and uses them to illustrate everything from elementary mechanisms of antigen-antibody interaction to complex cellular responses. I like this approach but, inevitably, experimental method is discussed more than is usual in a basic textbook. This is justified because it is directed mainly at postgraduates engaged in another discipline and particularly at those with a sound knowledge of biochemistry. The book is written with commendable clarity which is maintained, for example, throughout a detailed description of immunoglobulin structure.

Three subjects are covered in depth, namely, the structure and function of immunoglobulin, lymphocyte populations and their interactions, and the relationship between genetics and immunology. There are short chapters on immunity to infection and reactions of immunological injury but these are remarkably superficial in comparison with the rest of the book. Perhaps these topics are more difficult to analyse in the same way. Complement is treated relatively briefly within a chapter on the interaction of antibody and antigen and I think this highlights an imbalance that must be held against the book.

Overall, it is comprehensible and interesting to read, and at a reasonable price it is a worthwhile buy for the limited readership at which it is aimed.

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Fundamentals of human lymphoid cell culture

By J. L. GLICK. Marcel Dekker, New York and Basle. Pp. x and 157. SwF 52.

In the established subjects, such as synthetic organic chemistry, there are excellent practical textbooks that combine relevant theory with technical details and "cookbook" recipes. The appearance of similar texts in immunology indicates its coming of age. In the best of such handbooks the authors confine themselves to techniques with which they have personal experience and this is true of the above practical guide to long-term culture of human lymphoid cells.

The author details several important techniques that are usually dealt with elsewhere in a summary fashion. He describes the use of water purified by filtration and by activated carbon and mixed-bed resins, and the importance of resistance greater than 1 M Ω and preferably 12 M Ω . The need to rinse glassware in *pure* water is stressed. There is the useful comment that most tissue-culture media are stable for 6–12 months at 4°C, apart from the glutamine component which is stable for only 3–6 months. The necessity for "good" batches of fetal bovine serum or human serum (0.5–1%) for RPMI 1640 medium and of horse serum for Fisher's medium is indicated, and Hepes buffer, 25mM, with bicarbonate is recommended for the culture of human cells, avoiding the need for gassing. There is a valuable discussion of sterile technique and a check list for eliminating causes of bacterial contamination, and a method for removing mycoplasmal contamination is described.

Methods for the establishment of long-term B-cell lines by infection with Epstein-Barr virus are described. However, the value of removing T cells, which kill the newly emerging cell lines, was probably recognised too recently to be incorporated in this book. Simple methods for separating large numbers of lymphocytes and preparing conditioned medium containing T-cell growth factor are given. Cell cloning, preservation by freeze-drying, fluorescence tests for E-B virus antigen with Evans blue as counter stain, and the four-chambered Speir-Levy eosinophil counting chamber, a useful time saver for cell counts, are described. The chapter on cross contamination of cell lines is a salutary warning.

This book arose from workshops organised at Associated Biomedical Systems at Buffalo and indicates that instruction in techniques is just as important as availability of reagents in developing a large market for new commercial products. However, the author is scrupulous in his descriptions of the preparation of the commercial reagents. This is not a definitive textbook but it is a valuable practical guide to good tissue-culture technique and for the culture of human lymphoid cell lines.

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