

some detail. Unfortunately this field has expanded more rapidly than objective evaluation can occur.

This is an interesting and well written compendium of various topics in communication disorders. The chapters vary in aim and style but a great deal of up-to-date information and excellent summaries can be found. It is recommended to everyone interested in neurogenic communication disorders and I think it is a useful addition to the neurologist's library.

Andrew Kertesz
London, Ontario

TOPOGRAPHIC MAPPING OF BRAIN ELECTRICAL ACTIVITY. Edited by Frank H. Duffy, Published by Butterworth's, 1986. 428 pages. Cdn. \$70 approx.

The neurological literature of the last two decades has been full of descriptions of new techniques for analysis of EEG including evoked potentials of short and long latencies, spectral analysis of single or averaged EEG samples and finally topographic mapping of the multichannel data. While some or all of these techniques have been available in specialized laboratories for many years, it is only with the advent of faster smaller computers that all of the above can be combined in a single user friendly and commercially available machine. These recording and analysis systems for topographic mapping of this complex data are now being actively marketed in North America by several companies as clinically useful and necessary tools in neurological investigation.

This book "Topographic Mapping of Brain Electrical Activity" edited by Frank Duffy, is a collection of 25 chapters prepared by the participants in an international conference which was held in October 1984 in Boston. There is good worldwide representation amongst these authors with approximately half coming from each side of the Atlantic. The participants present a wide range of techniques for analysis of the EEG often with a few examples of clinical application and as in any book prepared from a conference, there is a variable level of quality and clarity in these written chapters. In many the mathematical issues are far beyond the grasp of most clinicians or electroencephalographers and must include caveats re clinical applications. There seems to be a lack of development of any consensus regarding empirical application of the techniques. Only Frank Duffy writing the final chapter suggests strongly that the techniques are ready to be widely applied. Harner in another chapter succinctly summarizes the theoretical applications of this technique and explains clearly and concisely how it appears in pilot studies that this technique is going to be a valuable one for monitoring some types of cognitive function. In most of the other chapters the clinical cases provided tend to have such major abnormalities in their neurological exam or CT scans that demonstrate that this technique can pick up any thing that the other more readily available and easier to interpret tests do.

This book is to be recommended for the clinical neurophysiologist contemplating acquisition of a mapping package as the study of these chapters provides an understanding of the limitations and variations of the different techniques utilized for analysis, including statistical expectations, techniques of interpolation, placement and numbers of electrodes, etc. However, since most of the chapters are written as a focus for

discussions amongst experts in the field, I cannot recommend this as a useful book for a student in clinical EEG or neurology as the material is far too highly specialized and lacking in perspective. The book, however, would also be useful reading for students of engineering or physiological psychology contemplating a study of data from this area, as long as they first study the three chapters in the commentary section (by Chiappa, Tyler and Duffy) to gain some general knowledge of these techniques before getting deeply into the other individual very specialized chapters.

I would finally commend the book for its good index, detailed bibliographies and the generous use of pictures and some colour plates.

Sherrill J. Purves
Vancouver, British Columbia

DREAMING AND NEUROLOGICAL DISORDERS. 1986. By Giuseppe A. Buscaino and V. Covelli. Supplement no. 52 to Acta Neurologica, Naples (in Italian, conclusive remarks in English).

This is a comprehensive review on the neurophysiology of dreaming and its abnormalities occurring during different neurological disorders. It brings together many of the most recent data pertaining to dreaming. One of the authors (GAB) is well known for his previous studies on this topic. A common scientific hypothesis holds that dreaming is the result of selective cortical activity involving mechanisms which also underlie the normal waking state. During sleep, this cortical activity is conditioned and regulated by brainstem activity. Informations, feelings and sensations which are elaborated during a dream come from the recent past — the events of the day —, the remote past — memory —, and from peripheral proprioceptive and other sensorial input during sleep.

The authors examine dreaming abnormalities occurring during blindness, deafness, commissurectomy, syndromes with impairment of ocular and skeletal muscles, focal hemispheric lesions, memory disorders, epileptic syndromes, narcolepsy, and other disorders. An *actual* loss of mainly visual dreaming occurs when the following conditions are present: an inability to evoke visual representations, the disappearance of REM-sleep and/or the impairment of rapid eye movements, the impossibility to acquire EEG desynchronization patterns, and when a dissociation occurs between cortical and subcortical processes underlying dreaming. An *apparent* loss of dreaming occurs in the following cases: memory disorders, severe mental disorders with loss of interest — e.g. depression —, impairment of dreaming recall, language disorders and treatment with drugs which interfere with REM-sleep.

To-day, dreaming has lost much of its mystery which existed at the turn of the century when Freud started to study its psychopathology. Although in some cases a dream may carry a particular meaning for the psychological life of the individual, neurophysiology and psychophysiology studies define dreaming in most cases simply as a current physiological event which is essential to maintain optimal brain function during wakefulness.

G. Campanella
Montreal, Quebec