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LOUIS KAHLENBERG.

Neuere Anschauungen auf dem Gebiete der anorganischen Chemie. By PROF. DR. A. WERNER. Second Edition. Braunschweig: Friedrich Vieweg und Sohn. 1909. pp. xv + 292. Price, 9 Marks; bound, 10 Marks.

To the average chemist only a limited time is available for familiarizing himself with the details of developments in lines other than his own. The appearance of the first edition of this book in 1905 was therefore welcomed by all who had become interested in the remarkable work of Werner and his co-workers, yet who had gotten only a hazy idea of the subject, on account of the enormous mass of material appearing constantly in the journals. Since then the number of contributions to the literature has not grown less, rather has it increased. This has been due to the extension of the views developed from the study of the metal-ammonia compounds to the hydroxy compounds, basic salts, acids, bases, hydrolysis, dyestuffs, and the difficult but successfully exploited field of the polynuclear compounds. Consequently a new edition of the book has become necessary, and in this second edition the author has brought together in concise form, and with full bibliography, all of the later developments in this fascinating chapter of inorganic chemistry.

Based upon the experience gained from the first edition, the arrangement of the matter has been greatly improved, making the book much more readable to those unfamiliar with the subject.

The new edition shows clearly the development of the author's views concerning valence. His attitude from the outset has been that of one who puts forth no final solution of a problem, but rather a working hypothesis based upon a clear insight into relations among a mass of compounds hitherto considered inarticulate. His hypothesis of "secondary" or "auxiliary" valences has indicated the way for experimental work leading to the discovery of many new compounds, explained the constitution of many old ones, and demonstrated relations hitherto unrecognized. Doubtless, as the author himself believes, the final truth concerning these compounds has not yet been revealed; but certainly his views and work constitute a most important step toward that truth.

The diversified character of the developments in this complex subject can be understood only when it is known that the author, while possessing a fine scientific imagination, is also an indefatigable worker in the laboratory; that while interested primarily in inorganic, he is equally at home in physical and in organic chemistry.

It is to be hoped that at some early day Prof. Werner will publish a laboratory manual embracing the preparation of typical compounds in each important group, and especially the methods employed in passing

from one group to another. Such laboratory directions exist, of course, in the literature, but they are so widely scattered that many turn aside from work in this field. The reviewer can imagine no more attractive subject for a student course in inorganic preparations than, for example, the cobaltammines, with their varying colors, their differences in ionization, and the multiplicity of possible transformations.

CHAS. H. HERTY.

Die Alkaloide. Eine Monographie der natuerlichen Basen. VON DR. ERNST WINTERSTEIN, Professor, und DR. GEORG TRIER, Assistant, an der eidgenössischen polytechnischen Schule in Zurich. Verlag von Gebrüder Bronträger, Berlin, 1910.

The appearance of this book is very timely. While text-books on organic chemistry usually contain a short chapter on alkaloids, special treatises on this subject are few and appear at long intervals. The book is excellently gotten up from the standpoint of workmanship, and contains almost every alkaloid whose existence has been definitely established. By omitting detailed methods of manufacture, leaving out descriptions of alkaloidal salts, and cutting down bibliographic references to a minimum, the authors have managed to condense a vast subject into 340 pages. A special feature of the book is the special attention given to the physiological behavior of those alkaloids whose effect on living organisms has been tested. The book consists of a general introduction, a special part and a large chapter on the function and generation of organic bases in plants. The introduction consists of ten chapters: Definition; historical review; occurrence; general methods of preparation, detection and quantitative estimation; general properties; constitution and methods used for its determination; synthesis of alkaloids; physiological behavior; phytotoxins; relation between constitution and physiological action; classification. The authors distinguish between alkaloids in general and alkaloids proper. The first term applies to all nitrogenous bases found either in vegetable or animal organisms; the second is restricted to vegetable bases containing nitrogen in heterocyclic union and possessing physiological activity. In the chapter on physiological activity the supposition is advanced ascribing this activity to a molecular combination of alkaloid and protoplasm, the enormous effect of relatively small doses being due to the smallness of the molecular weight of the organic bases as compared with the exceptionally large molecular weight of the albumins. A thorough discussion is given of the remarkable tolerance of some animals towards poisonous bases, atropine, for example, having no effect upon the rabbit, and the lethal dose of morphine being ten times larger for chickens and a thousand times larger for goats than for man. The authors criticize the utility of antidotes whose action, like that of tannin, consists in the formation of insoluble combinations with the organic base. Since many