

the trunk may participate in the oscillation of the limbs but regain the fixed position as soon as the movements, are accomplished and the subject has sufficiently regained his equilibrium. No noticeable diminution of muscular force is observed either in the upper or lower extremities.

Independently of the motor troubles that I have just indicated, I will draw your attention to certain muscular twitchings that some authors call fibrillary tremor, although in reality this phenomenon is not in any way analogous to the fine, almost incessant fibrillary contractions which are observed in different amyotrophies. These twitchings are seen in many of the muscles of the trunk and the limbs (back, thigh, fingers—Klippel, Durante). One frequently notices also the existence of *exaggerated contractions of the muscles of the face*, in the movement of mimicry, in those of the speech, or associated phenomena, during the execution of different movements of the limbs. Sometimes also subsultus of the tendons of the extremities is seen. Generally speaking these diverse manifestations on the part of the muscles may be observed equally in Friederich's disease. The study of the spasmodic phenomena, more or less developed in these patients, is particularly interesting, since it is in part owing to their existence that is based the constitution of this new clinical group.

In the first place the patellar reflexes are exaggerated, not always very markedly so, but all authors are agreed in describing them as presenting an intensity above the normal. In one of the cases of Klippel and Durante, and Francois H., they are noted as diminished in intensity. In any case this forms a very marked difference with the manner in which the reflexes are met with in typical Friederich's disease, since in this latter they are, speaking generally, abolished; it is only, however, exceptionally that one finds them preserved, and then but rarely, except during the initial period of this disease. In cerebellar heredo-ataxia on the contrary the patellar reflexes exist in greater intensity than normal, even when the affection has lasted ten or fifteen years or more. Besides, according to Sanger Brown, the exaggeration of the patellar reflexes should be considered as an initial phenomenon preceding even the other morbid symptoms and serving as the first indication to foretell that such and such a member of the family will be attacked at a later period. A foot

clonus has also been noted, but much more rarely (three cases of Sanger Brown). Finally, the greater number of authors speak of a spasmodic condition of the limbs more or less marked, especially of the lower limbs. Thus in one of the cases of Sanger Brown the "thighs are flexed nearly at a right angle; this contracture may be overcome partly by drawing with force on the limb in a slow and continuous manner." Klippel and Durante say "that in the case of Mlle. X. the condition of the reflexes is difficult to demonstrate, because of the rigidity produced when one wants to examine them." Nonne notes that in his three cases there was a difficulty in relaxation of the muscles in passive movement when the patient was ordered to do so. In the case of Botkine contractures arose from time to time in active and passive movements.

In regard to the sensibility, we have already seen, that sometimes, especially in the early stages, some pains of more or less intensity are experienced in the leg or in the loins. Sometimes, also, although rarely, objective troubles exist. Klippel and Durante note them in three cases; with Mlle. H.—there existed complete anæsthesia for all forms of sensibility on the internal surface of the leg and upon the crest of the tibia; there was besides a marked delay in the perception of sensation. With Louis H. tactile sensibility was abolished on the legs and feet; somewhat diminished on the fore-arms and hands; diminished on the face; preserved on the thighs on the arms, on the trunk; loss of sensibility to pain in the same region, except on the face. These disturbances of sensibility comprised sharply-limited zones at the knees and at the elbows. Heat was recognized everywhere; cold was not recognized in any part. Two points in order to be perceived on the limbs had to be separated 8 cm. These objective troubles do not belong to typical Friederich's disease and would then form a new differential character in support of cerebellar heredo-ataxia.

(To be concluded in the next issue.)

SODUM PHOSPHATE IN LOCOMOTOR ATAXIA.—Mr. Corder writes to the *Lancet* that he has had good results from the hypodermic injection of ten centigrammes of phosphate of soda in one gramme of vehicle every other day. Other observers have found much benefit from this form of treatment.