

NEUROBIOLOGY

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Morphologie und Physiologie des Nervensystems
Von. Prof. Paul Glees. Pp. xii+445. (Stuttgart :
Georg Thieme Verlag, 1957.) 58 D.M.

THE author describes this text-book as an attempt to organize the most important results of experimental neurology in a form suitable for readers interested in neurology and neurobiology. A valuable feature is its emphasis on neuroanatomy, the author's own subject, though his interests range far into neurophysiology.

The latter subject naturally falls into three sub-groups : (1) the traditional problems of localization which seek static answers and are intimately concerned with the anatomy of centres and pathways ; (2) a dynamic variety dealing with circuit analysis, functional principles or, more generally, with problems of 'how' as opposed to those of 'where' ; and (3) applied physico-chemistry elucidating in terms of the concepts of these sciences events which take place across membranes in nerves, synapses, end plates, etc.

Glees' references will help readers interested in these three fields to much of the relevant literature, even when the author himself is less fortunate in presenting leading ideas and has to be content with loosely connected facts. This criticism applies to the fields enumerated under (2) and (3) which are difficult to discuss interestingly without the background of a great deal of thought-provoking experimental activity. Since most of the work in these fields concerns structures below the brain stem, Glees' book does not really gather momentum until he has reached the level of the mid-brain, except when treating histology. It is, for example, still curiously disintegrated on the subject of the spinal cord.

The physiology of the brain is dominated by the first sub-group mentioned above, that is classical problems of localization which do not necessarily become neurophysiology in the stricter sense, merely because methods of degeneration and surgical removal have to some extent been supplanted by electrical equivalents, such as the method of 'evoked potentials' and other varieties of electrical recording and stimulation. On the other hand, the problems of localization are important in themselves, particularly when related to physiological points of view. Concepts used in this field are easily understood, while circuit analysis still is much concerned with the development of an appropriate arsenal of useful analytical notions.

In dealing with problems of localization the experimenter asks, for example, what parts of the brain are necessary for feeling thirst, hunger, for sleep and wakefulness, to what parts visual, acoustic and tactile impulses go, and in what ways the peripheral receptive fields are projected, or what disabilities performance tests disclose after certain operations, etc. Complex interconnexions such as those between hypothalamus and the pituitary gland require a firm histological basis as a first step towards establishing functional interaction.

In this general field of research to which Glees himself has contributed valuable information he is also a good guide. These sections, the leading ones in the book, are accompanied by excellent anatomical diagrams and describe the modern work in an easy, fluent style. Briefly the book is best described as an introduction to recent advances in the morphology and physiology of the brain. In this sense it is complete in its treatment of the facts and ideas that have been advanced during the past twenty years.

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