European Journal of Human Genetics (2006) 14, 1145–1146

www.nature.com/ejhg

BOOK REVIEW

A breath of fresh air

Respiratory Genetics

EK Silverman, SD Shapiro, DA Lomas, ST Weiss. Hodder Arnold, 2005.

Patrick J Morrison

European Journal of Human Genetics (2006) **14,** 1145 .
doi:10.1038/sj.ejhg.5201672

This is an excellent new textbook on respiratory genetics – an area that has suddenly emerged over the last decade.

It is well written and divided into four clear sections:

Part 1 deals with key concepts in respiratory genetics – this section is targeted at nongeneticists and will not be of great interest to readers of this journal, but provides an excellent overview for the general respiratory clinician, and includes topics on Bioinformatics, including how to carry out a good Pub Med search, and a succinct guide to SNPs and microarrays. Other chapters cover pharmacokinetics and functional genomics.

Parts 2–4 cover three clinical respiratory disease sections – Part 2 covers obstructive lung disease – asthma, chronic pulmonary disease and cystic fibrosis are covered comprehensively. Part 3 deals with interstitial lung disease, Part 4 covers miscellaneous – including the genetics of lung cancer and rare lung diseases. The glossary is excellent for those not fully familiar with genetic terminology. Chapter references are indicated with an * or a diamond ◊ depending on relevance and an excellent way to find a good reference quickly.

I enjoyed the miscellaneous section most – covering rare diseases and syndromes. It is up to date and includes discussion of causes of hereditary and sporadic pneumothorax including certain mutations in Birt-Hogg-Dubé syndrome – something that was not really recognised until recently.

There are only six colour plates – disappointing in a book of this size but overall, this is a great book for respiratory and interested general physicians. General clinical geneticists will find it useful to have a copy in the library for reference, and may find their laboratory colleagues having a look at the more clinical sections. This book should become the standard reference text in this area■

Patrick J Morrison is a Professor in the Department of Medical Genetics, Belfast City Hospital, Lisburn Road, Belfast BT9 7AB, Northern Ireland, UK.
E-mail: patrick.morrison@bch.n-i.nhs.uk

A balanced perspective of psychiatric genetics

Psychiatric Genetics and Genomics

Edited by Peter McGuffin, Michael J Owen and Irving I Gottesman. Oxford University Press 2004.

Barbara A Jennings

European Journal of Human Genetics (2006) **14,** 1145–1146.
doi:10.1038/sj.ejhg.5201679

Peter McGuffin, Michael Owen, Irving Gottesman and their expert co-authors have provided a cohesive and comprehensive overview of psychiatric genetics. Their book reviews the plethora of data available from family, twin and adoption studies for all of the major mental disorders. It also describes the underlying genetics and pathophysiology for diseases for which there is a detailed understanding, such as Huntington's disease and familial forms of Alzheimer's disease; and the use of genetic counselling for such conditions. In addition, the authors discuss strategies for tracking down and studying functional polymorphisms that have modest but additive effects on brain function; approaches that are of interest to geneticists working on other complex human diseases.

Part one of this book equips the reader with an understanding of the important theoretical and technical aspects of modern molecular biology; the study of quantitative genetics; linkage and association studies. The important landmarks in the history of these disciplines are presented, and complex concepts are described thoroughly and in plain English.

The subsequent chapters that consider abnormal development and adult onset disorders such as affective disorder, schizophrenia, substance abuse and dementia follow a disciplined and well-structured format. In each case, the classification and

epidemiology of the condition are outlined and then the relevant studies of genetic epidemiology and molecular biology are reviewed. These include twin and adoption studies; linkage analysis; cytogenetic data; and candidate disease association studies as appropriate.

In Chapter 10, the authors present compelling evidence from reviews of family studies (including twin and adoption studies) that shared genes rather than shared environments are key to understanding schizophrenia. However, linkage and molecular genetic studies suggest that the disease is not caused by individual alleles with a large effect. Disease association studies have produced the usual conflicting data even with obvious candidate genes based on neuropharmacological data, such as serotonin and dopamine receptors. Two of the problems discussed, for understanding the aetiology of schizophrenia in relation to genetics, were underpowered studies for detecting alleles with small or modest effects, and the need for a refined disease classification system.

The final part of the book considers the future of genetics in psychiatry and includes a chapter about pharmacogenetics. The authors, Rob Kerwin and Maria Arranz, review the findings from studies of the interindividual differences in treatment response and suggest strategies for future pharmacogenetic research and application. The chapter is subdivided to consider genetic variation in phase I and II metabolising enzymes, for example, cytochrome P450 and *N*-acytltransferase enzymes; and drug receptor and transporter targets, for example, dopamine and serotonin neurotransmitter systems. With each example the clinical problems of heterogeneity in response to treatment is presented; be it toxic accumulation of drugs in poor metabolisers of tricyclic antidepressants; or the complete lack of efficacy for some individuals treated with drugs targeting neurotransmitter receptor systems; or the drug-induced weight gain found in association with polymorphisms in one family of serotonin receptor. Many individual association studies between phenotype and genetic polymorphism are carefully reviewed by the authors in this chapter. The inevitable problems of contradictory data from different studies and failure to replicate positive findings are discussed. Small study size, population structure and assessment criteria can be blamed for some of the discrepancies. Kerwin and Arranz suggest strategies that include the study of extreme phenotypes and the use of transmission disequilibrium tests to minimise differences between studies and to avoid false positive findings in the future.

The thorough approach that the authors take to reviewing their fields in each chapter may present a problem for the reader. A good deal of provisional knowledge, based on conflicting data from many different studies, is discussed. This can leave the reader swimming through too much data from speculative hypothesis-generating research.

Overall, this is an excellent postgraduate textbook that marks an important stage in the field of psychiatric genetics; and the promise of a greater understanding of these complex conditions is presented without hyperbole. It can be strongly recommended to psychiatrists, neurologists, psychologists, clinical geneticists and genetic epidemiologists ■

Barbara A Jennings is at
Medicine, Health Policy and Practice,
University of East Anglia, University Plain,
Norwich, UK
E-mail: B.Jennings@uea.ac.uk