he again had voluptuous imagery, and, finally, became excited, and was reported to me inofficially as restrained in an institution eleven months ago. Since that time I have obtained no further details of his history.

It had been noted that for years this patient had not perspired, and Russian baths had been used in vain to bring on the cutaneous secretions. Under the treatment instituted—probably a mere coincidence—they became normal again. At this time it was observed that with every attack of occipital headache, his "neck would swell," and this measurably so. As in most patients of this class, constipation was a feature greatly complained of, and a headache was the never failing signal of an accumulation in the colon.

(To be continued).

A Case of Imbecility with Choreoid Movements. By Fletcher Beach, M.B., M.R.C.P., Medical Superintendent Darenth Asylum.

(With Illustrations.)

F. P., aged 17, was admitted May 17th, 1875, with the following history:—Parents healthy, temperate, not connected by consanguinity. His maternal grandfather and a cousin on the mother's side are paralyzed. He is the eldest of six children, of whom two are dead, one succumbing from scarlet fever, the other soon after birth. The rest are healthy. His mental condition is said to have been good up to the age of ten years, when, during a fight with a boy, he was struck with a key in the face. Disease of the jaw followed, and on recovery he was noticed not to be so bright, having been a good scholar before. Twelve months afterwards he was knocked down and became insensible, and some months after he fell and struck the back of his head. He has been getting gradually duller. Four years ago he had an epileptic fit, affecting both sides of the body. He was taken to the Hospital for Epilepsy and Paralysis, and, while there, had two fits. He became excitable and tried to stab a patient, and his removal became necessary. After he was taken out of the hospital he became quiet for a time, but the excitability reappeared. He was taken to the Hampstead Asylum, and subsequently removed to the one at Clapton.

The following was his condition on admission:—

He is well nourished, of a dark complexion. Head symmetrical, and of fair size; circumference 22 inches, transverse diameter 14¼ inches, antero-posterior 14½ inches. Width of forehead 4½ inches. No sign of rickets, syphilis, or scrofula. He is good-natured, obedient, and obliging; somewhat talkative. Mental capacity fair. His powers of observation, imitation, attention, and memory are good for an imbecile.

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After admission he had at times epileptic fits, which at first did not produce any loss of power on either side. Eleven months before his death he had a number of very severe ones, and, on recovery, the left side of the body was found to be weaker than the right. There was no spasm, and gradually the left arm and leg gained power. Three months afterwards another series of epileptic fits supervened, leaving him again with loss of power on the left side, the arm being more affected than the leg. The loss of power in the left side remained, and a month afterwards continuous spasm of the left hand and arm was noticed.

The following description was taken at the time:—As he sits in a chair he holds the tremulous left hand in the right. On uncrossing them, and letting the left hand and arm hang by his side, the whole arm is seen to be continually in action, and the hand is undergoing rather quick spasmodic movements. The thumb is extended and the fingers flexed, the fore and middle ones completely into the palm, the ring and little ones to a less extent. This is the usual position, but the position of the fingers changes, and the ring finger is at times less flexed. He can extend his arm and hand in front of him, and when he does so the movements increase. The fibres of the flexors of the fingers, of the biceps, triceps, and some of the scapular muscles can be felt twitching, and the scapula, arm, forearm, and fingers are constantly moving. Sometimes the triceps pulls the arm backwards; at other times the biceps pulls it forwards. The movements are not attended with pain, cease during sleep, and are not increased by attention being directed to them. The hand is not pronated, abducted, or adducted, but hangs by the side of the body in a straight position. When he attempts to take hold of an object the hand is brought forwards with the fingers extended, and the fore and middle ones widely separated, but they soon become spasmodically clenched. They go round the object, but cannot at first get close to it; after repeated trials they do so, and then, by an effort of the will, he opens the hand, though only for a moment, and grasps the object with a clutch. He has a fair amount of power in the left hand and arm, and can grasp my hand and pull me towards him. There is, however, considerable loss of power, when compared with the opposite (unaffected) side. All the toes, but especially the third and fourth, of the left foot now and then twitch, but to a much less extent than the hand. When he attempts to use his hand the great toe is drawn upwards and the other toes flexed into the sole, as is seen in cases of athetosis. The movements of the hand do not increase when he walks. There is a good deal of power in the left leg, but not so much as in the right. He walks as steadily with his eyes shut as when they are open. His speech is fairly clear, and has not been altered by the epileptic seizures. His tongue is tremulous when he puts it out, and very often, while doing so, his head is drawn backwards and directed upwards. It does not move at any other time. There are no movements of the face.

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Sensation is diminished on the affected side, and the limbs measure less in circumference. A measurement, taken at the same points on both arms, shows the left arm to be one inch and the forearm half an inch less than the right. There is no shortening. Shortly before death he experienced another attack of epileptic convulsions, and a semi-conscious state followed. He took no notice of what was going on around him, but would answer "Yes, sir," and "No," in answer to questions spoken in a loud voice. He lay in bed with his legs extended rigidly, and his arms and hands stretched out on either side of him. The movements before described ceased. At the end of the week he became quite unconscious, passed urine and fæces under him, and died.

Autopsy, thirty-six hours after death. The body was well nourished, rigor mortis persistent; the thumb of the right hand was clenched in the palm. The cranium was symmetrical, the calvaria thicker than normal. The dura-mater was congested, easily removed: it was not adherent to the cranium or cerebrum. The subarachnoid fluid was turbid and in excess; the vessels running over the surface of the brain were congested, and the pia-mater injected; there was no thickening or opacity of the membranes. A little fluid drained away on removing the brain, which weighed three pounds and half an ounce, from the cranial cavity. The convolutions were normal in size, with the exception of those in the parietal and temporo-sphenoidal regions. In the former position they were *slightly*, in the latter *very* coarse in character, *i.e.*, not highly developed. Island of Reil very evident. On applying gentle pressure with the fingers the brain was found to be firm in consistence, the parietal regions more resistant than normal, and the occipital convolutions firm and hard, those on the right side being a little harder than the left. On slicing through the brain a little excess of fluid was found in the ventricles. The white matter presented "puncta vasculosa" in excess, and was, so to say, "greyish" in character. In the region of the first temporo-sphenoidal convolution, and of the inferior parietal lobule on both sides, on a level with the middle part of the lateral ventricles, the white matter appeared fibrous. The same appearance was noticed in the white matter of the occipital convolutions on the same level.

Excellent microscopical sections of the affected parts of the brain were made for me by my friend Dr. Palmer, of the Lincoln County Asylum. On examining them with No. 7 Hartnack the chief changes noticed were: 1, great increase in the number of the vessels; 2, distension of many of these vessels; 3, extensive infiltration of the tissue with leucocytes, especially in the perivascular sheaths of the vessels.

These changes were seen especially in the grey matter of the right inferior parietal lobule and first temporo-sphenoidal convolution, more particularly where the angular gyrus joins the temporo-sphenoidal. Examination of this part showed great infiltration of the grey matter, and, to a less extent, of the white matter, with leucocytes. These bodies

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were present in the perivascular sheaths of all the vessels, in some places forming a single layer, in others many layers, being often in such quantity as to compress the vessel they surrounded. Generally hey were rounded, but, where subjected to pressure, they assumed an oval or angular appearance. In several places the vessels were much distended and their sheaths filled with leucocytes, while further on the walls were absolutely crammed with these bodies, exerting pressure on the vessel and reducing its lumen considerably. In some places the leucocytes had escaped into the surrounding tissue. Here and there they were collected into dense masses, forming so-called "miliary abscesses." Very often the leucocytes were in such numbers as to entirely obscure the vessel, so that its course and distribution could only be seen by the direction taken by them. Many of the vessels contained clot, and, in a few cases, mixed with it, were rounded bodies which stained with carmine, showing their recent character. In some of the vessels the blood-corpuscles had undergone a granular change, and in two sections the clot appeared dark in the centre, the surrounding portions shading off gradually. In one vessel the clot presented curved pressure-lines, described by Dr. Gowers as being due to exposure to pressure by the blood current. In some places there appeared to be an excess of fibrous tissue around the vessels. The white matter showed many leucocytes and an increase in the number of the vessels, but otherwise no change. The grey matter of the left inferior parietal lobule and first temporo-sphenoidal convolution, and that of the left occipital convolution, showed excess of leucocytes, but no great excess of vessels. A few of these presented perivascular sheaths filled with leucocytes. The nerve-cells of the third layer presented in many sections a clear space at the basal end, caused apparently by shrinking of the protoplasm, which stained readily, showing that there was no degeneration. Many of the cells had no processes, and others had only one at the apex. These appearances in the cells, I believe, are due to the mode of preparation, as they are not seen in frozen sections. In order to be certain as to the amount of change present I examined the sections of the brain of this patient side by side with others obtained from the brain of a man killed by an accident.

Some particulars of the foregoing case were given in the "British Medical Journal" a few years ago. I have now described the symptoms present during life, and the appearances found after death, including the microscopical appearances, with greater detail, and the drawings accompanying the paper are published for the first time. I formerly regarded the case as one of athetosis, but subsequent reflection has led me to look upon it as a post-hemiplegic disorder of movement, allied to those described by Dr. Gowers in his paper published in the "Medico-Chirurgical Trans-

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actions in 1876," Vol. lix., page 271. The movements of the hand and foot in the cases described by Dr. Hammond, who first gave the name "athetosis" to the disease, were *slow* and continuous, did not cease during sleep, and were unaccompanied by paralysis. In the case which I have related the movements were *rather quick*, ceased during sleep, and did not present themselves until paresis appeared. I do not lay much stress upon the last two symptoms, but the movements were quite different from those described by Dr. Hammond, and many other muscles than those of the hand and foot were affected. Dr. Gowers states that the essential difference between athetosis and the mobile spasm seen in partially paralyzed limbs is that in the latter there is a fixed spasm superadded to the mobile spasm. There was fixed spasm of the fingers in this case, which resembles, in many particulars, Case 12 in the paper of Dr. Gowers before referred to, except that in my case the movements are less severe, and there was no fixed spasm of the arm and forearm, but only of the fingers of the hand.

There were some special characters peculiar to this case. Among these may be mentioned presence of considerable voluntary power, although the movements were interfered with by the spasm, the affection of the arm being greater than that of the leg, an increase in the movements when an attempt was made at voluntary action, the drawing backwards and upwards of the head when the tongue was put out, and cessation of the movements shortly before death, no doubt due to exhaustion of the nerve-centres from the violence of the epileptic convulsions which he at that time experienced. The symptoms were quite different from those present in chorea.

What is the pathology of this affection? "The symptoms," as Dr. Gowers says, "point clearly to damage to the grey matter of the brain, to local perverted nutrition of nerve-cells, in consequence of which they overact, either spontaneously or on the stimulus of a volitional impulse, which is, by their overaction, perverted or irregularly distributed." Now, in this case, great congestion of the grey matter of the brain was present, evidenced by the microscopical appearances. The vessels are seen distended with blood-corpuscles, and the perivascular sheaths crammed with leucocytes, which are present in such numbers as often to obscure the vessels and the nerve-cells as well. That these appearances are pathological I have no doubt, as the mode

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of death was not asphyxial, and they were not observed in the brain of the man killed by an accident. It is therefore quite possible that the nerve-cells in this case have overacted from perverted nutrition, due to excessive supply of blood, and hence the spasms. Although I did not examine the ascending frontal and parietal convolutions, yet there is no reason to doubt that the changes described were present in them. Appearances similar to those I have mentioned were seen in the medulla from a case of hydrophobia, and were described by Dr. Gowers at the Pathological Society, and to a less degree in the cord from a case of tetanus, which Dr. Ross brought before the same society. Although it is quite open to an objector to say that these changes are secondary to irritation of the nerve-elements, I have an equal right to hold the opinion that the vascular changes are the primary lesion. The youth of the patient would no doubt cause the nerve-elements more readily to receive permanent damage.

On Catalepsy, with Cases. Treatment by High Temperature and Galvanism to Head. By ALEX. ROBERTSON, M.D., Physician to the Royal Infirmary and City Parochial Asylum, Glasgow.

Catalepsy is one of the most striking of the great group of functional disorders of the nervous system. In this country it is a rare disease, except in lunatic asylums, where, at least in a modified form, it is by no means uncommon. Among the recorded cases a considerable proportion occurred in women of a hysterical disposition. It has, however, been observed in many other conditions. Thus in some individuals it has been associated with gross organic lesions of the brain, such as tumours and softening; but these may be regarded as accidental coincidences, and not as essential to the disease. Malaria would seem to have been the agent in its production in a number of instances, this opinion being supported by the fact that the patients recovered under the use of quinine and other remedies with similar properties. A curious case is recorded by Vogt of an Alpine village near Würzburg, in which half of the population, both males and females, suffered from this disease. He states that the inhabitants had been much given to intermarriage, and that generally they are, or at least were—for his account was published in 1863—a small and deformed race. The seizures

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