On trial

Griffith Edwards

Brain, Behaviour and Drugs. By David M. Warburton. Pp. x+280. (Wiley: London and New York, December, 1975.) £6.95; \$15.30.

TEXTBOOKS on psychopharmacology are these days appearing thick and fast and there might be a case for a 'Which' report. The present book is certainly a good buy, but as in every consumer's report there are a few things to niggle about. The particular attraction of this subject is that it enables authors to put on it an individual stamp, and here the stamp is characterised by authority and enthusiasm.

Dr Warburton first discusses the chemistry of synaptic transmission, and the effect of drugs on transmission. An interesting chapter then focuses on control of homeostatic motivation, with particular reference to water balance and food intake. A chapter on the biochemical basis of mood competently covers essential ground, and the section on control of attention gives a careful account of a difficult area. There is a good section on schizophrenia but affective illness does not get similar treatment, and intelligence and learning are also covered.

It is in the later sections that there is occasion for a few criticisms. The review on the influence of alcohol on the EEG is not up to date. The section on the biochemical basis of drug dependence, although basically very well handled, shows some flaws. For instance, the statistic is quoted that 22.5% of the psychiatric admissions in Brazil, India, Morocco and Nigeria were between 1957 and 1964 as a result of an acute cannabis reaction—a statement so bizarre as usefully to be put before students to test their critical faculties, but not to be coldly retailed as fact. To say that personality changes consequent on cannabis use "seem to be irreversible", runs some leagues ahead of the evidence, and the cannabis literature is in general not sufficiently well treated.

The chapter on anxiety and stress is also a little bit disappointing. The concept of anxiety and the concept of stress could both have done with greater elucidation: the student might expect more about the measurement of psychophysiological correlates of anxiety. The discussion on the clinical application of anti-anxiety drugs on human beings errs on the side of optimism—not every psychiatrist would agree that "the debilitating

effects of pathological anxiety have been reduced to a remarkable extent by a number of psychoactive drugs."

The usual difficulty with the teaching text on this subject lies in effectively making the linkage between the psycho- and the -pharmacology. This book succeeds more than most. The real way to test such a new product must of course be to try it out live on a panel of consumers, and here that means seeing how the book actually goes as a teaching text. This book certainly deserves that kind of trial. □

Neural organisation

H. F. Bradford

The Synaptic Organisation of the Brain: an Introduction. By Gordon M. Shepherd. Pp.xi+364. (Oxford University: London and New York, 1975.) £3.80.

WE have not yet reached the position where a definitive account of the synaptic organisation of the brain can be given, but Professor Shepherd provides us with a useful current appraisal of our degree of success in the drive towards that objective. He begins with a brief introduction to the morphology of synaptic and related structures and of neural connexions, and proceeds to expound the biophysical mechanisms which probably underlie resting transmembrane potentials and their displaced versions, the action and synaptic potentials. This is done in an explanatory way rather than with a vigorous mathematical approach. This leads on to an analysis of dendritic organisation in relation to passive spread of potential change due to synaptic activity, and the work of Wilfred Rall in this area. The second and most dominant part of the book deals with neural organisation in the ventral horn of the spinal cord, the olfactory bulb and cortex, the retina, the cerebellum, the thalamus, the hippocampus and the neocortex. The text is based on an advanced seminar course given by the author in recent years at the Institute of Neurological Sciences at the University of Pennsylvania, and its aim is to isolate and propose principles of synaptic organisation in these regions for the consideration of advanced students and research workers in neurophysiology. Neuropharmacological and developmental aspects of the subject are purposely restricted to keep the length of the book within reasonable bounds.

I found the flow and content of the book interesting and engaging as well as informative, and it is well linked to the literature of the subject with

copious references (a large proportion dating from 1970 onwards). The absence of the more recent developments in our knowledge of catecholamine and indoleamine-operated pathways in the mammalian brain does detract from the success of the book as a description of synaptic organisation, but one appreciates the reasons for their absence. The accounts of the neurophysiological mechanisms of the various brain regions are clearly explained and well illustrated, and the rather conversational style of the text, together with the author's determination to present complex mechanisms as interplay of simpler more universal processes, adds to the ease of its reading. Each regional account deals with the range of neurone types present and the major types of synaptic connections existing between them. This is followed by an account of organisation in terms of circuit diagrams and the special features of that region in this respect. This is accompanied by a discussion of specialised dendritic properties crucial to the synaptic interactions. There are a large number of books in this area appearing at present, but this should prove to be among the most popular. By modern standards its price is attractive for its size and content, and in this respect too it should compete successfully on the bookstalls.

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