BOOKS RECEIVED

Boyd's introduction to the study of disease


This undergraduate text contains two main sections: general principles of pathology and systemic pathology. There is an opening chapter that briefly reviews aspects of normal biochemistry, cell biology and physiology. This is followed by an interesting and well written synopsis of the history of medicine and pathology. Chapters covering the general pathology of injury, inflammation, infection, and neoplasia follow. The second section contains chapters dedicated to specific organs or organ systems.

The book suffers more than most the problems of many other general texts: few areas are covered adequately, while there are several areas of the undergraduate pathology curriculum that are omitted completely—notably much of haematology and biochemical pathology. Alternative texts of comparable price succeed in presenting a more adequate volume of information in a comparable space. Much of the treatment of modern aspects of pathology, particularly oncogenes, are less up to date than might be expected of a recently published general text. The book is nevertheless written in a pleasant, chatty style that is easy to read, and the personal style with which it presents pathology will appeal to many readers.

T. J. CHAMBERS

Making monoclonals


This small book aptly claims to be “a practical beginner’s” guide to the production and characterisation of (mouse) monoclonal antibodies against bacteria and viruses, which are for use mainly in the development of diagnostic tests. Novices and the more experienced alike can expect to find something of benefit therein and worth the outlay. There are six chapters dealing with immunisation, fusion techniques, the screening of cultures for antibody production, the large-scale production, purification and storage of monoclonal antibodies and hybridoma cells, the characterisation of monoclonal antibodies, and their application in the development of diagnostic tests. Detailed protocols are given of the important basic procedures, or an appropriate reference is provided, and the emphasis is almost entirely on the practical rather than the theoretical aspects of the topic.

J. C. BOOTH

Portraits from memory


The circumstances of the development of a discipline shape its principles—and the principals then establish its tradition, set its standards, and develop its character. It is Hogmanay as I write, and my reader will see that I am playing with words; but James Howie makes his words work. His characters and his own character are alive in this Memoir Club edition in which his Portraits from the popular BMJ’s series are now published as a complete collection. He brings a discriminating eye and a fine firm touch to this work, and he displays a remarkable memory for detail. Some of the outlines are snapshots rather than portraits. There is an interesting variety of subject and of angle.

Not all of the portraits are of medical microbiologists or pathologists. Great characters from other branches of medicine and other walks of life are presented to remind us of our place in the scheme of things and to preserve the perspective, but medical microbiology and clinical pathology get the centre stage. It is fitting that a man who has done so much in his lifetime to identify and sustain our collective cause should give us such a useful text. We are indebted to him. We should each have a copy of this book to remind us of the debt and our heritage. The challenge for us is to match the examples that are so well drawn.

J. G. COLLEE

Botulism. The organism, its toxins, the disease


Botulism is of interest in relation to public health, agriculture, wildlife, the food industry, and the environment. The disease in man was recognised some two centuries ago and the causative agent, Clostridium botulinum, was isolated and described by van Ermengem in 1896. It is surprising that, despite the long history of botulism, many new and important facts have emerged in the past decade or so.

In 1977 the first edition of this book appeared under the single authorship of L. DS. Smith and rapidly made its mark as one of the most useful and authoritative accounts available. In the light of recent progress, the second edition, by L. DS. Smith and H. Sugiyama, is to be warmly welcomed.

As well as having been thoroughly revised, the book has been expanded to take account, in particular, of new information on pathogenesis and toxins, and of food microbiology. The resulting volume gives a comprehensive picture of the organism and its relevance to the five fields of interest listed in the first sentence of this review. This it does with a directness and conciseness that bear witness to the expertise of the two authors.
A few examples will serve to illustrate the value of the book. Reports of botulism caused by ingestion of toxin have now been overtaken in the USA by those of infant botulism, an account of which is linked to a description of wound botulism and of what has been succinctly described elsewhere as "infant botulism in adults". There is mention of the remarkable organisms that produce type F botulinal toxin but otherwise resemble C. barati; of those that produce type E toxin but otherwise resemble C. butyricum; and of those such as C. botulinum subtypes Af, Bf and Ba that produce two toxins, a major and a minor. The exceptional nature of the C2 toxin of C. botulinum type C, the control of C1 neurotoxicity by bacteriophage, the beginning of the end of the "subtype Cx and Cβ" terminology, and the overlap between the toxins of types C and D are all admirably illuminated.

Kacsar's presentation on the regulation and control of metabolic pathways is an excellent summary of a difficult area, and one in which practical applications in fermentation technology promise great rewards. The thermodynamics of bacterial growth (van Dam et al.) is explained clearly and simply. The application of chemiosmotic principles to microbial transport processes is thoroughly discussed in the chapter by Saunders. An unusual, interesting treatment of the effects of temperature on bacterial growth rates (McMeekin et al.) develops a model that should replace the Arrhenius equation. Models of photosynthetic culture growth (Y.-K. Lee) provide insight into phytoplankton ecology and allow for better control of cells cultured for commercial purposes. The final chapter in volume I (by Kodukula et al.) investigates the influence of pH on process performance in waste water treatment plant.

Volume II commences with a general theory of microbial inactivation kinetics (Casolari) applicable to processes of inactivation by radiation, heat or chemicals; this approach is better than exponential-single hit and multi-target theories for the explanation of many experimental observations. A transition state model for the kinetics of bacterial spore germination (Lefebvre and Leblanc) suggests that the dependence of transition probability on the nature and concentration of germinants and various types of activation should help explain this very important mechanism. A useful review of the mathematics of bacterial chemotaxis leads to a discussion of its application to symbiotic bacterial associations in nature (Rosen). The final chapters are devoted to attachment mechanisms involved in the surface growth of micro-organisms (Rutter and Vincent) and biofilm accumulation (Bryers). Although microbiologists have only recently begun to devise methods for the study of the physiology of microbes attached to substrata, it is evident that in many natural and engineered situations the growth and behaviour of organisms in films is fundamentally different from that in suspension. Interactions at interfaces and the development of gradients are phenomena that dominate in spatially and temporally complex situations. Concepts of this kind find a common usefulness in investigations as diverse as those employed in studies of dental plaque and corrosion of steel structures exposed to a marine environment.

Physiological models in microbiology


These volumes represent a most useful collection of articles around a common theme, the theoretical background necessary for an understanding of microbial physiology. Thus, volume I deals with mathematical models of growth and the influence of environmental factors, whilst models of spore germination, bacterial chemotaxis, growth on surfaces, and microbial death are to be found in volume II.

G. R. Smith

D. Lloyd