

Topley and Wilson's Microbiology and Microbial Infections (10th edition): Medical Mycology

W. G. Mertz, R. J. Hay. London: Hodder Arnold, 2007.
ISBN 9780340885673. £179

For 80 years, this book has been embedded in the development of medical microbiology. Those microbiologists who regularly make reference to 'Topley and Wilson' are likely to purchase this new (2007) edition almost without question. Now published in eight volumes, each available separately, the publication has lost none of its desire to inform readers of the current status of virology (two volumes), bacteriology (two volumes), medical mycology, parasitology and immunology (plus cumulative index).

Medical mycology is a somewhat more specialised topic than bacteriology or virology, but with the increasing incidence of opportunistic systemic mycoses, this comprehensive publication is timely. The book comprises 38 chapters divided across seven 'parts' encompassing topics ranging from a background via therapeutic agents to accounts of superficial, subcutaneous and systemic mycoses.

One assumes that many university libraries will acquire the 10th edition as a reference source. For undergraduate students studying medical mycology, detailed information on morphology and taxonomy is often challenging, and might be perceived as irrelevant or too great a challenge to undertake via classification handbooks. Thus, the introductory information provided in overview format in this volume is invaluable, particularly the succinct overviews of phylogeny and systematics, and laboratory diagnosis. Histopathological images, many in colour, are also extremely useful for reference purposes. Indeed, the presentation of the volume is excellent. Illustrations and figures, many in colour, are informative. Pages are laid out attractively, and references are comprehensive.

The division of the book into mycosis type (parts), comprising more specific information on species and genera (chapters) works well, reflecting the diagnostic approach that would be taken. Perusal of any of the chapters that address specific genera reveals excellent and up-to-date reviews. From my own viewpoint, I would have liked more reference to the role of fungi in medical biofilms, and interactions with bacteria – but you can't have everything, even though this book comes very close!

J. Verran

Global Tuberculosis Control: Surveillance, Planning, Financing: WHO Report 2007

Geneva: World Health Organization (WHO/HTM/TB/2007.376). 270 pp.

In 2005 there were 8.8 million new cases of tuberculosis (TB) and 1.6 million deaths from the disease worldwide. These stark statistics open this comprehensive report, the 11th in the series. The data presented have been collected from scientists and practitioners from all six World Health Organization (WHO) regional areas and, in the words of the authors, "presents the best possible overview of progress in reducing the immense burden of TB worldwide". As a member of the Acid Fast Club with a career-long interest in TB, I found the report to be a fascinating resource.

The report is divided conventionally into sections. There is an initial executive summary of key findings, an introduction, methods section, results section, conclusions and three annexes. The annexes give epidemiological summaries of high-burden countries and data on the *Stop TB Strategy*, case reports, treatment outcomes and estimates of TB burden by region and country.

The report is actually optimistic in its outlook, despite the grim statistics that populate its pages. It asks (and answers) whether or not national TB control programmes around the world met the 2005 case detection and cure targets set by the World Health Assembly (narrowly missed). The report also considers how effectively the *Stop TB Strategy* was launched in its first year in 2006 through implementation of *The Global Plan to Stop TB, 2006–2015* (not yet on course). However, it concludes by expressing the belief that the global epidemic is on the threshold of decline. Even so, it confirms that TB is still a major cause of death worldwide and draws attention to WHO's concerns regarding the link with HIV/AIDS and the emergence of multidrug-resistant and extensively drug-resistant strains, particularly in the African region.

Those who pick this up never intending to read beyond the initial key findings section will miss an impressive wealth of material. There is a good description of the terms and measures utilised. The methodology is both impressive and pragmatic, given the complexity, variation and reliability of data collected in different regions and countries. The results make interesting and salutary reading and give real insight into the state of play of TB surveillance, planning and financing at country level.

Although the report takes care to remain apolitical, the figures speak for themselves. At a time when we hear of up to £60 billion being injected into just one struggling British bank, it is poignant that WHO estimates that just £1.5 billion (US\$3.1) would enable all the interventions on the scale required by the Global Plan to be implemented.

The report is well written and the data are presented in clearly laid out tables. Undoubtedly, it is a specialist text but it is also a great fundamental reference and would prove insightful to anyone interested in TB and/or epidemiology on a global scale.

N. T. Hughes

Diagnostics for tuberculosis: global demand and market potential

Geneva: World Health Organization. ISBN 92 4 156330 3. 203 pp.

The authors immodestly describe this as a "groundbreaking report", financed by the Bill and Melinda Gates Foundation and aimed at the developers of diagnostic tests and also public health stakeholders. The foreword graphically sets the context with unsettling statistics from the 2007 WHO report *Global Tuberculosis Control* – "one-third of the world's population has latent TB" and "every year... nearly 2 million TB deaths worldwide". It also introduces us to the issues both from the public health and industry perspectives – a device that is repeated to great effect throughout the report. For this alone, it probably deserves the accolade of groundbreaking.

The stated intention is to encourage the development of new diagnostic tests that target the needs of developing countries by challenging commonly held perceptions of risk within the market. The report is divided into seven chapters and two annexes. The first chapter sets the scene by detailing the current constraints on TB control, the various flagship initiatives and partnerships, the Stop TB targets, the role of new diagnostics in improving TB control and also usefully provides a database of funding programmes and agencies that could be accessed by researchers and small biotechnology companies.

The second chapter gives an overview of current TB diagnosis. This includes the differing diagnostic priorities of developing and developed countries, special situations (e.g., HIV) and descriptions of the various current methodologies. I particularly liked the summaries of each method, giving advantages, limitations, total time to result and patient visits.

Chapter three provides a strategic overview of the current market for TB diagnostic testing, including the epidemiology of TB, global availability of TB laboratory services, pricing for current tests, and value of the globally served available market – all excellent stuff for putting together a business plan.

Chapter four addresses the technical, financial and logistical challenges and opportunities for TB diagnostics development. It also describes the evolving field of public-private collaborations for product development. Chapter five covers the potential market for hypothetical products in 2020, including market definitions and key assumptions. Again, there are all the business plan data to keep any financier or venture capitalist happy.

Chapter six sets out the socioeconomic burden of TB in plain language, illustrated starkly with specific case histories. This is aimed particularly at the public health providers and makes clear the benefits that can accrue from investment in this area. Chapter seven summarises the business environment, and this is followed by national profiles for 14 important or representative markets. For each country, data are provided on the size and nature of the market, national regulatory policies, intellectual property rights issues and contact information for local industry associations.

The report is well written. There are lots of colourful, informative figures and reams of accessible data. It would appeal to anyone in the science, social policy and business communities with an interest in TB.

N. T. Hughes

Histological and Histochemical Methods

J. Kiernan. Bloxham, Oxon: Scion, 2008: 4th edn.

ISBN 9781904842422. £40. 576 pp.

This text is aimed fundamentally at teaching the chemical, physical and biological principles behind all the key processes in fixation, staining and histochemistry. The book is targeted at lecturers and students in biological and biomedical disciplines alike; however, it has value to anyone involved in, or curious to learn about, the applications of histological techniques in the study of plant and animal tissue.

The book is composed of 20 well-researched and -presented chapters. This text has a concept of understanding principles before comprehending applications throughout its entire length. There is a distinctive appreciation of physical and organic chemistry, which underpins the book's primary teaching objectives.

The preface to this edition is well documented with good indicators on how best to use the text, highlighting concisely the most appropriate way to utilise the extensive reference sources in the bibliography at the end of the book. There are indicators of expansions to previous editions, most notably the chapters dealing with histological staining in one or two colours, staining blood and other cell suspensions, methods for connective tissues and methods for nucleic acids. The inclusion of a preliminary introduction to conventions and abbreviations is well planned and complements the entire text, providing useful practical information.

The opening chapter dealing with the introduction to microtechniques is extremely well written, with excellent practical useful guidance indicators that serve the reader well throughout the book. The chapters dealing with fixation and *in situ* hybridisation techniques are constructed sensibly in order to reflect the sometimes complex variations and diversity that these areas of histological techniques can present.

The book would benefit from the inclusion of some coloured prints. However, the schematic illustrations throughout are well presented and clear in their objectivity. The integration of theoretical and practical material ensures sound reasoning behind each given technique or procedure. The book's primary strengths are the detailed descriptions and discussions of chemical and biological mechanisms, and how these descriptions yield practically useful information in understanding biological or chemical processes.

The book represents excellent value for money, and any comparable text would be hard-pushed to match such a standard. The book would be an asset in any histological library.

G. Orchard

Transfusion Science

*J. Overfield, M. Dawson, D. Hamer. Bloxham, Oxon: Scion, 2007: 2nd edn.
ISBN 9781904842408. 272 pp. £21.99.*

Hurrah! At last, a new book in transfusion science that describes current laboratory procedures and protocols followed on our isles, rather than from the US perspective (informative though they are, some practices do not travel well across the Atlantic). The first publication of this book was ever-popular and became a sought-after possession for students, once printing ceased a few years back.

The long-awaited second edition, no longer part of the acclaimed Biomedical Science Explained series, nonetheless will not disappoint. Focusing predominantly on the undergraduate and trainee/specialist practitioner level, it successfully fills the gap in study material between the elementary and the higher echelons of transfusion science, delivering a solid basis of principles and applied knowledge that will ensure it is included on many university reading lists and on the shelves in blood banks.

The authors, a blend of academic specialists and experienced practitioners, have updated and extended the previous version to reflect significant changes and new findings that have occurred in transfusion science and transplantation since the first edition in 1999. The reader is served a coherent portion of established topics, such as complement, immune and autoimmune haematology, haemagglutination and blood grouping methods, etc., and new themes, including a new chapter on applications of molecular and immunological techniques, a brief section covering platelet immunology, and topical discussion including pathogen reduction methods, the advent of leucodepletion, stem cell processing and changing legislation and quality requirements. It even includes an introduction to microarray technology, giving a glimpse into the future of blood grouping.

The new design has enhanced the book's appeal considerably and encourages enthusiasm from the moment you view the contents page, increased from a miserly primary list to a comprehensive six pages of headings and subtitles. In our world of acronyms, a definitions list is provided and effective use of numbered subsections improves structure and allows the reader to map the path being followed.

Educationally sound, each chapter provides updated and expanded learning outcomes, and engages the reader by including eye-catching boxes of further information and interesting snippets. The inclusion of new illustrations and photographs enhance clarity for the visual learner, and case studies afford an applied perspective. Self-assessment questions and a suggested further reading list at the end of each chapter focus the reader towards a deeper level of understanding.

Successfully achieving a handy and easily affordable study book results in some limitations, and I felt that further details about immunohaematological disorders and associated laboratory investigations would have afforded a more complete balance to the book. Additionally, there did appear to be the odd inconsistency and the occasional questionable comment about current practice. The colour plates are a really beneficial learning aid, but they may have been better placed if integrated at the relevant point in the script, rather than collated at the start.

Concise and scientific but easy to read and delivered at a pleasant pace, the book is to be recommended as suitable for laboratory- and university-based students and practitioners alike, not just nationally but also internationally. Although not supplying sufficient depth to constitute a complete 'course book', at just over £20 it is great value for money, and even the most 'sociable' of student should be able to abstain from one evening's events to add this valuable resource to their study material.

P. Watson