

a current of 0.95 amp. 153° , while with a current of 1.25 amp. the temperature rose above the 200° mark.

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NEW BOOKS.

Notions Fondamentales d'analyse Qualitative. By V. THOMAS and D. GAUTHIER. 327 pp. and 91 Figs. Gauthier-Villars. Paris, 1912. Price not stated.

This text book differs essentially from those printed in this country in recent years. In the first place, it contains no theory; electrolytic dissociation, equilibrium and the mass law are nowhere mentioned. Analytical tables too are conspicuously absent. The preface states that the book is for *learners*, not for those who seek to pass examinations, and the thoroughness which this statement implies is everywhere evident. It contains more of the chemistry of the elements than most books on the subject. The matter regarding the limitations of the various separations is especially full and illuminating. Several methods are commonly given, and the exact path to be followed is left to the student or perhaps partly to individual instruction. Judged as a laboratory text it should serve well, with proper guidance, to develop real independence as well as careful and painstaking methods in the student, but the course here mapped out would doubtless require more time than American students usually get for qualitative analysis. "Notions fondamentales" is avowedly addressed to beginners, yet it is almost extended enough for a reference book, containing as it does considerable material on all but the very rarest elements, and it seems to the reviewer rather a pity that a reference book was not made of it, for such a book could be used by beginners as well as this one, and there is more need of such a book than of a teaching manual of qualitative analysis—at least in the English language. Many reactions apparently new are given here, though some very valuable ones, like the test for platinum with potassium iodide, the test for cobalt with α -nitroso- β -naphthol and the test for nickel with dimethylglyoxime—all very delicate and characteristic—are not included. The book also lacks, as most text books on qualitative analysis do, a systematic treatment of methods of procedure in detecting very small quantities of the elements and the limits of accuracy of the most delicate tests. This book contains short sections on the use of the microscope and the spectroscope, both of which are practically applied.

E. T. ALLEN.

Soil Bacteriology. By JACOB G. LIPMAN and PERCY E. BROWN. Published by the authors, 1911. pp. 87.

Soil bacteriology has needed definite laboratory methods to exploit it satisfactorily for student purposes. In this little volume an attempt

has been made to provide such directions as will furnish the student with a tangible knowledge of the important microbial processes of the soil. The methods are logically arranged, concisely and clearly stated, and pertinently effective for agricultural students. Use is made of material which is likely to be available to every laboratory. Laboratory media and methods are also given in appendix form.

It is gratifying to note a start in clearing the field of soil bacteriology from its chaos. The authors are to be commended in their effort.

CHARLES E. MARSHALL.

Grundlinien der Anorganischen Chemie. WILHELM OSTWALD. Third edition. W. Engelmann, Leipzig, 1912. pp. xxii + 860. Large 8vo.

Twelve years have passed since Professor Ostwald first enriched chemical literature by writing this admirable work. The first edition was reviewed at length in *Am. Chem. J.*, **25**, 83 (1901), and since that time a second German edition has appeared, as well as translations into English and other languages. Every chemist, or at least every teacher of chemistry, is familiar with the book. Its characteristic features are a philosophically consistent viewpoint and an intimate intermingling of descriptive matter with theoretical explanation.

The present edition contains sixty-five pages more than the first. The increase has taken place chiefly on account of the expansion of the introductory chapters from forty-five to ninety-two pages, and the addition of a chapter (fifteen pages) on the radioactive elements. The introduction has been entirely recast, and vastly improved in quality. The whole book, also, has been revised and brought up-to-date, and many changes will be noted. Thus, the old, grossly inaccurate dissociation pressures of calcium carbonate have been replaced by later values. This process might have been carried out more thoroughly, however. For example, the data in regard to sulfur are inexact and incomplete in many ways. But these slight blemishes do not impair the value of the book as a model presentation of the science from the modern viewpoint. A. S.

New Atomic Weight Curves. By E. WEDEKIND and J. LEWIS. Pp. 21, with 4 curves. 1910. Stuttgart: Ferdinand Enke.

The most reliable data on the densities of the elements and their oxides are collected and tabulated in a convenient form for reference. Using these data as a basis the authors have prepared four curves for each of which the 1909 atomic weights represent the abscissae and the following quantities the ordinates: (1) the atomic volumes of the elements; (2) the densities of the elements; (3) the densities of the highest oxides; (4) the ratio of the density of the elements to the density of the oxides.

A brief discussion and explanation accompanies each curve. The

work will be particularly valuable for predicting the densities of new or rare elements. On the basis of its position in the periodic system, the authors predict a density of 5.5 for metallic radium.

E. W. WASHBURN.

ANNOUNCEMENT.

The President of Section I, Analytical Chemistry of the approaching Congress of Applied Chemistry, desires to call the attention of chemists to an official notification received by him, that two important propositions will be advocated at the Congress.

It will be moved by the Verein deutscher Chemiker: To adopt for practical purposes an atomic weight table only once in five years and on a given date to introduce this generally and recognize it as binding in mutual dealings.

The Sectional Group "Analytical Chemistry" of the Verein deutscher Chemiker will make the following suggestion: To request the Sub-committee on Uniform Sampling, of the International Committee on Analyses, to take up the sampling of ores.

For fuller details, consult *Chemiker Zeitung*, June 6, page 635, and *Zeitschrift für angewandte Chemie*, June 7, page 1171.