

earlier edition by the same authors. They state that approximately a third of the articles in the second edition have been replaced by ones dealing with newer, innovative practices. However, only ten of the included articles have been published since 1970, and the three most current ones (1975) are all authored by one of the editors. The inevitable publishing lag is the major criticism of the book. Surely the editors could have surveyed their colleagues in order to have included more current articles.

The book is divided into eight sections, each dealing with a major facet of elementary science education. Prior to each section, and to each article, the editors provide a succinct, informative description of the major points of the articles, or article. These descriptive passages are particularly helpful for the preservice elementary teacher; they relate each topic to the whole concept of elementary science teaching.

In light of the concerns of most preservice elementary teachers, the more practical articles probably are the ones of greatest value. Among the outstanding practical articles are a detailed paper on the logistics of team teaching; a summary report of the National Assessment of Educational Progress in Science; two articles on the availability of ERIC and the variety of its services; an excellent checklist for assessing a science program; and a useful article, complete with many sample items, concerning evaluation procedures in elementary science.

The main concern about this book is that most of the included articles were written prior to or during the major national curricular projects for elementary science. Therefore, the readers are not exposed to detailed information about the theoretical bases for, or the practical problems of, the new elementary science curricula. Only one brief article compares ESS, SAPA, SCIS, COPEs, and several smaller projects.

With the exception of the curricular area, the book is a fairly thorough compilation of articles concerning elementary science. It should be useful to both preservice and inservice elementary teachers as well as to their university and college instructors and supervisors.

Jane Butler Kahle
Purdue University
West Lafayette, Ind.

Evolution

COEVOLUTION OF ANIMALS AND PLANTS, ed. by Lawrence E. Gilbert and Peter H. Raven. 1975. University of Texas Press (Austin 78712). 246 p. \$12.50 hardback.

This collection of papers, originally presented at the First International Congress of Systematic and Evolu-

tionary Biology in 1973, addresses itself to a number of topics: terrestrial seed plants and their relationships with insects; leaf-feeding animals and their impact on plant evolution; ant-plant relationships; seed dispersal and ecological modeling; insect courtship and plant pollination, to name only a few. The flow of energy as the currency of plant-animal coevolutionary relationships is a common thread of many articles. The studies presented in this volume are concerned with the dynamics of evolutionary relationships that have led to a given situation and to the reciprocal modifications that have taken place in the participating organisms. Emphasis is placed on the processes rather than products of evolution.

The book will be extremely valuable as a reference because it is the only available presentation of the current research in this field. Complete bibliographies at the end of each article will provide the reader with avenues to more in-depth study. I recommend the book for the advanced high school or college student who has particular interest in plant-animal interrelationships.

Claudia B. Douglass
Purdue University
West Lafayette, Ind.

CONCEPTS OF EVOLUTION, by Everett C. Olson and Jane Robinson. 1975. Charles E. Merrill Publishing Co. (Columbus, Ohio 43216). 272 p. \$4.50 softback.

Opinions, theories, and concepts animate this otherwise standard textbook for nonbiology majors. The introductory chapters give a view of organic evolution in its relationships to, and with, society and philosophy. This method helps the student place some kind of organization on that which is subjective and that which is objective. In other words, the text enables the student to understand that life is organization, and it is that organization which can extend and propagate itself by imposing the same self on other suitable matter. Thus, through growth and replication, organization creates organization.

In various other books, more attention is directed toward the history and meaning of the ideas behind evolution. These efforts, however, tend to fall short of the needs of students who desire an understanding of how evolutionary concepts, in biology and other fields, relate to human events and spheres of knowledge beyond the scope of science. This book is designed to meet such a need, but without sacrificing a sound understanding of the biological basis for evolutionary theory.

In the last chapter of the text, the full circle of ideas begun in chapter 1 nears completion. First, dealing with what evolution is; then, the history of life and how it can be explained; and from there, the constant progression of the

theory of organic evolution; like a tractor-tread, all these give movement to one of the great conceptual achievements of man. As with the links of the tractor-tread, systematically repeating its course of action, it is the same with ideas. They have a way of feeding back into the society that generated them and becoming the basic thought patterns by which its members live. The problems of all men become the problems of philosophers, and their writings, in turn, influence the society which generated them. Thus evolution has had an immense effect on everything we do, and even on the way we look at life. As we return to this point, now with a full background, we can see how evolutionary thinking has become entrenched in modern life and what some of its major consequences are and might be. In final analysis, a look at the past with an objective eye to the future is where any integrated study must come to rest.

The book is knowledgeably written, with artistic illustrations and important concepts summarized at the end of each chapter.

Barbara A. King
Christian Brothers High School
Memphis

BIOLOGY AND SOCIETY: THE EVOLUTION OF MAN AND HIS TECHNOLOGY, by Andrew McClary. 1975. Macmillan Publishing Co. (866 Third Ave., New York 10022). 320 p. \$7.95.

Perhaps the greatest compliment a teacher-reviewer can render a book is to adopt it for a course. I have adopted McClary's excellent presentation for my course in "Social and Ethical Issues in Biology," offered to undergraduate biology majors as well as nonmajors. It is also ideally suited to a senior-level high school course.

The author evaluates our technological and social dilemmas from an evolutionary perspective. He divides the book into three parts: Past, Present, and Future. The "Past" begins with a comparison of the organismic level of life (hydra) and the ecosystem level (a pond). There follows a simplified, but adequate, survey of human biological and cultural evolution.

The "Present" begins with a history of domestication and its impact on the development of Western technology. Although McClary does not fully elucidate the thesis that "Domestication brought a series of social and technological changes of the greatest significance," this section is outstanding. It acquaints the reader, in a well-written and logically outlined sequence, with the rise of specialization and of scientific thought, the interaction between machine and nature, the price of the human "cultural ecosystem" ("... it takes 850 acres of Canadian timber to publish a single Sunday edition of *The New York Times*"), the impact of genetic se-