Abstracts.

Neurology.

NEURO-ANATOMY AND NEUROPHYSIOLOGY.

[148] Myelin-containing ganglion-cells (Über markhaltige Ganglienzellen).—

The author has made a painstaking study of a somewhat neglected subject in neurohistology, viz., the occurrence of myelin as a complete or incomplete sheath round nerve-cells and its collection in polar fashion within certain others. His paper is concerned also with the nature of those cells that sometimes are found to encapsule ganglion-cells. Myelinated nerve-cells are found chiefly in the ganglia of the cranial nerves, are common in reptiles and birds, rare in the lower mammals, and particularly so in man. The relation of the structures investigated to the neurilemma and its cells is also discussed. There are good illustrations and a full resumé of the pertinent literature.

J. V.

[149] The development of the cortex and the functions of its layers.—

Summarizing his findings this writer states that the primitive arrangement of the cortex as it appears in the paleo- and archipallium shows two cell layers—the lamina granularis, which has mainly a receptive-correlative function, and the deep pyramids, which have a corticifugal and commissural efferent function. The principle of this lamination is kept up in the neo-cortex, with this difference, however, that the receptive-correlative granular layer has given rise to supragranular cells, which again are subdivided into two sublaminae: the upper cells still retain a smaller size, while the cells lying nearer the granularis acquire a pyramidal form. As far as concerns the cause of the development of the supragranular layer, Kuhlenbeck, and later but independently of him, Faul, have given the following neurobiotactic explanation of this process, which is perfectly in accordance with the
facts. As in the palaeocortex and in the archicortex the afferent cortical fibres, carrying corticipetal impulses, run in the zonal layer—a fact fundamentally represented by the primary and secondary olfactory tracts—similarly in the neocortex, callosal fibres and part of the ascending thalamic fibres run in the more superficial parts of the cortex, between the surface and the granular layer. Since therefore the space between the surface and the granular layer is an important region for corticipetal impulses, it is not strange that these impulses give rise to a much greater outgrowth of matrix cells of the granular layer in a superficial direction, and thus to the formation of supragranular layers which in maturing at the same time acquire a larger size.

C. S. R.


Tobey and Ayer’s modification of the Queckenstedt test has for its object the detection of thrombosis of the transverse or lateral sinus. Briefly, it depends on the fact that if the transverse sinus, forming the chief intracranial tributary of the internal jugular vein, is occluded, it will not act as an outflow for the cerebral circulation. Hence unilateral compression of the vein of the affected side will not produce an increased obstruction to the circulation, and consequently there will not be a rise in the spinal fluid pressure. The vein on the unaffected side has had to take over the entire outflow, and therefore its compression will cause a rise equal to that of bilateral compression in a normal person.

In a series of fifty skulls studied by the author 92 per cent. had a difference in the diameter of the outgoing venous sinuses of the two sides, twenty-five being larger on the right and twenty-one on the left. In the cases in which the sinuses were larger on the right, the variation in size was greater than when the left side was the larger. The greater resistance to flow caused by this increased the amount of blood carried by the right side in cases in which the right side was the larger, and tended to diminish the discrepancy when the left side was larger. There is therefore a definite anatomical basis for the fact that the mean of manometric tests shows more response to jugular compression on the right and less on the left. Individual variations occur so frequently, however, that the left side may carry much more blood than the right and may give much greater response to jugular compression.

R. M. S.
The effects of local freezing of the central nervous system of a cat—
A. Schneider and B. Epstein. Arch. of Neurol. and Psychiat., 1931, xxv, 1263.

In connection with his work on experimental convulsions, Speransky, in 1926, reported a method of producing epileptiform fits in dogs by freezing portions of the cerebral cortex. The phenomena described were explained by Speransky on the hypothesis of the formation in the frozen area of an 'auto-neurotoxin,' which is disseminated throughout the central nervous system and body by the spinal fluid and blood. The influence of the spinal fluid was apparently demonstrated by the fact that drainage of the fluid prior to the freezing caused a sharp delay in the reaction time. Furthermore, transfusions of spinal fluid from an animal in which the cortex had been frozen resulted in a similar, but again milder, set of symptoms.

The authors have repeated these interesting experiments on thirty cats. In none was there observed anything resembling the picture described by Speransky. In only one was any marked postoperative excitement noted: this soon disappeared and the cat recovered perfectly. The only clearly recognizable pathological condition consisted in a moderate degree of glial increase in the marginal and immediately subjacent layers of the cortex, with some evidence of the formation of gitter cells and slight neuronophagia. The dura appeared to exercise little if any protective influence in these cases. The paralyses produced by freezing of the spinal cord were transitory only, and this, together with the lack of objective changes in the cells of the spinal cord, shows conclusively that little if any lasting damage is done by the freezing.

The authors suggest that possibly the changes observed are due primarily to the temporary anaemia and anoxæmia produced by the stoppage of circulation during freezing.

R. M. S.


A series of thirty-one cases is reported in which the severest types of pain were relieved by interruption of the dorsal sympathetic fibres. The evidence so obtained, together with that gained from diagnostic block with procaine hydrochloride and injection of alcohol, has led the authors to believe that there may be definite sensory pathways running in the dorsal sympathetic chain.

R. M. S.