

BOOK REVIEW

Microbial ecology of the gut. Editors R. T. J. Clarke and T. Bauchop, Academic Press, London, 1977. Pp. xvii + 410. Price £ 13.50/\$ 26.50.

This book is a valuable addition to microbiology and microbial biochemistry. It is an improvement over its predecessors 'Human intestinal flora' by Draser and Hill and 'The rumen and its microbes' by Hungate, in that it tries to provide an integrated account of the microbial ecology of a wide class of animals. The limited space of four hundred and odd pages naturally has imposed certain restrictions on the treatment of different aspects of the subject. This becomes apparent in some sections, which turn out to be mere catalogues of information without providing any stimulating discussion. Ten authors have contributed a total of nine articles that comprise the book.

The first two short chapters on 'Methods for studying gut microbes' and 'The gut and its microorganisms' written by R. T. J. Clarke, one of the editors, give a bird's eye-view of the available information. The subject matter deals briefly with the cultivation and study of aerobic and anaerobic microbes of the gut and the factors that affect their growth and survival. The different types of gut microbes are listed with short account of their morphology.

The third chapter by R. A. Prins, deals with the biochemical activities of the gut microorganisms. This article that accounts for slightly more than a fourth of the whole book, deals with the microbial degradation of a variety of natural products in the diet including cellulose, hemicelluloses, pectins, proteins, lipids and other minor factors. Competitive relationship and beneficial interaction between the gut microbes are discussed briefly in this chapter. This section could have been elaborated in a bit more detail by abridging the basic biochemical aspects of the earlier sections.

The next two articles entitled 'Fermentation in the hindgut' and 'Foregut fermentation' by R. H. McBee and T. Bauchop, respectively, provide short but illuminating accounts of the organisms in different animals. The chapters deal with the anatomical and physiological aspects of the habitats and the environmental suitability of these organs for microbial growth. The articles will be of interest not only to researchers in these fields but also to laymen.

The sixth chapter on 'Protozoa in the rumen ecosystem' by R. T. J. Clarke provides a brief account of the taxonomy of protozoa, their distribution, metabolism and contribution to host. Some sections tend to be repetitive of the information provided in Chapter 3.

The article by D. C. Savage on 'Interaction between the host and its microbes' can be considered as the highlight of the book. It deals with the autochthonous and allochthonous microbes and their beneficial interactions with hosts and also their deleterious effects in altered conditions. This is the only chapter where some emphasis is laid on the microbes in the human gut. The author discusses the altered conditions like bacterial overgrowth and growth during infection. He also presents a balanced view on the possible role of microbes in human neoplasia.

M. E. Coates and R. Fuller in Chapter 8 review the studies with gnotobiotic animals in host-microbe interactions. The article deals with the production and maintenance of germ-free animals, their characteristics and also reviews the data on studies with gnotobiotic animals.

The last chapter by R. L. Baldwin, L. J. Koong and M. J. Ulyatt, discusses an aspect in its infancy, namely, the mathematical models on the formation and utilization of fermentation products. The treatment should be of much interest to those involved in microbial engineering.

On the whole, this book will be of value to researchers working on borderline topics encompassing microbiology, biochemistry and immunology. It will be a useful reference book for students.

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