one of mycosis fungoides running an unusually protracted course, in which the full development of the disease was prevented by the death of the patient.

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NOTE ON AN INJURY CAUSED BY THE LEE-METFORD BULLET.

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AN opportunity offering itself, I lately made an experiment with the new rifle bullet by firing it through a recently-amputated lower extremity at a 50 yards range, using the cordite cartridge; the velocity of the projectile under these circumstances would be about 2,000 foot-seconds. The bullet passed through the ankle-joint, entering the astragalus behind, above the surface for articulation with the os calcis, and passed out in front through the neck of the bone. The skin wounds were very small, that of entrance being a little less in diameter than the bullet, and that of exit a little smaller than the former. On dissection, it was found that the bullet had passed through the astragalus about half an inch beneath the articulating surface for the tibia. All the astragalus except its head was pulverised, and all its articulating surfaces split except that for the scaphoid. The lower end of the tibia was fissured in many directions and to a certain extent pulverised, although the bullet had not actually touched any part of this bone. The cause of this condition of the tibia was evidently the bursting apart of the astragalus while firmly held by the grasp of the two malleoli. The attachment of the external malleolus of the fibula to the outer surface of the tibia did not give way and the internal malleolus was not fractured; thus it was that when the bullet passed through the astragalus, greatly distending that portion of the bone held between the malleoli, the articulating surface of the tibia was split and the lower end of the bone extensively fissured. Had one or other malleolus given way it is probable that the fissuring of the tibia would have been less, if it occurred at all. The accompanying illustration is from a photograph of the bone injury taken immediately after dissection.

There are certain points in connection with this experiment, although made on dead tissues, which are well deserving of consideration. The entrance and exit wounds were mere harmless-looking punctures; there was no displacement of bone apparent on inspection, and, on such examination as I made of the joint, no crepitus was perceived. Knowing how great is the damage usually done by small-bore bullets at high rates of velocity when bone is traversed, especially on the exit side, and seeing how slight appeared the injury done in this case, my first idea was that the bullet had passed through the joint, causing but little, if any, fracture of the bones forming it. But, on dissection of the parts, most extensive bone injury was found, as already detailed. This, no doubt, was due to the very cancellous texture of the bone traversed by the projectile, and to the slight resistance it offered. The bone was pulverised, the fragments being driven apart in directions at right angles to the track of the bullet, not forwards through the exit wound. Then, again, the extent of serious damage found beneath these two inoffensive-looking skin wounds points strongly towards the imperative

necessity there is for a careful exploration and examination of all wounds caused by small-bore rifle bullets in situations where bone may have been traversed, in order to arrive at a definite diagnosis, on the accuracy and completeness of which the treatment must entirely depend; it shows that slight skin wounds and absence of displacement and crepitus are no guarantees against extensive fracture.

The older military surgeons taught the advisability of avoiding exploration of bullet wounds wherever possible. They had learnt from a sad experience that bullet wounds which had been explored were more likely to "go wrong" than were those in which this procedure had not been carried out. But, nowadays, when even exploratory laparotomies are known to add hardly anything to the gravity of those cases in which they may be considered necessary, so in small-bore bullet wounds, where bone may have been traversed, one or both of the skin orifices should be enlarged, and a complete examination of the track made. This procedure, if carried out with the precautions of modern surgery, can in no way increase the severity of the injury, and it must give the surgeon his only clue to treatment.

A, head of astragalus; B, neck of astragalus; D, articulating surface of astragalus for tibia displaced; F, bits of same; E, internal malleolus; H, bits of the cancellous structure of the astragalus.

Had the injury above described occurred in a soldier on active service, and had the treatment been carried out on the lines indicated by the outward appearances of the wounds, good surgery would not have been practised, and the result must have been most unsatisfactory. On the other hand, a thorough exploration of the bullet track would have left the choice of two methods of treatment: excision of the ankle joint, or amputation above it. If the existing conditions of the campaign did not necessitate the evacuation of the field hospitals and the passage of the wounded towards the base of operations, probably excision would have had a fairly hopeful outlook; but if transport towards the rear was imperative, then amputation would probably have been the sounder line to adopt.