try. (8) Radiation Chemistry, F. S. Dainton: A rapidly developing science brought up to date. (9) Mass Spectra and the Chemical Species Produced by the Impact of Low Energy Electrons, M. Krauss, A. L. Wahrhaftig, and H. Eyring: Application of rate theory to this complex set of phenomena. (10) Radiochemical Separation Techniques, H. L. Finston and J. Miskel: A complete collection, much of it in tabular form. (11) The Fundamentals of Radioantography, W. P. Norris and L. A. Woodruff: A general discussion of the application of nuclear emulsions to a variety of problems, mostly biological. (12) Cellular Radiology, R. K. Mortimer and C. A. Beam. (13) Removal of Radioelements from the Mammalian Body, J. Schubert: A pioneering survey of a new, highly interesting field. (14) Vertebrate Radiology, Physiology, A. Edelmann.

Special Functions of Mathematical Physics and Chemistry. By Ian N. Sneddon. 164 pp. (Oliver & Boyd, England) Interscience Publishers, Inc., New York, 1956. $1.75. *Reviewed by E. Richard Cohen, Atomics International.*

Physics and engineering today are making more and more use of the "special functions" of mathematics. In the fields of radio propagation or neutron diffusion, which now straddle the dividing line between physics and engineering, as well as in quantum mechanics, a knowledge of these functions is essential. Prof. Sneddon has written a concise survey of the field. The book (one of the *University Mathematical Texts* series) is intended for physics rather than mathematics students; it is written from the viewpoint of the mathematical physicist or the applied mathematician.

The first chapter is an introductory one on the solution of ordinary differential equations in series and the second chapter discusses the general hypergeometric equation. The final three chapters of this small book are then concerned in turn with the Legendre function, Bessel function, and the Hermite and Laguene function. In each case applications of the functions are demonstrated in the text with examples from electrostatics, astronomy, and quantum mechanics. Further examples are given in the problem set at the end of each chapter. The problems have been carefully chosen to extend the material in the text and many of the most important properties of the functions are presented here. This technique is often objected to, but with a small volume (pocket-sized, if you don't mind bulgy pockets) it becomes mandatory. The burden placed upon the instructor is greater in this case than it would be if important results were less densely packed—and the density of information in Prof. Sneddon's book is surprisingly high. The volume should also serve as a refresher course or as a handbook of properties of special functions for the physicist working in those fields where these functions arise. It does not, nor is it intended to, replace the *Bateman Project* volumes edited by Prof. Erdelyi; but for the physicist, Sneddon is the more useful.

Fundamentals of Optics. Vol. 24 of Handbuch der Physik. Edited by S. Flügge. 656 pp. Springer-Verlag, Berlin, Germany, 1956. DM 132.00; if part of series, DM 105.60. *Reviewed by L. Marton, National Bureau of Standards.*

The rapid succession of more and more volumes of this truly monumental encyclopedia of physics makes it possible to give a rather general evaluation of the manner in which the aims set by the editor are fulfilled. One can't help but praise many aspects of this undertaking. Volume 24 on the "Fundamentals of Optics" is a very good example of the care with which the individual contributors have been chosen and how wide a scope is covered by the articles.

Five chapters constitute the present volume. The first one, written by Erik Bergstrand on the "Determination of the Velocity of Light", is a very concise presentation of the different methods used, a good critical survey of the respective advantages and disadvantages and a really fine discussion of the results. It is very commendable how much information can be condensed into so few pages. The whole review is only 40 pages long with three pages of references.

The next two chapters are written in French, in contrast to the first one which is in English. First comes a masterly chapter on "Optique Géometrique Générale" by André Maréchal, followed by an equally excellent chapter on "Interférence, Diffraction et Polarisation" written by Maurice Françon. Maréchal's chapter takes up 126 pages whereas Françon's chapter is 290 pages. These two chapters are written in the best tradition of the Institut d'Optique of Paris and contain almost everything one would wish to know about these subjects. I use the word almost because it is clearly impossible to cover any subject completely, and for anyone who wishes to criticize it is always easy to find items which would be worth adding to a book of this nature. It should be pointed out, however, that the presentation is not only up-to-date in these papers, but it gives a remarkable feeling to the reader that such a classical subject as geometrical optics or interferences are far from being closed chapters. The application of newly developed methods has transformed some parts of classical optics to a degree where the present chapters hardly resemble any classical book on optics.

The two last chapters having been written by the same author, Hans Wolter, may be grouped together again. One is on the "Optik dünner Schichten" which is written in 94 pages. The last one is on "Schlieren, Phasenkontrast und Lichtschnittverfahren" and treats this subject in another 90 pages. I give the titles of the chapters in their original language to indicate that these are written in German. The optics of thin layers chapter is entirely new, at least I do not remember any earlier text book or handbook of physics in which this subject has been treated to any extent. Almost as new is the last chapter on Schlieren, phase contrast, and related observations which took up only a very small part, if any, of earlier treatises. Both chapters contain much