a variety of suggested solutions to general problems.

Mathematical formulations are described where necessary, and the need for statistical treatment of data is emphasized. An intelligently critical attitude pervades much of the discussion. In the first half of the book special appendixes are devoted to descriptions of specific methods. These seem uneven in value, and at best they provide a searching review—for example, the section on metabolism. In other cases they are elementary or will become dated too quickly. Typographical and more serious errors are few, although the otherwise excellent short discussion of dispersions is hurt badly by two of the latter. The graphs and illustrations, which were selected for their originality, are in some instances not as easy to interpret as one could wish.

In the first edition, the author addressed himself to the intelligent layman as well as the professional worker. This edition will be rough sledding for the nonspecialist. So much material has been crammed into what remains a relatively small volume that terseness loses its virtue. Especially in the section on biocoenology, it is sometimes impossible to understand what the author is saying without recourse to the original literature that he is trying to summarize. The writing style, which is at times abstruse, contributes to this difficulty.

This volume, like other recently published brief but penetrating treatments of segments of ecology, will be best appreciated by, and will have the greatest influence on, reasonably advanced students.

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## Biological Nomenclature

**Naming the Living World.** An introduction to the principles of biological nomenclature. Theodore Savory. English Universities Press, London, 1962; Wiley, New York, 1963. xiv + 128 pp. $3.95.

The need for an internationally recognized system of nomenclature under which each kind of organism is provided with a scientific name is so evident to systematists that few of them devote time to publicly justifying this primary assumption. Nomenclature is an indispensable adjunct to taxonomy, and this branch of science and its sister sciences depend heavily upon the orderly though still imperfect system of nomenclature now in use.

This small volume was written by a practicing zoologist whose keen sense of humor and scholarly approach to his topic make for pleasant and informative reading. The first four chapters are admittedly elementary, and they are intended as an introduction for biology students. They are concerned with the need for scientific names and the origin and construction of such names. The next six chapters deal with the development of internationally acceptable rules governing nomenclature. The development of the botanical, zoological, horticultural, and bacteriological codes are traced; certain special codes, which have a more restricted application, are also mentioned. Subsequent chapters deal with many concepts and practices familiar to taxonomists—good taste in the selection of names, linguistic problems, categories of classification, and the development of indices to scientific names used in the literature of both plants and animals. In the final chapter the relationship of systematics and nomenclature is discussed; this chapter concludes with a list of the essential elements common to all codes of nomenclature and a series of recommendations designed to guide in the choice of names.

It is manifestly impossible to discuss so technical a subject without delving rather deeply into matters that primarily interest taxonomists, yet anyone with a little familiarity with the biological sciences can find something of value in this small book. Being a zoologist, the author understandably is more intimately familiar with the zoological than the botanical code of nomenclature, and his botanical colleagues will find minor points with which they disagree in some of his remarks about their code. The fundamental fact is, however, that systematists on every hand are working towards the same goals of orderliness and stability in biological nomenclature, and although their methods differ in some small details, the methods are basically alike.

This book is well written and authoritative, and its style is such that it should provide interesting and informative reading for the scientist as well as the scientifically oriented segment of the general public.

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## Chemistry of Carbohydrates

**Comprehensive Biochemistry.** vol 5, *Carbohydrates.* Marcel Florkin and Elmer H. Stotz, Eds. Elsevier, New York, 1963. xvi + 328 pp. Illus. $14.50.

This volume is intended, presumably, to deal with the chemistry of carbohydrates in a way that will be useful to biochemists. In this resolve, it is singularly unreliable, uneven, and unsuccessful.

The book is multiauthored, and the varied styles and approaches make this apparent. Many of the writers must be considered to be experts on their subjects, since they have published much of the same material in better form in other reviews or books. To weave this expertise into a useful book is a laudable aim, but it didn't come off.

A reading of chapter 1, which deals with the monosaccharides, reveals (on p. 28) that Adams' catalyst (Pt) is used for hydrogenolysis of benzyl esters; (p. 29) that nucleic acids contain O-glycosyl linkages; (p. 31) that fructose contains five carbon atoms; (p. 34) that the furanose ring of sugars is planar; (p. 35) that the pyranose ring of a sugar in a chair conformation has six axial substituents; (p. 48) that the silver salt of diphenylphosphate can react with an alcohol to give the triester; (p. 49) that diphenylphosphorochloridate has an oxygen between phosphorus and chlorine, that all esters of phosphate are labile to alkali, that the effect of alkali on glucose 6-phosphate is simple hydrolysis, and that the hydrolysis of phosphate esters occurs only by fission of the P-O bond; (p. 53) that the reaction of Brigls' anhydride in Lemieux's classical synthesis of sucrose occurs with inversion of configuration; and (p. 54) that the conversion of phenyl β-D-glycosides to 1,6-anhydrides is "hydrolysis."

This list of typographical errors, careless mistakes, and misleading and superficial statements is an indication of a woefully inadequate editorial policy. Biochemists are entitled to something more than this as an introduction to carbohydrate chemistry. In this age, when the most delicate studies of molecular conformation, catalysis, and reaction mechanism are being made by biochemists working with enzymes, such a treatment cannot be taken seriously.

The uneven development given to the different sections of the book is illustrated by comparing chapters 7b

and 7d. The first is a superficial discussion of methodology in general and of the homopolysaccharides in particular. No references are given in the text, although a bibliography appears at the end. The latter chapter is replete with literature references, and great detail is given with respect to the properties and structures of the substances involved. For another example, one can refer to the unreasonable amount of space devoted to the ascorbic acids in chapter 1 (10 pages) and the completely inadequate treatment of the cyclitols in chapter 8 (6 pages).

One has to conclude that the contributors to this volume did not have a common goal in mind, and that the editors did not succeed in imposing one. As one might expect of a 327-page book that sells for $14.50, it has a slick, professional appearance. It will serve quite well to fill the gap between volumes 4 and 6 in this series.

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## Hunt Facsimile Series

**Sertum Anglicum** (Facsimile with critical studies). Charles-Louis L'Héritier de Brutelle. George H. M. Lawrence, Ed. Hunt Botanical Library, Pittsburgh, Pa., 1963. xcviii + 37 + xi pp. $10.

L'Héritier is not well known even among botanists, undoubtedly because of the scarcity of his works, but this may be altered by this facsimile printing of 2000 copies of his *Sertum Anglicum*, which had been known only from 35 complete copies. Ironically, Redouté, whose career as botanical artist was set off by L'Héritier, graces bedrooms today wherever *House and Garden* awaits the reader on the porch. *Sertum Anglicum* is a "wreath" of 125 plants, mostly seen by L'Héritier in English stoves and gardens when he visited Banks and his coterie during 1786 and 1787. He had planned a prodrome toward a Peru-Chilean flora, based on Joseph Dombey's collections. He did not complete the prodrome, but Dombey's discoveries constituted one of the nine sources of the *Sertum*, which included plants found in Paris gardens, Masson's South African novelties, plants of the South Pacific, and others. Of 35 species illustrated in the *Sertum*, 31 appeared for the first time, mostly the work of Redouté and Sowerby, and 7 have not again been illustrated.

L'Héritier's resources included a botanical library second in Europe only to Sir Joseph Banks's, a personal fortune, and leisure. Even before his death by assassination in 1800, the French Revolution had destroyed L'Héritier's grand designs.

This facsimile, printed in Holland, initiates the Hunt Botanical Library series, and it is augmented by four introductions. Stafleu (Utrecht) has written on L'Héritier's life and works; Gilmour, King, and Williams (Cambridge and London), on the horticulture of the *Sertum*; Blunt, the author of *The Art of Botanical Illustration*, on his favorite subject; and there is a translation of the Latin commentary by three Saint Vincent Archabbey monks. More than half of the species described were new. The list of collectors cited in the *Sertum* will prove useful beyond the book; Matthias Hultgren of Maryland, one of the 20 collectors, is virtually unknown. Although an occasional transposition (1748 for 1784) mars the text, the typography and format are entirely pleasing, and the book is attractively priced. For the gardener who delights in the literature after dibbling in his cold frame, the *Sertum* is an admirable gift.

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## New Books

### Biological and Medical Sciences

**Les Acides Nucléiques.** Michel Privat de Garilhe. Presses Universitaires de France, Paris, 1963. 136 pp. Illus. Paper.

**Advances in Applied Microbiology.** vol. 5. Wayne W. Umbreit, Ed. Academic Press, New York, 1963. 397 pp. Illus. $13.

**Advances in Cancer Research.** vol. 7. Alexander Haddow and Sidney Weinhouse, Eds. Academic Press, New York, 1963. 609 pp. Illus. $18.

**Advances in Marine Biology.** vol. 1. F. S. Russell, Ed. Academic Press, New York, 1963. 424 pp. Illus. $13.50.

**Botany in Indian Universities.** Report of the University Grants Commission Review Committee. The Commission, New Delhi, India, 1963. 92 pp. Paper.

**The Cell in Mitosis.** Proceedings of the symposium held under the provisions of the Wayne State Fund Research Recognition Award (Detroit, Mich.), November 1961. Laurence Levine, Ed. Academic Press, New York, 1963. 286 pp. Illus. $10.

**Clinical Aspects of Immunology.** P. G. H. Gell and R. R. A. Coombs, Eds. Davis, Philadelphia, 1963. 909 pp. Illus. $17.50.

**Clinical Biochemistry of Domestic Animals.** Charles E. Cornelius and Jiro J. Kaneko, Eds. Academic Press, New York, 1963. 692 pp. Illus. $20.

**Einführung in die Reflexmikroskopie.** Und die physikalischen grundlagen mikroskopischer bildenststehung. Albert Westphal. Thieme, Stuttgart, Germany, 1963. 116 pp. Illus. Paper, DM. 29.40.

**Energy-Linked Functions of Mitochondria.** Papers presented at a colloquium (Philadelphia, Pa.), April 1963. Britton Chance, Ed. Academic Press, New York, 1963. 294 pp. Illus. $4.50.

**Environmental Control of Plant Growth.** Proceedings of a symposium (Canberra, Australia), August 1962. L. T. Evans, Ed. Academic Press, New York, 1963. 467 pp. Illus. $17.

**Enzyme and Metabolic Inhibitors.** vol. 1, *General Principles of Inhibition.* J. Leyden Webb. Academic Press, New York, 973 pp. Illus. $26.

**The Enzymes.** vol. 7. *Oxidation and Redection* (pt. A.) *Nicotinamide Nucleotide-Linked Enzymes: Flavin Nucleotide-Linked Enzymes.* Paul D. Boyer, Henry Lardy, and Karl Myrback, Eds. Academic Press, New York, ed. 2, 1963. 748 pp. Illus. $21.

**Fatty Acid Metabolism in Microorganisms.** Klaus Hofmann. Wiley, New York, 1963. 90 pp. Illus. $3.25.

**The Human Embryo.** E. Blechschmidt. Schattauer, Stuttgart, Germany, 1963. 119 pp. Illus. Plates.

**Insect Pathology.** An advanced treatise. vol. 2. Edward A. Steinhaus, Ed. Academic Press, New York, 1963. 703 pp. Illus. Until 31, Oct., $20; $23.

**International Review of Cytology.** vol. 15. G. H. Bourne and J. F. Danielli, Eds. Academic Press, New York, 1963. 454 pp. Illus. $16.

**Neuroendocrinology.** Ernst and Berta Scharrer. Columbia Univ. Press, New York, 1963. 303 pp. Illus. $8.50.

**Physical Techniques in Biological Research.** vol. 6, pt. B, *Electrophysiological Methods.* William L. Nastuk, Ed. Academic Press, New York, 1963. 441 pp. Illus. $14.50.

**The Physiology of Earthworms.** M. S. Laverack. Pergamon, London; Macmillan, New York, 1963. 216 pp. Illus. $7.

**Plant Physiology.** A treatise. vol. 3, *Inorganic Nutrition of Plants.* F. C. Steward, Ed. Academic Press, New York, 1963. 829 pp. Illus. $24.

**Selected Botanical Papers.** Irving William Knobloch, Ed. Prentice-Hall, Englewood Cliffs, N.J., 1963. 325 pp. Paper $3.95.

**A Short Textbook of Medicine.** J. C. Houston, C. L. Joiner, and J. R. Trounce. English Univ. Press, London; Van Nostrand, Princeton, N.J., 1962. 574 pp. Illus. Paper, $4.50; cloth, $5.75.

**Soil and Freshwater Nematodes.** T. Goodey. Rewritten by J. B. Goodey. Methuen, London; Wiley, New York, ed. 2, 1963. 560 pp. Illus. $16.

**The Wisdom of the Body.** Walter B. Cannon. Norton, New York (© 1932), 1963. 333 pp. Illus. Paper, $1.95.

**Zoethout's Laboratory Experiments in Physiology.** Blaine H. Levedahl and Albert A. Barber. Mosby, St. Louis, ed. 6, 1963. 174 pp. Illus. $3.75.