

## Book Reviews

**BASIC MECHANISMS OF THE EPILEPSIES: MOLECULAR AND CELLULAR APPROACHES.** Advances in Neurology Volume 44. Edited by Antonio V. Delgado-Escueta, Arthur A. Ward, Dixon M. Woodbury and Roger J. Porter. Published by Raven Press. 1096 pages. Cdn. \$137 approx.

This is one of a number of recent multi-authored books dealing with basic epilepsy research, but at 1096 pages, it is by far the most comprehensive. Concentrating on the cellular and molecular mechanisms involved in the cause and effect of seizures, the 53 chapters by 127 authors deal with topics in molecular biology, physiology, biochemistry, pharmacology, and pathology. In vitro electrophysiological recordings from hippocampal, neocortical, and other brain slices, direct studies of surgically resected human brain tissue, membrane patch clamp studies of single ion channels, the kindling model, recombinant DNA technology, and PET scanning are all major areas of research dealt with by this text which received little or no attention in the classic first *Basic Mechanisms of the Epilepsies* published in 1969 because they were either unheard of or were in the early stages of development. The book is not "an easy read" since most authors assume a fair degree of familiarity with their particular discipline on the part of the reader. Its main function will be as an up-to-date reference text for clinical and basic neuroscientists and their students who are interested in epilepsy research. However, the introductory chapter containing 357 references provides an overview of most of the work found in the rest of the book and also suggests priorities for research for the next decade. Anyone who wants a fairly detailed but concise review of current trends in epilepsy research can get it by reading this chapter. For those who will read no further than this book review, the "hot" areas in basic epilepsy research are: 1. electrophysiological recording in brain slices from both human and experimental models to determine mechanisms of neuron bursting and synchronization; 2. biochemical studies of epileptic human brains using PET and NMR technologies; 3. gene mapping in both the generalized and partial epilepsies; 4. studies of the consequences of seizures (i.e., do seizures lead to brain damage or further seizures?); and 5. utilization of basic biochemical and pharmacological findings to determine new anticonvulsant therapies.

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**NEUROANATOMY, A CONCEPTUAL APPROACH.** First edition. 1986. By C. Romero-Sierra. Published by Churchill Livingstone. 449 pages. Cdn. \$36.95.

I approached this text with interest and pleasurable anticipation. It is written by an author well known for his work in basic neurology and for his interest in medical education. The forward by Dr. John Basmajian praises the work in strong terms, and to me this was a recommendation that could not be ignored, given Dr. Basmajian's standing in the anatomical field.

Unfortunately, the book was a disappointment. The approach is a little unusual, although the idea of teaching concepts without a mass of detail is one that is very prevalent at the moment. It is said, that students will remember concepts better than

isolated facts, and that they will develop pegs on which to hang their clinical knowledge. Perhaps this is the case, but concepts are generalizations and should be based on proven fact. They will collapse when it is found that they don't account for all the facts and for the new facts that so rapidly accumulate, particularly in relation to the nervous system. An example of this is the concepts with respect to pain, the pain pathways, the functions of the thalamus and various aspects of pain sensory representation in the cerebral cortex which were current in the later 70's but which are now known to be incorrect and demonstrated as such by the discoveries of the 80's.

The first half of the book summarizes the main anatomical facts considered to be of importance by the author. Because of an apparent effort to economize, it contains a considerable amount of error or, more properly, half truth. Some of these are small but others are more fundamental. This is particularly so in relation to sensory representation in the cerebral cortex, the connexions of the thalamic nuclei and even with respect to the description of the gyri and sulci. The inputs and outputs of the various thalamic nuclei are given in general terms but the author tends to ignore the different subdivisions of these nuclei and presents each as a homogeneous mass. Such an approach does not do justice to the evidence available with respect, to take examples, to the projections of the cerebellum, the striatal complex and substantia nigra to the thalamus.

In the various sections presenting this overview of anatomy, there is simply not enough detail. I have personally found that, for concepts to be accepted, sufficient detail has to be presented to make the generalization obvious and explanatory of the facts given. It is true that in the latter part of the book more anatomical detail is presented but the scattering of information in this way is disturbing.

I was particularly disappointed by the chapter on the autonomic nervous system and then by the following one on the peripheral nervous system. This latter and many of the following chapters contain a considerable amount of elementary clinical material. This would be all very well, if it was explanatory of some aspects of the basic neurology but it does not read as such. Much seems to have been inserted more to satisfy the demand for clinical exposure.

The later chapters expand on the cranial nerves, the sensory motor systems and the regional structure and functions of the cerebral cortex.

The criticisms that I made of the early part of the book continue, but are diminished for this is the better part. There is to my mind an excess of simple clinical material and not enough basic neurology, but perhaps that is to taste. However, from this book alone, I would have found it very difficult to get a true picture of the reticular formation, the raphe system and various interrelationships of the striatal pallidal complex.

Most of the illustrations are good and they are particularly profuse, only a few are confusing and could be eliminated. However, this is a minor point. Having said all this, I must hasten to add that this is not a bad book. To the contrary, it is really quite good. The problem is, I feel, that I expected so