

The very idea of such a book should excite teachers the country over who need locally produced guides to the plants of their region. While the present volume covers only ornamental woody plants and is useful chiefly in the northeastern United States, it is a remarkable though simple tool—one that should bridge the chasm of knowledge between the specialist and the gardener. Furthermore, it is testimony to the remarkable specificity of the forms of leaves for plant identification.

Teachers frustrated by a lack of local identification-books that not only do the job but do it for little children should acquire this book. It is an example of what can be done through cooperation of the taxonomic specialist and the teacher. There is no reason why such guides, to all sorts of plants, cannot be developed in every region of our country; but the teacher should realize that he, not the specialist, must take the initiative in their production.

William A. Weber
University of Colorado
Boulder

RESEARCH METHODS IN PLANT SCIENCE, by Richard M. and Deana T. Klein. 1970. Natural History Press, Garden City, N.Y. 768 pp. \$20.00.

Biology teachers and students will find this book to be a useful one. It is unique in presenting a comprehensive, clearly written compilation of plant-research techniques, which are current, well documented, and logically arranged. The style is interesting and informal. Clarity of statement and well-chosen illustrations permit comprehension by the nonprofessional, yet the precision and accuracy should satisfy the demands of even the most critical of professional investigators.

Definitely not intended as a textbook, this reference work emphasizes the "how" of experiments, rather than the "why." The introduction includes an "inexpensive botanical library" of softback books in nearly every major field of botany. This should be of particular interest to teachers and students who are seeking to build a holding of quality books on the usually meagre budgets available to them. The bibliographies are current, the index extensive and specific, and the suggested sources of supplies extremely useful.

Every school library and everyone engaged in plant investigations should acquire this volume.

Donald M. Huffman
Central College
Pella, Iowa

MOLECULAR APPROACHES TO PLANT PHYSIOLOGY, by C. A. Price. 1970. McGraw-Hill Book Co., New York. 398 pp. Price not given.

This textbook is designed for upper-division undergraduate courses and for graduate courses. As the title indicates,

the approach to plant physiology is restricted. This approach and its treatment in this book are useful to teachers and students. There are only five chapters: on chemical transformations, photosynthesis, the movements of water and other fluids, inorganic nutrition, and growth and development. Each chapter has several case studies that emphasize the scientific approaches to gaining knowledge in plant physiology. The case studies are excellent teaching devices. The student who uses this book should have a background in general biology or botany; general physics, including light and waves; and chemistry, including organic chemistry and thermodynamics. The well-prepared student will benefit greatly from this book. It is a model of the *principles* approach (as opposed to the encyclopedic or the specific approach). It should be received well by plant physiologists and all biologists.

Thomas A. Cole
Wabash College
Crawfordsville, Ind.

PLANT FORM AND FUNCTION: AN INTRODUCTION TO PLANT SCIENCE, by Gerald J. Tortora, Donald R. Cicero, and Howard I. Parish. 1970. Macmillan Co., New York. 576 pp. \$10.95.

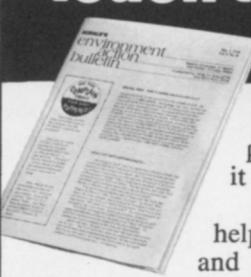
This textbook, designed for an introductory college botany course, is one in

the Macmillan "Biology" series. It is organized around the theme of form-and-function. Form is presented as a unifying concept, and the functional activities of plants are analyzed in relation to form. A survey of the plant kingdom is appended.

In keeping with advances in molecular biology and cellular physiology, the authors have chosen to examine the structure of plants at the molecular, cellular, and organismic levels. The importance of biochemical and physical contributions to studies of plant structure is made evident. Basic principles of chemistry are given for those students who wish or need this background. The contributions of the transmission electron microscope to studies of cell structure are presented; however, the textbook omits any reference to the scanning electron microscope. The Danielli-Davson model is presented as the only model for membrane structure—a more serious lapse.

Considerable chemical detail—too much, in fact—is given in the discussion of respiration. The models for the light reaction of photosynthesis might be somewhat misleading to a beginning student. The chapters on plant growth and development and on plant heredity are not brought into clear relationship, as they might have been if presented under the theme of plant morphogenesis. It is interesting to note the liberal

You're teaching the children of the Pollution Age. Teach them how to survive.



We're handing our youngsters a polluted world. A poisoned world. At least, let's teach them how to clean it up—and survive. Starting now.

That's what Rodale's *Environment Action Bulletin* helps you to do. Each week, this 8-page newsletter crisply and candidly reports up-to-the-minute ecology news.

EAB pinpoints pollution crises. Tells you who's responsible. Offers concrete practical ideas for responsible student action.

Try *EAB* for 26 weeks at a special introductory rate, 20% lower than the regular price. If you're not satisfied at any time during your subscription, we'll refund your money in full.

Subscribe now. Get your classes into action right away. So they'll still be around for their fiftieth reunion.

ENVIRONMENT ACTION BULLETIN
Emmaus, Pa. 18049 EB-10

Please enter my subscription at the special introductory rate of \$4 for 26 weekly issues. If not satisfied at any time while I am receiving the Bulletin, I will receive a full refund.

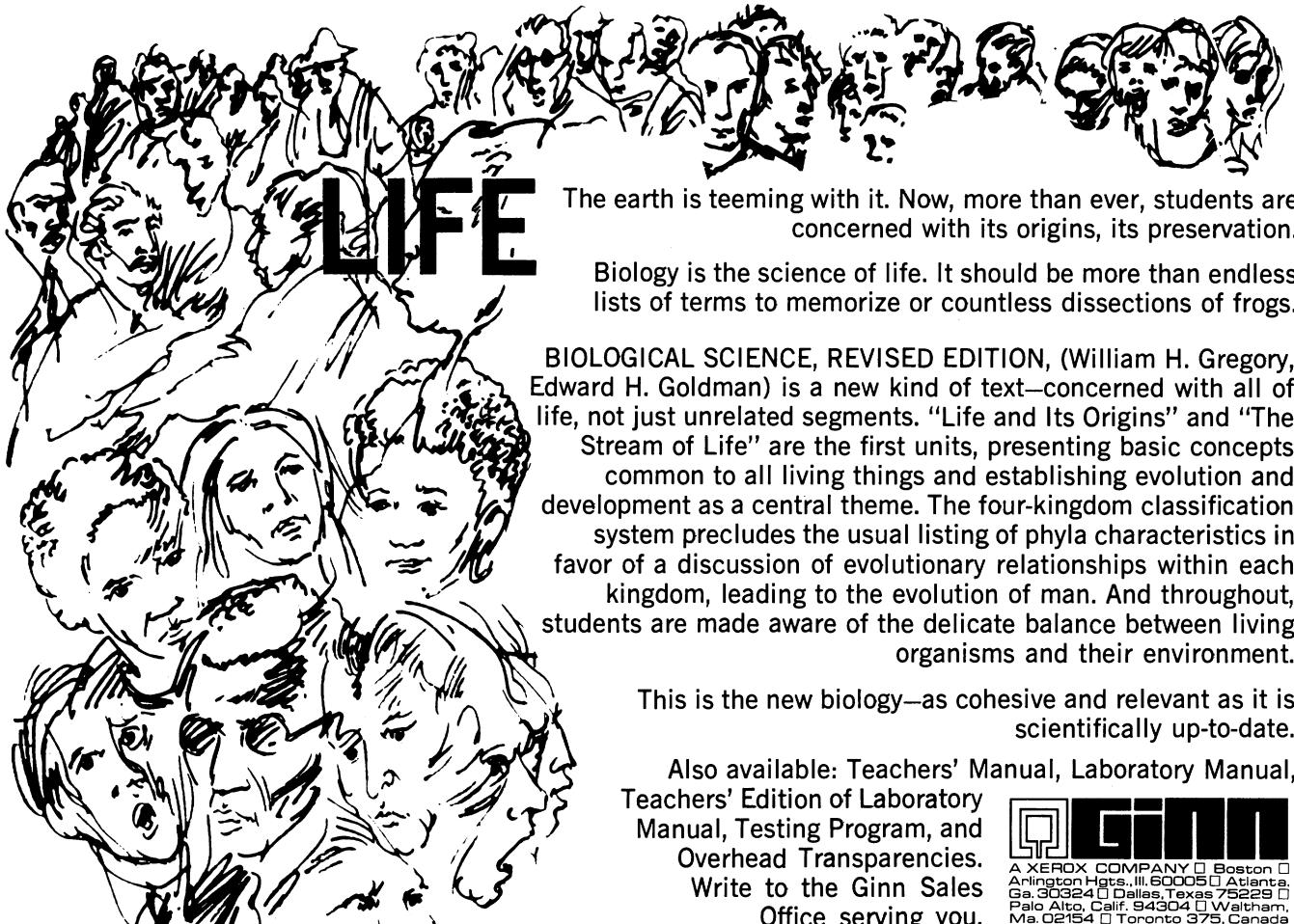
NAME _____

(PLEASE PRINT)

ADDRESS _____

CITY _____ STATE _____ ZIP _____

Special group rates: \$3.00 each for 10 or more 6-month subscriptions delivered to same address.



LIFE

The earth is teeming with it. Now, more than ever, students are concerned with its origins, its preservation.

Biology is the science of life. It should be more than endless lists of terms to memorize or countless dissections of frogs.

BIOLOGICAL SCIENCE, REVISED EDITION, (William H. Gregory, Edward H. Goldman) is a new kind of text—concerned with all of life, not just unrelated segments. "Life and Its Origins" and "The Stream of Life" are the first units, presenting basic concepts common to all living things and establishing evolution and development as a central theme. The four-kingdom classification system precludes the usual listing of phyla characteristics in favor of a discussion of evolutionary relationships within each kingdom, leading to the evolution of man. And throughout, students are made aware of the delicate balance between living organisms and their environment.

This is the new biology—as cohesive and relevant as it is scientifically up-to-date.

Also available: Teachers' Manual, Laboratory Manual, Teachers' Edition of Laboratory Manual, Testing Program, and Overhead Transparencies.

Write to the Ginn Sales Office serving you.



A XEROX COMPANY □ Boston □
Arlington Hgts., Ill. 60005 □ Atlanta, Ga. 30324 □ Dallas, Texas 75229 □
Palo Alto, Calif. 94304 □ Waltham, Ma. 02154 □ Toronto 375, Canada

use of scientists' names in the discussion of the chemical basis of heredity; this is not done in the authors' discussions of other aspects of botany.

Examples are used throughout the textbook to illustrate principles and enliven facts. There are many excellent, green-colored line drawings. Chapter summaries are given and review questions are raised. A bibliography follows each section. A laboratory manual, entitled *Plant Form and Function in the Laboratory*, has been prepared in correlation with the textbook.

I have only one major criticism of this book: that the authors fail to emphasize the relationship of man to plants.

Alan R. Orr
University of Northern Iowa
Cedar Falls

CYTOLOGY

ELEMENTS OF CYTOLOGY, by Norman S. Cohn. 2nd ed., 1969. Harcourt, Brace & World, Inc., New York. 495 pp. \$9.75.

As in the first edition, this book is divided into three parts, concerned respectively with the cytoplasm, the nucleus, and nucleocytoplasmic relations. More than 100 pages have been added, and much of this new material pertains to recent research in ultrastructures and the chemistry of the cell. The book is designed for an undergraduate course

in cell biology, with emphasis on bio-molecular organization and function "when related to the heredity, physiology and development of the whole organism."

The chapters are very readable, and each ends with a generous list of selected readings. There are many excellent micrographs, as well as the clear line drawings. In fact, the illustrations alone could well be an exciting experience for the science-prone high school student.

Marjorie Behringer
University of North Dakota
Grand Forks

CHEMISTRY

CHEMISTRY: AN INVESTIGATIVE APPROACH, by F. Albert Cotton and Lawrence D. Lynch. 1970. Houghton Mifflin Co., New York. 660 pp. \$7.40. Offered with teacher's guide, 571 pp. \$6.20.

This textbook is one of the three authorized revisions of the original CHEM Study program. The revision integrates laboratory materials with text materials in keeping with the philosophy of emphasis on experimentation and laboratory activities.

Basically, materials covered in this revision correspond to those of the original CHEM Study program. There are some notable changes in arrange-

ment and presentation of topics. Sections dealing with the atom and chemical bonding are found much earlier in the program, apparently to give the student background in these topics before he takes up chemical reactions and chemical equilibria. Presentation of materials relating to energy levels of electrons has been improved for better understanding. Changes in format make the text easier to read. The revision effectively uses models in the CHEM Study way.

There are over 500 illustrations and photographs, and many of the latter are related to laboratory procedures. Self-check questions, located in the body of the text, are intended as an aid in reviewing concepts and materials in small segments rather than by chapters.

Only two chapters deal with organic chemistry. A short chapter deals with some aspects of biochemistry. Most high school programs in chemistry end before these topics can be introduced and explored.

The program includes a teacher's guide to experiments and text, progress tests, and audiovisual support materials. The films used in the original CHEM Study program fit in very well with this revision. Teachers and school districts should find this text and related materials worthy of examination.

Sam J. Genova
Pueblo (Colo.) Public Schools