FUNDAMENTALS OF SENSORY PHYSIOLOGY. 3rd Edition. Edited by Robert F. Schmidt. Published by Springer-Verlag, 300 pages. 1986, Illustrated. Cdn. $28 approx.

This is the third edition of R.F. Schmidt's "Fundamentals of Sensory Physiology", the first two editions having been published in 1978 and 1981. The book has, by now, certainly earned a niche for itself and I expect is being used quite widely in courses in medical curricula as well as in basic courses throughout the western world. The authors (there are contributions by seven German sensory physiologists) begin by presenting the groundwork of their topics in sufficient detail for even those with a bare minimum of biological background to be able to follow the text. The subjects are then well-developed into moderate complexity with the reader being carried along in step-by-step fashion.

A dominating feature of the book is the editor's liberal employment of italic print and bold face print for the purpose of emphasis and whenever terms are employed which require defining. This may become a little distracting at times, however, as the smooth flow of the readers' thought can be interrupted as one tends to skim forward through the text, skipping over the normal print for the next italicized phrase or bold facing type font. The book is copiously illustrated, many figures appearing in colour when required, but a liberal use is made also of grey tones highlighted by red: the effect is pleasing to the eye and understanding is facilitated by the clarity of the resultant figures.

The brevity of the chapters encourages one to use this book as a handy reference volume and the inclusion of a question section (the answer key is provided at the back) at the end of each chapter will certainly be of great benefit for students who wish to test their comprehension of the material just covered. The content of each chapter is presented thoroughly and well, especially when peripheral systems are considered. As one progresses through the nervous system however, less thorough coverage is provided, until finally cerebral cortex is reached. I was a little disappointed that despite the tremendous advances made in recent years in our understanding of sensory mechanisms of the neocortex, little impact seems to have been made upon the authors of the book's chapters. For example we now have a much greater understanding of the roles played by known synaptic transmitters in molecular terms as well as at the system, or functional, level; little of this information appears in the sections dealing with cortex. In his preface, Schmidt stressed that this volume is updated by the inclusion of a "Nociception and Pain" chapter. He would do well in preparation for a fourth edition to give further thought on how best to update and expand the sections dealing with thalamus and in particular, cortex.

Notwithstanding this one criticism, the book is indeed timely, it is very clearly written, and a splendid job has been accomplished in turning out this 3rd edition. The authors, editor and publisher are to be congratulated. The book is not at all expensive and is good value. It is most likely to be purchased by students, including those in nursing, rehabilitation medicine, undergraduate physiology, medicine, dentistry and allied biological and medical sciences. I recommend it.

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TOPOGRAPHIC HISTOCHEMISTRY OF THE CEREBELLUM. 1986. By Enrico Marani. Published by Gustaf Fischer Verlag, Stuttgart and New York. 169 pages. 57 figures. 14 tables. Cdn. $84.50 approx.

Professor Marani of Leiden University, The Netherlands, has demonstrated an organization of the cerebellar cortex in mammals not previously suspected from classical histrology, Golgi impregnations, or electron microscopy: alternating longitudinal bands in the molecular and granular layers correspond to high and low concentrations of enzymatic activities associated with afferent neurotransmitter systems. This histochemical topography denotes the distribution of mossy and especially climbing fibres originating outside the cerebellum. A similar pattern is found in the inferior olivary nuclei.

This small, soft-cover book, representing volume 16, number 4 in the series "Progress in Histochemistry and Cytochemistry", is a summary compilation of Professor Marani's investigations spanning the past decade, integrated with related studies by others. Conclusions are based mainly on histochemical evidence, with confirmation of some details by quantitative biochemical and immunocytochemical techniques. Two enzymes are the focal points: acetylcholinesterase and 5′-nucleotidase. The longitudinal band pattern is demonstrated in the cerebellum of mammals ranging from rodents to carnivores and primates. Ontogeny is considered briefly, but I would have preferred a more thorough discussion of embryonic development. A few chapters are written by guest authors. The book is well illustrated and the references are extensive.

Though this book contains few if any new, previously unpublished data, it is a well organized, condensed survey of the topic and should save many hours of library work for investigators of cerebellar organization. The price is high, but worth it to those actively engaged in this domain.

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