During the progress of the disease there was developed a systolic bellows-sound over the base of the heart—the result, probably, of uræmic endocarditis. The bellows-sound remained after all symptoms of renal disease had passed away; and in time it became a double basic murmur, with the usual physical signs of incompetent aortic valves. For some years the valvular disease caused but little functional disturbance; but at length, with increasing obstruction of the circulation, dropsy came on, and with it albuminuria from passive congestion of the kidney. Death occurred in about ten years from the commencement of the renal disease. In this case it will be seen that a primary renal disease was the exciting cause of valvular disease of the heart; and that, the renal disease having passed away, the cardiac disease ultimately caused dropsy and a secondary albuminuria, the result of obstructed circulation and passive congestion of the kidney.

ON MUSCULAR ATROPHY (MALADIE DE CRUVEILHIER).*

By J. T. BANKS, M.D.,

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CASE II.—The next case which I propose to detail is that of a lady about twenty-five years of age, in whom the disease commenced about three years and a half since. In the year 1867, she was brought to my house by her brother, a young and well-informed physician, who had closely watched the case, and kindly furnished me with accurate notes. Some time before I saw this lady, she had consulted my friend and colleague Professor McDowel.

In the month of May 1866, this lady perceived that her left hand, particularly the thumb, was so weak that she found it difficult to strike the keys of the pianoforte. On investigation, however, it was found that the hand had been for some time previously much weaker than the other. Up to this time, she had been in the possession of fair average health. Her habits were active; she was of a nervous temperament, highly intellectual, and of a cheerful disposition. The only point connected with the history of her family worthy of notice, is that her father was the subject of locomotor ataxy, which existed for six years, and that his death was caused by apoplexy.

On examining the left hand when the lady complained of weakness, the ball of the thumb was found to have lost its natural plumpness, and the thumb had lost the power of adduction, so that she could not touch the tip of the little finger with it. The treatment recommended by Dr. McDowel and myself was, the syrup of phosphate of iron with strychnia and quinine, with faradisation to the affected part. For nine months this treatment was steadily pursued without the disease being in the least influenced by it, the atrophy slowly but perceptibly progressing.

In the December of 1867, six months after the left hand was first observed to be affected, the same phenomena presented themselves in the right hand; and the order was precisely the same, the thumb being the first part assailed. At the end of one year from May 1867, the left hand and the right were almost powerless, both presenting the peculiar and characteristic claw-like appearance, the "main de griffe." The muscles of the forearm were next invaded, the flexors more particularly, those of the left arm more rapidly changing than the right.

In fifteen months from the commencement of the disease, the lower extremities were attacked. At first, weakness and weariness were experienced on slight exertion, soon followed by inability to move. The atrophy of the muscles of the legs was not very marked; but they were soft and flabby. Finally, there was utter and complete inability to support the body. Two years from the first manifestation of the malady, it was evident that muscles which frequently escape the ravages of this most terrible disease, or are only affected at a very advanced period, were engaged. The pronunciation of labials and dentals became difficult; and, finally, the power of speech was nearly lost. Soon deglutition was impeded; soft solids could be got down better than fluids; but the attempt to swallow is always a struggle most painful to witness. The power of mastication is altogether lost. For the last five months no articulate sound has escaped her lips; her effort to speak is a mumbling occasionally intelligible to her sister, but conveying nothing to a stranger. There is a constant and profuse flow of saliva. The atrophy is now almost universal. The tongue lies motionless on the floor of the mouth. Still there are some muscles which have escaped the devastation of disease. The face does not present the appearance of emaciation. When last I saw this poor lady, I was

struck by the want of correspondence between the face and the other parts of the body: she was reading, and her eyes beamed with intelligence. When alone, I was informed that she managed to turn the leaves of her book with her chin. There has been, it should be observed, no diminution of sensibility, rather an exaltation. Nor is there any difficulty of maintaining the temperature of the extremities. At times, she complained of tenderness of the surface, and pain was felt on pressing the spinous processes of the third and fifth cervical, and the eleventh and twelfth dorsal vertebræ. From the earliest period, although the disease pursued its course, invading in succession the various parts indicated with unrelenting severity, there were short intervals when it seemed to stand still, affording delusive hopes of improvement, soon destined to disappointment. A more painful case can scarcely be conceived; and, in truth, no description can convey an adequate idea of the reality. About a fortnight having elapsed since I saw this lady, I visited her brother to-day to ascertain her present condition. He tells me there exists a painful state of hyperæsthesia, the slightest touch causing pain and spasm. The muscles of the neck are rapidly wasting. She has difficulty of supporting the head, and deglutition is more painfully difficult.

CASE III.—Mr. M., aged 25, a civil engineer, the son of strong and healthy parents, still living, with no hereditary predisposition to disease, was temperate and regular in his habits, vigorous and active, and of a high order of intellect. On obtaining an appointment, he proceeded to India, and arrived at Calcutta on the 25th September, 1866—to use his own words—"in perfect health." In a few days he went to Port Canning, a place notoriously unhealthy; so much so, that higher wages than ordinary are given as an inducement to the natives to reside there. The unhealthiness of the locality was proved to Mr. M. by the prevalence of disease among the people under him, although he learned that the season was exceptionally healthy. The place had been partially cleared of jungle, but it was undrained. The water was brackish, and this the natives used; for the use of the Europeans, water was brought from Calcutta. The surface of the ground was four feet below high water-mark of ordinary spring tides.

Notwithstanding the extreme insalubrity of Port Canning, Mr. M. continued to perform his duties, which obliged him to be out until midday, without observing any change from his ordinary good health until November 12th. He then had an attack, the symptoms of which, he says, were headache and sickness of stomach, with fever. The duration of the illness was four days. On going to Calcutta, he quite recovered in two days, and returned to Port Canning.

About the middle of December, he felt pains which he considered rheumatic in both arms. The pains continuing, he sought advice the following month (January 1867), finding, also, that there had been a gradual diminution of strength in the arms. He observed that the weakness commenced in the right hand.

On January 19th, he found it difficult to raise a full glass to his mouth. The weakness increasing, he consulted physicians in Calcutta; and, by their advice, he employed galvanism, a current being passed from his neck or shoulder through each arm for about a quarter of an hour each time; the arms and legs being also well rubbed by hand each day. He also was directed to take syrup of iron and strychnine. Writing soon became a matter of extreme difficulty; and March 11th was the last entry in his diary. Still he could sign his name; but the operation was performed slowly and laboriously—the pen being fixed between his fingers, and, if ink were required, the pen being removed for him. Gradually the arms became powerless.

On March 26th, a second consultation of physicians was held, and he was ordered to leave the tropics forthwith, an order which he disregarded. For some time he had found that he could only manage to feed himself by means of a spoon or fork, stooping his head near the plate; but on the evening of the consultation, he found it impossible by any means to feed himself. During all the time up to the end of March, he walked each day, taking a considerable amount of exercise, but always finding walking on uneven ground, or going up and down stairs, difficult. He was also unable to rise from his chair without assistance. At length, after falling repeatedly and being unable to get up without assistance, he gave up the attempt to walk alone. He had also been in the habit of riding; and this he continued as long as he could, being assisted on to the saddle; and his horse, which had previously the habit of bolting and other bad habits, became so gentle that he could ride him anywhere with the reins lying on his neck, being unable to hold them, at least with any effect.

Still he remained in charge of the municipality up to April 22nd (seven months), having completed a report of the works while he was in charge, and also a detailed statement of projected works for the following year; and so admirably had he done his work, that he received the thanks of the authorities. On May 7th, he left Port Canning; and,

* Continued from page 3 of last number.

on the following day, he was almost carried on board ship. For the first week after he sailed from Calcutta he could not leave his cabin. He had an attack of ague, with, for two days, such sickness of stomach that nothing remained on it. After recovering from this ague-fit, he gradually gained strength, so that five weeks later, when he arrived at Southampton, he could walk unassisted, and move his fingers better. There was, however, utter and complete inability to raise the arms from the side. He was, however, able to move a book or pull a light chair if he could get a hand on it. The pains which were present early in the disease disappeared altogether when the arms became powerless. There never was the slightest diminution of sensibility in either arm; if an arm were subjected to pressure by lying on it, the sensation of "pins and needles" was experienced.

On June 26th, I was consulted by the gentleman whose history, from his own notes, I have detailed. His arms hung powerless by his side; all the muscles of the arm and forearm, and the muscles around the shoulders, were much wasted; his head slightly drooped. The sensibility was perfect. His legs were thin, but he could walk well. I requested to have a consultation with Dr. Stokes, who saw him with me on the following day. We recommended electro-galvanism, needles being inserted into the skin; and salt water shower-baths, followed by friction to the arms. We also advised him to take a drachm of the syrup of the phosphate of iron, strychnine, and quinine, three times a day. He found that, although the shock was slight, the needles caused sickness; so that he resumed his former mode of applying the current. From the time when this gentleman was seen by Dr. Stokes and myself (June 26th) until the beginning of November, he had an attack of ague about every ten days. Living at the seaside, he took a salt water shower-bath daily, and had his arms and shoulders well rubbed with a flesh-brush. He also continued the electro-magnetism and the syrup. He almost lived in the open air. The treatment he continued up to December. The syrup he ceased to take at the end of September, and the application of the electricity was discontinued in a month afterwards. By the end of November he could feed himself, cut his dinner, pull a light oar, steer a boat, also write freely; but he could not raise a weight, or pull on a heavy coat.

On December 19th, I saw the patient, and was most agreeably surprised at the progress he had made. There had been a manifest increase of muscle, not only of the wasted parts, but of the body generally.

On the 8th of the following month (January), he went to St. Anne's, Blarney. He commenced to take hot-air baths—four in the first ten days, remaining an hour or more in the bath. He found himself weaker, which to some extent he attributed to giving up wine and beer. He subsequently took a bath each day, followed by energetic shampooing, remaining only half the time in the bath that he had done at first. He again improved; and, after a sojourn of two months at Blarney, during which he took a bath daily, he left it decidedly improved, and better able to walk up and down hill than on his arrival.

On March 4th, after a drive about Dublin (the day being very cold), he again had an ague-fit, the first since January 6th. The attack was unusually severe. On this occasion, the shivering fit was followed by very high fever and headache of intense severity. Finding I was out of town, he sent for Mr. Butcher. After some days, he recovered, and went to Bray, where he resumed the use of the hot-air bath. By the middle of April he was able to walk round Bray, and from this date he had no return of ague; and he winds up the notes with which he kindly furnished me by saying, "I feel myself so well that I believe myself now (May 24th, 1868) quite capable of undertaking work again." From this time he has continued well, and is now engaged as engineer of a railway.

THE HOSPITAL FOR SICK CHILDREN.—We are requested to intimate the following liberal arrangements for clinical teaching at this hospital:—"That the practice of the hospital be thrown open gratuitously to the pupils of the different hospitals and medical schools in London; but that not more than four from each school be offered the privilege at one time. That the admission be limited to a period of three months, but be renewable on application. That the pupils so admitted bring with them recommendations from one of the medical officers or teachers of their school, and that they receive from the House-Surgeon a ticket authorising them to attend the practice. That the names of gentlemen so admitted, with the date of their admission and the schools with which they are connected, be entered in a book; and that, if their attendance be regular, they shall receive a certificate testifying to such attendance. That, in order to render such visits more useful, each of the senior medical officers engages to give clinical instruction at the bedside, or after the visit, once a week." This arrangement will commence on Tuesday, January 17th.

ON A CASE ILLUSTRATING THE PRESENT ASPECT OF THE ANTISEPTIC SYSTEM OF TREATMENT IN SURGERY.

By JOSEPH LISTER, F.R.S.,

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A YOUNG man, eighteen years of age, was lately admitted under my care in the Royal Infirmary on account of impaired usefulness of the right arm, resulting from an accident which befel him three months previously, when the handle of a winch, revolving with great rapidity, struck the limb at the posterior aspect, about three inches below the elbow, breaking the ulna and dislocating the upper end of the radius forwards, the lower ends of the bones of the fore-arm being tilted backwards to a corresponding degree. He at once sought medical aid; but, strange to say, the nature of the injury was not recognised, and the result was that when I saw him the fragments of the ulna were firmly united at an obtuse angle with each other; a marked depression existing posteriorly over the seat of fracture, while the head of the radius formed a prominence at the anterior and outer aspect of the joint, being securely maintained in its abnormal position through the connection of the other end of the bone with the lower end of the ulna. The elbow could not be flexed beyond a right angle, so that he could not put his fingers to his mouth; and, although the hand could be rotated passively, he was quite unable himself to execute pronation or supination. He also complained that the limb was so weak that he could not lift any heavy object from the ground, and expressed great desire to have this faulty state of matters rectified.

It was plain that before an attempt at reduction of the dislocated radius could be made with any chance of success, it would be necessary to break again the united ulna. But, considering the length of time that had passed since the accident, and the slightness of the leverage that could be obtained upon the seat of fracture so near the elbow, it seemed hardly likely that this object could be attained without a cutting operation. And even supposing the bone to give way, I felt it very doubtful whether the dislocation could even then be reduced, both on account of its long duration and because the angular form which the ulna had assumed implied a shortening of the fore-arm, which at that late period necessarily affected all its textures. On the other hand, there could be little doubt that, if the ulna were exposed and divided, and if, further, the head of the radius were removed, the limb could be at once restored to its proper form. But to do this would be to make voluntarily a compound fracture of the ulna and a compound dislocation of the elbow-joint—a procedure which, under ordinary treatment, I should have regarded as unjustifiable. But with the means now at our disposal of guarding against the mischievous influence of external agents upon wounds, I believed that these two operations could be performed without any chance of mischief resulting. Accordingly, at a clinical lecture on the 12th December, having explained the aspect of the case, and having failed to rebreak the ulna by very forcible measures under chloroform, I first washed the skin of the fore-arm and elbow with 1 to 20 watery solution of carbolic acid, to destroy all putrefactive particles in the epidermis and hair-follicles, and then made a longitudinal incision about two inches long over the back of the ulna where it had been broken, while an assistant threw over the part a cloud of spray of 1 to 40 carbolic lotion by means of Richardson's apparatus; and, having sufficiently detached with the knife the muscles from the bone, and ascertaining precisely with the finger the situation of the callus, I inserted the blades of a pair of strong bone-pliers, smeared with an oily solution of the acid (1 to 10), and, cutting through the bone, used the pliers as a powerful lever to wrench the fragments sufficiently apart, and detach them enough from surrounding soft parts to insure free mobility, the antiseptic spray being meanwhile constantly maintained. A sponge wrung out of 1 to 40 watery solution having then been bandaged upon the wound, I made an attempt to reduce the dislocation of the radius; but, meeting with the failure I had anticipated, I at once cut down upon its head in a cloud of spray, and removed it by nipping through its neck with the pliers, the blades of which had been again smeared with the oil. A folded cloth dipped in the watery solution having been laid upon the wound, I had the satisfaction of finding the fore-arm assume, under moderate extension and coaptation, a perfectly normal shape. The limb was then enveloped in lac-plaster from the middle of the arm to the lower part of the fore-arm, the sponge and cloth having been previously removed under the spray, the wounds being left unstitched, to secure complete absence of tension from accumulating blood or serum. Cloths to absorb discharge, and a roller smoothly applied so as to adapt the