serted, and the boy placed in bed. About a wineglassful of blood only was lost.

January 30th.—The stitches were removed.

February 3rd.—The ligatures were removed.

May 16th.—He was discharged convalescent. Three sinuses were together weeping half an ounce of pus *per diem*. The boy looked fresh and well.

February 15th, 1878.—The boy says now that he is quite well; two sinuses are discharging a little, and that little is becoming less every day. He gains weight and flesh.

My finger in the acetabulum readily entered his pelvis during the operation; a loose piece of bone was removed; and this pelvic mischief accounts, in my opinion, for the yet present sinuses.

Fig. 1.—The rectum is supposed to be transparent. 1. Psoas magnus muscle; 2. Iliac muscle and exterior cutaneous nerve; 3. Genito-crural nerve; 4. External iliac artery; 5. External iliac vein; 6. Bladder.

In this operation, I have demonstrated that surgeons possess a new method of controlling hæmorrhage; and as an amputation at the hip-joint must ever represent a grievous loss of tissue, any amelioration in its performance must be welcome to the surgeon and the patient. I venture to say that compression of the iliac artery *per rectum* is less serious than compression of the aorta through the abdominal wall; that the former is more *easy and reliable* than the latter, a straight smooth lever alone being required; that the circulatory system is far less disturbed, by reason of the circulation in the opposite limb remaining undisturbed; and no danger results to the rectum from the lever if guided by the hand of an expert surgeon.

[Mr. Richard Davy concluded by demonstrating the operative details on the dead body; and suggested that this new method of compressing the aorta and iliacs might apply to many operations in pelvic surgery.]

M. RICHET has, he considers, demonstrated that the gastric juice is a combination of hydrochloric acid with tyrosine and leucine. M. Richet's researches bear especially upon the nature of the albuminoid substances in combination with the acid.

CLINICAL LECTURE

ON ANTISEPTIC OSTEOTOMY FOR ANKYLOSIS AND DEFORMITY.

By RICHARD BARWELL, F.R.C.S.,
Surgeon to Charing Cross Hospital.

GENTLEMEN,—Some months ago, I spoke to you concerning the value and use of osteotomy in cases of ankylosis of the knee. I mentioned why, in most cases of true ankylosis at that joint, it would very nearly always be found a most efficient substitute for the more severe operation of excising a wedge of bone from the angle. One of the cases brought to your notice in that lecture, was one of true or bony, the other one of false or fibrous, ankylosis. I now show you a third. A. T., aged 14, also a case of false ankylosis, upon whom I performed osteotomy of the femur very close to the knee, and who has now, you see, a quite sufficiently straight limb, with which he walks very well indeed; the better, too, for possessing a slight amount of mobility at the point of ankylosis. Now, before we go on to another sort of deformity, to which I more especially wish to direct your attention, allow me to say a few words concerning this operation in falsely ankylosed knee-joints. There are very many cases of this sort, in which stretching the fibrous bond with a certain degree of force is the best possible treatment. You have seen me do this a great many times so as to procure a very useful and mobile limb. But there are other cases, like these two, R. B. and A. T., in which the surgeon finds one of two impediments. One is produced by extreme and invincible shortening of the posterior crucial ligament, which causes, if the surgeon wrongfully persevere, posterior luxation of the tibia, partial or total, while extension is produced; the other obstacle only arises when the joint has been more disorganised than in the above event, so that throughout what was its whole, or nearly its whole area, fibrous or fibro-cartilaginous bonds unite the bones. If these bonds be fairly long, the knee may simply be put straight by manual power; but if they be short, and if the shape of the joint-surfaces be much altered, considerable force will be necessary, and this force is in such cases extremely likely so to rend the union that a knee movable in all directions—a flail-joint as it is called—will result. This joint on the knee is very useless, or worse. Therefore when, the patient being narcotised, the surgeon meets with such difficulty, that either one or the other of these misfortunes appears imminent, it is wise to abstain from further effort, and to divide the femur as close as he can to its lower end, either then or on some future occasion. The result will be a rapid and safe convalescence, and an extremely good limb quite sufficiently straight and with a certain, perhaps a very useful, amount of mobility at the knee. Thus much I have felt it right to add to the subject of my former lecture. We will now turn to another class of deformity.

Rickets produces certain curves of the bones which, if they persist, are extremely ugly and detrimental. I say if they persist, because it is desirable to guard against the notion that I would advocate operative interference during early childhood, or while there is a fair chance of spontaneous recovery—for a certain number of young people do recover even from pretty severe distortion of the bones, if they can be placed in the best circumstances for such cure to take place. But a large number of such children, especially after a certain age, do not recover, but must remain permanently distorted, unless operative surgery intervene. The cases which I will show you immediately are not the first cases of rickety distortions remedied by surgery, though one of them offers the largest results hitherto attained or attempted. In 1861, Billroth operated on a bent tibia, and has since repeated the procedure (Langenbeck's *Archiv*, vol. i, p. 677); and, in 1874, Mr. Howard Marsh published in the *Medico-Chirurgical Transactions* three cases in which he had partially divided the tibia with the saw and had fractured the fibula, and one case in which he had removed from the tibia a wedge-shaped piece of bone, a very severe operation unlikely to be repeated.

A few words concerning the *rationale* of the method which I practice may be desirable. My mode of carrying it out you have witnessed. It will be seen at once that, if a bone abnormally bent be

divided, and then placed in a straight position, there must result at the place of division an angular interval between the ends of the bone; that is to say, the two flat surfaces caused by the division will not be in contact throughout, but will only touch each other at one side or corner, while the rest will lie apart more or less according to the amount of rectification which the limb required; and it must of course happen that the interval will correspond with the concave side of the faulty curve.

The problem to be solved is so to arrange matters that this in some cases tolerably wide gap between the bone-ends may be most readily and certainly filled up; and I need hardly say that this will occur if we can leave the periosteum over this gap either entire or very nearly so. The weapon which I use is the chisel. I have no hesitation in saying that this is the best instrument for several reasons; one is the absence of detritus, the other the less injury done to soft parts. Let us for a moment consider what the saw must do to the tissues in the immediate vicinity of a cylindrical bone, one, namely, whose section would be of a circular form. The instrument must have a certain play beyond the edges of that bone, and must, therefore, make in its neighbourhood a quadrilateral wound of a size larger than the tangential square, and this wound not cut clean as with a knife, but mangled throughout by the teeth of the saw. I use, then, the chisel (first employed by Billroth) and, through the same periosteal wound, cut in all directions, but not quite through the bone. I believe practice has given me the capability of judging, partly by distance, partly by sense of resistance, and partly by the sound elicited, when I have reached to very near any of the surfaces. There I stop, and I believe can always avoid going through and cutting the periosteum. The rest of the bone is broken, but even in this simple matter there is a certain method. Firstly, the power must be applied in a direction away from the place where the chisel entered; secondly, the jerk though sharp must be very short, the bone moved but very little away from its natural position. Then the rectification must be done slowly and with a slight amount of extension, not for fear of riding (I have never seen such displacement), but simply to obviate tearing the periosteum.

We will go on to the consideration of cases.

E. B., aged 9, a strong looking handsome child, who has been brought up in a healthy house in the country, was sent to me in

Fig. 1.

October 1877, her mother begging that I would do something to put her legs straight. The condition was then, as you see, very ugly. (Fig. 1.) The bones were well consolidated; and, I think, there was no chance of their getting straight without operation. Accordingly—

October 25th—I divided the right fibula on a very oblique line backwards and upwards, so that the ends might ride and obviate, on straightening the leg, separation of the tibia. I then almost divided the tibia from its inner and posterior edge at a right angle with the shaft; the parts left were easily snapped; the leg was slowly straightened, and put up in plaster of Paris: all this was done antiseptically. The plaster supplied, however, was not very reliable. I therefore postponed operating on the other leg.

November 1st.—I performed the same operation on the left side, and treated the limb in the same manner. No fever or pain followed; the wounds were both healed on November 25th, that on the right leg probably a week sooner, but, after dressing it on the 30th, the dressings had not been disturbed. From this date, nothing further is to be said until December 11th, when the child was allowed to get up;*

* On the 14th, the patient was shown at the Clinical Society of London. Certain of the members remarked that she did not walk very well—a defect resulting from the very recent getting up from bed.

but, in a few days, the union was found hardly strong enough to support the weight, and there was a little yielding of the tibia outward.

Fig. 2.

She was ordered to bed again until January 22nd.

February 1st.—She left the hospital with the limb as now shown, and walking quite well. (Fig. 2.)

I will but detain you with one other case, one in which no fewer than six bones were divided.

E. E., aged 17, an inmate of the Cripples' Home, where she first came under my notice, begging that something might be done to help her. I therefore took her into Hospital on March 27th, 1877. She was fairly healthy, but the strongly bowed legs were a great trouble. She could not walk, since at each step her body had to be thrown over so much that she either fell or was obliged to seize on some support. Crutches, owing to this oscillation, impeded her, and were worse than useless. The plate, as here given (fig. 3), speaks for itself; but it is well to give some measure-

ment as more accurate than mere appearance. When she stood with the inner malleoli in contact, the knees were just over six-and-three-quarter inches apart.

April 12th.—I divided the fibulae (obliquely), and then the tibiae about an inch below the head of the one and the tubercle of the other, and then put the legs straight in plaster of Paris. Both limbs were similarly treated.

May 3rd.—Neither pain nor fever resulted from the above operation; there was fair union. I should have operated a week ago on the femora, but that the catamenia, which were excessive, intervened. To-day, I divided both femora above the junction of the middle and upper thirds from the outer side, and put the limbs in plaster of Paris. She was placed on a couch, properly arranged to obviate any necessity for movement.

July 10th.—The plaster was removed; but the union of the left was less strong than the right, and it was placed on a MacIntyre's splint.

July 11th.—The patient got up, and was placed on crutches.

July 30th.—She could walk very well, balancing rather than supporting herself with crutches. Another patient called her rather suddenly: she was startled, turned quickly, fell, and broke her right thigh obliquely about an inch and a half above the artificial fracture.

The second fracture did not do so well as the one I had purposely made: it was very difficult to prevent the bone from riding, and to keep it straight. The progress was slow, and the result a slight bend forwards of this part, and a shortening, which the original section had not produced.

On December 28th, 1877, she left the Hospital, able to walk well, and with the limbs very fairly straight.

Fig. 3.

A little examination of the plate (fig. 4) shows that the right femur is more bent than the left—the result of the accidental fracture; and, had this not occurred, there is no doubt that the knees would have been almost, if not quite, in contact. Even as it is, the result is such as to render it doubtful whether she is now a fit inmate of an institution for cripples.

These cases show clearly that osteotomy with the chisel is an operation unattended with danger, with fever, or indeed with more than very trifling pain; by its means we can rectify deformities and lameness, hitherto considered beyond the reach of art; and, as in the case of ankylosis, may substitute a very mild operation for one greatly more severe. In none of the many cases on which I have performed this operation has the fracture suppurred or inflamed, but the bones have united with remarkable rapidity, even when a large wedge-shaped gap must have existed.

Fig. 4.

[To be continued.]

CASE OF PARTIAL CONVULSIONS (JACKSONIAN EPILEPSY); WITH OBSERVATION ON PERCUSSION OF THE SKULL IN DIAGNOSIS.*

By ALEXANDER ROBERTSON, M.D.,

Physician to the Town's Hospital and City Parochial Asylum, Glasgow.

I SHALL first record this case, and afterwards direct attention to its points of special interest.

J. N., aged 38, engineer, while in Madras, in 1868, had sunstroke. Previously, and also after its occurrence, he was of drunken habits. In 1869, he had syphilis—a chancre on the penis, followed by indolent bubo in the groin, and a severe and protracted attack of pains in the joints and bones, which were worse at night. There is not, however, any history or existing indication of nodes, nor are there any glandular enlargements, and he has a healthy aspect. About seven years since, he began to suffer from seizures of an epileptiform character, recurring every six weeks or two months, but latterly at rather shorter intervals. These have occurred in different forms; but the following has, upon the whole, been the most frequent. Spasmodic action, usually without premonitory symptoms, begins in the right hand as a whole, though, in a number of instances, it has begun in the little finger; then the hand becomes clenched and bent at the wrist, the forearm is flexed on the arm, and the head is drawn towards the right shoulder. The arm, in this contracted state, is then jerked across the breast for about a minute, after which the attack ceases. Consciousness is not impaired during the whole time. On a number of occasions, the convulsive seizure has been limited to the right lower extremity; beginning in the right foot, extending thence upwards to the thigh, and ending in forward and backward movements of the leg, which lasted for some minutes. At other times, however, and more frequently of late, the attacks, beginning in the arm and progressing as described, have extended to the side of the body and right leg, and have advanced to unconsciousness. When this happens, the last event he is aware of is the forearm turning outwards from the chest and becoming supinated. So far as can be ascertained, the convulsive action seldom affects the left side. The succeeding unconsciousness may last a quarter of an hour or even longer. All the fits are accompanied by severe pain in the convulsed members. They are also followed by more or less of paralysis in the same parts, which, however, does not generally last above three or four hours, and

may pass away in a much shorter time should the preceding convulsions be slight.

On September the 24th, he had a severe fit. The convulsions were stated by an intelligent patient beside him to have lasted about three minutes, and the unconsciousness about ten minutes. I saw him just after he had become fully conscious, and proceeded to test the motor power and the sensibility in the extremities which had been convulsed. The following notes were then made. At twenty minutes after the fit began, when I placed my fingers in his right hand and asked him to squeeze them, no appreciable pressure was felt on his attempt, while the pressure with the left hand was moderately firm; at thirty minutes (tested by dynamometer), pressure by the right hand two pounds, left hand thirty-five pounds; at fifty-five minutes, right hand twenty-six pounds, left thirty-seven pounds; at two hours, right hand fifty-four pounds, left fifty-one pounds. The patient is right-handed. At twenty minutes, he could scarcely raise the right leg from the bed; but after that, power was restored to it nearly *pari passu* with the arm. At twenty minutes, he scarcely felt sharp pinching in either the right upper or lower extremity; at thirty minutes (tested by æsthesiometer), both on the back and front of the right hand and wrist the two points of the instrument were felt as one at nine inches, whereas on the palm of the left hand the points were felt as two at one inch and a quarter, and at three inches on the back of the same hand; at an hour, on the front of the middle finger of the right hand both points were felt at an inch, and, on corresponding finger of the left hand, at three-quarters of an inch—sensation being all but fully restored in the affected hand.

Some months ago, I happened to be in the ward, when he had a seizure with very different features from those hitherto described. He began to cry out in a mournful strain, "Oh dear! oh dear!" and, on my going up to him, he asked me, with a wild frightened aspect, what was going to be done to him. In about half an hour, he regained his mental composure. There were no convulsive movements. He states that previously he had suffered from three other such turns.

He is of average intelligence; and, in illustration, it may be mentioned that he has the charge of the galvanic batteries in the hospital. He states, however, that his memory is rather impaired. He does not suffer from headache, but, on tapping somewhat firmly with the point of the finger all over his head, he feels pain of moderate severity on the left side, above the centre of the left ear, over a nearly circular area two inches in diameter. The lowest part in the circumference of this space is two inches above the highest point of the ear. He was not aware of any pain or uneasiness in this region till his attention was directed to it by the percussion. There is no indication of any other impairment of nerve-function, except a little deafness of both ears, probably due to his occupation, and a just appreciable greater width of the right pupil than the left one. The retinae are normal in appearance.

The treatment has consisted chiefly in the administration of the iodide and bromide of potassium. He is at present getting the iodide in thirty-grain doses, twice daily. Besides, since the discovery of the local pain, which is only lately, the first of what is intended to be a succession of blisters has been applied over the affected region.

REMARKS.—1. The lesion is probably situated on the surface of the brain, involving the inner membranes, in the area corresponding with the dull pain, and thus implicates the motor region for the extremities, as indicated by Hitzig's and Ferrier's experiments.

2. Percussion of the skull was of material aid in the diagnosis. By this mode of examination, namely, smart tapping by the finger, the force applied may apparently be transmitted to the membranes and surface of the brain, to such a degree as to induce pain in these parts, if they are in a morbid condition. Obviously this test will more likely be of service when the disease is circumscribed than when it is generally diffused. It is worthy of note that, as no pain is felt till the part is percussed, probably the lesion does not implicate the skull, or the skull and dura mater; for when these parts are involved, and particularly when syphilis is the cause, the pain at the affected points is usually distinct enough, especially at night, and indeed is often very severe.

3. The starting-point of the morbid action inducing the fits would seem to have been sometimes in the centre for the arm, at other times in the centre for the leg, and occasionally in that for purely mental function.* This suggests the propriety of not too hastily arriving at a conclusion respecting the limits of a lesion, by reason of the convulsive movements occurring in the same order in two or three successive fits.

4. The paralysis which followed the convulsions, though at first very complete in degree, was of brief duration; and is explained in accordance with the view now being generally accepted, that this form of palsy is due, not to organic change, but rather to temporary exhaustion

* In a paper published in the *Edinburgh Medical Journal* for December 1869, I directed attention to this occasional varying mode of commencement of the fits in the same patient.

* Read before the Glasgow Pathological and Clinical Society.