

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

stand up to repeated use in the laboratory. In the data on materials used to form gradients there appears to be no mention of self-generating gradients employing silica-coated polyvinylpyrrolidone, but this product may have been marketed too late for inclusion in the book.

These are minor deficiencies, however, and I warmly recommend the book to anyone concerned with the practicalities of preparing and characterizing plasma membranes. If you wish to find out what provides the basis for a particular technique of preparing plasma membranes, or of labelling them, or assaying marker enzymes, etc, the book will be most useful. Throughout the volume one can find information on how to use a particular method, how widely it is applicable, what its advantages and disadvantages are, and what special features require attention in the interpretation of data obtained. This approach has been adopted consistently in all 4 chapters that are, respectively,

concerned with techniques for rupturing cells and the assessment of their suitability and efficacy, general methods for the preparation of plasma membranes, the identification of subcellular fractions especially those containing plasma membranes, and the preparation of plasma membranes from specific tissues and cell lines. The book also contains innumerable practical hints, e.g., commercial detergents are often impure, and after prolonged storage the composition at the bottom of the container may differ from that on the top.

In a final section there are useful appendices on the properties of aqueous solutions of sucrose and Ficoll, tabulated information on centrifuge rotors used for the preparation of membranes, information on useful detergents, and the addresses of suppliers of materials and equipment.

J. A. Lucy

Cytochalasins. Biochemical and Cell Biological Aspects

Volume 46, Frontiers of Biology Series

Edited by S. W. Tanenbaum
North-Holland; Amsterdam, New York, Oxford, 1978
xvi + 564 pages. Dfl 218.00, \$95.00

Some 12 years have produced more than 500 papers about the effects of this small group of macrocyclic fungal products, whose name refers to their action as cell 'tranquillisers', a literal translation of the name being 'cell relaxers'. This stimulation of research by the discovery of a small group of compounds of rather strange and obscure origin must be one of the most intense that has yet taken place. The interest and controversy aroused by use of these compounds centres around the claims that they can be used to separate phenomena due to the action of fibrillar contractile structures in the cell, in particular those due to the action of actin type microfilaments, from phenomena due to other organelles. But this is still an area of controversy as the various articles in this book show

and there is at least some evidence that their prime site of action may be upon a cell surface receptor. As the possibility emerged that these compounds, in particular cytochalasin B, might be used in this manner everyone had to have a 'go' with the new magic substance and as a consequence a large, interesting, often controversial literature, occasionally of rather low quality, began to emerge.

It is indeed fortunate for the fame of the cytochalasins that their discovery co-incided with the introduction of methods for detecting contractile microfilament systems within the cell, such as better EM methods and the use of heavy meromyosin to detect actin because the two approaches were often used to complement each other.