

The fibula being a small bone, I wired it, but to fasten the tibial fragments, these two long steel nails were employed in this manner, in opposite directions, thus :



The nails are too large to drive them through compact bone without using a drill first. I was afraid it might split. It is interesting to notice how the living tissues have destroyed the heavy silver plating on these nails. Here are three other nails which were used in knee excisions, and they are eroded even to a greater extent, one having its point off for a distance of about half an inch. I have lately discarded the fancy plated and expensive nails, and use the ordinary steel wire nails from the hardware shops. They are just as secure, and not so easily eroded.

In the case of Miss L., the first dressing was not disturbed till the fifteenth day, when the wound was found to have healed, and I then removed the silk worm gut sutures. In twenty-one days more the nails were removed; Macewen's half-box splint taken off; and over the sublimated dressing then renewed, three strips of perforated zinc and a starch bandage were sufficient to support the limb. On the seventh week the nail holes had healed over, and to her delight, the bone which had given her so much trouble and pain was able to bear her weight for the first time in seventeen months, for firm osseous union was secured. She began to use it at once, and is now able to walk on it. She has a shortening of two inches.

Case 3 before you.—Ununited fracture of the femur. The man on the table for operation is fifty-one years of age, with a family and personal history second to none. He is a short, heavy man, weighing over two hundred pounds. Three months ago he was thrown from his carriage, his whole weight coming on the right knee, which caused the bone to break at its lower third. I can trace the line of fracture on the upper fragment (which is projecting forwards and slightly outwards). The lower fragment I cannot feel very distinctly, but it must be drawn upwards by the ham-string muscles and the quadriceps extensor, for we have a shortening of two and a half inches. It is no

doubt tilted backwards by the gastrocnemii. The over-riding and the wide separation of these fragments have no doubt prevented its repair. I am now making a long incision upwards, from the external border of the patella, over the upper fragment. I avoid opening into the joint, but allow the knife to pass down to the bone above the synovial pouch, cutting through all the structures over the upper fragment with one sweep of the knife. You here, see the serrated and bare end of the upper fragment protruding through my incision. There has been apparently no attempt at the formation of a callus. I have it now freely liberated, without stripping the periosteum off. I can feel the medullary canal filled with fibrous tissue, still more or less granular, bleeds freely and extends to the lower fragment, which is deeply buried, drawn upwards and tilted backwards. The line of fracture is very oblique, extending over three inches up the shaft of the bone. After removing the fibrous tissue, and the projecting tip of the upper fragment, I can see that the lower fragment is comminuted. It is broken into three pieces, and one of the fissures is directed towards the joint and may have been into it. I shall liberate the lower fragment from its bed. The tip of the bone is so deeply and firmly buried that I must remove it. Observe how easily I can reach this bone and saw it off with Wyeth's exsector. As Dr. Todd has just remarked, it acts like a charm. By chipping and paring away the bone with forceps and chisel, I not only freshen the fragments, but also secure a fairly good fit. I have them wired together, and one long steel nail driven through the centre of both fragments. The nail I shall remove in four weeks. I expect a good deal of oozing, so I have used a drainage tube of chicken bone and applied a very large antiseptic dressing, both of which I shall remove in a few days. Macewen's half-box splint, in which you will notice the limb is so securely and comfortably placed, is an excellent appliance.

*Note.*—It is now six days since the operation. Shock was marked, but not grave; oozing considerable. Temperature has not exceeded the normal. The pulse is now natural, and he relishes his nourishment, and sleeps well. The dressing was changed on the fourth day; wound looked very well. No oozing since, and he bids to do well.