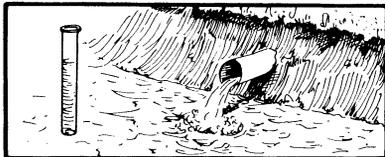


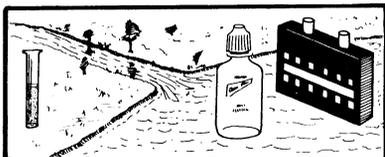


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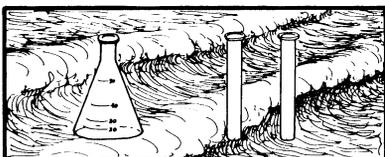
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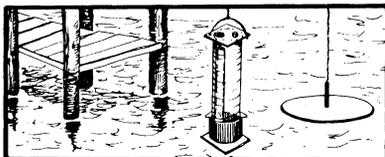
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sleeves and tackled the real problem: getting modern biologic concepts, procedures, and instruments into the student's hands and within a framework that allows the student some flexibility in developing experiments to satisfy his curiosity about biologic phenomena.

Pertinent background information is presented for each of the 12 problems with explanations of procedures and instrumentation. Typical problems or experiments are suggested, and the student is encouraged to design one or more scientific experiments and interpret the data that he collects. Most of the problems require several weeks to complete. Most are of a physiologic nature and many sophisticated (though typical) instruments, other than the microscope, are used; these include centrifuges, colorimeters, kymographs, and oscilloscopes.

Although the manual probably will be used in "majors" courses, it presumes no experience in biology; and the directions are so detailed that anyone with scientific curiosity could soon become deeply involved. Many of the problems would be excellent for projects by advanced high school students.

The manual is not specifically geared to the textbook by Baker and Allen. It does, however, follow their pattern of hypothesis-prediction, in which the real objective is to teach scientific method, not an encyclopedia of facts.

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Textbook

LIFE SCIENCE: A LABORATORY APPROACH: INQUIRING INTO LIFE, by John H. Marean, Odell Johnson, and Bernadette R. Menhusen. 1972. Addison-Wesley Publishing Co., Menlo Park, Calif. 329 p. Price not given. (With teacher's guide, 141 p.)

This textbook was designed for use in junior high school life-science courses. It is divided into 13 chapters, covering the following topics: characteristics of life, response to water, transport in organisms, motion in living things, food-getting and food-making, fuel for the human machine, changes foods undergo, respiration, reproduction, behavior, ecology, biologic clocks, and man's role in natural communities. Each chapter contains laboratory activities, discussions of related content, a summary, questions to check student understanding, suggestions for further exploration, and a bibliography. An explanation of the metric system, a list of calories in common foods, and a glossary are presented in the appendixes.

The outstanding feature of the textbook is the emphasis placed on student-centered laboratory activities. It rep-

resents an attempt to remove the traditional textbook and factual material from the center of the teaching-learning process. Students are provided with an introduction to living things through a series of laboratory activities, which generally reflect the objectives stated in the teacher's guide and do not require extensive laboratory equipment or special facilities. More than just a token number of activities involving plants are included. Many thought-provoking questions, whose answers are not given, are distributed throughout the book. Numerous illustrations are presented that pose questions or supply directions for setting up laboratory apparatus.

However, the book does have serious shortcomings. A few of the illustrations have no captions and are not mentioned in the text. Human reproduction is not given adequate attention, and the section on diffusion is not well done. A large number of laboratory activities appear to be drawn, either directly or with slight modification, from existing biology textbooks and laboratory manuals. This may create problems in articulating the life-science course with high school biology courses. Many of the laboratory activities are traditional and do not lend themselves to student inquiry. The solutions to at least four of the laboratory investigations are presented in later sections of the book. The last two chapters contain only one laboratory activity.

Even though the book has several shortcomings, it is still a welcome alternative to most of the existing junior high school life-science textbooks because of its approach to the teaching of life science. I recommend this book to all life-science teachers. It should also be of general interest to high school biology teachers.

The teacher's guide contains an overview of the textbook, suggestions for conducting the classes, time schedules, goals for each chapter, lists of materials, answers to student questions, and directions for preparing special materials. Several of the sections are extremely brief, but as a whole the guide is adequate.

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Zoology

CONTROL OF PLANT-PARASITIC NEMATODES. Vol. 4 of *Principles of plant and animal pest control*, by the Subcommittee on Nematodes (W. F. Mai, chairman) of the Committee on Plant and Animal Pests, Agricultural Board, National Research Council. 1968. Pub-

(Continued on p. 170)