

terms in different languages (*cf.* primary generalized epilepsy). The author then gives his reasons for not using the international classification he prefers, in accordance with the practical orientation of his atlas, the well tried pragmatic grouping derived from the classification of Gibbs and Lennox, with emphasis on the preferential age.

The seven following chapters deal with the erratic seizures of the new born, the various seizure forms of infants, in particular the West and Lennox-Gastaut syndromes, petit mal attacks in children of school age, in teenagers and adults, psychomotor attacks, neocortical focal seizures, subclinical seizure discharges, primary generalized attacks (*grand mal*), seizures of undetermined or nonepileptic nature. Each chapter is introduced by a short survey of aetiological factors and of the most common clinical signs, with ample reference to the literature, followed by a general description of the usual interictal and ictal EEG patterns, which thereafter are illustrated in the figures and, where necessary, specified in the legends.

The concluding chapter summarizes the principal differential diagnostic considerations. Although the limitations of the scalp EEG are fully realized, it is stressed that a recorded seizure is of considerable importance for diagnosis. Much depends on the versatility of the EEG technician. The author concludes with advice which can be wholeheartedly supported: in the presence of an incompletely recorded seizure, which leaves some questions open, it is better to say so instead of overinterpreting insufficient data.

The list of references comprises 208 entries. A good index allows rapid looking up of specific details. The illustrations are excellent and flawlessly reproduced (a compliment to the publisher). The text is well written, excepting a few minor linguistic errors (German is not the native language of the polyglot author). It comprises condensed (and cautious) information about theoretical fundamentals, stresses the practical points and reflects in all parts the author's experience and common sense.

This book is not intended to compete with the famous seizure atlas of Ajmone Marsan and Ralston, which attempts to correlate closely the clinical and electrical seizure manifestations. This author's aims are more modest but not less commendable. His atlas helps the young electroencephalographer to recognize and assess the ictal discharges he may encounter in his records. It also helps neurologists and all those who have to deal with epilepsy to a better understanding of this proteus-like condition.

R. HESS
Neurolog. Clinic
University,
Zurich (Switzerland)

Cellular mechanisms subserving changes in neuronal activity. — C. D. Woody, K. A. Brown, T. J. Crow Jr. and J. D. Knispel (Editors). (Brain Info. Serv., UCLA, Los Angeles, Calif., 1974, 167 p., \$ 6.00).

This soft-cover book is a collection of brief summaries of presentations by 16 participants in colloquia in the Department of Psychiatry, UCLA, November 1973. A central theme

of 'cellular mechanisms' could not be followed by all participants simply because cellular processes were not directly involved in some of the research reported.

What follows are selected comments on various summaries which this reviewer feels may be of special interest to readers who are not familiar with many of the diversified approaches to neural mechanisms.

Woody proposed a two-state system for the mediation of conditioning when animals are trained, in his paradigm, to a click conditioned stimulus (CS). The first is postsynaptic involvement at motor areas controlling conditioned motor specificity, the second state involves pre- or intrasynaptic elements at sensory areas controlling CS specificity. The Black-Cleworth observation that a conditioned blink can be established with unconditioned stimulus (US) to an efferent nerve, when all sensory input has been eliminated, is a most provocative finding. By some means antidromic stimulation is producing central information usually thought to be effective only via sensory input pathways. Gormezano reports his studies on the optimal CS-US interval. In a summary of a series of experiments, J. S. Buchwald discusses results of her successful conditioning of decorticate, diencephalic and mesencephalic cats.

Work on various models and mechanisms of habituation is reviewed in the summaries of Carew and Kandel, Farel and Krasne.

The possible role of Ca^{++} in neural functions was discussed by three participants. Adey, in a stimulating report, discusses the possibility that Ca^{++} effects upon cortical synaptic function may be dependent upon Ca^{++} release by intrinsic gradients. Looking at especially slow changes in neural activity, Hagiwara points out, for example, that some thresholds, variously defined, may show slow changes but the slowest changes of all may be the evolving of Na^+ spikes from Ca^{++} spikes with a time constant of one million years! Krnjević discusses the possibility that the excitatory transmitters, glutamic and aspartic acid, may work via the mobilization of membrane Ca^{++} which would then lead to increased Na^+ conductance.

In other summaries Gershenfeld discusses the dual role excitatory and inhibitory, of serotonin in some *Aplysia* neurons, Rall reviews his concept of the function of dendritic spines in neuronal plasticity, primary afferent depolarization produced via the ventral root in frog spinal cord is presented by Rudomin, Somjen reviews how glia, K^+ and neurons may interact, Bennett discusses gap junctions, and Doty unravels an intriguing mystery of how an "engram" may pass between the hemispheres, or how it may be read-out from storage in a hemisphere in a behaving monkey.

Many of the summaries are brief, contain mostly figures, and there are no participant discussions, with one exception. Discussions would have made the reports more readable and interesting.

Although this book appears 1.5 years after the presentations it is to be recommended to those wanting to become quickly informed about fundamental research in neural mechanisms going on in a number of active laboratories.

At the price it is a bargain.

L. T. RUTLEDGE
University of Michigan,
Ann Arbor, Mich. 48104 (U.S.A.)