The "astragalo-scapoid capsule" extends from the tip and sides of the internal malleolus across the astragalo-scapoid articulation, on to the internal cuneiform bone, and loses itself in a fibrous expansion, blending with other ligaments on the fore part of the inner border of the foot. The extent and direction of the fibres which chiefly oppose rectification of the foot can be felt with the finger-tip, when traction is made on the inverted foot. A curved tenotome should be entered immediately in front of the anterior border of the internal malleolus, the blade as far as possible being kept between the ligaments to be divided and the superjacent skin. In the next stage of the operation, the blade is to be turned against the surface of the ligament, and, by means of a gentle sawing motion, is made to divide it. As the superficial fibres are divided, deeper ones come into play, and must in their turn be divided until bone is reached. By keeping the knife close to the bones, and directing its point towards the plantar aspect, the calcaneo-scapoid ligament, which forms an important part of the capsule in these cases, can be easily divided. In this operation, the tendon of the posterior tibial muscle will almost certainly be divided, and not improbably that also of the anterior tibial muscle. The long and short plantar (calcaneo-cuboid) ligaments can most effectually be reached just where they pass between the two bones. A straight tenotome must be entered as nearly as possible over the calcaneo-cuboid articulation on the outer edge of the foot. If there be much inversion, this point will appear to be on the sole of the foot. The blade must be kept close to the bone, and be made to follow the direction which this articulation takes. In this manner, the two ligaments, mostly blended together at this point, will be divided simultaneously.

I append the forms of tenotome which I have found most useful in children. They differ from those in ordinary use, chiefly in the fact that the stem is longer and the cutting blade shorter. They were made for me by Mayer and Meltzer; the drawings have accidentally been made quite one-third larger than the knives themselves.

Figs. 5, 6, and 7.—Tenotomes; these sizes must be considerably reduced for infants.

The success of all such operations depends on the smallness of the external incision; that is, on their being subcutaneous. I therefore prefer a short cutting blade, as I think the danger of enlarging the external wound is lessened thereby. If it be intended to divide several structures at the same sitting, I should recommend an anæsthetic to be given, and that an Esmarch's bandage be applied. In this manner, all undue hæmorrhage is prevented. I would just add that general rigidity of the foot is a means of gauging the extent to which the ligaments, being affected, need division. This rigidity depends partly on their unyielding nature, and partly on their shortness. Even in contracted muscles, there is always more or less elasticity, dependent, among other things, on their length. The subsequent treatment of these cases is simple enough. My practice is to rectify the foot as much as possible; and to apply a plaster-of-Paris bandage. I leave this first dressing undisturbed for a week or a fortnight, in order that healing of the cutaneous wound may complete itself. After this period, manipulations, etc., may be commenced. I shall not enter into these well known details; each case must, of course, be treated in relation to its special requirements.

It must not be supposed that syndesmotomy (section of the ligaments) is necessary in all cases; or that this operation alone will cure club-foot, any more than tenotomy cures it. More-

over, there will always be a residuum of cases for which neither the one nor the other operation will suffice, and in which tarsectomy, in some form, will have to be entertained. But the subcutaneous, or even the open, division (for the skin itself is often no mean factor in resisting rectification of the foot), in suitable cases, of the strong unyielding ligamentous structures which I have shown by dissection to be constantly implicated in this deformity, will, I venture to think, not only secure a better result, but lessen the tendency to relapse, and reduce the length of time necessary to effect a cure.

ON FRACTURE OF THE METACARPAL BONE OF THE THUMB.

By EDWARD H. BENNETT, M.D.,

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At the meeting of the British Medical Association, held at Cardiff last summer, I referred in the remarks I made in opening the session of the Surgical Section, amongst other matters, to the subject of fracture of the metacarpal bone of the thumb. (BRITISH MEDICAL JOURNAL, August 1st, 1885.) I directed attention to the fact that the most common simple fracture of this bone, and of the entire metacarpus, had been overlooked until the publication by myself of a note of the injury in 1881. (Proceedings of Dublin Pathological Society, *Dublin Journal of Medical Science*, vol. lxxiii, p. 72.) In support of my statement, I exhibited in the Pathological Museum of the Association, then open, a collection of these fractures, united, six in number, all bones from the right hand. Beside them, I placed the entire collection of similar fractures of the remaining bones of the metacarpus in our collection, which had been obtained without any attempt at selection of individual bones, or any knowledge of the relative frequency of fracture in them. These are, in all, nine, two from one hand and seven from separate individuals.

I stated that the discovery of these facts had led me to look out for the injury in the living, and that I had found it to be sufficiently common, capable of ready recognition and of efficient treatment; but that it is constantly overlooked, greatly to the disfigurement and damage of those to whom it happens.

I now write this short note to make a correction in my account of the injury, which, though of secondary importance only, I prefer to make myself, rather than to have it made by another. I stated that every example I had seen in the living or dead occurred in the right thumb.

I avoided committing myself to the assertion that it could not occur on the left side. I merely said, "most remarkable is the fact that in every case the accident has been on the right side of the body."

I am now able to supply a drawing taken from a left hand, deformed by the fracture, and to record the observation of two other examples on the left side, in patients seen this session in Sir P. Dun's Hospital. Thus I hope to correct whatever of error might have arisen from my record of my experience in August last. This correction appears called for by the observations contained in the review of my address, published in this JOURNAL, from which I quote the following: "It will, no doubt, soon appear whether our author is correct in affirming the frequency of this injury, and its constant limitation to the right hand; for the matter is one of too much daily interest, both to surgeon and patient, to be overlooked."

Fig. 1.

To render this note intelligible to those who may read it without requiring them to refer to my previous statements, I republish the original sketch of the fracture (Fig. 1), and also woodcuts taken from the left and right hands deformed by the injury, abandoned to the natural means of recovery only.

For comparison with these illustrations, I have copied Hamilton's

representation of the deformity produced by "partial luxation of the metacarpal bone of the thumb backwards," on which I wish to make a few observations.

Fig. 1 represents exactly the details of the united fracture in one of my specimens, and is the illustration published in 1881. It represents the union of an oblique fracture (*a b*) which detached the palmar half or more of the articular surface of the metacarpal bone of the right thumb, which faces the trapezium, with that projection of the base of the bone into the palm which supports the surface. The entire bone, except the little piece so separated, had slipped backwards, a displacement which, seen in the living subject, simulates a subluxation of the bone in this direction. The appearance of subluxation in the living is confirmed by measurement; for, as the fracture does not reach the dorsal surface of the bone, no shortening of this surface can be detected.

In all the six specimens I exhibited, the fracture is the same, and the displacement of the larger fragment similar. In the living, while the fracture is still recent, it is easy to detect crepitus by pressing on the base of the bone with the finger and thumb placed on its dorsal and palmar aspects, while extension is made sufficient to reduce the deformity.

Fig. 2.

The woodcut (Fig. 2) represents the deformity produced by the fracture in the left hand of a young gentleman, a student of the School of Physic, Trinity College, a member of my surgical class. His is the first example I have met with on the left side. He gives me the following account of the accident which produced it.

"On July 18th, 1885, I was riding a horse over a water-jump, in front of which, at the height of three feet, there was fixed a pole. The ground being very soft, the horse slipped on his hind feet, at the same time trying to raise his fore legs for the jump. He, however, only managed to get one fore leg over the pole, which he, in consequence, carried with him across the water, and fell heavily on his right side. As he fell, he stretched out his neck, so that I, having the reins in my left hand, the point of my thumb was dashed with great violence against the pommel of the saddle, causing fracture of the base of the left first metacarpal bone, and dislocating the proximal phalanx on to the dorsal aspect of the metacarpal bone. On getting to my feet, I at once reduced the dislocation, and bound the thumb to the hand with a handkerchief, so as to keep it reduced, not noticing the other lesion. After this, I went to the nearest doctor, but, when I reached him, about half an hour after, my hand and wrist were so much swollen that he did not notice the fracture, but just left it as I had it. In about seven days, the swelling having gone down, I noticed a tumour at the base of the metacarpal bone, which I showed to the doctor, but he was unable to reduce it. The tumour still remains, but does not impede the movements of my hand in the least."

This note was given to me in the first week in April this year, and I may only add that, within the last few days, in the course of operative surgery I have just closed, I called on this young gentleman to amputate a limb through the hip-joint. During the operation, I noticed him to wince, and asked the reason, when he said: "My left thumb never failed me until now"—a fair proof of the long-lasting ill effects of the injury allowed to go without treatment.

I need not give the details of the two other left hand cases, which are in essential points similar to this, with only this difference, that one, being recognised and treated in the out-room of Sir Patrick Dun's Hospital recovered, in the ordinary course, with the least possible deformity. The second was an old injury caused during a fight, and united with characteristic deformity.

I now pass to the comparison of a typical case represented by Fig. 3, with the case of "partial luxation of the metacarpal bone of the thumb backwards," Fig. 4, published by Hamilton (*Fractures and Dislocations*, 6th ed., 722).

One cannot look at these representations without being struck with their likeness, so far as the tumour, formed by the base of the meta-

carpal of the thumb in each, is concerned; and I cannot help expressing the opinion that the injury in each is the same.

When we bear in mind the form of the articulation in question, it is

Fig. 3.

Fig. 4.

difficult to conceive the idea of a partial dislocation occurring in it, and remaining as a permanent deformity. If we apply the analogy of a rider and his saddle to this perfect saddle-shaped joint, the difficulty will, I think, be evident. A rider, thrown on to the pommel, must, as we know, adopt one of two courses: make his dislocation complete, or get back into his seat; there is no permanent partial displacement possible.

Hamilton's account of the partial dislocation runs thus: "Incomplete backward luxations of the metacarpal bone of the thumb seem to be produced by the same causes which cause complete luxations. The signs of this accident are sometimes obscure, owing to the presence of considerable swelling, and they have been often left unreduced." I believe we shall gain in the accuracy of our diagnosis, and the certainty of our treatment, by searching for the signs of fracture in these examples of apparent partial dislocation; and by recollecting that we have positive proof that the fracture is not only common, but very constant, in its character.

The treatment necessary, in these cases, is careful reduction of the fracture by extension, and the application of an accurately fitting compress over the extremity of the displaced bone, maintained in place by a light splint fixed to the lower end of the radius, and extending to the extremity of the thumb; this apparatus must be maintained for at least four weeks.

MEDICAL PRACTITIONERS IN JAPAN.—The *Sei-I-Kwai* medical journal, of Japan, for April last, states that, according to statistics recently published by the Central Sanitary Bureau of the Home Department, the total number of practitioners in Japan, up to August, 1883, was 39,768, of which number 3,395 hold licences from the Home Department, and 36,373 held licences from the prefectures. As compared with the total number of practitioners in 1881-2, there was an increase of 3,472, of whom 581 held licences from the Home Department, and 2,941 from the prefectures. This gives an average of one practitioner to 910.82 of the population. The total number of specialists was 1,844, of whom 191 were aurists, 701 oculists, 567 obstetricians, and 387 bone-setters. This shows an increase of 281 specialists, as compared with the number in 1881-2. The total number of midwives was 19,035, or one to every 49 births. Compared with the total in June, 1880, this shows an increase of 1,251, or more than 10 per cent. yearly.

PRESENTATION.—Mr. J. S. Dykes, of Glynneath, has been presented with an illuminated address, a silver tea-service, and life-size oil paintings of himself and Mrs. Dykes, subscribed for by about 1,500 of the people of the neighbourhood, as a mark of the high esteem and regard in which he is held by them.