devolving upon Dr. Robertson are incompatible with his continued superintendence of the "Journal of Mental Science."