Abstracts.

Neurology.

NEURO-ANATOMY AND NEUROPHYSIOLOGY.

[92] Studies of cerebral function in learning.—K. S. Lashley. Arch. of Neurol. and Psychiat., 1924, xii, 251.

Much of the literature on the function of the electrostimulable cortex presents an inextricable tangle of physiological fact and psychological speculation. Claims are made that it is motor, that it is sensory, that it is sensorimotor, that its motor function is exercised through the storing of images of movement, that it is the final common path for all voluntary movements, and that it is a reflex centre not primarily concerned with voluntary activity.

With a view to testing the validity of certain of these hypotheses, Lashley destroyed the greater part of the precentral gyrus of both hemispheres in monkeys which had been trained previously in habits of manipulation and visual discrimination. When the animals recovered from paralysis it was found that they showed perfect retention of these habits. From this it is concluded that the so-called motor areas are not directly concerned with the performance of complex learned activities. The motor impulses of conditioned reflexes must descend from other areas of the cerebral cortex than the precentral gyri, and the latter cannot be regarded as the source of impulses for 'voluntary movements.' Destruction of the corpus striatum subsequent to recovery from diplegia produced only the usual symptoms of striate lesion without recurrence of the symptoms of cerebral paralysis. Recovery from paralysis was therefore not due to vicarious function of this nucleus.

The author concludes by summarising the evidence for considering the precentral gyrus as part of the kinetic mechanism for reflex control of spinal posture and for maintenance of excitability of lower motor centres.

R. M. S.


With the object of making visualisation of the intricate spaces and channels of the subarachnoid system a less difficult task than it has hitherto been, the authors obtained casts by injecting varying proportions of eeloidin and camphor in dogs and fresh human cadavers. Satisfactory results were obtained, although the thinner portions of the subarachnoid spaces remained
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The paper is illustrated by coloured drawings, which do not, however, altogether meet the object of the authors.

R. M. S.


It is well to have a thorough-going and complete investigation of the fibre-anatomy of the basal ganglia, since speculation as to striatal function has often outrun anatomical facts, on which alone physiological theories must rest.

Relying largely on the experimental results of the Vogts and of Wilson, the author has prosecuted further researches by experimental methods in cats, dogs, and rabbits, and by the examination of certain human brains, including that of a normal newborn infant and of an eighth-month fœtus.

His conclusions are too long to be conveniently summarized here, but among them may be mentioned the following:

- There is a definite tractus striomesencephalicus ad substantiam nigrum, which arises chiefly in the head of the caudate, and is characterized by the fineness of its fibres;
- The main constituents of the laminae medullares of the globus pallidus are striopallidal fibres;
- The fibres of Forel's bundle (H1) are chiefly striopetal, but among them are some that are striofugal;
- Forel's (H2) bundle contains mainly pallidofugal fibres, but some are striopetal;
- The corpus Luysii is doubtfully connected with oral segments of putamen-caudate and globus pallidus;
- There is a definite pallidofugal connexion between globus pallidus and posterior longitudinal bundle;
- The red nucleus has a definite connexion with the corpus striatum by chiefly pallidofugal fibres, though some appear to be from the putamen-caudate;
- There is no proof of any connexion between cortex and putamen-caudate by fibres passing in either direction, but in the cat the author found a cortico-pallidal relationship, degeneration being present in the globus pallidus after lesions of the frontal poles.

S. A. K. W.

NEUROPATHOLOGY.


In normal patients the number of cells in each successive cubic centimetre of fluid drawn off at lumbar puncture decreases very rapidly from the first to the fifth cubic centimetre, and thereafter more slowly. In a series of fifteen