As mentioned above, the choice of material for a condensation, while often being a matter of taste, seems to be mostly felicitous. Objection may be raised toward the arrangement of some parts. For instance: $\beta$-ray spectrographs are applications of electron optical principles. Nevertheless, their presentation is divided into three fragments: lens spectrometers are discussed in the chapter devoted to electronic aberrations; some "prismatic" spectrometers are to be found in the chapter dealing with deflecting fields; and the final chapter on applications has a generalized discussion of these devices. While there is some justification for discussing the principles underlying these devices in Chapters VII and XI, if a description of the instruments was shifted to the final chapter it would help those who like their information neatly gathered.

This brings us to the question: for whom was the book written? Condensations are mostly utilized by research workers engaged in other fields needing a concise introduction and by teachers. The second edition of Klemperer's *Electron Optics* fulfills the needs of the research worker remarkably well, principally because of its excellent bibliography. Some reservations will have to be made, however, on using the volume as a textbook. While it may be excellent as a guide for outlining a graduate course in electron optics, it will have to be supplemented by material contained in other books and/or periodicals. This is particularly evident in the presentation of the theoretical material: almost all equations are presented without derivation or other proofs.

Printing and binding are excellent. The price, while rather high, is perhaps not entirely out of line with the prevailing high prices of books.

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**Mathematical Aspects of the Quantum Theory of Fields.** By K. O. Friedrichs. 272 pp. Interscience Publishers, Inc., New York, 1953. Paperbound $5.00.

In this book five papers which have previously appeared in the communications on Pure and Applied Mathematics are reprinted. A successful attempt is made to present some of the aspects of the quantum theory of fields in consistent mathematical language in a manner useful for mathematicians. The treatment is limited to linear interactions although current physical interest is centered on nonlinear fields. By representing states by functions and operators by functional operators, many of the field relations involving Dirac-functions are rigorized using the methods of L. Schwartz. The particle representation seems to be the most suitable in dealing with fields extending over infinite space.

The problems of a quantized boson field interacting with a given source distribution is treated in a Lorentz invariant form and a scattering operator is introduced. The notion of myriatic fields which possess no particle representations, even if enclosed in a box, is presented and discussed in conjunction with occupation number representations. A construct similar to Dirac's sea of negative energy electrons can be derived from the formalism. The problem of boson and fermian fields under the action of a source distribution linear and homogeneous in the field variable is solved in certain special cases and a Lorentz invariant treatment of the boson fields by B. Zumino is presented.

While the methods introduced do, indeed, rigorize many of the formalistic aspects of the quantum theory of fields, they do not seem to suggest physically useful extensions of present ideas.

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**Experimental Nuclear Physics.** Edited by E. Segrè. John Wiley and Sons, Inc., New York, 1953. Vol. I, 789 pp., $15.00. Vol. II, 600 pp., $12.00.

**Nuclear Moments.** By Norman F. Ramsey. John Wiley and Sons., Inc., New York, 1953. 169 pp., $5.00.

For several years now there has been an increasing need for "a book which would bring the experimentalist up to date in experimental techniques, point out to him significant facts and data, and indicate the broad lines of theoretical interpretation". No individual physicist could hope to perform so ambitious a task by himself, nor is the random, uncorrelated publication of textbooks and monographs likely to give a complete picture of modern experimental physics either. A compendium of separate articles, each written by an authority, and the whole under the guidance of an experienced physicist is probably the best solution—the celebrated *Handbuch der Physik* originated in just such a cooperative effort. *Experimental Nuclear Physics* is an attempt at the same kind of synthesis in its own field, and before going any further it must be said that the attempt is a distinct success.

Of the three projected volumes of *Experimental Nuclear Physics* the first two have already appeared and the third is still in preparation. The closing dates for the material included in Volumes I and II were all toward the end of 1951 with the exception of Staub's paper, which was closed in December 1950. Each contribution is in the form of a self-sufficient monograph with its own bibliography.

Part I, Detection Methods (165 pp.) by Hans H. Staub, opens with a discussion of the motion of ions and electrons in gases. This leads naturally into the principles of operation of ionization chambers and proportional and Geiger counters, which are treated clearly and concisely. Crystal and scintillation counters unfortunately receive less than three pages each, doubtless because the material was prepared over three years ago. A more extensive section on cloud chambers follows, and nuclear emulsions and Cerenkov counters are also covered. Part I concludes with an account of the electronic instrumentation used with counters and construction and operational details of counters and cloud chambers.

Part II, Passage of Radiations Through Matter (191 pp.) by Hans A. Bethe and Julius Ashkin, is superb. Heavy charged particles, beta and gamma rays are covered in considerable detail, and much practical as