

NEW BOOKS.

ELEMENTS OF ELECTROCHEMISTRY. BY R. LÜPKE. Translated by M. M. PATTISON MUIR. Philadelphia: J. B. Lippincott Co. 1897. vii + 223 pp. Price, \$2.50.

We have used the German edition of this text-book in our class in electrochemistry and can heartily recommend it as the only book at all suitable for such purposes, and now the English translation has made it still more useful. Still, excellent though the book is, we cannot help wishing that Mr. Muir had written a new book, giving particular attention to the incomparable experiments of Faraday on Electrochemistry, instead of making this translation.

The book is somewhat overbalanced. The osmotic theory, as illustrated by osmotic pressure, boiling-point, and freezing-point, occupy nearly forty pages. We found it far better to substitute a couple of lectures for this part. For the student of electrochemistry the lectures were sufficient.

The book opens with the Phenomena of Electrolysis. A number of simple and instructive experiments are described, but we regret to note the absence of Faraday's simple but elegant qualitative experiments on this subject. Then follow chapters on Hittori's Transport-Numbers, The Law of Kohlrausch, The Dissociation Theory of Arrhenius, Osmotic Pressure, Vapor Pressure of Solutions, Boiling-Points and Freezing-Points of Solutions, Summary, Aqueous Solutions of Electrolytes, Liquid Cells, Daniell Cells, Reduction and Oxidation Cells, The Solution Pressures of the Metals, Intensity of Fixation and Polarization, Irreversible Cells, Accumulators, and The Energetics of Galvanic Elements. Nearly all the subjects are illustrated by good and simple experiments, most of them of such a nature that the student can construct the necessary apparatus himself.

C. L. SPEYERS.

MANUAL OF QUALITATIVE CHEMICAL ANALYSIS. BY THE LATE DR. C. REMIGIUS FRESENIUS. Authorized Translation by HORACE L. WELLS, M.A., Professor of Analytical Chemistry and Metallurgy in the Sheffield Scientific School of Yale University. New edition, thoroughly revised from the Sixteenth German Edition. New York: John Wiley & Sons. 1897. xvii + 748 pp. Price, \$5.00.

In the present translation Prof. Wells has given to American