General Biology

INQUIRY INTO LIFE, 3rd Ed., Henry E. Childs, Jr. and Louise Cramer, 177 pp., William C. Brown Co., Dubuque, Iowa, 1968.

A one semester biology course for non-science majors who are in the first or second year of their college experience must of necessity be even better than a course designed for majors who, if they do not learn what they should in the first course, may learn it in a later one. While this lab manual however may be useful to the authors with their own students, for the most part it is inadequate to fulfill the objectives of the best biologists and educators in the country. It is condescending and treats non-science oriented students as if they were high school students taking biology in college. Indeed the level of sophistication of a goodly number of high school biology laboratory programs in the U.S.A. is higher than this laboratory manual demands. At the same time that the authors profess to teach science as inquiry, detailed information on note taking for *College Science* courses is given.

There are sixteen chapters—apparently one for each week of the semester. No information is given as to time blocks. If the chapter is to be done in a two-hour period, the lack of clear direction and interrelating necessary makes for a meaningless and irrelevant operation for the student. Chapter Two on *The Cell* has five figures and one plate to which no reference is made in the manual. Figs. 2-3 on the compound microscope requires labeling of parts but nowhere does the manual call for this activity. In the operation on the microscope, the student is asked to examine the letter "e." *After* the "e" is obtained in sharp focus under high power, the student is asked to open the iris diaphragm and manipulate the mirror. Toward what end? The student is then asked to remove the slide and instructions for returning the microscope are given. The student is then asked to make a wet mount slide of a hair. Any good microscopist would be aghast at the logic, procedure, and content of this exercise. It is a good example of the lack of real thought given to the operations, the pedagogic outcomes, and the writing.

Chapter VI on the *Animal World* has enough material in it to keep a student busy for weeks. The laboratory room is set up with fifteen stations ostensibly with fifteen representative animal types. Figs. 6-15 then ask for a cross-check of eleven animals and fifteen different characteristics ranging from that of being triploblastic to that of having a circulatory system. In the epilogue of the chapter the authors say "In this survey a vast amount of material has been covered." The authors have ably reviewed the chapter and perhaps the volume—it is strictly a survey and a vast amount of material covered. In Brandwein's words "What was uncovered?"—and in the reviewer's words "What was learned?"

The organization of the laboratory work as indicated in the *Table of Contents* is fair. A useful list of prefixes and meanings is appended. As stated earlier, as a laboratory manual positing inquiry it lacks meaning, the inquiring attitude and relevance. It provides an exercise in data gathering and data storage. The non-science oriented student needs clear, inviting, exciting laboratory operations and unfortunately he does not get it from *Inquiry Ino Life.*

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AUDIO-TUTORIAL INTRODUCTORY BIOLOGY: PRINCIPLES, Marvin R. Barnume, Robert J. Gillespie, Arnold J. Greer, and Louise K. M. Peardon, 192 pp., $4.95, The Glencoe Press, Beverly Hills, California, 1967.

A workbook for student use in an audio-tutorial lab a la Postlethwait in a junior college setting. The organization of the lab work depicted here is not the point of review; it is the method of teaching which is illustrated. Some of the exercises are "old hat" to the better educated high school student, e.g., the Fehling test. Some are straight from BSCS; others are from traditional courses, e.g., life cycles.

But as a teacher reads this, it is obvious that it does lend itself to the audio-tutorial approach. Unfortunately, there seems to be a great deal of "dry-labbing" possible. However, this is well worth examining if for no other reason than as a starting point for the teacher's own manual.

A COURSE IN BIOLOGY, Baker and Allen, 403 pp., Addison-Wesley Publishing Co., Reading, Massachusetts, 1968.

A shorter (one-semester) version of an earlier work, *The Study of Biology*, for the elementary college course. The authors make quite a case for the book in its Preface stating their views of biology teaching. Even though they acknowledge the great importance of molecular biology, they indicate much of biology teaching will still revolve around more traditional topics—but in a molecular context. The chief thrust, however, is in an elaborate attention to scientific methodology. Each chapter is replete with "hypothesis," "deduction," and "conclusion" as