Book Review

The Role of Culture Collections in the Era of Molecular Biology. ATCC 50th Anniversary Symposium Held 23 September 1975 in Washington, D.C. Edited by Rita R. Colwell. American Society for Microbiology, Washington, D.C., 1976, 76 p., \$12.

This slim volume contains the proceedings of the 50th Anniversary Symposium of the American Type Culture Collection held in September 1975, and as such it will be of interest to all microbiologists, for few of them indeed can be indifferent to the services provided by culture collections. The ATCC occupies an outstanding position among the culture collections of the world, so a book of this kind is timely, both as a historical review and as an opportunity to enunciate the functions of culture collections in the future. The thirteen distinguished contributors can be congratulated on a lively and informative volume.

The book is introduced by an amusing Foreword by S. T. Cowan and a historical note by Richard Donovick, tracing the history of the ATCC from its foundation in 1925. Another more detailed review of world culture collections is provided later in the volume by J. R. Porter, sketching their growth from the almost legendary Kral collection, to the several hundred that exist today, mostly supported by universities or governmental agencies. Carl Lamanna adds a plea on the curatorial importance of culture collections, and this is followed by a discussion by R. G. E. Murray of some of the most interesting new advances in our knowledge of microbial ultrastructure. Rita R. Colwell contributes a well-balanced and comprehensive review of computer science in relation to modern microbiology: this can be thoroughly recommended as an introduction to an area where relevant review articles are still very scarce.

A number of essays on special groups of microorganisms then follow. John Liston gives a clear account of the changing attitudes to the taxonomy of bacteria as reflected in successive editions of *Bergey's Manual of Determinative Bacteriology*. Particularly interesting is the great increase in the last few editions in the detail about individual bacterial species, though the number of genera and species recognised has barely doubled. In contrast, the most recent edition has a very uneven treatment of

the higher rank categories.

Leonard Hayflick draws our attention to a new innovation in culture collections, the maintenance of lines of tissue culture cells, with some iconoclastic comments on much current work with a few atypical cell lines, and some fascinating glimpses of recent work on cellular chimeras between different species and the implications for the distant future. René Dubos gives a historical review of bacterial genetics, and Seymour Hutner contributes a stimulating essay on our ignorance of protozoa, spiced with some flashes of humour.

The last few contributions are occupied largely with the imperative need to preserve for the future a diversity of germ plasm of all types. Eugene Odum explains the ecological principles that require a rich diversity for stable ecosystems. Arnold Demain illustrates the great industrial importance of collections of microorganisms for novel fermentation processes. Harve Carlson outlines the possible technology for maintaining germ plasm of all kinds of living creatures (not simply microorganisms) but using techniques of the type familiar in microbiology (a topic also touched upon in Hayflick's essay).

Throughout the volume the contributors quite properly stress the valuable functions of the ATCC. It is especially important in the present climate of economic and ecological thought that these aspects should be strongly emphasized. Without culture collections, microbiology would soon be strangled: like libraries, they are most needed when the need is unexpected. Some of the articles, notably Carlson's, look principally to the future of such collections, and should stimulate constructive new thoughts for new developments.

The volume is well prepared and illustrated. It is a pity there is no index, however brief. This book is one that should be available in all microbiological libraries, and many microbiologists will find, as I have, that it is a rich mine of new and interesting material – not too weighty, but satisfying – a sort of *macedoine de fruits* as it were, a good dessert to heavier fare.

P. H. A. Sneath
Department of Microbiology
University of Leicester
Leicester, 1 7RH, England