

interstellar medium. The pertinent observations are summarized and the physics needed to interpret the data on absorption, scattering and polarization of starlight and on the dynamical phenomena in expanding H II regions (those containing ionized hydrogen) and supernova shells is simply and lucidly developed. The figures rarely occupy more than an half page and tables are also brief and to the point. Each chapter is followed by a rather extensive bibliography; a very helpful appendix defines the symbols used in the book, with references to the equations in which some of the terms are introduced and with numerical values of the constants. The index lists subjects, but not astronomers.

Spitzer and his colleagues at Princeton have participated in much of the theoretical work covered in this book and have stimulated several of the rocket and spacecraft experiments aimed at studying interstellar grains through their effects on the transmission of ultraviolet radiation. The related subject of the formation and evolution of spiral arms in the gas (in which they have been less deeply involved) is not discussed and is in fact more suited to a discussion of galactic structure. The book is well written, well produced in a convenient format and highly recommended.

STEPHEN P. MARAN
Goddard Space Flight Center
Greenbelt, Md.

Fundamentals of Radiation Protection

By Hugh F. Henry

485 pp. Interscience, New York, 1969.
\$17.50

The subject of radiation, its hazards and its benefits, is one of the most important of our day. Its full utilization has been hampered by scare tactics supported by implications based on areas that have not been adequately investigated. On the other hand, potential hazards have been ignored because of the zeal for its employment by certain groups who wish to avoid restrictions and who justify this by stressing risk versus gain concepts.

The author of this volume has attempted to treat all aspects of the radiation protection problem, if not in detail, at least with a cursory examination. In his attempt to combat some of the publicity that has been accorded to the protagonists of lower permissible levels and greater restrictions for reactor siting, it would appear that in some cases he is guilty of leaning too far in the other direction. His neglect of detail can be excused by his attempt to reach

a general and rather unsophisticated audience. One can question the value of the book on this basis, but Hugh Henry clearly states in the preface that this is his objective, and it appears that he has done a rather fine job in meeting it.

The book covers all the basic disciplines involved (physics, biology, radiation effects, and dosimetry), the special topics of maximum permissible exposure levels, monitoring and protection. In addition, emergency situations, administration of health-physics programs and nuclear weapons are discussed in separate chapters. He concludes with a discussion of the benefits that can be derived from sources of radiation.

The usefulness of the book is probably impaired by the author's failure to go into details, by its rather offhand dismissal of many problems and by the lack of specifics. In addition, the validity of some of the dose values cited can be questioned. The accuracy of some illustrations and definitions have been compromised by the desire to oversimplify the subject, which must be dealt with precisely in order to have meaning. These factors, combined with the author's obvious desire to minimize the problems precipitated by possible radiation hazards, probably compromise the book's value. However, if one is willing to supplement and clarify issues with fuller discussions, the book could be useful for elementary courses. It does cover the entire field of health physics quite comprehensively and does have an excellent bibliography restricted explicitly to the material mentioned in each section.

NORMAN A. BAILY
Professor of Radiology
University of California, San Diego

Springer Tract in Modern Physics: Synchrotron Radiation as a Light Source: Electron-Phonon Interaction and Boltzmann Equation in Narrow-Band Semiconductors

B. Höhler, ed.

120 pp. Springer-Verlag, New York,
1969. \$10.50

It is characteristic of the awakening interest in synchrotron radiation that, almost simultaneously, two reviews of the subject have recently appeared. The one reported here is presented on 73 pages (including bibliography). The other, somewhat longer review is the book by A. A. Sokolov and I. M. Ter-nov [see review, page 47].

Godvin's review is remarkably well written. It is somewhat limited, as he

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