Periscope

PROGRESSIVE LENTICULAR DEGENERATION, W. B. Cadwalader. (Journal A. M. A., Jan. 30, 1915.)

The author reports a case of progressive lenticular degeneration, confirmed by necropsy, the first one, he thinks, in American literature thus completely reported. During the lifetime of the patient no definite diagnosis had been made. The first Wassermann was slightly positive, but the subsequent ones negative and lenticular disease had not been suspected until the postmortem. The patient, according to the imperfect history obtained, had been subject to frequent recurring attacks of mental depression and on admission to the hospital her mentality was distinctly impaired, memory largely affected, and she was listless, lethargic, and at times emotional. From the very beginning there was a distinct tendency to spasticity of all the extremities, and of the face, but the well marked tremor, limited at first almost solely to the right upper limb and the muscles of the face gradually affected the entire musculature, though it never became noticeable except on voluntary movement. The earlier spasticity probably masked the tremor to some extent. The onset of this case was not unlike that of Wilson (Brain, 1912, p. 316). There was nothing indicating a toxemic condition—no fever, malaise, etc. Aside from the first slightly positive Wassermann there were no clinical evidences of syphilis or microscopic evidences of lues in the brain. The low power of the microscope showed a number of small irregular scattered areas of softening in the lenticular nuclei of both sides, the largest being about the size of the head of a pin, and these were more numerous in the putamen than in the globus pallidus. Although there was increase of the neuroglia, the large nerve cells of the putamen seemed less numerous than normal. There was nothing specially abnormal mentioned elsewhere.

MAUTHNER'S CELL. Geo. W. Bartelmez. (Jour. of Comp. Neurology, Vol. 25, No. 1, pp. 115-116.)

The nucleus motorius tegmenti may be divided into cell groups which correspond to the various motor nuclei of the medulla oblongata and the relations with these nuclei represent the primitive connections of the groups.

The groups have secondarily acquired relations with the primary sensory nuclei which lie at the same transverse levels and have differentiated accordingly.

This connection is interpreted as an adaptation for rapid reflexes between the sensory centers and motor centers of the somatic musculature.

The axones of the larger cells of the nucleus motorius tegmenti comprise the greater part of that portion of the fasciculus longitudinalis medialis which goes to the spinal cord.

The motor tegmental nucleus is best developed in the region of the acoustico-lateral nuclei.

Certain cells here have migrated toward the acoustico-lateral decussation, from which they receive collateral fibers, and they have increased in size. They are homologized with the Müller's cells of cyclostomes.

Mauthner's cell is interpreted as a cell of the same type as the Müller's cells which has gone much further in its differentiation as a result of establishing a direct connection with the VIIIth root fibers. It is the association cell of three-neurone reflexes having short latent periods. The perikaryon and dendrites are gigantic in their proportions but the nucleus is not correspondingly large.

At least twelve different types of fibers have endings in the pericellular net of Mauthner's cell. One portion of the pericellular net is particularly highly developed. It is termed the axone cap and is primarily an acoustico-lateral connection.

There is clear evidence that the different dendrites of Mauthner's cell have different types of connections. The endings of the VIIIth root fibers upon the lateral dendrite in *Ameiurus* are well adapted for a study of the nature of the synapse. The two plasma membranes are seen in contact. The cell affords an excellent material for the study of the structure of the cytoplasm.

JELLIFFE.

THE MEDULLA OBLONGATA OF MAMMALS. C. J. Herrick and G. E. Coghill.
(Jour. of Comparative Neurology, Vol. 25, No. 1, pp. 65-85.)

The first response which the *Amblystoma* embryo can make to external stimulation of the skin is a simple avoiding reaction, turning the head away from the side touched. This is soon followed by an S-shaped reaction of the whole body, and this in turn by a simple swimming reaction. In the earliest stages of all of these reactions the afferent nervous impulse is transmitted through a chain of several neurones to the upper end of the spinal cord, thence across the ventral commissure into a descending efferent or motor tract, which is also composed of a chain of neurones. In the earliest swimmers the initial response, excited by cutaneous stimulation, is supplemented by a proprioceptive "muscle-sense" response excited by the muscular contraction itself, and thus the rhythm of serpentine locomotion is maintained (Figs. 5 and 6). At this age the same peripheral sensory neurone may serve both as exteroceptor and as proprioceptor (Figs. 2 and 3) and on the efferent side of the arc there is also a lack of differentiation between the tract neurones and the peripheral motor neurones (Fig. 3). The only possible reaction to stimulation is a total response of the somatic musculature—the swimming reaction.

In the spinal cord of the half grown larva the simple peripheral sensory neurones of the earliest stage have been replaced by definitive spinal ganglion neurones, among which those concerned with exteroceptive responses are probably distinct from those involved in proprioceptive reactions. Long ascending and long descending tracts are differentiated within the spinal cord and peripheral motor neurones are now distinct from those of the long descending motor tracts. By the elimination of numerous synapses, conduction in the spinal cord is much more rapid than in the younger embryos of the first reacting stages. In addition to these