fication. The assembly of 441 references that give original data on the minerals listed will in itself be found most useful.

PAUL F. KERR
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The Structure of Physical Chemistry. C. N. Hinshelwood. New York: Oxford Univ. Press, 1951. 476 pp. $7.00.

In this book we see physical chemistry through the eyes of a long-time student and distinguished contributor to the field. The author traces the fundamental principles and the interconnections between them in a realm extending to the borders of science. We have pictured for us the molecular chaos in material systems that is measured by entropy and controlled by quantum laws. Maxwell's equations enter naturally into the explanation of the electrical nature of matter, and the theory of relativity relates matter and energy and so measures nuclear stability. Chemical equilibria and chemical kinetics are both examined in their broader aspects, and finally we learn something about the living cell and how it operates. Consciousness itself is examined and is clearly shown to be something quite beyond the scope of contemporary physics and chemistry.

The reader will no doubt enjoy Professor Hinshelwood's clear exposition, but he may often wonder how particular conceptions arose and where he can turn for a more exhaustive exposition of interesting points. He will be obliged to seek such references elsewhere.

Everything considered, one must say that here is a valuable book that should interest many in the broader aspects of physical chemistry.

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Metabolic Methods: Clinical Procedures in the Study of Metabolic Functions. C. Frank Consolazio, Robert E. Johnson, and Evelyn Marek. St. Louis: Mosby, 1951. 471 pp. $6.75.

This volume presents the methods which Dr. Consolazio and his colleagues have found useful in studying the metabolism of human beings. The techniques are described in detail, with instructions for operating apparatus and examples of calculations, so that anyone with basic laboratory training should be able to carry through the analyses. Following each section, a bibliography lists alternative methods, but these are not discussed.

Since the authors present only a single method for most determinations, it is unfortunate that several of their selections are outmoded. For example, the acetylene method for estimating cardiac output has been supplanted by the cardiac catheter. The authors might have increased the value of their manual by explaining the reasons for their choice of method. The addition of a short section giving the specificity of the technique and the expected order of accuracy would also be useful. Moreover, the organization of the book leads to difficulties. For example, the estimation of serum sodium or potassium is discussed in the section on "instrumentation" in connection with the flame photometer and under "biochemistry," but the use of the flame photometer is not even mentioned in the index under "sodium" or "potassium."

The authors are to be censured for suggesting (p. 21) that the same syringe be used repeatedly without sterilization in obtaining blood specimens from large numbers of subjects. Since this introduces a serious risk of disseminating infectious or serum hepatitis, no compromise with complete sterile technique should be permitted.

The purchase of this book is not recommended except for large libraries of research institutions. It cannot be considered as an adequate general guide for the study of human metabolic function, but its usefulness as an adjunct to more comprehensive reference books cannot be doubted.

PHILIP K. BONDY
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Scientific Book Register

Hormones: A Survey of their Properties and Uses. Published by direction of the Council of The Pharmaceutical Society of Great Britain. London: Pharmaceutical Press, 1951. 220 pp. 35s.

Linear Transformations in n-Dimensional Vector Space: An Introduction to the Theory of Hilbert Space. H. L. Hamburger and M. E. Grimshaw. New York: Cambridge Univ. Press, 1951. 195 pp. $4.50.

Phase Microscopy: Principles and Applications. Alva H. Bennett *et al.* New York: Wiley; London: Chapman & Hall, 1951. 320 pp. $7.50.

Nucleic Acid. Symposia of the Society for Experimental Biology, No. 1. Reissue. J. F. Danielli and R. Brown. New York: Cambridge Univ. Press, 1951. 290 pp. $7.00.

The Measurement of Radio Isotopes. Denis Taylor. London: Methuen; New York: Wiley, 1951. 118 pp. $1.50.

The Battle for Mental Health. James Clark Moloney. New York: Philosophical Library, 1952. 105 pp. $3.50.

Energy Sources—The Wealth of the World. Eugene Ayres and Charles A. Scarlott. New York–London: McGraw-Hill, 1952. 344 pp. $5.00.

The Earth's Magnetism. 2nd ed. Sydney Chapman. London: Methuen; New York: Wiley, 1951. 127 pp. $1.50.

The Birds of Greenland, Part III. Finn Salomonsen; illus. by Gitz-Johansen. Copenhagen: Einar Munksgaard, 1951. Pp. 349–608 and 16 plates, with cumulative index. Accompanying map of Greenland, Dan. kr. 10.

Advances in Genetics, Vol. IV. M. Demerec, Ed. New York: Academic Press, 1951. 343 pp. $7.50.

The Conduction of Electricity through Gases. Rev. 3rd ed. K. G. Emeléus. London: Methuen; New York: Wiley, 1951. 99 pp. $1.50.

On Dreams. Sigmund Freud; new English trans. by James Strachey. New York: Norton, 1952. 120 pp. $2.50.

Metabolic Interrelations. Transactions of the Third Conference, January 8–9, 1951, New York. Edward C. Reifenstein, Jr., Ed. New York: Josiah Macy, Jr. Fdn., 1951. 294 pp. $4.00.

Anatomy of the Chordates. Charles K. Weichert. New York–London: McGraw-Hill, 1951. 921 pp. $8.00.