

Hereditary ataxia (Friedreich's disease) is an extremely rare affection usually developing in childhood, at puberty or in early manhood, and resembling locomotor ataxia; but the lightning pains of the early stage of locomotor ataxia are absent, and there are no marked crises. Moreover, in hereditary ataxia the upper extremities are involved earlier and more severely than in locomotor ataxia. Its interference with locomotion, and the deformity known as contracted foot, to which it may give rise, may bring it into relation with orthopedic practice.

Pseudo-hypertrophic muscular paralysis is a chronic progressive affection characterized by a diminution or loss of the power of certain muscles, together with an increase in their size; coincidentally there is diminution in the size of other muscles. The muscles of the calf are among those which are most frequently found enlarged. (Fig. 3.) In both the enlarged and diminished muscles there is an atrophy of muscular elements, but in the former there is also an abnormal deposition of fat, with hypertrophy of the connective tissue. The disease nearly always develops during childhood, and the influence of heredity may often be traced. It first manifests itself by muscular feebleness. The patient walks with a peculiar waddle, because, in order to compensate for loss of muscular power, he throws the centre of gravity of the body over each leg in turn as it supports the body weight. The weakness of the glutei and of the muscles of the back causes a marked lordosis of the lumbar spine in standing; while in kneeling on the hands and knees there is a characteristic sagging of the back, causing a saddle-shaped depression. There may be associated mental enfeeblement. In time deformities appear; owing to distortion of the joints from contracture of some of the muscles, there may be talipes equinus, flexion of the knees and thighs, lateral curvature of the spine, etc. Here again the intelligent application of therapeutic gymnastics and massage may do much to improve the nutrition of the affected muscles and retard the progress of the disease; mechanical treatment may prevent contractures; and a combination of operative and mechanical treatment may do much to correct deformity that has occurred and thus make the condition of the patient more comfortable.

"The stimulation of the muscles by electricity has been employed and advocated, but, however sedulously employed, I have never seen distinct effects from the use of either faradism or voltaism. Indeed, we have no facts whatever to justify the expectation that any form of electricity, that could be applied to the muscles, would influence the interstitial growth of fibrous tissue, or that any electrical stimulation of the fibres can save them from the destructive influence of the compression they endure. It must be remembered, moreover, that electricity is a very feeble agent in stimulating muscular fibres to growth compared with the physiological stimulus of voluntary effort. Muscular exercise does seem to have some influence in retarding the failure of power. It