Other Books of Interest

Hydrocarbon Chemistry. GEORGE A. OLAH and ARPAD MOLNAR. Wiley, New York, 1995. xx, 632 pp., illus. $69.95 or £55.

Hydrocarbon chemistry is of obvious economic importance, dealing as it does with petroleum and other materials on which we depend for fuel and raw materials. In this book Olah and Molnar have set out to provide "a comprehensive up-to-date treatment" of the field "as an entity encompassing both basic chemistry and practical applications." The book, which is addressed to a readership ranging from research and industrial chemists to advanced students, opens with an introduction defininig the basic categories of hydrocarbons, discussing their uses as energy sources, and outlining the processes for their synthesis and conversion. This is followed by chapters discussing in greater detail their production from petroleum and natural gas and their synthesis from C_1 sources such as syngas ($CO + H_2$) and methane and its derivatives. The remaining nine chapters deal with various kinds of transformation: isomerization; alkylation by various (mostly metal) catalysts; electrophilic and cyclo- addition; carbonylation; oxidation or oxygenation (the authors prefer the latter term or "oxyfunctionalization"); heterosubstitution; hydrogenation and reduction (the latter a less developed subject); olefin metathesis; and oligomerization and polymerization. Generally written in a flat and factual style with the focus on chemical structures and reactions, the book does include some historical information about the field and related industrial developments. Practical applications are considered throughout. Each chapter has its own reference list, typically including over 200 entries, with over 1000 for the 122-page chapter on oxygenation, and there is a 27-page subject index.

Katherine Livingston

Vertebrate Paleontological Techniques. Vol. 1. PATRICK LEIGGI and PETER MAY, Eds. Cambridge University Press, New York, 1995. xx, 344 pp., illus. $69.95 or £45.

The techniques used by the preparators who are responsible for preserving fossil vertebrates for study or display are generally disseminated only informally, and the field of vertebrate paleontology has lacked an up-to-date printed work on the subject. The present volume is offered as the beginning of a presumably ongoing attempt to fill this lack and to standardize techniques of collection, data handling, preparation, and curation for the field. For it the editors have brought together 35 workers from a variety of museums and other institutions to describe both time-tested methods and new technologies. The volume opens with a general discussion of conservation issues by Sally Y. Shelton. This is followed by chapters on adhesives and consolidants, important for broken or fragile specimens, and on the collection of taphonomic data, bearing on the depositional environment of specimens. A chapter on the collection of macroinvertebrates covers the process from the logistics of setting up camp to the uncovering of bone and casting of specimens, with special sections on collecting in caves—repositories for many Quaternary specimens—and on quarry staking, or the marking of previous excavations. With respect to microvertebrates, Malcolm C. McKenna *et al.* describe their elaboration of wet sieving—"a fully mechanized, large-throughput, economy-of-scale operation"—as a collection technique. The handling of specimens once collected is the subject of the remaining chapters. Mechanical and chemical techniques for removing matrix and preserving specimens are each the subject of a chapter, as is the heavy-liquid separation method. Histological techniques for preparing specimens for study by microscopy, procedures for molding, casting, and painting, and the mounting of skeletons are also subjects of individual chapters, and the work ends with a brief discussion of the use of computerized axial tomography and radiography for nondestructive analysis. The chapters are somewhat variable in approach, but discussions of equipment, lists of materials, and pertinent illustrations are common features, and some give step-by-step instructions for the procedures described. Each has its own reference list, and there is a subject index for the whole.

Katherine Livingston

Vignettes: Astronomical Outreach

In Walt Whitman's often quoted poem "When I Heard the Learn'd Astronomer," the poet tells how, being shown the astronomer's charts and diagrams, he became tired and sick and wandered off by himself to look up "in perfect silence at the stars." Generations of scientists have been annoyed by these lines. The sense of beauty does not become atrophied through the work of science, as Whitman implies.

—*Steven Weinberg*, in *Life in the Universe:* Scientific American: *A Special Issue* (Freeman)

Astronomy remains what it has been throughout its long history, a playground for unrestrained metaphysical and theological speculation, but this can hardly now be said to lie at its core. When modern astronomers in one breath profess themselves to be agnostic and in the next describe the ripples revealed by COBE [the Cosmic Background Explorer satellite] as "traces of the mind of God," this tells us only that theological sophistry is not what it was.

—*John North*, in *The Norton History of Astronomy and Cosmology* (Norton)

Updating

The 54-page paperback *Atlas of Drosophila Development* by Volker Hartenstein that was published in conjunction with *The Development of Drosophila melanogaster* (Michael Bate and Alfonso Martinez Arias, Eds.), reviewed in *Science* **265**, 819 (1994) is now available separately from Cold Spring Harbor Laboratory Press for $39.

Books Received

Amino Acids and Their Derivatives in Higher Plants. R. M. Wallsgrove, Ed. Cambridge University Press, New York, 1995. xiv, 280 pp., illus. $64.95. Society for Experimental Biology Seminar Series, 53.

Apoptosis and the Immune Response. Christopher D. Gregory, Ed. Wiley-Liss, New York, 1995. x, 416 pp., illus. $89.95.

Aristotle's *Physics*. A Guided Study. Joe Sachs. Rutgers University Press, New Brunswick, NJ, 1995. xiv, 261 pp. $52; paper, $18. Masterworks of Discovery.

Atomic Force Microscopy/Scanning Tunneling Microscopy. Samuel H. Cohen, Mona T. Bray, and Marcia L. Lightbody, Eds. Plenum, New York, 1995. x, 453 pp., illus. $125. From a symposium, Natick, MA, June 1993.

Atoms, Radiation, and Radiation Protection. James E. Turner. 2nd ed. Wiley, New York, 1995. xviii, 557 pp., illus. $69.95.

Atrial Arrhythmias. State of the Art. John P. DiMarco and Eric N. Prystowsky, Eds. Futura, Armonk, NY, 1995. xii, 432 pp., illus. $70. American Heart Association Monograph Series.