that place is "Eponym as placebo," Boring's address before the Seventeenth International Congress of Psychology (Washington, D.C., August 1963), in his role of Honorary President. The locus and timing of the original provide sufficient rationalizatiion for a reprinting in this book; congress proceedings are not that widely distributed or consumed. Eponymous events in science are those named after great innovators, those apparently responsible for revolutionary trends or outstanding periods of intellectual development—Newtonian physics, Darwinian biology, and Freudian psychology. The idea of science progressing by eponyms is not simply a regression to the Great Man theory of history but a recognition that the need for communication is often served by using the names of men as labels, provided hero worship is at the same time shunned. Eponymy, indeed, distorts history. "It magnifies those persons who are found above the threshold and diminishes those below it. Eponymic distortion arises out of man's limited range or perception . . . out of his need for leaders . . . and out of his desire to perceive high goals upon which he may train his ambition." The eponym is a placebo.

The overall content of the book, 30 papers in all (plus a set of alphabetized references and careful indexes of names and subjects) is organized under five major rubrics: The Zeitgeist and the Psychology of Science (8 papers), The History of Psychology (5), The Scientific Method (7), The Mind-Body Problem (4), and The Psychology of Communicating Science (6). Taken together with *Psychologist at Large* (another dozen papers, some selected short essays, and a chronology of Boring's principal publications through 1960, as well as the autobiography) and, of course, the major works listed above, one has an excellent working library of Boring's formal output. The informal one will probably never be assembled—oceans of letters and memoranda on all manner of things, residing in countless files all over the world, and treasured by their possessors.

FRANK A. GELDARD
*Department of Psychology,*
*Princeton University*

## Plant Biochemistry, An Introductory Survey

**The Chemistry of Plant Processes.** C. P. Whittingham. Methuen, London; Philosophical Library, New York, 1965. 209 pp. Illus. $7.50.

This pocket-sized but densely packed introductory survey of plant biochemistry goes on to cover also most of the organismal features of plant function, emphasizing their cellular and biochemical aspects. Up-to-date textbook material of this kind has been badly needed in the field. The book is tersely written, and by the student must be studied, not just read. Its value is enhanced by 167 literature references, plus a small selection of general references at the end of each chapter.

The book is divided into two parts, the first covering plant metabolism and including chapters on cellular structure and function; enzymes; fermentation and respiration; energetics of respiration and biological syntheses; photosynthesis; and nitrogen metabolism. The subjects of respiratory metabolism and photosynthesis are very effectively developed, with historical milestones and examples of experimental data that will give the student an unusually good feel for the why behind biochemical pathways and components, which students so often confront as straight and tedious memory work.

Part 2 proceeds to nonbiochemical and organismal aspects of plant physiology, and includes chapters on osmotic relations of the individual cell (including diffusional and active uptake of solutes), water relations of the whole plant, translocation, and growth. The book concludes with an appendix entitled "Chemistry of the constituents of living organisms," which presents a brief survey of bio-organic chemistry useful for the many students whose background could well be refreshed at the beginning of a course.

A few important topics have been missed, including oxygen affinity of respiratory chain oxidases; mechanism and problems of respiratory and photosynthetic gas exchange of tissues and organs; mineral nutrition; and dormancy. The term *glycolysis* is not used or explained; I consider this unfortunate in view of the term's wide use.

Part 2 is noticeably weaker, less accurate, and less modern in outlook than the more purely biochemical chapters in part 1. Coverage of osmotic relations is old-fashioned. The one-page treatment of water transport by the vascular system is hopelessly inadequate. We run into quite a few misleading or incorrect statements—for example, there is no evidence for movement of salts through a tissue against a concentration gradient (p. 136); the mechanism of root pressure is unknown (p. 137); Munch's theory is that mass flow occurs from a place of high suction pressure to a place of low suction pressure (p. 157); the action spectrum of *Avena* and *Phycomyces* phototropism indicates auxin destruction (p. 172); the active component of coconut milk has been shown to be 6-furfuryl adenine (p. 178); *Xanthium* requires a 14-hour dark period for flowering to occur (p. 178); only the far-red-absorbing form of phytochrome is capable of causing floral induction (p. 180).

I noticed quite a number of typographic errors in the spelling in the text, in the titles and authors' names in the references, and in the footnote numbers in the text that cite literature references. The latter errors could cause much trouble for those not familiar with the references cited.

These shortcomings could be rather easily rectified. And even as it stands, *The Chemistry of Plant Processes* is an admirable piece of work, and one that will, I am sure, find wide application as a textbook in modern courses in plant physiology.

PETER M. RAY
*Department of Botany,*
*University of Michigan, Ann Arbor*

## Active Organisms

**The Biology of Hemichordata and Protochordata.** E. J. W. Barrington. Freeman, San Francisco, Calif., 1965. vi + 176 pp. Illus. Paper, $2.50.

Naturalists and experimentalists alike will appreciate this well-written résumé of some of the more recent work on the groups concerned. The emphasis is on function, and the animals are portrayed as active organisms operating in an environment. Information on structure, physiology, behavior, and ecology is interrelated, and descriptive

detail already available in modern compendia is repeated only where needed to provide a necessary background.

An introductory chapter reviews the concepts of Protochordata and Deuterostomia, and discusses possible phylogenetic relationships among deuterostomes. Modern groups are regarded as related clades, with the pterobranchs perhaps representing the existing group least modified from remote protochordate progenitors. Chapters on the Hemichordata (42 pp.), Urochordata (45 pp.), and Cephalochordata (57 pp.) summarize newer information on feeding and digestive processes, the nervous system and behavior, and selected aspects of reproduction, larval ecology, and life histories for each group. The accounts of microphagous feeding in ascidians and amphioxus, and of the nervous system and function of the gut in enteropneusts and amphioxus are particularly good. Other outstanding features are the discussion of the origin of the vertebrate pituitary and its possible homologs in hemi- and protochordate groups, and the excellent summary of work by the author and others on the organic binding of iodine and evolution of the thyroid gland. The chapter on Urochordata is less comprehensive and up to date than those on the other two groups, but the literature to be covered here is much larger.

Altogether the author has done an excellent job in selecting material of broad interest, in summarizing and evaluating it, and in pointing out the features that we vertebrates owe to our remote descent from ciliary-mucoid particle feeders. The illustrations are good, and approximately half of the 114 references listed date from the last decade. The book is recommended to students and teachers of both invertebrate and vertebrate biology.

D. P. ABBOTT
*Hopkins Marine Station, Stanford University, Pacific Grove, California*

## Africa Today: Representative Cultures

**Peoples of Africa**. James L. Gibbs, Jr., Ed. Holt, Rinehart, and Winston, New York, 1965. xiv + 594 pp. Illus. $10.50.

Tyros have had nowhere to turn for concise descriptions of representative cultures of Africa. There is, of course, no real substitute for the prolonged visit to a tribal people which a book-length description affords. But for readers without the time or inclination to tarry with each tribe, *Peoples of Africa* now provides a well-conducted "Gibbs's Tour" through 15 societies south of the Sahara. Although designed primarily as a "student cruise," the itinerary is recommended for anyone with any social science background or with Bohannan's *Africa and Africans* as a foundation.

The authors of the profiles of *Peoples of Africa* are experts, depicting "their" societies with the intimacy of knowledge derived from protracted study in the field since 1950. Although the superb prose of Colin Turnbull's description of Mbuti Pygmy life is rare in the profession, the style and clarity of all of the writing is commendable. Selection of the authors was determined not only by such abilities, but also by the nature of the cultures they had studied.

Gibbs's selection of societies reflects African diversity in race, language, environment, economy, size of population, and in type of kinship and of government. Although the major categories of all of these features are represented in the sample, the societies can not be taken as "representative," in the sense of being typical of the classificatory divisions. Actually, where diversity is very great within such categories, a variety of examples is usually provided. On the other hand, there is no representation at all from the old French colonial area, and a third of the entire cultural sample comes from Nigeria. These biases, which reflect Anglophonic parochialism and an uneven distribution of research, are not as serious as they might seem. Three of the cultures studied in Nigeria extend more or less widely into previously French territory. The emphasis of the book is not on colonial or emergent Africa, and the sample provides a satisfactory picture of the outstanding features of traditional African cultures.

The various profiles are roughly comparable in format, each being introduced with editorial comment on the special significance of the particular society. There follow the familiar categories of ethnological description, plus some less standard ones, such as child training and law. The common outline proved to be no straitjacket for the authors, but the standard categories assured greater comparability among the profiles. Unfortunately, such comparison is not facilitated by the book's index, which is internally confused and sometimes actually misleading. The maps, diagrams, and bibliographies are helpful and a half-dozen snapshot-size illustrations add meaning and flavor to each description.

Although emphasizing the indigenous aspects of African life, the cultural sketches show their modernity by avoiding the old fiction of a precolonial "ethnographic present." The traditional past is carried into the observed present throughout virtually every profile. This too involves some fictions, but little worse than the kind of oversimplification entailed in forcing "the life of a people" into 40 pages. Largely missing in the discussion of change are the conflicts and problems of Africans caught up in the punishing opportunities of "development." Here the anthropologists have been more prone than the tribesmen to read the literate, urban clerk out of the tribe. But, like all fictions, this one is useful. It keeps an introduction to the complexities and varieties of African culture as simple as possible.

There are more than 30 American universities with a concentration of courses on Africa. It is difficult to see how they have gotten along without *Peoples of Africa*. None should try to do so now.

HORACE M. MINER
*Department of Anthropology, University of Michigan*

## Magnetohydrodynamics

**Engineering Aspects of Magnetohydrodynamics**. Proceedings of the third annual symposium (Rochester, N.Y.), March 1962. Norman W. Mather and George W. Sutton, Eds. Gordon and Breach, New York, 1964. xiv + 675 pp. Illus. $34.50.

This volume is an almost complete collection of the papers presented at the third symposium on engineering aspects of magnetohydrodynamics (MHD) held at the University of Rochester in March 1962. It is the second and last