

and if too great an amount of force be employed the entire foot be dislocated forward in its relation to the leg. This accident occurred with me in one case. Under these circumstances it is considered justifiable to remove the astragalus.<sup>8</sup> The removal of the bone has been favorably reported upon by several Americans, notably Morton, of Philadelphia, and has also been frequently performed in Germany. Koenig, however, has recently asserted that instead of removing the astragalus he prefers to persist in efforts made at short intervals to force the astragalus into the proper position.

Bone operations of all kinds on the foot, are to be avoided if possible. They maim the foot to an extent that is done by no other method. The foot in congenital varus is always short and imperfectly developed, and by the removal of a section of bone from the outer border the foot is made still shorter, and its growth is possibly interfered with. On the other hand, the open section at the inner border of the foot, or the subcutaneous section of obstructing bands of tissue, so that the foot may be corrected by manual force, permits of a lengthening which is greatly of advantage both in appearance and usefulness. With increased experience I am more and more disposed to employ a greater length of time, and to put forth greater efforts to rectify the deformity by manual force, as much as possible avoiding cutting operations where the circumstances do not urgently demand that they be employed. I find that the less cutting that has been done the more perfect the form and function of the foot, that is to say, where the treatment of the case has been sufficiently persevered with to secure eventually the complete correction of the deformity. I show some cases here to-night in which voluntary motion at the ankle-joint is through an arc of 60 degrees, and in whom the plantar surface makes an angle of less than 80° with the axis of leg. In these cases the position of the feet must be regarded as most satisfactory. It is questionable whether any person seeing some of these children walk, or even examining the foot, would suspect that ever they were cases of club-foot.

Even when the deformity in the foot has been quite corrected, and when the relation of the foot to the leg at the astragalo-crural joint has been set right still there is in some cases disagreeable

pigeon-toe manifested. This is due to the twist in the leg bones, by which the external malleolus is carried further forward than normal in its relation to the internal. This may be corrected by osteotomy of the leg bones, and then setting the segments in such a position as to correct the pigeon-toe. In children, however, I prefer to wear an appliance which is here shown, which consists of a band passing around the pelvis with which is connected at the side by a hinge joint a bar which passes down to about the middle of the thigh, and then continuing downward is a coiled steel spring which is attached to the boot. Now, when the appliance is put on, and the boot so twisted as to have a tendency to turn the toe outward, it will induce in the patient the habit of turning out the toe, and eventually will in children evert the foot in its relation to the leg, that is to say, it exerts a force tending to untwist and therefore correct the deformity in the leg bones.

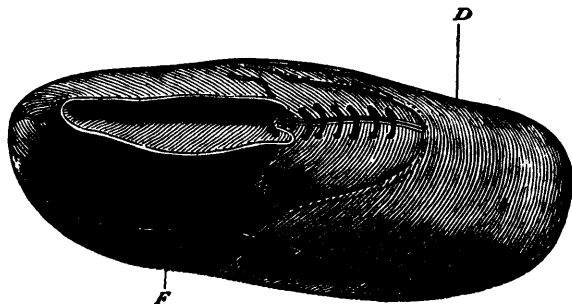


FIG. 8.—Showing day shoe.

The question is sometimes asked, when the treatment of club-foot should begin in an infant. My reply is that attention should be given to the subject as soon as the child is born. The mother or nurse should be instructed to grasp the foot in the hand and to evert the foot, that is to twist it toward the correct position. This manipulation should be repeated several times a day. It has the effect of not only correcting the deformity, but also of increasing the development and mobility of the foot. If this plan be intelligently followed until the child is 8 or 9 months old, some cases can be completely corrected so that the active interference of the surgeon is not demanded. Other cases which are more resistant although not entirely corrected by this treatment, will be so much improved as to lessen very greatly the difficulties and insure much better results in the