Book Reviews

Quantum Mechanics. International Series in Pure and Applied Physics. Leonard I. Schiff. McGraw-Hill, New York–London, ed. 2, 1955. xii + 417 pp. Illus. $6.50.

The revision of this standard textbook and reference work has been accomplished mainly by the addition of topics that either provide further illustrations of general principles or introduce new methods that have been developed since the publication of the first edition in 1949. Among the more important of these are a discussion of a diffraction experiment in connection with the interpretation of the uncertainty principle, an introduction to the use of variational principles in the theory of scattering, and a brief but very clear exposition (following Bethe) of the "effective range" approximation in the treatment of the two-nucleon system. The sections dealing with fundamental particles have been brought up to date by the insertion of brief references to the properties of mesons; a number of references to recent research papers have been added.

It is my opinion that the book's usefulness as a text might have been enhanced further by amplification of some of the sections dealing with fundamental concepts and methods. This is especially the case in the chapter on the matrix formulation of quantum mechanics. The student who has not had an introduction to matrix algebra is likely to feel that the subject is inadequately treated. The discussion of unitary transformations would have been improved, for example, by addition of a short section on the concept of change of basis in a vector space, and the important theorem on simultaneous diagonalization of commuting matrices might well have received further attention. The treatment of angular momentum has been improved by addition of a section on the definition in terms of infinitesimal rotations, but little further use is made of this important concept in the sequel. The section on addition of angular momenta is a description of the general procedure; it would have been improved if an example had been added. Additions of this kind might have been compensated for by abbreviating other detailed mathematical parts of the book that illustrate relatively less important points. The discussion of representations of the hydrogen wave functions in parabolic coordinates and of the classical theory of the Cerenkov effect are examples.

The book is remarkably accurate, both in detail and in exposition of general principles. It continues, in the second edition, to be an excellent text for courses in quantum mechanics at the graduate level.

J. L. Powell

University of Oregon

Cardiovascular Renal Problems. Hans Popper and Daniel S. Kushner, Eds. Blakiston Div., McGraw-Hill, New York, 1954. xviii + 325 pp. Illus. $5.

This is the first volume of a projected series of reproductions of clinical-pathologic conferences held at Cook County Hospital from 1946 to 1953, and it deals with selected problems in the field of cardiovascular-renal medicine from the standpoint of clinical-pathologic correlation. The editors have attempted to "select the clinical problems which are representative of the majority of patients with cardiovascular renal disease encountered in the wards . . ." and present them in the form of transactions of the hospital conferences.

The introduction is a short informative history of the development of clinical-pathologic correlation, from the first coordinated attempts by Benvieni and Morgagni to relate the findings at the autopsy table to clinical observations, through Cabot's introduction of clinical-pathologic conferences as an adjunct to medical education, to the present-day philosophy and practice of this teaching exercise.

Under three main headings entitled "Cardiac problems," "Vascular problems," and "Renal problems," 26 conferences are reproduced, covering such specific problems as "Chronic pulmonary insufficiency in sandblaster," "Complication of coronary artery disease," "Deforming arthritis and edema," and "Differential diagnosis of uremia." Each conference has a brief clinical history followed by the usual sections of clinical discussion, pathologic observations, pathologic discussion, and final pathologic diagnosis. Pertinent references to published work related to the particular problem conclude each conference. In a number of instances, additional, more didactic discussion is included under the heading of "Editors' notes."

The pathologic discussions are uniformly thorough and instructive in contrast to rather sketchy clinical discussions in some sections. There is an abundance of illustrations of pathologic material, both gross and microscopic. However, for a book purporting to stress the correlation between ante- and post-mortem findings there is a surprising dearth of illustrations of clinical material. For example, only three x-rays and no electrocardiograms are reproduced in the entire book.

The purpose of a book such as this is not entirely clear. A clinical-pathologic conference is an important part of medical training, both for medical students and graduates. However, a C.P.C. is inherently a "live performance" where questions, comments, and even arguments can add to the interest. Although the editors state in the preface, "It has been our intention to maintain the spirit of each original conference," in my opinion much of the spirit of a C.P.C. is lost in print, and we are left with a "post-mortem." For the busy physician, this book may warrant an evening's reading but probably is not worth inclusion in his permanent library.

Neil C. Moran

Laboratory of Chemical Pharmacology, National Institutes of Health

Principles of Meteorological Analysis. Walter J. Saucier. Univ. of Chicago Press, Chicago, 1955. xvi + 438 pp. Illus. $10.

This book represents an attempt to narrow the gap between the theoretical material that is covered in basic courses of meteorology and the applied material that is covered in weather analysis courses. Integration of these two broad phases of training stems from the author's connection with the Chicago school of meteorology and the underlying educational philosophies that were developed by Carl-Gustaf Rossby and continued under the direction of Horace R. Byers.

Beginning with an introductory chapter defining atmospheric variables, the book describes the various meteorological charts and diagrams in Chapter 2. An interesting and valuable feature is the discussion of map projections, map scales, measurement of geodetic distances and directions from a map, and great-circle arcs. Ensuing chapters cover hydro-