

FRACTURE OF THE ASTRAGALUS.

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IN discussing the subject of fracture of the astragalus Rieffel estimates the total of recorded cases of these injuries at about seventy examples.

In searching these records as fully as I can I have failed to find a single instance of osseous union of such a fracture. Our very latest writer on the subject, Helferich, says, “ fracture of the astragalus rarely occurs as an isolated injury, being almost always combined with injuries of the knee joint or of the tarsus.” Another author, Ballenghien, in a monograph on fractures of the tarsus, writes : “ One never meets a fracture of the astragalus without that one of the fragments or even the entire bone is at the same time displaced.”

It is possible that certain of the examples of exceptional astragalus which I have recorded in the discussion of the *ostregonum tarsi* are united fractures, but putting these aside, although I present to the meeting some sixteen examples I think I am justified by its rarity in placing on record this united fracture of the astragalus in which no displacement whatever has occurred.

The museum of this college contains two specimens of fracture of the astragalus which appear to be of the most common form, vertical fractures passing through the trochlea and breaking the body of the bone into two or more pieces. Both were removed during the progress of suppuration of compound fractures. In both these cases the fractures were

limited to the astragali, neither the bones of the limb above the ankle nor of the foot beneath were broken.

Of the form of fracture seen in compound dislocation of the ankle, I present a specimen which Sir William Thomson kindly gave me some years ago. In it the astragalus is displaced backwards and inwards leaving its decapitated head behind it in relation to the navicular bone. This injury was caused a man fouling his foot in the wheel of a traction engine in motion. A primary amputation has preserved the specimen for us.

In the united specimen I submit there is a single line of fracture passing through the whole thickness of the bone and perfectly united by bone without any displacement. But for the indelible trace of the injury in the articular cartilage of the trochlea above and in the concave surface which corresponds with the posterior facette of the os calcis beneath the presence of an united fracture could not be recognised. On the upper surface the line of fracture starts at the tubercle of the bone and passes forwards and inwards to reach the inner margin of the trochlea and passes down through the facette which articulates with the inner malleolus ; beneath the line passes forwards from the tubercle until it enters the tunnel where it joins the upper line. It is difficult to understand the mode of production of such a fracture for the cause must have been a shock or blow taking effect only on the inner and posterior part of the ankle, no traction on the lateral ligament of the ankle could have done it, as I believe the detachment of the ostrigium is produced.

With this specimen I have preserved the remaining bones of the foot to show their freedom from injury, and I verify the similar freedom of the bones of the leg and of the knee joint. The specimen being obtained in the dissecting-room no history of the case in life could be obtained.