

number of patients. Finally, a paper examines postural synergy in compensating for movements of the body's center of gravity during quiet breathing, as an example of cooperation among muscle groups. The analysis and conclusions are relatively simple.

As a summary evaluation, this is a somewhat specialized book, constituting a worthy memorial to its progenitor; many questions are raised, which are treated at greatly different levels of detail, practicality and satisfaction to the reader. Although the topics are diverse, their treatment is moderately well unified by the consistent attempt to relate the very general formulations to the particular results, and to seek to make measurements which could elucidate these connections. The various application areas are, however, at greatly different levels of development, which results in some frustration of the author's general desire for coherence and synthesis.

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Principles of sensory physiology. — H. Tamar. (C. C. Thomas, Springfield, Ill., 1972, 396 p., \$21.50).

One who undertakes writing an advanced text on sensory physiology, even without emphasizing behavioral and perceptual aspects, is faced with the chore of reading and reviewing literally hundreds of papers published in recent years. Even more herculean is the task of trying to organize the material in a manner which is more than a review or an annotated bibliography. Much of Tamar's book reads like an annotated bibliography but, considering the present state of our lack of knowledge in sensory physiology, it is doubtful if the data from hundreds of research papers could be organized to be markedly otherwise.

The book consists basically of four chapters. An additional short introduction and a review chapter on electrophysiology complete the 350 pages of text and references.

Although the review chapter on *Nervous Transmission* comes last it probably should be read first, since it contains valuable references and good sections on such things as "oscillatory phenomena" and "electrogenic sodium pumps". The strong feature of the *Introduction* is a discussion of Fechner's law and Stevens' power law.

Chapter II, *A Survey of Receptors*, is 50 pages in length and contains: description of receptors in vertebrates and invertebrates; detailed examination of muscle spindles; crustacean stretch receptors and discussion of the vertebrate labyrinth. Unless the reader has had a prior course in neurophysiology he will find the going difficult since most of the text is in the form of brief summaries of research papers. Many of the 31 figures (all borrowed) are helpful but 8 of these are not referred to in the text. Further, figure legends (also borrowed) are often not sufficiently explanatory of the experimental design under which the data were collected, to enable the reader to understand the graphic summary.

The third chapter, relatively short, surveys the general mechanism of the receptor response in many different kinds of receptors. References are numerous (187 in 29 pages)

and an adequate background knowledge is assumed for the reader.

Chapter IV, *Inhibition*, is an extensive (100 pages, nearly 450 references) account of recent work on peripheral and central inhibition in four systems: visual, auditory, olfactory and gustatory. Tamar's approach is to organize research findings around: (1) inhibitory mechanisms identifiable as control processes among the interactions of peripheral neural elements; (2) centrifugal inhibition, sometimes called central control of afferents; and (3) central inhibition of various kinds at different levels. This arrangement seems logical and accommodates present knowledge. A disadvantage of an organization around sensory systems is that overall themes or functional generalities of inhibition are not readily obvious or easy to summarize. Not all of the figures in this chapter are pertinent, and at least 8 are not referred to in the text.

The material on initial events of receptor activation (Chapter V), would appear in most texts as a first chapter. Even here this chapter could well be read before the others. Gustatory receptors receive most attention with the remainder devoted to visual receptors. The muscle spindle and Pacinian corpuscle are treated elsewhere, which leads one to wonder why Chapters II and V were not combined. Only 16 figures appear in Chapter V and this reviewer felt that line drawings or diagrams of such things as the electroretinogram, the early receptor potential and the late receptor potential would have added greatly to the text. Again, some figures are not mentioned in the text material and the relevance of one or two is not obvious.

Although this book is not strictly an annotated bibliography the author apparently intended to be thorough in his journal review. The inclusion of foreign research reports not generally available will be appreciated. It appears the journal search was extensive through 1968 and spotty into 1969 and thus the material summarized is already about 3 years old.

This is a valuable book in at least two respects. Graduate students and other researchers in sensory physiology will find it to be an excellent source book and other neuroscientists wishing to inform themselves about various aspects of receptor types, their function and organization, will find consulting this book the best way to bring themselves reasonably up-to-date on current thinking and research findings in sensory physiology.

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Brain development and behavior. — M. B. Serman, D. J. McGinty and A. M. Adinolfi (Editors). (Academic, New York, 1971, 386 p., \$19.50).

Through this volume the reader can sample the variety of papers on development of the mammalian nervous system and behavior presented at the Second Annual Winter Conference on Brain Research held in 1969. Most of the 19 chapters were presented there and were then revised and