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.

PETER W. FRANK
Department of Biology,
University of Oregon

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.

GERALD B. OWNBEY
Department of Botany,
University of Minnesota

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