

carrying it through the interosseous membrane, around the back of the radius, and reattaching it near its old point of insertion. This transforms a powerful pronator into a mild supinator, and often succeeds in relieving a severe deformity and renders the arm much more useful.

In the thigh, where the extensor group is so frequently paralyzed, the sartorius remaining active, the sartorius can be divided at or near its insertion, and the cut end fastened into the fascial attachment of the quadriceps to the patella. The development which takes place from use of this muscle is often sufficient to maintain extension of the leg in walking, and thus do away with the necessity of a support above the knee.

In a valgus position, due to paralysis of tibialis anticus and posticus muscles, and unopposed action of the peronei, the deformity may be corrected and the equilibrium of the foot restored by dividing the peroneus longus low down behind the outer malleolus and carrying its proximal end across the extensor tendon and securing it into the tendon of tibialis anticus. This relieves the *pull* on the outside of the foot and gives support to the inside. If by this means the *guying up* of this part of the foot is not sufficiently accomplished, a section may be taken from the tendo Achillis and transplanted into the tibialis posticus.

In cases of paralytic varus, which are much less frequent than the foregoing, the opposite plan may be followed but care should be exercised not to weaken too far the inside of the foot for fear of producing flat foot. For this reason in this form of disability the writer prefers to leave the sound tibialis anticus intact and, after dividing the paralysed peroneal tendon or tendons to attach the distal end of one or both to some sound muscle say the peroneus tertius or extensor longus digitorum.

In cases of paralysis of the calf muscles, the tibialis posticus or peroneus brevis or both may be inserted into the tendo achillis; but this is the least satisfactory of any of the cases of tendon transposition, as the combined strength of these two muscles does not equal a fourth part of the calf muscles. (This was the original operation of Nicolodani and although it is least useful of any muscle transposition, yet to him is due the suggestion of this plan of treatment.)

A muscle, which is useless or harmful by reason of the position of its attachment, but which is active and capable of development, will gain power as it is transposed so as to be able to work to advantage, so a small muscle like the sartorius may be transplanted into the quadriceps extensor, and while it can never hope to take its place yet it will develop so as to do a share of the work required of such a muscle. On the other hand if these muscles are allowed to remain in useless positions they would just as surely atrophy and degenerate.