Review of Biological Research in Aging: Volume 1
Edited by Morton Rothstein

Alan R. Liss; New York, 1983
424 pages. £49.50

This is the first of a series to provide a service to bio-gerontologists in giving a convenient and up to date (February 1982) review of the relevant papers. Future volumes are hoped to continue this objective. The areas covered include the theories of ageing, its evolution and genetics; immunological, neurobiological and endocrine systems are also discussed as are the cell-biological aspects of the well known phenomenon of senescence of fibroblasts in culture. The section devoted to metabolic changes includes chapters concerning age-related changes in nucleic acids, transcription, translation, enzymes and their alteration, protein turnover, lipid peroxidation and glucose and insulin metabolism. Changes in drug metabolism and the interaction between nutrition and ageing are included in the final sections of this interesting book. In the introduction to the chapter on nutritional effects human self-interest finally is revealed when the most relevant question is posed “is there a nutritional regimen which will maximise or increase lifespan?” Unfortunately a firm answer can only be given to the laboratory rat!!! It has been known for 50 years that restriction of the intake of certain foods will increase the lifespan of this lucky rodent.

An attractive feature of this book is that each chapter concludes with a section concerning the most recent findings which helps give the reader at least the reviewer’s view of the most important progress in the various areas in this volume. Unfortunately the coverage is very variable ranging from a detailed discussion of the immunology of ageing to a one and a half page chapter on senescence and ageing in fungi followed by over two pages of references, which is not really useful to the reader (except for the references). To this biochemist the most interesting sections concerned changes in protein biosynthesis and breakdown (i.e. turnover), an area where definitive experiments can now begin to be performed — and the metabolism of polyunsaturated fatty acids to produce lipofuscin (which accumulates with age): whether lipofuscin affects any cell functions is an important area for further study, which this book has clearly shown.

A.R. Hipkiss

The Biology of Euglena. Volume III: Physiology
Edited by D.E. Buetow

xvi + 363 pages. £32.40, $49.00

As the ‘Buetow’ is considered like the ‘Bible’ on Euglena research, it is very nice to see the publication of the third volume entitled ‘Physiology’, since the first two volumes were published in 1968. This new book updates the earlier ones and covers new areas of investigation on Euglena:

Ultrastructure; flagella and the cell surface; circadian and infradian rhythms; movement and locomotion; responses to photic, chemical and mechanical stimuli; stimulation and inhibition of metabolism and growth; chloroplast molecular structure; photocontrol of chloroplast development.

Each chapter is well presented, usually not too long, and therefore is easily read. Nice micrographs accompany the chapters which deal with morphological description; especially on Euglena ultrastructure where previously unpublished micrographs have been used in order to increase the range of illustrations available for study. In the
middle of the book, an impressive number of figures are presented in the longest chapter on 'circadian and infradian rhythms'. The research results presented all through the book were essentially carried out on the members of the genus *Euglena*, and especially *Euglena gracilis*, which are among the most widely used and researched eucaryotic microorganisms in biology. This is the result, of course, of the unique taxonomic position held by this genus which shows both animal-like and plant-like characteristics.

I understand that a fourth volume of this series is planned to be published. It will cover 'Subcellular Organelles and Molecular Biology'. As more research time has been devoted to the chloroplasts of *Euglena gracilis* than to any other component of the *Euglena* cell, several chapters of volume IV will review chloroplast structure, development, chemistry and metabolism, and another one will present the most recent information on mitochondrial morphology, ultrastructure, isolation, physiology and function.

Finally I can recommend warmly this book to all the Euglenophiles, because it is the only series available on *Euglena* research and because the standards are high. We expect to see soon the next volume!

D. Affolter

*Unusual Micro-organisms – Gram-negative Fastidious Species*

Edited by Edward J. Bottone

*Marcell Dekker, New York and Basel, 1983*

136 pages. Sw.Fr. 79.00

This book contains six essays on an assortment of bacteria. They vary considerably in size. There is one essay of 44 pages on *Eikenella corrodens* with 13 illustrations and 75 references, 20 pages of *Capnocytophaga* and 6–12 text pages each on *Gardnerella, Cardiobacterium, Pasteurella multocida* and *Actinobacillus actinomycetemcomitans*. It is difficult to justify the claim that the book contains 'intensive investigations concerning the microbiological, clinical and epidemiological correlates of these micro-organisms'. One could not do all that in six small pages. Most of the chapters deal superficially with the organism and disease in a way that will not satisfy microbiologists, clinicians or epidemiologists. The authors are all from the USA and the references are mainly from American sources. The book may have been a long time in preparation as almost all the references are prior to 1980. In one chapter 32 of the 43 references refer to work published prior to 1969 (12 prior to the Second World War).

The first chapter is the largest and most rambling. Under the subheading 'DNA homology studies' no DNA homology data are given and a paragraph on toxin production concludes that no toxins are produced. It would have been useful to include data on cell wall composition, lipids and metabolism, if a new perspective is to be presented. *Capnocytophaga* is neither 'unusual' nor 'fastidious'. If it was included at all they might have referred to the work of the Japanese, e.g. Miyagowa et al., or British, e.g. Collins et al. and Holbrook et al. in this field. I cannot understand the arithmetic in Table 3, p.54 which gives the biochemical reactions of six strains of *C. sputigena*; e.g. 25% produce acid from amygdalin, i.e. 1.5 strains, and 60% from dextran, i.e. 3.6 strains. There is considerable debate as to whether or not it is possible to clearly differentiate subspecies of *Capnocytophaga* at all.

The chapter on *Actinobacillus* is concise but the excellent review by Killian et al. is not mentioned. Some British sources are quoted here notably the first edition of Topley and Wilson (1929) and Leonard Colebrook's (spelt Colbrook unfortunately) 1920 description of the organism.

The price inside the copy sent for review was 79.00 Swiss Francs which is expensive for 122 text pages. The binding of the book is first class.

J.D. Williams