

Introduction to Ecological Biochemistry

by J. B. Harborne

Academic Press; London, New York, San Francisco, 1977

xiv + 243 pages. £7.00; \$13.65

Biochemical ecology (chemical ecology or phytochemical ecology) was born of an awareness by ecologists that chemical compounds do play a significant rôle in the complex interaction between living organisms, and the ability of chemists, using modern analytical techniques, to identify such compounds. The possibility that this knowledge might be applied in the control of insect pests and microbial diseases in crops, and also in the conservation of natural communities, has contributed to the rapid advances made in this field in the past decade and to the establishment of biochemical ecology as a new interdisciplinary subject.

This timely review of major developments in the field is based on a course given by the author to undergraduates in the biological sciences but is aimed at a wide readership. It covers the biochemical aspects of the adaptation of plants to their environment, their response to attack by micro-organisms, plant pollination, insect and mammalian pheromones, hormonal interaction between plants and animals, the effect of plant toxins on animals and the interaction between

higher plants. Secondary plant compounds already implicated in these interactions include terpenes, alkaloids, cyanogenic glycosides, glucosinolates, flavonoids, non-protein amino acids, cardiac glycosides, steroids, phenols and quinones. The elegant and varied biosynthetic capabilities of living organisms and the undoubted antiquity of the finely balanced chemical interactions between them contrast sharply with the recent arrival of man on the evolutionary scene and his clumsy attempts to influence his environment by chemical means.

The great merit of this review is that the reader is left as much intrigued by what clearly remains to be discovered as by the fascinating results of completed work. Nonetheless it remains a work crammed with well-presented hard facts in an infinitely readable form and will be read with profit by workers with varied scientific backgrounds, a tribute to the literary and editorial skills of the author.

L. Fellows

Cell Biology: A molecular approach (second edition)

by Robert D. Dyson

Allyn and Bacon; Boston, London, Sydney, Toronto, 1978

xviii + 616 pages. £7.95

There seems to be a small forest of books titled 'Cell Biology' and as a consequence intending readers may all too easily fail to see the particular tree which could provide the timber that would best furnish their minds. The first edition of this book, published only 4 years ago, provided a tree clearly of greater

stature than any other since the forest was first planted. Nevertheless this tree like nearly all others in the wood has grown lop-sided.

Cell biology is still a discipline youthful enough for everyone to be a little uncertain of its limits. I feel that it has two important branches: first, the struc-

ture and function of the component organelles of each cell; and second, the behaviour and interactions of groups of cells. The first branch reaches towards biochemistry and molecular biology while the second should link with all those variously titled subjects that deal with whole organism biology. The two branches are closely linked and it is, for instance, particularly pleasing to be able to read, as we now can in many research papers appearing at present, how cellular interactions can be explained to a considerable extent in terms of the behaviour of microfilaments within cells. The first edition of this book appeared to be developing a strong bud towards this second type of cell biology. Since nearly all the other trees in the forest lacked this branch or bud I felt that the book had particular advantages for use in teaching 2nd and 3rd year university students.

But an uninformed forester has been around and has removed this promising branch from the tree. The second edition now has virtually the same appearance as the other deformed trees in the forest. Such topics as malignancy, contact inhibition of movement, cell

adhesion, or differentiation have either disappeared or have been atrophied. The attempt made in the first edition to relate the role of cell biology to the explanation of the functions of tissues in animals has been diminished. The useful chapter on techniques found in the first edition has been shortened by omitting subjects such as chromatography, electrophoresis or varied immunological methods. The book remains weak on prokaryote and on plant cell biology.

So we are now provided with a very conventional, well illustrated and fairly up-to-date textbook which covers the biochemical principles behind cell biology and a survey of the functions of the organelles of the cell. It also contains chapters on excitable cells, contractility and motility, and cell division and brief looks at cell recognition and differentiation. I found the second edition a considerable disappointment knowing of the promise shown by the first edition. Indeed in most respects the first edition is a better textbook than the second.

Adam Curtis

Preparation and Characterization of Mammalian Plasma Membranes

Volume 7, part 1, Laboratory Techniques in Biochemistry and Molecular Biology

Edited by T. S. Work and E. Work

North-Holland; Amsterdam, New York, Oxford, 1978

ii + 266 pages. Dfl 60.00; \$26.00

The book reviewed was the pocket edition of volume 7, part 1, by Dr Evans, in this series.

In the Introduction to the book the author says that he has attempted to rationalise and generalise practical guidelines for the preparation of plasma membrane fractions. A potential buyer will probably therefore have several questions in mind, including: does the book succeed in achieving its stated aims? How useful will it be? Is it expensive? How comprehensive and up-to-date is it? At rather more than £13 the pocket volume is perhaps costly for individual purchase (particularly by post-graduate students for

whom it will be especially useful) but otherwise the book is highly successful. It is a well-designed laboratory aid that is very comprehensive. The book, which has been produced without delay, contains many references to papers published as recently as 1977 and it provides good coverage of both well-tried and new methods.

Small points of criticism can be made. There are a few typographical errors and, although the book is well printed on good quality paper, the reproduction of the electron micrographs is not as good as might be expected. One also wonders how well the binding will