at the mercy of unconscious and irresponsible drives. This subtle problem of understanding the basis of policy making may be the most important problem the "behavioral sciences" face in the coming decades.

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Physics

Plasma Spectroscopy. Hans R. Griem. McGraw-Hill, New York, 1964. xii + 580 pp. Illus. $18.50.

The author's professed intention is to provide a reference source in theoretical and experimental spectroscopy for plasma physicists and astrophysicists as well as a textbook for graduate students. It is my opinion that the concepts "textbook" and "reference source" are somewhat contradictory, particularly in this field which is so rich in original literature. The task of writing a reference source in this field is an enormous one that requires a different outline than the one used by the author, and perhaps two to three volumes the same size as this book.

The first nine chapters, which constitute an excellent survey of the basic and refined theories that form the backbone of plasma spectroscopy, also demonstrate that the author is well versed in these theories. Griem very neatly shows that the theories frequently can be simplified without significant loss in accuracy, while still exposing the dominant physical processes. This is indeed very commendable. However, he completely ignores the fact that a theory must be compared with experimental data before it is possible to judge whether that theory is adequate. It is possible to overlook such an omission in a purely theoretical treatise, and perhaps in a textbook, but not in a volume that is supposed to be a reference source in experimental as well as theoretical plasma spectroscopy. Objective critical consideration of the relevant experimental data in conjunction with the exposition of the various theories would add considerably to the importance of the book.

The last seven chapters of the book (about 100 pages) are devoted to practical aspects of plasma spectroscopy. The author discusses light sources, instruments, detectors, and standards, as well as measurements of temperatures, densities, and atomic parameters. He does so rather well, considering the small amount of space assigned to each one of the numerous subtitles in these chapters. The limited space allows only a rather scant treatment of the practical aspects of the plasma spectroscopy, which is acceptable in a textbook but not in a reference source. The author has included rather complete tables of the numbers and coefficients that are important in both theoretical and experimental plasma spectroscopy.

The structure of the book is good. It covers the basic elements of plasma spectroscopy and provides the necessary references to the original work. It is a good graduate textbook for a semester course in plasma spectroscopy but needs to be considerably expanded before it will serve as a reference handbook. It is recommended to physicists who do not have a specialist's training in spectroscopy. It is my hope that the author will expand a future edition to include more critical evaluations of the various theories with respect to the experimental observations as well as more detailed discussions of the practical problems that face the experimentalist.

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Carbohydrate Chemistry

An Introduction to the Chemistry of Carbohydrates. R. D. Guthrie and John Honeyman. Oxford University Press, New York, ed. 2, 1964. viii + 144 pp. Illus. $3.40.

There is a continuing need for a short, compact, up-to-date, textbook account of carbohydrate chemistry. This subject, which represents one of the important areas of organic chemistry and an extensive area of industry, is not well presented in most organic chemistry and biochemistry textbooks. Treatises are much too large and, in most small volumes, the subject matter is irregularly covered.

This second edition of *An Introduction to the Chemistry of Carbohydrates*, a small, modern view of carbohydrates, contains a useful presentation of the subject for the average student who wishes a general simplified presentation. It presents a brief description of the simple sugars, their proof of structure, conformation, and chemical reactions. Oligosaccharides are treated very briefly, as are polysaccharides. I believe this book is the best short account of carbohydrates that is available. My principal criticism is that the organic chemistry of the carbohydrates is not presented in the light of modern reaction mechanism chemistry, but perhaps such explanation may be anticipated in the looked-for third edition.

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Antarctic Research Series

Biology of the Antarctic Seas. vol. 1. Milton O. Lee, Ed. American Geophysical Union, Washington, D.C., 1964. xii + 186 pp. Illus. $10.

The Antarctic Research Series, a new series emanating from the recent IGY program, will report results from all disciplines of Antarctic research.

The first volume, edited by Milton O. Lee, is a collection of eight reports dealing with Antarctic marine life. The titles are as follows: "Primary organic production in the Drake Passage and Bransfield Strait"; "Primary productivity under sea ice in Antarctic Waters, 1, Concentrations and photosynthetic activities of microalgae in the waters of McMurdo Sound, Antarctica, . . . [and] 2, Influence of light and other factors on photosynthetic activities of Antarctic marine microalgae"; "Respiratory metabolism and ecological characteristics of some fishes in McMurdo Sound, Antarctica"; "Temperature responses and tissue respiration in Antarctic Crustacea, with particular reference to the krill *Euphausia superba*"; "Antarctic foraminiferal zonation"; "Improved techniques for benthic trawling at depths greater than 2,000 meters"; and "Catalogue and bibliography of Antarctic and sub-Antarctic benthic marine algae."

Inasmuch as most of these articles are of moderate length and deal with specific problems, they would customarily be published in a variety of scientific journals. The American Geophysical Union is to be commended for preventing this scattering by bringing these articles together in a single volume. This not only facilitates the