

## Book review

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*Biological Psychiatry*, 3rd edn. By M. R. Trimble and M. S. George. (Pp. 393; £63.99; ISBN 9780470688946 hb.) John Wiley & Sons: Chichester, UK. 2010.

This current edition of *Biological Psychiatry* represents an update of the second edition published 14 years ago. In 13 chapters it summarizes the research in the field of biological psychiatry – including sections on the relevant scientific concepts and technical approaches; recent research into each of the major psychiatric illnesses and current treatment modalities.

The first chapter of the book outlines the basic scientific concepts that underpin research in biological psychiatry. Cogent summaries of biological principles are provided from the level of the gene through to the neuron and neurotransmitters. Compared with the 1996 edition of the textbook there are updated sections on single nucleotide polymorphisms, proteomics, endophenotypes, third messengers and a more detailed section on receptor subtypes. There are also short sections on glial cells, synaptic plasticity, neurogenesis, neurotrophic factors, the role of stem cells and inflammation. However, epigenetics receives only a mention, there is no explanation of the widely used genome-wide association studies (GWAS) and phrases like ‘recently, the discovery of the polymerase chain reaction’ betrays the book’s heavy reliance on past editions.

The second chapter explores the neuroanatomy relevant to psychiatry on the legitimate premise that understanding the hardware is as important as understanding the software. However, this chapter goes into considerable detail on the anatomical connections of the limbic system, the basal ganglia and relevant sections of the cerebral cortex in a manner that seems more likely to be of interest to the anatomical enthusiast than someone seeking an overview of relevant aspects of the field.

A more immediately useful summary of the relationship between anatomy and emotion/behaviour is provided in the third chapter. This relationship is approached from three different directions – by anatomical location, by emotional experience and through the lens of anatomically localized dysfunction. A host of useful insights is drawn out of this, although the focus is on literature published in the 1980s and 1990s.

Chapter four provides a clear account of the history and current status of classification systems in

psychiatry and some thoughtful comments on their limitations, generally with respect to the reliance on phenomenology over pathophysiology (or in the authors’ neat analogy – between the perspectives of the gardener and the botanist). This chapter also provides an overview of the ‘clinical investigations’ – biochemical tests, EEG and brain-imaging techniques with updated sections on the latest techniques including diffusion tensor imaging, near infrared spectroscopy and transcranial magnetic stimulation.

The next seven chapters review the research on particular psychiatric illnesses with each chapter divided generally into the categories of genetics; metabolic and biochemical findings; neurochemical findings; neurophysiological and neurological data; imaging; and somatic variables, followed by a chapter reviewing current biological treatments. Some of the chapters from the second edition have been reorganized to reflect contemporary nosology, including a new chapter on disorders of motivation and addiction. These chapters survey large portions of the literature relevant to each group of disorders and cover most of the major hypotheses and current projects in the field.

Using the chapter on affective disorders as a representative example – the history of the monoaminergic hypotheses of depression is covered, as is the early work on neurohormonal findings, mainly with respect to dysfunctional HPA axes in depressed populations. Findings in the neuropsychological and neuroimaging fields are also covered. However, in this chapter and others, there is a pronounced focus on historical studies over more contemporary ones. For example, little space is given to the molecular and statistical genetic advances of the last two decades; no mention is made of the role of inflammation in affective disorders; the interaction of gene and environment; epigenetics, or animal models; scant attention is given to GWAS studies (even relevant negatives) or recent developments in the neuroendocrinology of affective disorders. Instead, sections are devoted to an anachronistic categorization of depression by Winokur from the 1980s and hypotheses from the 1960s about X-linked transmission of affective disorders. A notable exception to this limitation is the chapter on addiction and disorders of motivation which provides a comprehensive survey of the contemporary field.

Indeed, in a review of the second edition of this textbook, a reviewer commented ‘one senses a hesitancy in this work, as if standing at the threshold of yet another revolution but still glancing backwards’

(Janicak, 1998). This limitation has only been compounded in the present edition by the rapid progression of the field. In many respects the challenge taken on by the authors is insurmountable – in eschewing the usual habit of delegating chapters in a book covering a field of this size to experts in each sub-field they have attempted to cover the entire area themselves. As most researchers will be too acutely aware it is difficult to stay abreast of your own sub-field and those sub-fields immediately adjacent in the context of exponentially increasing volumes of research, let alone to develop the kind of familiarity with movements in the field and competing hypotheses that form the intangible 'value add' of a masterful summary.

This book therefore may be valuable to those engaged in clinical practice who wish to familiarize

themselves with some of the basic concepts behind modern biological psychiatric research and the recent history of the field. However, those wishing for an up-to-date and comprehensive summary of the current field would need to supplement this book with further information.

### Reference

Janicak PG (1998). *American Journal of Psychiatry* [Book Review]. **115**, 568a–569.

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