(Society of German Radiation Protection Physicians). Volume 1 of this society's *Yearbook*, which gives the first report on the group's activities, presents topics discussed at the annual meeting of the society, held at Freiburg in January 1961. Cleverly edited by Hans-Joachim Melching and his associates, the volume gives an interesting progress report on the activities in different fields of radiation protection, including radiology in radiation protection, radiation damage incurred as the result of professional activities and its diagnosis, radiation protection laws and their practical application, radiation protection in industry, dosimetry, and problems of waste disposal. There are stimulating contributions by Holthusen, Zuppinger, Heilmeyer, Langendorff, Melching, Wideroe, and Sommermeyer—just to mention a few that are worthy of study. I found especially interesting the article by Umberto Cocchi, "Professional radiation damage in man," which presents valuable information (in both text and illustrations) on the early historical development of radiation protection measures.

The yearbook reflects well the activity of the society during 1961, activity which apparently inspired not only more systematic studies but also the participation of many outstanding scientists in the society's second meeting, which was held in January 1962. According to the announcement, volume 2 of the yearbook will present important contributions by Langendorff, Buu-Hoi, Faber, Mitchel, Bacq, Maisin, and other well-known scientists.

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For Engineering Students

Handbook of Vector and Polyadic Analysis. T. B. Drew. Reinhold, New York, 1961. vii + 103 pp. $5.50.

Drew begins by giving the standard treatment of vector algebra which one expects to find in a book for engineers and physicists. Then he goes on to discuss Gibbs's algebra of dyads, using the Gibbsian notation, and finally proceeds to a generalization of it called polyadic algebra. The various differential operators are defined, and their algebraic properties are developed. Integral formulas are nowhere mentioned.

The author states that the material is intended for the use of engineering graduate students in fluid mechanics, heat transmission, and diffusion. Unfortunately, formulas expressed in the notation of this book will be incomprehensible to most mathematicians and physicists, and I feel that it would be regrettable for students of engineering to learn it rather than the standard notation of Levi-Civita and Einstein or the more modern notation of the exterior differential calculus of E. Cartan, which is now finding its way into undergraduate courses on advanced calculus and applied mathematics.

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Atlas of the Universe. B. Ernst and T. E. de Vries. H. E. Butler, Ed. Nelson, New York, 1961. 227 pp. Illus. $9.95.

This book, which was written in Holland by "non-specialists for non-specialists" to present the "picture of the universe developed by modern astronomy," consists of a series of photographs and illustrations and a short encyclopedia of astronomy.

Photographs presented in the usual order, starting with the earth and proceeding out to the universe of galaxies, constitute about one half of the book. The authors have assembled a fine collection of photographs and drawings, many of which are not usually seen in popular books and the reproduction is usually good, although some lack the contrast needed to bring out fine details. In this section the authors have crowded too much material into the text accompanying the photographs, for the text is a highly condensed survey and history of astronomy. For example, the caption accompanying the photographs of the Andromeda galaxy traces the history of the island universe theory from Wright and Kant up through Hubble. It includes the observations of Herschel (on star clusters), and Huggins (on gaseous nebulae), the problem raised by the supernova of 1885, and the solution of that problem by Hubble, using Cepheid variable stars. But no mention is made of how Cepheid variables can be used to determine distances! The nonspecialist certainly does not have the background to assimilate all of these details.

A better level is achieved in the second portion, which contains some good short discussions on subjects ranging from aberrations to zodiacal light. There are also numerous tables with useful astronomical information. But again the authors show lack of perspective when they give only a small discussion of the important topic of stellar evolution but include such things as zero velocity surfaces and Lagrangean points in a discussion of spectroscopic binaries.

The book will be of value to a high school student interested in astronomy or to an amateur who wants a ready reference together with some good photographs. Both should use the book with care, however, since there are many errors scattered throughout. The general reader who wants to learn about astronomy will get little from the book. He will find the first section too condensed and confusing for his purposes, while the second is useful only for reference.

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The Peacock Memoir

X-Ray Powder Data for Ore Minerals. The Peacock Atlas. L. G. Berry and R. M. Thompson. Geological Society of America, New York, 1962. vi + 281 pp. Illus. $8.25; GSA members, $6.

This excellent memoir is largely a collection of tabulated records of photographic x-ray powder diffraction patterns of ore minerals. Bragg angles, observed and calculated spacings, intensities, and indices are listed for the lines of each of the almost 300 patterns reported. Nearly all native metals, sulfides, sulfosalts, opaque oxide minerals, silver and mercury halides, calcite, dolomite, minerals of the wolframite and scheelite groups, and quartz are represented by these patterns. All of them were produced in the laboratories of the authors or in the laboratory of the late M. A. Peacock under whose direction the work was begun.

The tabulations are most complete.