

lumbar region. Farther up in the cord the degeneration has become localised to the postero-median column, except in the rarer cases of cervical tabes. Degeneration in the posterior roots and the fibres of Charcot's root zone and those to Goll's and to Clarke's columns, the latter probably being chiefly instrumental in bringing about ataxia. This degeneration is in the lumbar region chiefly, rarely in the dorsal, but occasionally in the cervical. Slight and scattered degeneration in the posterior ganglia and some degeneration in the peripheral nerves, is also seen. In the cord too in advanced cases the endogenous fibres of the posterior columns, that is those fibres which connect the various sensory levels, show degeneration,—this is not present in the preataxic stage of the disease (Mott. *Tabes in Asylum and Hospital Practice*, *Archives of Neurology*, Vol. II., 1903, pp. 1-327).

As an associated condition Mott describes in some cases of his series a degeneration in the pyramidal tract affecting those fibres most remote from the centres of nutrition, *i.e.* in the longer fibres of the tract—those to the lower extremities. This fact seems to me to be very significant and is probably what has already happened in the sensory neurones. As if in the presence of a toxine the neurones had simply faded, and, as in a plant with insufficient nourishment, the branches farthest away from the roots are first affected.

Many theories are advanced as to the etiological factors which bring about this pathological picture. Most authorities attribute to syphilis the essential or at least the preponderating role as a causative factor, although exposure to cold, fatigue, injury, and various toxins are also mentioned, only to be assigned by most to a secondary place in the etiology of this disease. According to various authorities the disease may start:—

1. In the intramedullary part of the posterior roots alone.
2. In their extramedullary portions, either (a) at the site of their passage through the dura mater and arachnoid, in which situation Nagiotte has described a condition of perineuritis, or (b) according to Obersteiner and Redlich, at the site of their passage through the pia mater and the peripheral neuroglial layer, in both of which they have described a chronic thickening in cases of tabes. But this perineuritis described by Nagiotte is not present in all cases of tabes, and certainly in cases of spinal meningitis where the meninges are thickened we do not get symptoms of tabes. Moreover, this condition of chronic posterior meningitis described by Obersteiner, though present in many cases of tabes, is by no means present in all. The thickening in the peripheral neuroglial layer is probably secondary to the alterations in the spinal cord.