REMARKS ON MYELITIS.

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ACUTE inflammation of the spinal cord is always a serious disease, generally attended with grave danger, and in a large proportion of cases fatal. But it varies so much in its symptoms, in dependence partly on the seat and extent of inflammation, partly on its intensity, that its diagnosis is often very obscure, and it is consequently liable to be confounded with other affections of the cord, or with diseases of the peripheral nervous system.

As a contribution to an exceedingly interesting subject I propose to narrate, and comment briefly on, several cases of what were, or on good grounds were believed to be, cases of acute myelitis, but which yet differed so much from one another in their severity, in their symptoms, and in their event, that they might well seem to have little or no pathological connection with one another.

The first case I shall quote is a typical example of severe myelitis ending in incomplete recovery.

CASE I.—The patient was a rural postman, 19 years of age, who was sent to me on May 17th, 1886, by Mr. Alfred Wright of Romford. On May 9th, while going his usual rounds he felt hot, for the day was sultry, and to cool himself walked into a brook with his boots on, and then lay on the grass and fell asleep. After he had thus rested for a time he walked home, feeling perfectly well, and he remained well during the rest of the day. Shortly after going to bed, however, he experienced some numbness and tingling in his arms and legs, and observed that he had a little difficulty in moving them. These symptoms had become much aggravated by the next morning; when he was found to be suffering from incomplete but well-marked paralysis of the arms and legs, with numbness of the lower extremities. The paraplegic symptoms increased upon him during the ensuing week, at the end of which time he was admitted into St. Thomas's. He had, up to the onset of his illness, always enjoyed excellent health, and had never had syphilis or rheumatism. He was a spare, healthy-looking youth, suffering from paralysis of his limbs and trunk, difficulty of breathing, and want of control over the rectum and bladder. He had absolute motor paralysis of the lower extremities, of the intercostal muscles, and of the other muscles of the walls of the trunk; so that he was quite unable to move any part of the legs, or to shift the position of his body as he lay in bed. The upper extremities were partially paralysed. He could not move his fingers or thumbs in the least degree; he could flex and extend the hands on the forearms slightly, and could also pronate and supinate the forearms. The triceps muscles were almost absolutely powerless; but the flexors of the forearms on the upper arms retained some power, and the arms consequently tended to become flexed at the elbows. He could use the muscles about the shoulder-joints fairly well. His breathing was entirely diaphragmatic; and, though he seemed to breathe without particular difficulty while making no effort, he soon became breathless when speaking or coughing. There was no paralysis of the muscles of the head and neck or face. The paralysed muscles were flabby but not tender. Sensation was impaired, but nowhere absolutely lost, throughout the lower extremities, and the lower part of the trunk to the level of the fifth dorsal vertebra behind and the ensiform cartilage in front. The anaesthesia extended a little higher on the right than on the left side. The tendon reflexes at the knees and ankles were wholly absent. The plantar reflexes were brisk on the left side, feeble on the right. The cremasteric and abdominal reflexes were absent; the scapular well-marked. The scratch of a pin on any part of the body was followed in a few seconds by factitious urticaria. The bladder was distended, the urine dribbling away. This fluid was slightly ammoniacal and cloudy with mucus. Bowels confined; but the faeces had escaped unconsciously. The skin over the sacrum was reddened, but as yet free from bed-sore. There was no affection of the organs of sense, and the pupils and optic discs were normal. Temperature, 99.8; pulse, 72; respiration 16.

For some two or three weeks after admission the patient re-

mained very ill, suffering much from inflammation of the bladder, occasional dyspnoea connected with the paralysis of his intercostals, and loss of appetite, and sickness. Moreover the anaesthesia became more pronounced and extended a little further upwards; and the paralysis of the arms, and more especially of the left arm, increased; the arms, too, became rigidly flexed at the elbows, owing apparently to the combination of absolute paralysis of the triceps muscles, with the retention of comparatively considerable power in the flexors; and bed-sores formed. Even during this period, however, there was some return of power to the left lower extremity.

After this there ensued a period of two or three months, in the course of which there was, on the whole, considerable improvement; but during which certain phenomena remained with little change or even underwent aggravation. The anaesthesia gradually disappeared. Its upper limit descended slowly; and recovery advanced more rapidly in the legs and feet than in the thighs and lower part of the abdomen. By the end of August sensation was completely restored. The arms never lost feeling.

The improvement in the voluntary power over the lower extremities was uniform though slow. The left recovered the more rapidly; but slight return of movement was noted in the right as early as June 10th. A week later feeble knee-jerks were for the first time obtained. They were well-marked a few days later, and soon became unduly brisk; and early in July ankle-clonus was elicited on both sides. At this time he was able to move his legs, ankles, and toes freely as he lay in bed, the movements on the right side being feeble, those on the left of considerable power, the muscles of his trunk had all become stronger, and he was consequently able to move himself freely in bed. By the middle of August he could stand with assistance, and early in September he could walk across the ward by himself. At this time the lower limbs were small, having emaciated in some degree during his illness, but there had been no disproportionate wasting of muscles, and the knee-jerks continued excessive and ankle-cloni well-marked.

The recovery of the intercostal muscles was extremely slow; nor was it easy to say when improvement began in them. Early in September, however, it was noted that the lower intercostal muscles acted fairly, although the upper ones seemed still powerless. Not long afterwards the chest moved freely.

As before remarked, the upper extremities, and more especially the left, continued to fail after the patient's admission, so that at the end of a few weeks he had no power whatever in the forearms or hands or in the triceps muscles, though the flexors of the forearms on the upper arms still retained some power, and the muscles about the shoulders, though extremely weak, remained relatively strong. These muscles, moreover, wasted very rapidly. The deltoids became small and the muscles of the upper arms shrank almost to nothing. But the most remarkable attenuation was shown in the forearms and hands. The former became little more than skin and bone, and presented concave depressions before and behind, between radius and ulna in their whole length, the thenar and hypothenar eminences wholly disappeared, and the spaces between the metacarpal bones were deeply depressed. But long before the emaciation of the forearms and hands had attained its extreme point, the muscles about the shoulders and those of the upper arms had begun to improve; so that about the middle of July he could raise his upper arms freely and could extend the forearms. This improvement continued up to the time of his leaving the hospital. But little or no change took place in the condition of the forearms and hands; and the muscles of these parts, for the most part, refused to respond to galvanism. On the right side, however (which had always been somewhat less affected than the left), the patient could adduct the thumb slightly; and the extensors of the wrist and of the fingers showed a trace of galvanic irritability.

The bed-sores, which were in process of formation at the time of admission, were slow in healing. They finally got well during the month of September. It was long also before he obtained complete power over the bladder; the urine up to a late period running away from him involuntarily as he lay in bed. It was long also before the inflammation of the bladder, which presented occasional relapses, wholly subsided, and the urine became absolutely healthy.

He was discharged from the hospital on the 1st January, 1887, being at that time in excellent bodily health. He was very thin; his legs were small, and there was exaggeration of tendon reflexes with ankle-clonus, but he could walk well; his trunk muscles

had recovered perfectly; he had the use of the muscles of the shoulders and upper arm, which, however, were small and weak; but there was scarcely any amendment in the forearms and hands, which still presented no visible trace of muscle, and the latter of which were without power of voluntary motion, and bent into the form of claws.

The treatment consisted mainly in rest, in sedulous attention to the condition of the skin and bladder, in the endeavour to improve the general health with tonics, etc., and for some months in the daily use of the constant current.

There can be no doubt that the case just narrated was a typical case of myelitis, brought on by exposure to cold and wet, affecting mainly the cervical and upper dorsal portions of the cord, and resulting (as so often happens in cases in which the inflammation is extensive and severe) in permanent disorganisation of certain tracts of the cord, and permanent paralysis with nutritive lesions in the peripheral organs innervated from these disorganised tracts. I may add that I have seen the patient at intervals since he left the hospital, and that the condition of his upper extremities remains unchanged, while in all other respects his health has improved.

It is interesting to compare with this case another which has recently been under my care, in which the affection was extremely slight (so slight indeed that possibly some may be inclined to dispute the accuracy of my diagnosis), and from which recovery was comparatively rapid and complete.

CASE II.—A healthy young man of nineteen, a clerk on the Stock Exchange, went on Sunday, December 19th, 1886, for a walk from the West End of London to Hampstead Heath. The day was extremely cold, and he sat and sauntered about on the heath for some time. He walked home, and on his way complained that his legs were cold, and that he could not make them warm. The next day he went to the city as usual, and continued to go backwards and forwards until Christmas Day. During this period the sense of coldness in his legs continued; and occasionally he complained of numbness in them; and of pins and needles, especially when they were touched. On one occasion he went to the closet, and got up after a time, thinking he had gone ineffectually, but found to his surprise that he had passed a large stool. This was the only occasion on which anything definitely amiss was noticed in regard to his emunctories. His brother, who was a medical student, found out also during this week that there was impairment, but not actual loss of feeling, in the feet, ankles, and along the front of the legs, and that his tendon and superficial reflexes were normal. I did not see him professionally until the 25th, when there was already some improvement. At that time he still complained of coldness, with pins and needles, in the legs; and there was marked impairment of sensibility in the regions before named. But his reflexes were normal, and he was healthy in all other respects. In the course of the next ten days the condition of his right leg became normal; but the left leg from the knee downwards still felt slightly numb; and tactile sensibility was obviously impaired in the feet and ankles. At the end of a fortnight from that time he was perfectly well. On subsequently making minute inquiries I learnt, in addition to what is stated above, that while at his worst the passage of his motions was scarcely perceived by him, and that on several occasions he dropped a slipper and walked about without knowing it. His general health throughout was perfectly good; his tendon reflexes remained unaltered, and the muscular strength appeared to be unimpaired. He never had tenderness or pain in the muscles or nerves. He has continued well ever since.

There is no reason to doubt, I think, that this was a slight case of myelitis. The apparent cause, the symptoms, and the result, are all compatible with this view. The only reasonable alternative suggestion is, that it may have been a case of multiple neuritis. Whichever hypothesis, however, be accepted, it is obvious that the sensory region was alone or mainly involved.

In contrast with the last, the next case presented impairment of the motor functions only.

CASE III.—The patient was a married woman, aged 49, who had enjoyed excellent health. She had been nursing her mother, night after night, for some time; going to the house (which was about a mile from her own) every evening. On the evening of January 9th, 1887, which was exceedingly cold, she was kept standing outside her mother's house for a considerable time, and she recollects that while waiting she had slight aching throughout the left leg. She sat up as usual, the room being very cold, and her legs feeling very cold. About 3 A.M. she tried to rise from

her chair, and found to her surprise she had lost all power in her legs. She had to be taken home in a cab, and remained paralysed, and with little or no control over her evacuations, until her admission on January 20th. She said that her legs had felt numb for a day or two at the beginning, but that this condition had disappeared.

On admission she had a few small bed-sores; she was unable to stand, but could move her legs feebly in bed; there was no pain or loss of sensation; the knee-jerks and plantar reflexes were present; she could not sit up without assistance; the urine dribbled away and the motions escaped without control; she presented some tenderness along the dorsal spine, and the left lower extremity was somewhat oedematous. It may be added that she had had oedema of the left leg off and on during the last two or three years. With the exception that her bed-sores troubled her for some time, and that for some time her urine was ammoniacal and offensive, she improved rapidly during the early part of her stay in the hospital. The right leg had recovered completely by the end of three or four weeks, and the left leg had improved so much, that with assistance she could walk a little; also she re-acquired control over the rectum and bladder. Then the oedema in the left leg increased, and this limb consequently became weak, and she continued with little change for two or three months. Subsequently the oedema diminished, and the left leg improved again; but when she left the hospital, nearly five months after admission, the left leg was still somewhat oedematous, and was still so weak that (though she could move it freely) she was unable to stand upon it. It was supposed that the oedema was connected with some old plugging of the veins. At any rate, no disease within the abdomen that might account for it could be discovered. I may here mention that the tendon reflexes became unduly brisk.

In this case, as in the last, there is room for difference of opinion with regard to the nature of the disease. It is obvious, however, that the lesion occupied the motor region of the cord, and only a limited extent of it in the dorsal region. There was certainly no evidence of vertebral disease; there was no history of syphilis, nor was she treated for syphilis; there could not have been a tumour. Indeed, the only alternative suggestion is that there may have been sudden hæmorrhage into the substance of the cord. This explanation, however, is for many reasons unlikely.

I pass from these to the consideration of two other cases in which fatal myelitis was associated with similar affection of limited regions of the nervous organs within the skull; cases which seem to show that, just as the more chronic inflammatory condition, commonly called sclerosis, has a tendency to attack at the same time, or in sequence, different parts of the nervous centres, so the more acute form of inflammation may occasionally become disseminated. At any rate they show that inflammatory softening at first limited to the brain or cord is apt to become complicated by inflammatory softening of other parts of those organs which have no direct or apparent connection with the regions affected in the first instance.

CASE IV.—The first of these cases was published in detail in the fourth volume of the *Ophthalmological Society's Transactions* by my colleagues Dr. Sharkey and Mr. Lawford. It was that of a girl, aged 17, who was admitted into the Royal London Ophthalmic Hospital on November 22nd, 1883. She had had fairly good health up to November 9th. On that day her eyesight began to fail, and by the 13th she was quite blind. She had had neither headache, sickness, paralysis, nor fits. On admission she was well nourished but somewhat anæmic. She had slight enlargement of the thyroid body, which had existed as long as she could recollect, but her only complaint was of blindness. The pupils were dilated and inactive to light, but there was no ocular paralysis. Well marked optic neuritis was discovered in both eyes. In every other respect she seemed healthy.

She continued in the same state until December 8th, when she observed a little weakness in the left leg; this rapidly increased, so that on the 12th, when she first complained of it, she could not walk; the leg was powerless and slightly rigid; sensation was impaired in it, and the knee-jerk was excessive. On the 13th the paralysis of the left leg had advanced, and there was also slight loss of power in the right. On the 14th there was absolute loss of power in the left lower extremity, and anæsthesia extended on the same side as high as the nipple; the right leg was partially paralysed and anæsthetic, and she passed urine into the bed for the first time. In the course of the morning she had a fit lasting for about ten minutes, and unattended with unconsciousness, in which the right arm and leg were convulsed. Her tem-

perature, taken in the day, was 100.2° F., and her pulse 96. On the 15th she was emotional and excited at times, and passed her evacuations unconsciously. On this day she was removed to St. Thomas's, and placed under my care. She continued in much the same state. On the 19th, 76 ounces of urine, which were clear and acid, but offensive and containing a trace of albumen, were drawn off. On the 22nd it was noted that there was complete paralysis of both legs, loss of control over the emunctories, evident weakness of the left hand, loss of sensation, not only in the legs and over the greater part of the trunk, but likewise in the left forearm and hand on the ulnar side. The knee-jerk was excessive on the left side, normal on the right; no ankle clonus; no tendon reflexes could be obtained in the arms. On the 23rd sensation was impaired in the right forearm and hand, and she complained of pain across the lower part of the abdomen. On January 4th it was noted that the condition of the legs remained the same, that sensation was deficient in both forearms, and that the urine was offensive and contained pus. The muscles and nerves of the affected limbs were reported by Dr. Kilner to present the reactions of degeneration. The temperature, which had only been moderately raised up to December 29th, had since that date varied between 101° and 105°. There was also much epigastric pain. Little alteration occurred during the next few days, excepting that the presence of peritonitis became evident, and a slight double external squint was noticed. She died on January 10th, sixty-two days from the time when her vision first failed, and twenty-nine after the first appearance of symptoms of paralysis.

Necropsy.—There was acute peritonitis, due to extension of inflammation from the bladder, the mucous membrane of which was intensely inflamed. The inflammation had extended all along the ureters to the pelvis and substance of the kidneys. The thyroid gland was considerably enlarged. The brain and contents of the skull generally to the naked eye appeared to be absolutely healthy; but microscopic examination showed that there was intense inflammation of the optic discs, nerves, commissure, and in a less degree of the optic tracts; and that slight evidences of inflammation were present in the meninges about the chiasma and on the adjacent surface of the frontal lobes. The spinal cord presented no abnormal appearances, except over a space two or three inches in length in the lower cervical and upper dorsal regions; there it was intensely congested and much softened. The microscopic appearances of the affected region confirmed the opinion that the changes were due to inflammation. In the cervical cord above the seat of obvious disease, inflammatory changes were observed extending along the columns of Goll; and, again, in the lumbar enlargement the columns of Goll were alone affected, the nerve-fibres having undergone complete granular degeneration, and some of the vessels being crowded with leucocytes. The other parts of the cord appeared to be healthy.

CASE V.—The next case was sent into the hospital on December 28th, 1886, by Dr. Bower, of Peckham Rye, and placed under my care. The patient was a labour master at the Camberwell Workhouse, aged 24. In 1883 he had had syphilis, followed by slight secondaries, but in other respects seems to have been healthy until last September, when he began to complain of occasional lumbar pain, aggravated by exercise. This, which did not prevent him from working, continued without much change up to eight weeks ago, when it became more severe, extended up the back as high as the shoulders, and outwards into the hips. He was now compelled to take to his bed, and from about this time he gradually lost power over his lower extremities and control over his rectum and bladder.

He was a well-built but pale and spare man, with an anxious expression of face, and complaining of pain at the back and front of the head, of pain in the loins extending at times to the hips, of absolute loss of motor power in the lower extremities, and of incontinence of urine. He had no voluntary power whatever over the legs, but sensation in them was perfect. The knee-jerk was absent on the right side, and feeble on the left; but the plantar reflexes were brisk, as also were the cremasteric and abdominal. No other nervous affection was present, and the pupils acted to light and accommodation. He had no tenderness or curvature in the spine, and there was no evidence of tumour anywhere. The urine was alkaline and ammoniacal, and there was a small bed-sore. His thoracic and abdominal organs appeared to be healthy.

No improvement whatever took place after admission. On the contrary, the symptoms underwent gradual aggravation; the paralytic affection of his lower extremities increased; the bed-

sores extended in area and depth; the bladder (varying a little from time to time) continued inflamed; he lost flesh and strength; and he suffered so much and so constantly from pain in the loins, hips, and back of the thighs, that (although no tumour could be felt) it led me to suspect that he was suffering from malignant disease about the lumbar vertebrae—a suspicion which I entertained to the last.

On January 6th it was noted that sensation had become impaired in the left lower extremity, as high as the knee in front and the buttock behind, that both knee-jerks were now absent, as also the cremasteric and lower abdominal reflexes. Early in February it was observed that his legs were apt to become stiff and drawn up involuntarily; but, excepting that he was weaker and more emaciated, no change of importance had taken place. The plantar reflexes were present, but feeble.

During the afternoon of February 4th it was found that the patient had almost suddenly lost the use of his left arm; he could not lift it from the bed. He had no power of flexion at the elbow, and very little power of flexion or extension at the wrist or finger-joints. The hand felt numb, but there was no discernible anæsthesia. The elbow-jerk was diminished on this side. No pain, giddiness, or fit of any kind attended or had preceded this paralytic attack. On the 6th the loss of power in the arm (which was kept rigidly extended) was absolute, but there was still no anæsthesia in it; also the tongue was protruded to the left, and there was some weakness of the lower part of the left side of the face. These facts were important, for they showed that the paralysis of the arm was not spinal, as had been at first suspected, but cerebral. About this time it was noted that painful impressions made on the left leg were referred by the patient to the right leg; but he was apathetic, and always disinclined to concentrate attention or to answer.

Very little further change occurred. A day or two after the last observation was made the paralysis seemed to have disappeared from the face and tongue, and the patient was able to move his thumb and fingers slightly; but shortly afterwards the weakness of the lower part of the face and tongue had returned. His bed-sores, which had improved, began to extend; his urine was ammoniacal, loaded withropy mucus, and highly offensive; he grew more and more apathetic and drowsy, though still wearing the aspect of much suffering; his pulse became rapid, he perspired profusely, and evidently the end was fast approaching. He died at noon on February 18th, his death being preceded by drowsiness, profuse sweating, great rapidity of pulse, and rising temperature. This had varied for the most part since admission between 97° and 101°, but on the evening of the 15th it rose to 102°; during the 16th and 18th it varied between 98° and 100.4°; at 6 A.M. on the 18th had risen to 105.6°, at 10.30 to 107.6°, and immediately after death was found to be 109.4°.

It need only be stated, as respects treatment, that having regard to his syphilitic history he was put on a course of iodide of potassium and mercury, that morphine was employed to relieve his distress, and that his bladder was systematically emptied and washed out with antiseptic solutions.

Necropsy.—The body was much emaciated, and there was a long and deep bed-sore over the sacrum. There were no syphilitic lesions anywhere, and, with the exceptions to which special attention will be drawn, the viscera were healthy. Membranes of brain healthy. A few patches of thickening were observed in the arteries at the base of the brain, but the vessels were all pervious. In the centre of the right centrum ovale minus was a patch of yellow softening, in which were a few small hæmorrhages. It was oval, about three-quarters of an inch in its long diameter, and only a few lines thick. Another patch of softening, about the same size as the last, and also on the right side, involved the posterior third of the lenticulo-striate portion of the internal capsule, and the contiguous parts of the caudate and lenticular nuclei. The two patches were quite independent of one another. In all other respects the brain was healthy.

Membranes of cord healthy. From the tenth dorsal vertebra downwards the cord was extremely soft, in fact almost diffuent. The grey and white matter could scarcely be distinguished in the lumbar region. To the naked eye all other parts of the cord seemed healthy.

There was no disease of the bones of the skull or spine.

The bladder was inflamed; the ureters and pelvis of the kidneys were dilated and inflamed, and the substance of the kidneys was congested, and presented a few minute abscesses.

The last case I shall quote is one concerning the nature of

which there may reasonably be, as in regard to my third case, some difference of opinion. On the whole I believe the case to have been one of myelitis; and partly for this reason, but more on account of its clinical interest, venture to include it in the present paper.

CASE VI.—W. J., a carpenter, aged 27, was admitted under my care on March 25th, 1886. His health had been excellent, but he said that he had had local venereal sores, though never secondary symptoms. In the previous November, he was struck in the right flank by a lift, which came down suddenly upon him, and squeezed him against a table over which he was leaning. He was laid up for nearly six weeks, not on account of any spinal symptoms, but mainly because of pain and swelling of the right knee. At the end of that time, though still weak, he resumed his work. His present illness dated from early in January, when he began to suffer from pain in the part of the back where he had been struck. This was followed by numbness and weakness in the left foot, which, in the course of a day or two, extended up to the knee. A fortnight later he began to lose feeling in the right leg. The anaesthesia in his right leg and the loss of muscular power in his left had progressively increased, but he had never had incontinence of urine or faeces.

State on Admission.—A healthy-looking, well-developed man. He had complete anaesthesia and analgesia of the right lower extremity and right side of the trunk, as high as the sixth rib in front and tenth dorsal vertebra behind. There was also a belt of anaesthesia and analgesia, about four inches wide, encircling the left half of the trunk, the upper level of which corresponded to the upper level of the anaesthesia on the right side. There was no impairment of sensation on the left side, excepting in the belt above described. There was considerable loss of power in the left lower extremity. He could move all parts of it in all directions, but the movements were very feeble, and could be arrested by the finger. The right leg, he said, was as strong as ever it had been, and it appeared to be normally powerful. He could walk when supported on the left side, but he moved his left leg feebly, and, at the same time, its movements were ataxic. The superficial reflexes were much exaggerated on the right side; brisk, but normal, on the left side. On the right side the tendon reflexes were feeble, but on the left they were excessive, and there were both ankle- and knee-clonus. Moreover, the testing for reflexes in the left leg brought on violent tremors in it, lasting for some time. The abdominal reflex was absent on both sides. There was no loss of control over the rectum or bladder, and no bed-sores, and no affection whatever of arms, head or neck, or organs of sense. There was no pain, tenderness, or curvature in the course of the spine.

It is needless to give details as to the progress of this case. It is sufficient to say that the account above given was fully confirmed by repeated observation; that he complained for some time of more or less uneasiness, pain, and sense of constriction about the loins and upper part of the abdomen; that gradually, in the course of months, sensation returned in great measure to the anaesthetic regions, and the left leg regained power; that after a while (although still the tendon reflexes remained more brisk on the one side, and the superficial reflexes more brisk on the other), the superficial reflexes became nearly equal on the two sides, while some excess of knee-jerk and ankle-clonus became developed on the right side; that delayed sensation was observed on the anaesthetic side as sensibility returned; that no evidence of spinal disease, or of tumour, or of extension of nervous lesion ever appeared; that his muscles had not wasted, and his general health remained good; and that, when he left the hospital on August 11th, although much improved, sensation on the right side was not restored absolutely, and his left leg was so weak that he could only walk with the aid of two sticks. But improvement was still in progress.

For a time the patient was treated (in the hope that his disease was syphilitic) with iodide of potassium and mercury; also an issue was made near the spine, in the neighbourhood of the part on which the blow had been inflicted; and, latterly, the constant current was applied systematically.

In introducing this case I said that there was room for difference of opinion in regard to diagnosis. The accident to which he naturally attributed his paralysis occurred eight or nine weeks before the onset of paralytic symptoms, and, although he was laid up after it for six weeks, this was mainly, if not solely, due to the injured knee; moreover, the blow he received from the lift was on the right side just above the crest of the ileum, and did not involve the spine at all. I was disposed to think at one time that

he had vertebral caries; nor can I be sure that this was not the case, for I have not infrequently known paraplegia to be due to vertebral caries, when there has been not only no spinal curvature, but no pain or tenderness whatever. But there was no direct evidence of caries, and the fact that he continued to improve, although allowed to get up, is opposed to this explanation. Whether the disease was syphilitic remains an open question. The patient seems to have had syphilis, but had never presented any signs of secondary or tertiary disease. The belief that the symptoms were due to inflammatory softening of the cord—which, on the whole, is the view of the nature of the case which I am now disposed to adopt—is not, of course, incompatible with the syphilitic origin of the disease. The case is the most striking example I have ever seen of the limitation, in disease of the cord, of anaesthesia to one side of the body and of motor paralysis to the other side. It is clear that the lesion, whatever it was, involved only a short length of the left half of the mid-dorsal region of the cord.

I have little to add by way of comment on the above series of cases. There are a few points, however, which they seem to illustrate, and to which I may direct attention. In the first place, they show how widely cases of myelitis may differ from one another in degree of intensity and prospect of recovery. In the second place, they show that the inflammation may attack any region of the cord and any extent of it; and that the lesion may be multiple, and (as in disseminated sclerosis) affect at the same time or in sequence different parts, not only of the cord, but of the cord and brain. And, in the third place, they seem to show that, while in some cases the affection comes on immediately after its apparent cause, and rapidly attains its full development, in other cases its onset is insidious and its course progressive.

That myelitis is often attributed to exposure to cold or wet, or to both, is undoubted, and some of my cases are typical examples of this fact. It is probably in such cases that the onset is sudden, and the affection of the cord attains its highest point in a short time; but in some cases there is no evidence that temperature or allied conditions have had any causative relation to the attack. In my last three cases no such explanation was suggested. In two of them there was a history of syphilis, but there is no sufficient reason to assume that in either of them syphilis was the cause of the myelitis. In one of these two the patient had received an injury, but so long an interval had elapsed between the accident and the coming on of paraplegia, that it seems scarcely likely that this was the actual cause. In the remaining case, that of the girl of 17, there was no hint of syphilis or injury, and the girl had been a healthy girl up to the very moment at which failing sight gave the first indication of cerebral mischief. In her case, as also in my fifth case, the disease was prolonged and rendered fatal by secondary extension or dissemination of softening; but this extension would seem to imply the persistence and widening operation of the cause on which the primary lesion itself depended, and would suggest, therefore, either the presence of infective organisms or some constitutional defect, such as tendency (from whatever cause) to obstructive disease of small arteries, and consequent nutritive changes in the part to which the obstructed vessels are distributed. I am inclined, arguing from the facts of certain cases of softening of the pons Varolii and other parts of the brain which I have met with, and some of which I have published, to believe that in many cases of softening of the cord the softening is immediately due to obstruction (thrombotic or other) of the smaller arteries. And I may point out that the strict limitation of the lesion to the lateral half of the cord, as occurred in my last case, is best explained by this hypothesis. Such obstructions, as I have already hinted, might of course be syphilitic.

THE CONTAGIOUSNESS OF LEPROSY.—The Rev. Canon Baker, of Cape Town, to whom we are indebted for an interesting pamphlet—*Remarks on the Spread of Leprosy at the Cape of Good Hope*—writes to us, expressing his belief in the contagiousness of leprosy, and mentions a remarkable circumstance as being within his own knowledge, namely, that in a certain house three consecutive cases of this disease occurred in individuals not connected by consanguinity or marriage.

DONATIONS.—Mr. J. C. Burton Borough, of Chetwynd Park, has given £200 to the Salop Infirmary, Shrewsbury, in lieu of an intended legacy.—Lord Robartes has given a hundred guineas, and the Rev. J. Harvey £50, to the North London Hospital for Consumption.