

Reviews

Cell and Molecular Biology

ELECTRON MICROSCOPY AND CELL STRUCTURE, by Michael A. Tribe, Michael R. Eraut, and Roger K. Snook. Basic Biology Course, Book 2. 1975. Cambridge University Press (32 E. 57th St., New York 10022). 115 p. \$14.95 hardback, \$5.95 softback.

This particular portion of the Basic Biology Course series deals with the fine structure of plant and animal cells as seen through the electron microscope. A good contrast is presented between the magnification and resolution of the light microscope and the electron microscope. The presentation of cellular substructure is purposefully specific and, consequently, may need to be supplemented by a discussion of the function of the cellular organelles. Pictures of electron micrographs fill most pages, allowing the reader to actually visualize the structure of the organelles and their interrelationships.

An outstanding feature of the book is its organization. It is written in a programmed manner with the recommended prerequisite knowledge and behavioral objectives clearly stated at the beginning. A glossary and a list of supplementary readings are included in addition to an index.

Electron Microscopy and Cell Structure would be especially valuable as a supplement to any course on cellular structure. Any student who is interested in electron microscopy would be sure to enjoy and profit from this book. The self-instructional format permits the student to utilize the materials on a totally individual basis. The book may be used by either high school or college students and would be a significant contribution to any reference shelf.

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LIGHT MICROSCOPY, by Michael A. Tribe, Michael R. Eraut, and Roger K. Snook. 1975. Basic Biology Course, Book 1. Cambridge University Press (32 E. 57th St., New York 10022). 108 p. \$14.95 hardback, \$5.95 softback.

This college laboratory manual presents a self-instructional program on the components and correct use of the light microscope for examining biological objects. Nine learning objectives are given in the introduction, and a self-assessment test on those objectives concludes the manual. The major instructional topics of the manual concern the structure and operational procedures for light microscopes, the calibration and use of the microscope for measuring size, phase-contrast microscopes and staining as aids to resolution, and stereoscopic microscopy. A fault-finding flow diagram is provided to aid in solving problems encountered in the use of the microscope. A 26-page appendix reviews some practical and theoretical limitations on resolution, including details on interference and diffraction of light waves. The appendix is an optional portion of the program and requires an elementary background in trigonometry and optics.

The problem of making this manual useful with the diversity of microscopes used in college laboratories has been adequately solved by providing cards illustrating five representative makes of microscopes. Throughout the program, biological specimens are prepared for observation and used by the students in gaining experience with the light microscope. These techniques include making wet mounts, staining epithelial cells from the mouth, making squashes of onion root tips, and preparing and staining blood and bacterial slides. Work with the stereomicroscope employs *Drosophila* to observe sexual dimorphism, differences between mutant and wild forms, and as an aid

in the preparation of salivary gland squashes.

The manual is clearly written in an excellent format and is profusely illustrated with line diagrams and photographs. British spellings and terms are noticeable but do not distract from the effectiveness of the program. However, proofreaders overlooked several errors and omissions which will inconvenience students. The most conspicuous examples of this are omissions of page numbers which were to refer the student to another portion of the program.

This learning program is well suited for general biology courses at the college level, although it probably includes more detail than is included in most beginning courses. The manual offers a unique and innovative approach to teaching light microscopy. Particular emphasis is placed on microscope calibration and resolution, areas often neglected in curricula. Although this book can be used independent of the remainder of the series, substantial curriculum changes may be necessary to allow time for additional coverage of light microscopy and to coordinate the organisms and techniques studied with those used in other courses. This laboratory manual is appropriate for use in modular teaching units and purchase of the program by students may not always be essential.

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Ecology and Environmental Biology

AMERICAN SPORTSMEN AND THE ORIGINS OF CONSERVATION, by John F. Reiger. 1975. Winchester Press (205 E. 42nd St., New York 10017). 365 p. \$10.00 hardback.

Implying that scholars have ignored sportsmen or have treated them with