

5. The solution of lecithin in bile salts shows a greatly increased optical rotation, from which it may be calculated that the rotation of the lecithin is about $[\alpha]_D = 7.75^\circ$.

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NEW BOOKS.

Roscoe and Schorlemmer's *Treatise on Chemistry. Volume II.—The Metals.* New edition, completely revised by SIR H. E. ROSCOE AND DR. A. HARDEN. New York: The Macmillan Co. 1907. xvi + 1436 pp. Price, \$7.50 net.

Roscoe and Schorlemmer's two volumes on inorganic chemistry are in the library of every chemist, and their admirable qualities are so familiar that detailed description is unnecessary. The characteristics which distinguish this work have been preserved in the revised edition and, at the same time, the whole has been brought thoroughly up to date. It is a pleasure to use a book which is so eminently readable, and yet so adequate to its purpose scientifically as is this one. The historical perspective, as heretofore, is carefully maintained throughout, and adds greatly to the charm as well as to the usefulness of the volume. The full and well illustrated accounts of technical processes are still a conspicuous feature of the book. The revision has been most thorough. There are changes in almost every paragraph, and the additions dealing with recent investigations are very numerous and exceedingly well chosen. On the whole, nearly two hundred and fifty pages have been added. In the earlier part of the volume the most noteworthy changes consist in the introduction of sections on Werner's theory of valence, on J. J. Thomson's corpuscular theory of the constitution of the atom, on colloidal solutions of metals, and on the phase rule (in connection with an expanded account of salt-hydrates). The paragraphs on alloys have been enlarged and give an admirable résumé of the subject. The section on crystallography (50 pp.) has been transferred from Volume I to this volume, and has also been revised. A new section on radioactive elements and radioactivity (28 pp.) has been added at the end. The only section which seems to fall conspicuously short of the high level attained by the book as a whole is that on the constitution of steel. This subject is of such great interest, both theoretically and practically, that the very inadequate treatment of recent work is incomprehensible. Roozeboom, Von Jüptner, and Roberts Austen are not even mentioned, although elsewhere references to the latest investigations are always given.

Throughout the book, modern views have been introduced with such skill, and have been incorporated so completely to form a homogeneous product that one is never for a moment reminded of the fact that the first edition was written over thirty years ago. Just as the first edition was

the standard work in English for the chemist of the last generation, so the new edition is destined to occupy the same position for the chemist of the present generation.

ALEXANDER SMITH.

Thermodynamics of Technical Gas Reactions. By DR. F. HABER, Professor at the Technische Hochschule, Karlsruhe. Translated by ARTHUR B. LAMB, PH.D. Longmans, Green and Co. 1908. xix + 356 pp.

Haber's "Thermodynamik Technischer Gasreaktionen," which presented an exhaustive theoretical treatment of a number of gaseous reactions, appeared originally in 1905 as the result of a course of lectures. This translation not only includes all that appeared at that time, but the subject matter is brought up to date, special attention being paid to the new experimental researches of Nernst and of Haber himself and to the theoretical deductions of Nernst. The book is divided into seven lectures and three appendices under the following general headings: The Latent Heat of Chemical Reaction and its Relation to Reaction Energy; Entropy and its Significance in Gas Reactions; Another Derivation of the Formula Previously Obtained, and its Bearing on Reactions between Solids; Examples of Reactions which Proceed without a Change in the Number of Molecules; Some Examples of Reactions Involving a Change in the Number of Molecules; The Determination of the Specific Heats of Gases; The Determination of Gaseous Equilibria with a Theoretical and Technical Discussion of Related Questions. The Appendix to Lecture III summarizes the views developed recently by Nernst in his "Experimental and Theoretical Applications of Thermodynamics to Chemistry;" the Appendix to Lecture V includes much of the recent experimental work on gaseous dissociations and equilibria; the Appendices to Lecture VII describe some recent work bearing directly upon the lecture.

The translation is not entirely satisfactory, but without going into too great detail, the following points may be noted: On page 60, the reference to (1a) p. 49 should read (7a) p. 49; page 89, phenyl fluoride should be used instead of benzene fluoride; page 295, Fraunhofer in place of Frauenhofer. On page 339, the statement that H. v. Wartenberg demonstrated that the formation of water from hydrogen and oxygen and of carbon dioxide from carbon monoxide and oxygen are dimolecular reactions is incorrect. He concluded both to be trimolecular reactions. "Catalyzer" and "catalyst" appear to be used indiscriminately, in fact in one case the two appear in consecutive sentences (page 201), and in another in two successive paragraphs (pages 183-184) catalyst is used twice and catalyzer three times.

In spite of these criticisms, the book as a whole is a most valuable one and can be heartily recommended to all who desire to become more