

sphenopsids are of *Equisetum*; for gymnosperms there nineteen plates of conifers, two of ginkgos and one of Cycas.

Comparison with other books on SEM of plant materials demonstrates both the weakness and strength of the work in question. An index is unusual in a picture book, but Lott has one that is complete and accurate. The text is beautifully printed and well produced and is remarkably free from typographical errors. Lott has beautiful pictures of lichens and algae, groups that are represented poorly if at all in most texts. On the other hand SEM plates of photosynthetic tissue are much more exciting in Troughton and Donaldson's book.

The book will be an excellent addition to the library of anyone interested in plant morphology. The chapter on algae is beautiful and far superior to anything else available. Students should certainly become acquainted with SEM since the depth of field of these photographs gives a remarkable three-dimensional quality. Come and tiptoe through the tulip!

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LIMNOLOGICAL BOTANY, Volume III, by G. Evelyn Hutchinson. 1975. John Wiley and Sons (605 Third Ave., New York 10016). 660 p. Price not given.

An excellent resource book for the advanced limnologist, this volume should be used in conjunction with volumes I and II, Hutchinson's earlier works.

The author delves into the ecological concepts of limnology and in six chapters covers lower rooted vegetation, aquatic tracheophytes, the chemical ecology of freshwater macrophytes, and the algal benthos.

Included in the text is a bibliography and an index of authors with their outstanding limnological works indicated. This alone would save time and effort for any student of limnology. Each lake mentioned by the author is listed, as well as the latitude and longitude for each. The genera and species of the plants cited are also indexed to afford ready access to specific information without page-by-page searching. Drawings of various species are utilized throughout the text to help with identification. An abundance of graphs and

tables is used to illustrate the important aspects of each chapter.

The author's style is such that even an individual with a casual interest in limnology will be intrigued by the information presented, and the true limnologist will find the book invaluable.

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MODERN CELL BIOLOGY, by William D. McElroy and Carl P. Swanson. 2nd ed., 1976. Prentice-Hall, Inc. (Englewood Cliffs, New Jersey). 397 p. \$9.25 softback.

Although the title of this book is somewhat misleading in that the contents are much more encompassing, this book should be a requisite for any student's introduction to cell biology. Too often such introductory books are extremely narrow and restricted in their coverage of the relevance of the material presented. This book does not err in this respect. Although the chapters dealing with general cell biology are presented clearly, with fine examples and illustrations, one of the important features is the development of continuity between cells and their definitive role in man's reproduction, development and evolutionary patterns. The student can thus gain a new perspective and become much more aware and appreciative of the mechanisms of genetics, speciation and adaptation.

This book is highly recommended.

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### Cell and Molecular Biology

BASIC CHEMISTRY: A PROGRAMMED PRESENTATION, by Stewart M. Brooks and Cynthia F. Norton. 3rd ed. 1976. The C. V. Mosby Company (3301 Washington Boulevard, St. Louis, Missouri). 112 p. \$6.50 softback.

This programmed instruction manual is an excellent companion and supplement to a basic course in chemistry for biologically oriented curricula. It is a very useful tool in reviewing material learned previously and largely forgotten as well as in reinforcing principles, facts, and methods in courses currently being studied. The format of programming lends itself to drill and self-testing. These elements of self-discipline

skillfully guide the learner to master areas sometimes difficult for biology students, particularly in problem solving.

The book is well organized, easy to follow, and efficient to use. The contents are graded in sequence and complexity to include thirteen sections, nine of which center on inorganic fundamentals: the physical universe; structure of matter; chemical reactions; descriptive chemistry of some common compounds; stoichiometry; gas laws; solutions; colloids; and nuclear chemistry. The remaining four parts constitute an introduction to organic chemistry; the hydrocarbons; substituted hydrocarbons; biochemistry; and metabolism.

Though not a substitute for a chemistry textbook as such, nor sufficiently comprehensive for chemistry majors, this programmed presentation is highly recommended for biology students acquiring a chemical background for many phases of their academic pursuits.

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OUTLINES OF BIOCHEMISTRY, by Eric E. Conn and P. K. Stumpf. 4th ed. 1976. John Wiley and Sons (605 Third Avenue, New York, 10016). 629 p. \$15.95 hardback.

Conn and Stumpf successfully present biochemistry in an organized and structured fashion, as evidenced by their coverage of the three units of biochemistry: chemistry of biological compounds, metabolism of energy-yielding compounds, and metabolism of informational molecules. Each chapter conveniently begins with a section on "purpose," which includes a brief explanation of the topic's importance as it relates to the subsequent chapters. A useful short introduction deals with a background description of the biochemical entity to be discussed and its orientation in understanding biochemistry. The reader will appreciate the numerous tables and figures of biochemical structural formulas around which the authors build a detailed text in a readable fashion. Accurately labeled tables and figures appear in close proximity to their references in the text, thereby facilitating learning by the student. At the back of each chapter there is a list of reference material along with the author's evaluation, which provides a useful tool for students to pursue their biochemical interests further. Each chapter ends with review problems and