was caused by the extent of shaft removed, and not overriding of the ends of fragments.

Fractures through the humeral shaft are well known to often unite badly. This has been said to depend in a large measure on the impossibility of effecting complete immobilization when they are high up, as the pectoralis major, being a respiratory muscle, keeps up an incessant motion of the upper fragment. But it is more probable that the truth is just the contrary, viz., that too firm adjustment and tight bandaging here, as elsewhere, impede the circulation and retard, if not wholly arrest, ossific processes. We certainly know that in various fractures of the leg which fail to unite under a rigid fixation, adjustment will often quickly consolidate if we take off the splints and allow the limb to hang unfettered.

Fractures of the Femur, Treated by Osteoplastic Methods.

The various fractures of the femur which may be treated by osteoplasty, osteorection or osteoclasis may be divided into two classes: First, compound fractures, which imperfectly unite with extensive hyperostosis; and second, those simple fractures which unite with the limb shortened and distorted.

With primary osteoplasty in compound fractures of the femur I have had no experience, as all these compound fractures coming under my own immediate care during the past fifteen years have been from railroad accidents, attended with so much destruction of the soft parts that amputation had to be performed. But though none of these cases of the first class have come under my own immediate observation after the injury, three of such cases have come under my notice—two under my own care—for secondary osteoplasty to relieve pain or resulting deformity.

Every practitioner knows well the serious aspects presented by a complete fracture through the shaft of the femur in an elderly or fleshy subject, but when the fragments have been driven out through the muscles and the skin, a very grave state of things exists.

Exclusive of the dangers from infection, there is the almost insurmountable difficulty of overcoming the contraction of the immense muscles and fixing the fragments. A large variety of mechanical devices have been invented, but we have none yet which meet the requirements better than stout wire to hold the ends of the fragments in apposition. But even this often fails or gives rise to so much irritation that necrotic changes set in and a consecutive operation is quite invariably necessary.

Case 7.—Compound fracture of left femur; faulty, defective union, with very large callus. Secondary osteoplasty.