

Cell handbook

Cell Biology. (Biological Handbooks, 1.) Compiled and Edited by Philip L. Altman and Dorothy Dittmer. Pp. xix+454. (Federation of American Societies for Experimental Biology: Bethesda, Maryland, 1976.)

FROM time to time a new book appears which is not simply a rehash of those that have gone before. Until now, biology has lacked its "Beilstein" and it is often a time-consuming business to find some small piece of information which you know has been published. This book compresses the maximum amount of factual information into the minimal space and at the same time gives key references from which a quick general overview of the field of interest may be made. To give some examples, do you want to know what nutritional mutants of mammalian cells are available; 31 types are listed and 40 references are given to the field, all in the space of 2 pages. Are you interested in cloning mammalian cells; 52 examples are given and 49 references in only 3 pages. How long would it take to find the oxygen consumption of 618 different mammalian tissues; it is all here

with 198 references compressed into 17 pages. As this one volume extends to 400 pages, excluding appendices and a full index, the amount of information available is remarkable.

Some sample headings, similar in range to those listed above, will give an indication of the scope of this miniature encyclopaedia: resting cell membrane potentials, rheological properties of cells, changes in cell surface membranes with malignant transformation, permeability of inner mitochondrial membrane to anionic substrates, gross chemical composition of microsomes, occurrence of microfilaments in non-muscle cells and tissues, DNA content of cell nuclei. Obviously this is not a book that can be read but it is a book which most biologists are likely to treasure. Inevitably the choice of key references is open to criticism and at times the choice seems somewhat parochial. Nevertheless sufficient are given to enable the research worker to get off to a flying start.

This series is likely to be a must in many libraries.

T. S. Work

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Somatic cell genetics

Variation, Senescence and Neoplasia in Cultured Somatic Cells. (A Commonwealth Fund Book.) By John W. Littlefield. Pp. xi+163. (Harvard University: Cambridge, Massachusetts and London, 1976.) £6.15.

THOSE of us who work in the field that is now somewhat pretentiously called somatic cell genetics owe John Littlefield a great deal. This little book puts us further in his debt. It is based on a course taught by him at Harvard over a number of years. The students who were exposed to this teaching can count themselves fortunate. The information presented is constantly subjected to the sort of critical assessment that can be provided only by someone who has himself worked long and intelligently in the field.

As its title indicates, the book has three main themes. The chapters dealing with genetic and other forms of variation in somatic cells and those dealing with the phenomenon of 'senescence' *in vitro* are difficult to flaw. The discussion of senescence, in particular, is informed by a degree of perception that I have not found

matched in any other published account of this subject.

I hope I may be forgiven for saying that I found the treatment of neoplasia less good. I think this may be because the author has not himself had so much experience of work with tumours; whereas, of course, he has made monumental contributions to the study of cells *in vitro*. In discussing experiments on somatic cells growing *in vitro*, he is very conscious of the quantitative aspects of the work he is describing, and especially of quantitative deficiencies in the evidence presented. His assessment of experiments dealing with the formation of tumours is, however, less sure. If he had treated the relationship between 'transformation' and tumorigenicity with the same rigour as characterises his analysis of mutagenesis in somatic cells, I doubt whether he would have written: (Established) "heteroploid lines appear to have lost growth control and to have become neoplastic". Even so, there's no chapter in this book that isn't worth reading, and there is, as a very important bonus, an absolutely splendid bibliography.

Henry Harris

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