skin of the plantar surface and internal border are much shortened. By reason of the foot being so much extended the tibialis anticus is put on the stretch and helps to keep the inner border of the foot elevated. The abductor hallucis is shortened in a marked degree, also the flexor hallucis, and the long flexor of the toes; in fact, even in a mild case of the deformity there is no structure of the foot which is not modified by its abnormal relationships and alterations of function.

The position of the posterior tibial artery is worthy of careful observation. Even the normal artery is in danger when it is necessary to cut the structures about the inner malleolus; and sometimes the vessel is drawn away from its proper relationships. In the dissected foot which is here presented, which was taken from a hydrocephalic infant, it will be seen that the posterior tibial artery lies directly between the tiblialis posticus muscle and the tibia.

Etiology.[2]—Various theories have been propounded setting forth the causes of club foot, but up to the present no general concensis of opinion has been reached. The theories which have met with a certain amount of favor are :—

(1) The dynamic or spasmodic muscular contraction theory.

(2) The mechanical theory.

(3) The arrest of development theory.

(4) The defect in the germ theory.

Diagnosis.—The determination of the existence of this deformity is seldom a matter of difficulty. In infancy there is sometimes a spasmodic condition of the tibiales which cause the foot to similate this deformity. Manipulation, however, by the mother or nurse with massage, for a short time, soon restores the foot to a normal condition.

The magnitude of the deformity varies much at birth, depending greatly upon the natural formation of the foot. If the child be of stout build and strong bone the foot is likely to be short and the deformity hard to correct. On the other hand, if the child be of slender build, and the foot long and bones in general rather small, the deformity, though quite as marked in degree, is much more easily corrected. The degree of resistance varies much from the mildest ones in which complete correction can be at once made and retained by the hand to those in which resistance to correction is offered by greatly deformed bones, shortened ligaments, muscles, fasciæ and skin, to such an extent, even in infancy, as to entirely preclude the possibility of rectification without cutting, lacerating or prolonged stretching of the above structures.

The difficulties in the way of rectification are greatly increased with age. In walking, the weight is borne in such a manner as to confirm the foot in its abnormal position. Movement at the astragalo-crural joint becomes less, a bursa develops where the foot comes into contact with the ground, and in the adult corns, ulcers, and sometimes sinuses not only make walking very painful or impossible, but also introduces complications which stand in the way of the surgeon when treatment is to be adopted.

Treatment.—Cases of club-foot vary greatly in the amount of deformity, and in the difficulty that opposes the surgeon's efforts to correct. When the foot is very short and chubby the course of treatment is rendered much more difficult. In some instances the foot may be placed in such a position as to correct the varus without any for-

FIG. 4.—Three years elapsed before photo showing correction was made.

cible manipulation. The equinus can seldom or never be corrected without prolonged treatment or operation. [3]Operative treatment for the correction of club-foot is of comparatively recent date.