

text on chemical kinetics where the pitfalls of assuming that a rate is simply proportional to the concentrations of the apparent reactants would be displayed. Another example where modern presentation would be useful involves the Legendre transformations leading to different thermodynamic functions which are introduced in the classical ad hoc manner and not in the elegant and transparent form presented by Callen.

In conclusion, I find it hard to believe that publication of this text satisfies a need not already better filled by existing books.

Advances in Astronomy and Astrophysics, Volume 1. Zdeněk Kopal, ed. 366 pp. Academic Press Inc., New York, 1962. \$10.00. *Reviewed by Otto Struve, University of California, Berkeley.*

THIS is the first volume of a new series of books "to provide a semiperiodic forum for the publication of review articles . . . from the pens of leading students of the respective subjects". The present volume consists of five such articles: John Hazlehurst of the Yerkes Observatory writes on "The Shock-Wave Theory of Novae", G. H. Herbig of the Lick Observatory on "The Properties and Problems of T Tauri Stars and Related Objects", D. W. Parkin and W. Hunter of Liverpool, England, on "Meteorites and Cosmic Dust", L. Perek of Prague on "Distribution of Mass in Oblate Stellar Systems", and K. Serkowski of Warsaw, Poland, on "Polarization of Starlight". All five articles are well worth reading: they constitute an interesting blend of theory and observation. Of special interest to American readers will be the articles by Perek and Serkowski, whose home institutions are located behind the "Iron Curtain", and whose original scientific papers are not always easily available.

Elementary Modern Physics. By Richard T. Weidner and Robert L. Sells. 513 pp. Allyn and Bacon, Inc., Boston, 1960. \$9.50. *Reviewed by Fay Ajzenberg-Selove, Haverford College.*

THE contents of courses titled "Modern Physics" vary greatly from one college to another. A corollary to the lack of standardization in course contents is the large number of books which have been published in the last ten years as texts for these courses. Almost anyone can now find a book which will mirror his prejudices, and will present them at the appropriate level of sophistication. Gradually books have appeared that have become widely used: Leighton's *Principles of Modern Physics* is the classic text for a senior course. I think that Weidner and Sells' book may well become the standard text for a sophomore level course. Weidner and Sells' approach is not particularly original. It is a book that a bright freshman, after the first semester of a good general physics course, could read by himself, and understand. The topics covered in the book are of the standard, balanced variety: there are chapters on relativity (with the results, wonder of

wonders, then incorporated where appropriate in the remainder of the book), on quantum effects, on the hydrogen atom, on many-electron systems, on x-ray spectra, on accelerators and detectors, on nuclear structure, on nuclear reactions, and on molecular and solid-state physics. An adequate number of sensible problems is provided. While most of the presentation is very clear, a few sections, such as the discussion of binding energy, are needlessly complicated. The weakest section is that dealing with nuclear physics; there are a few minor errors and some unusual symbols, but mainly, there is not enough emphasis on the exciting experimental work of the past few years in nuclear and particle physics. A student can learn the basic language from the book, but he would have to derive his excitement from other accounts: good supplementary material would be the *Scientific American* articles by Morrison, Gell-Mann, Treiman, Hofstadter, and De Benedetti. Specifically one could wish for more than just a mention of the Cowan-Reines experiments, and for a discussion of the Wu and Lederman-Garwin parity nonconserving experiments. Finally, it would seem to me that a modern physics book should include a discussion of work in low-temperature physics, but here we come again to the interpretation of the words "modern physics". Still, it appears to the reviewer that Weidner and Sells have given the best presentation now available of modern physics topics in a form suitable for beginning students.

Biographical Memoirs of Fellows of the Royal Society. Volume 7. 363 pp. The Royal Society, London, 1961. 30s. *Reviewed by R. Bruce Lindsay, Brown University.*

VOLUME 7 of these biographical sketches of recently deceased Fellows of the Royal Society maintains the same high standard set by previous issues. The book contains brief biographies of twenty-five Fellows and foreign members who died between 1959 and 1961. Of these the oldest at death was 89 and the youngest 54. The average age was 75. Twelve represented the life sciences and thirteen the physical sciences, engineering, and mathematics.

Physicists will be interested in the accounts of Maurice de Broglie (the elder brother of Louis de Broglie) and Schrödinger, as well perhaps as those of Tizard, who had a varied career, Mees in photography, and Spencer Jones and Stratton in astronomy. One pure mathematician, J. H. C. Whitehead, is included. The two aeronautical engineers, W. J. Duncan and R. A. Frazer, will be recalled for their important joint publication with A. R. Collar of a book on matrices, of considerable value to applied mathematicians.

Most of the sketches are very brief, though that on Tizard runs to a generous 36 pages. As usual, each contribution is accompanied by a bibliography and a fine portrait of the Fellow being memorialized.

Both the historian of science and the general reader will find this an interesting book.