

FRONTIERS OF BIOLOGY

Editors: A. NEUBERGER AND E. L. TATUM

LYSOSOMES  
IN BIOLOGY AND PATHOLOGY

4

J. T. DINGLE

R. T. DEAN

Editors

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# LYSOSOMES

## IN BIOLOGY AND PATHOLOGY

# 4

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IN BIOLOGY AND PATHOLOGY

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## General preface

The aim of the publication of this series of monographs, known under the collective title of '*Frontiers of Biology*', is to present coherent and up-to-date views of the fundamental concepts which dominate modern biology.

Biology in its widest sense has made very great advances during the past decade, and the rate of progress has been steadily accelerating. Undoubtedly important factors in this acceleration have been the effective use by biologists of new techniques, including electron microscopy, isotopic labels, and a great variety of physical and chemical techniques, especially those with varying degrees of automation. In addition, scientists with partly physical or chemical backgrounds have become interested in the great variety of problems presented by living organisms. Most significant, however, increasing interest in and understanding of the biology of the cell, especially in regard to the molecular events involved in genetic phenomena and in metabolism and its control, have led to the recognition of patterns common to all forms of life from bacteria to man. These factors and unifying concepts have led to a situation in which the sharp boundaries between the various classical biological disciplines are rapidly disappearing.

Thus, while scientists are becoming increasingly specialized in their techniques, to an increasing extent they need an intellectual and conceptual approach on a wide and non-specialized basis. It is with these considerations and needs in mind that this series of monographs, '*Frontiers of Biology*', has been conceived.

The advances in various areas of biology, including microbiology, biochemistry, genetics, cytology, and cell structure and function in general will be presented by authors who have themselves contributed significantly to these developments. They will have, in this series, the opportunity of bringing together, from diverse sources, theories and experimental data, and of integrating these into a more general conceptual framework. It is unavoidable, and probably even desirable, that the special bias of the individual authors will become evident in their contributions. Scope will also be given for presentation of new and challenging ideas and hypotheses for which complete evidence is at present lacking. However, the main emphasis will be on fairly complete and objective presentation of the more important and more rapidly advanc-

ing aspects of biology. The level will be advanced, directed primarily to the needs of the graduate student and research worker.

Most monographs in this series will be in the range of 300–400 pages, but on occasion a collective work of major importance may be included exceeding this figure. The intent of the publishers is to bring out these books promptly and in fairly quick succession.

It is on the basis of all these various considerations that we welcome the opportunity of supporting the publication of the series '*Frontiers of Biology*' by North-Holland Publishing Company.

E. L. TATUM

A. NEUBERGER, *General Editors*

# Preface

Interest in the role of lysosomes in the physiology and pathology of the cell has continued to expand and much new material has been published in the two years since the publication of Volume 3. Thus, most chapters in this volume concern fields of study which have not been reviewed previously in this series.

Chapters on the characterisation of lysosomes and investigation of their function in platelets and arterial walls are breaking new ground and new work is reported also on the localisation and function of lysosomal hydrolases. Such studies may, in conjunction with the new work on control mechanisms (which is also reported in this volume), begin to give us new insight into the interaction of the lysosomal system with the other components of the cell.

The tremendous expansion of work on lysosomes and the recognition of the importance of their interaction with other diverse systems within cells, tissues and organs has been recognised fittingly by the recent award of the Nobel Prize to Professor Christian de Duve. The editors of this series would like to congratulate Professor de Duve on this honour and to dedicate this volume to him.

J. T. DINGLE  
R. DEAN



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