

effects on living things and on works of art, buildings, and other valuable materials. The authors show that local pollution of air and water may lead to total contamination of the world.

A good section of the book is devoted to discussing the efforts of agencies and governments to keep our air and water clean. There is an interesting survey of ideas for future sources of energy; the pros and cons are presented, so that the reader gets a good picture of what these will take in terms of time, effort, and capital. Perhaps the excellent coverage here given to this crucial problem will help the public to make important decisions.

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### Education

**THE TIMELY AND THE TIMELESS**, by Bentley Glass. 1970. Basic Books, Inc., New York. 108 p. \$4.95.

In today's society science is not considered a part of the lives of men. Glass tries hard to show why this situation must be rectified. The literate, technologic society must grasp the import of science as part of and for the culture. A primary role of education is to help man appreciate the nature of science and its application in the established culture and the implications for the counterculture. The counterculture must become aware of the methods of science as means to distinguish what is real from what is not.

To this end, Glass suggests that the education of the citizen of the future must deal with science as a social and historical process. This is not merely the study of scientific inquiry; it must include the relations of science to man's value systems and goals. Although the scientist attempts to view reality objectively, he exercises a degree of subjectivity in his selections of those aspects of reality he wishes to study, and this gives some direction to the growth of science.

Glass draws heavily on the writings of John Dewey to support the notion that science and education must deal with that which is relevant to the individual interacting with society (the timely dimension) as well as to man's place in the universe (the timeless dimension). He criticizes the conservative nature of education and asks that reform be accelerated. Literacy per se is insufficient: a literate society must understand the interdependence and complexity of the natural sciences, social sciences, arts, and humanities. Hence a basic question of the future is one that has remained with us through time: how do we relate science to education?

Glass suggests that such a relationship

can be better understood if an awareness of science as a dynamic social process is fostered. However, several problems must be considered before a complete cognitive framework can be erected. He points out the need for a determination of factors limiting the growth of science—factors that may determine equilibrium or extinction. He suggests that the following may be major limiting factors: (i) volume of scientific information; (ii) specialization necessary for the scientist to carry out his work; (iii) the rapid rate of educational obsolescence; (iv) side effects of technologic developments, both social and political; and (v) psychologic resistance by the population, as well as inadequate support by that population. He also points out the need for a study of the relation of the growth of science to technologic improvement, population size, rate of population increase, and the welfare of the people. Furthermore, Glass asserts the need to evaluate technologic developments before they are released into society.

Unfortunately, 10% of the book is devoted to describing the rationale and some history of the Biological Sciences Curriculum Study (BSCS). Supposedly this is to serve as an illustration of what can be done. It is questionable whether BSCS and the other curriculum studies of the 1960s ever achieved even a fraction of what Glass outlines so perspicuously in this book.

This is a timely, meaningful book for all educators. Glass's proposal for continuing education, although not particularly innovative, should be considered seriously. After all, it has to do with the self-renewal of society—a timeless concern.

*David H. Ost*  
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**THE SECONDARY TEACHER AT WORK**, by Leonard M. Douglas. 1967. D. C. Heath & Co., Boston. 220 p. \$3.95 (softback).

The preface indicates that this book was written to serve as (i) a textbook for a pre-service general-methods-of-teaching course and (ii) a sourcebook on educational problems for inexperienced teachers. The number of in-service teachers who will choose to obtain this book will be few, however; and I hope there are not too many teacher-education courses around for which this would be a relevant book.

There is essentially nothing in this book that was not available in similar books 20 years ago. It includes chapters dealing with psychology, student potential, classroom records, elementary statistics, tests, reports to parents, planning, teaching methods, teaching aids,



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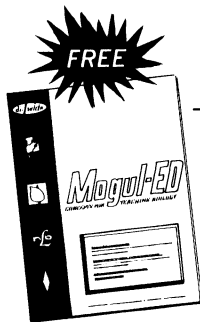
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discipline, extracurricular activities classroom observation, and evaluation of student teaching. One indication of the out-of-date nature of this book is the chapter on classroom observation; a few checklists are included but no mention is made of systematic classroom observation systems such as Flanders Interaction Analysis.

Generally the book encourages the reader to adapt to the existing educational system (more precisely, to the author's perception of it) rather than providing specific aid to teachers or prospective teachers in how to help students learn.

*Ronald D. Anderson*  
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### Human Biology

**BEYOND CONCEPTION: OUR CHILDREN'S CHILDREN**, by Martha Kent Willing. 1971. Gambit, Inc., Boston. 241 p. \$6.95.

Three babies are born into the world every second—180 babies by the time

one finishes reading this brief review. Estimates place the United States a mere 60 years behind India in population growth. The problems of overpopulation pose the most severe threat to man's existence today.

How long can the thin veneer of green plants support this ever-increasing mass of air-breathers? What can be done to stop this human epidemic? Can "stop at two" solve the problem? These are some of the topics the author discusses in this book. Her candid style brings the reader face-to-face with the harsh and often tragic results when too many people try to live in too little space. We are made aware of the dilemma of trying to control our population while retaining our moral values on human life.

Young people of high school and college age can benefit particularly from reading this book. Nevertheless, the problem of overpopulation does not belong solely to the young: it concerns us all.

*Elizabeth J. Davison*  
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**GENERAL ZOOLOGY LABORATORY GUIDE**, by J. E. Wodsedalek and Charles F. Lytle. 6th ed., 1971. Wm. C. Brown Co., Dubuque, Iowa. 232 p. \$4.25 (softback).

As it has been in its previous five incarnations, the Wodsedalek zoology laboratory manual remains strong on morphology and in the classical tradition. In this tradition, laboratory study begins with microscopy, examines cells and tissues, deals with mitosis, meiosis, and the early embryology of the starfish in a single, rather over-simplified chapter, and then proceeds on the stately "march through the phyla" in much the way that our scientific grandfathers must have done it. The final chapter deals with the early development of the chick and the frog. An appendix gives an indefensibly brief outline of animal classification—indeffensibly brief, that is, unless one cares to take the alternate view that it should have been omitted entirely, inasmuch as the textbook probably gives a similar outline and does a more detailed job of it.

Although the title page labels the manual the "complete version," the preface speaks of "This short version . . ." Does there, in fact, exist in some empty-realm a super-complete, long version?

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**TWELVE PROBLEMS IN BIOLOGY**, by Jonathan C. Hake, Jeffrey J. W. Baker, and Garland E. Allen. 1971. Addison-Wesley Publishing Co., Reading, Mass. 202 p. Price not given.

The special contribution of this laboratory manual is in bridging the unfortunate time-lag between the research laboratory and the teaching laboratory. During the 1960s, when many laboratory procedures and new instrumentation were providing the tools for exciting discoveries in biology, the general-biology teaching laboratory languished in activities and concepts of the 1930s (and earlier). Those who saw the need to update and reinvigorate biology-teaching had to put forth heroic individual effort to translate such daily research procedures as colorimetry and chromatography into a "new biology" for the school laboratory. Many biology teachers gave up and yielded to an ever-tantalizing notion: that the laboratory is not a necessary part of biology. Meanwhile these authors rolled up their

(Continued on p. 168)