

TABLES FOR CHEMICAL CALCULATIONS, WITH EXPLANATIONS AND ILLUSTRATIVE EXAMPLES. BY HORACE L. WELLS. New York: Henry Holt & Co. 1903. pp. v+58.

“This little book has been prepared to facilitate chemical calculations by the use of logarithms.. Too often this work is done by the laborious process of simple multiplication and division, in which, to save labor, the use of roughly approximate atomic weights is too prevalent in cases which deserve more accurate treatment.”

This extract from the preface indicates the character of the work. It includes, besides a table of five-place logarithms, the usual tables of factors for gravimetric and gas analysis, metallurgical factors and factors for indirect analysis, atomic and formula-weights. The feature of the work is the introduction of its logarithm after each factor and after each formula-weight, thus saving the greater part of the time usually spent in hunting up logarithms. The factors are those most frequently used in inorganic analysis, and no attempt is made to invade the field of proximate organic analysis. All factors have been calculated at least three times independently. The book should prove extremely useful. It is suggested that as it is likely to be used much on the laboratory desk, a future edition might well be bound in a water-proof cover of some material like oil-cloth.

H. N. STOKES.

A SCHEME FOR THE DETECTION OF THE MORE COMMON CLASSES OF CARBON COMPOUNDS. BY FRANK E. WESTON, B.SC., F.C.S., Lecturer in Chemistry at the Polytechnic, Regent Street. London and New York: Longmans, Green and Co. 1904. pp. viii+56.

The publication of this book is evidence of the fact that teachers of chemistry are beginning to realize that the laboratory training of students of organic chemistry should consist of more than practice in ultimate analysis and in the preparation of organic compounds. A working knowledge of the science requires not only experience in these parts of the subject, but also a facility in identifying unknown compounds by means of their characteristic reactions. It is to help the student in his study of this important part of the subject that this book is written.

A number of sections of the book are devoted to describing the general methods used. An account of the action of the various classes of compounds with such reagents as water, potassium

hydroxide, sulphuric acid, etc., is next given. Then follows a careful description of the tests which should be applied to a substance under investigation after the elements present have been determined. An example will make the author's method clear. A section is devoted to a consideration of the compounds which contain carbon, hydrogen and nitrogen. A list of the classes of compounds falling into this group is first given. Hydrochloric acid serves as a reagent to divide the group into sub-groups. For the compounds insoluble in the reagent special tests are given, which make it possible to identify the class to which the compound studied belongs. A series of tests to be applied to the substances soluble in the acid, follows. These distinguish, for example, primary, secondary and tertiary amines, diamines, hydrazines, alkaloids and pyridine, quinoline and pyrrol and their derivatives. After the class to which the compound belongs has been determined, a study of the physical properties of the substance and of a derivative of it serves to complete the identification of the compound. In the final section is given, in tabular form, the solubilities in water of the different classes of compounds.

While a few general reactions of value in the qualitative examination of organic compounds have been omitted, and while a few of doubtful value have been included, the comprehensive plan has been worked out admirably, and the book is singularly free from errors.

JAMES F. NORRIS.

TEN LECTURES ON BIOCHEMISTRY OF MUSCLE AND NERVE. BY W. D. HALLIBURTON, M.D., F.R.S. Philadelphia: P. Blakiston's Son & Co. 151 pp.; 33 illustrations. Price, \$2.00.

There is, perhaps, no field of physiological chemistry more perplexing to the student or less inviting to the investigator than the chemistry of muscle. In its beginning the subject gave promise, and commanded the attention of several notable investigators, whose results seemed worthy of consideration, but complications soon began to arise, and the questions involved became more obscure the more they were submitted to examination, until the literature has finally fallen into a state of almost hopeless confusion. The appearance of a text-book, therefore, by an active investigator in this field, and one well known for his clearness and power of explanation, will be universally approved; and it may be stated at the beginning, that if the object of a text-book be the development of an idea from the author's point of view,