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BOOK REVIEWS

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Recent development of neurobiology in Hungary. Vol. I: Results in neuroanatomy, neurochemistry, neuropharmacology and neurophysiology. — K. Lissák (Editor). (Akadémiai Kiadó, Budapest, 1967, 139 p., U.S. $6.00).

This is the first volume of a series in which the results of neurobiological investigations predominantly carried out in Hungary are to be published in the English language. The book begins with a most stimulating article on "The anatomy of complex integrative units in the nervous system" by J. Szentágothai. The histological findings of the author and his co-workers are related to pertinent results in neurophysiology and interpreted in the context of a concept of neuronal networks which are thought to constitute the main functional units of the nervous system. Applied to various structures of the spinal cord, cerebellum, thalamus and cortex this approach opens up new vistas and will no doubt influence our efforts to understand how the brain works. This article is followed by a brief review on "Neurotransmitters of the brain: a biochemical, pharmacological and pathological study" by M. Wollemann, and by other articles which can only be referred to by title because they are already condensed from the work of the respective authors and their groups: J. Knoll: "Pharmacological control of central nervous activation mechanisms"; L. Pickenhain and F. Klingberg: "Electrophysiological and behavioural investigations on the delay period of conditioned reflexes"; J. Domonkos, L. Heiner and L. Latzkovits: "Studies of the correlations between function and metabolism on the basis of the carbohydrate metabolism of tonic and tetanic muscles".

The book contains many instructive illustrations and is well printed.

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Molecular basis of some aspects of mental activity. — O. Walaas (Editor). (Academic Press, New York, 1967, 476 p., $19.50).

This book is the first of two volumes resulting from a NATO Institute Symposium held in Norway in August 1965. The first volume, reviewed here, is divided into five sections, although the chapters therein do not particularly adhere to the section headings. Section I, "Biochemistry, Morphology and Nerve Tissue Activity", contains papers by Hechter, Robinson and Roberts. Various theoretical aspects of higher brain function are related to current trends in biology. Some of these contributions represent updated versions of material presented elsewhere; *e.g.*, *The Neurosciences Research Program Bulletin*.

In a subsequent section entitled "Mechanism of Hormone Action", Hechter discusses more generally the nature of intercellular communication, with emphasis on the popular cyclic AMP. (In a chapter in a subsequent section, Rall and Kakiuchi relate cyclic AMP metabolism to the brain more directly.) Other chapters in this section by Cori, Mueller, Sekeris and Krahl describe studies relating endocrine function to macromolecular synthesis. Two chapters deal specifically with the nervous system — one on the nerve growth factor by Levi-Montalcini, and one on the actions of insulin on the nervous system by Rafaelsen. A section on "Proteins, Nucleic Acids, Lipids and Brain Function" begins with a general paper by Richter. A review of the nucleic acids is presented by Smellie. A study by McEwen and Hydén reports changes in acrylamide gel patterns following training of handedness. This work has been referred to frequently but has not been reported elsewhere. The "memory transfer" advocates are represented by Fjerdingstad *et al.* Clausen describes techniques for quantitative thin layer chromatography in neuropathological studies, and Honegger compares LDH-isoenzymes with lipids from consecutive histological sections through the mammalian retina and cortex. Kvamme *et al.* present evidence for the allosteric nature of glutaminase. In a section entitled "Inherited Metabolic Errors" Kalckar presents a short, succinct description of the molecular basis of galactosemia. Closs and Woolf describe, respectively, biochemical and genetic correlates of phenylketonuria, and Eldjarn writes on heredopathia atactica polyneuritiformis, better known as Refsum's disease, a rare disorder in which a branched-chain fatty acid (phytanic) is found in large amounts.

Neuroscientists engaged in research on molecular approaches to nerve function will find this book of value, particularly the chapters on mechanism of hormone action. They may be able to integrate the exciting findings in biology with the present state of knowledge in the nervous system. It will in fact be difficult for them to browse through this book and not find something of interest. For those somewhat remote from the molecular approach, the volume is a rather spotty introduction to new developments in neurobiology.

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