

---

 BOOK REVIEWS
 

---

**Advances in Carbohydrate Chemistry.** Volume 14 Edited by MELVILLE L. WOLFROM. R. STUART TIPSON, Associate Editor. Academic Press Inc., 111 Fifth Avenue, New York 3, N. Y. 1959. xi + 525 pp. 16 x 23.5 cm. Price, \$15.00.

It has been said that as man advances in the education of his fellows he gains not so much in wisdom as in his ability to rationalize sin. To paraphrase this comment in the narrower context of scientific research, the suggestion would be that the continual accumulation of factual knowledge has only made us more proficient in rationalizing our ignorance. To prepare himself for such rationalization, the chemist of today finds himself surrounded by multi-volume "libraries" consisting of "Reviews," "Advances," "Methods," "Symposia," "Techniques," "Preparations" and "Syntheses," all of which are in the business of distilling from the current periodical literature the essence of its content. And rarely does one encounter the authoritative one-man textbook, carefully and lovingly prepared with a style that is as well developed as the content is circumscribed. In its place we find the multi-authored, varistyled expanded versions of recent symposia (or still worse, "lecture notes") rushed into press while the market is still hot.

This trend in publishing is, of course, amply justified by two arguments: (1) the literature is too voluminous for one person to consume, and thus some form of reduction is required before it can be taken without serious indigestion; and (2) the rapid transmission of knowledge (the very latest knowledge) is as important as the fidelity of the transmission. The quality of the different compendia does vary greatly, and this quality is due primarily to the care exercised by the editor. Regardless of his excellence, however, a high standard will be maintained only so long as the size of the task remains manageable. Professor M. L. Wolfrom of Ohio State University has been associated with the *Advances in Carbohydrate Chemistry* since its beginning as one of the editors, and as one who has contributed to this series, I can attest to the firm and demanding control he has maintained. The continuing excellence of this series reflects his devoted service.

The *Advances in Carbohydrate Chemistry* has been published yearly since 1945, and has now reached the enviable stage that it can almost sustain itself by bringing up-to-date subjects that have been treated in previous years. This 14th volume of the series performs this function in the articles "The Cyclitols" by S. J. Angyal and L. Anderson, "Aspects of the Chemistry of the Amino Sugars" by A. B. Foster and D. Horton, "Pyrimidine Nucleosides" by J. J. Fox and I. Wempen, and "Structural Chemistry of the Hemicelluloses" by G. O. Aspinall.

To anyone working with the inositols and their derivatives, the review by Angyal and Anderson will be welcomed. All of the possible inositol isomers are now known as chemical entities and the complex effects of stereochemistry on the reactivity of each member of the class can be compared. Many conjugated forms of myo-inositol have been found in nature, and complete structures can now be assigned to most of them. As yet incompletely characterized are the myo-inositol containing lipids, although suitable methods are available for the task and only time and effort are now required to complete this job. The discovery of amino-inositols (inosamines) in nature has greatly expanded the area for characterization and synthesis of such cyclitols. All of these subjects are discussed in detail in this review. In addition, the authors make a justifiable plea for official action at an appropriate level to bring about adoption of a universal system for nomenclature of the cyclitols. This is not a problem unique to cyclitol chemistry and the solution should be gladly received by all concerned with asymmetry in ring systems.

In the other chapters, Foster and Horton deal mostly with the synthesis and chemistry of 2-amino-2-deoxyhexoses, and give a review of the many excellent papers of Kuhn, Baer and Gauhe on the amino sugar containing oligosaccharides in human milk. Fox and Wempen review the chemistry of

pyrimidine nucleosides. This includes the several reactions of recent discovery which involve the participation of the pyrimidine ring in inversions of configuration on the sugar ring. Also included are reviews of the present state of knowledge on the chemistry of hemicelluloses by Aspinall, the applications of lead tetraacetate in the field of carbohydrate chemistry by A. S. Perlin, the diverse knowledge about the Maillard reaction by G. P. Ellis, and the preparation and properties of  $\beta$ -glucuronidase by G. A. Levvy and C. A. Marsh.

With the chapters in this volume is a brief biography of Géza Zemplén. In the laboratory of K. P. Link, this reviewer was exposed to the history and some of the glamor of the great period of carbohydrate chemistry which encompassed Emil Fischer, W. N. Haworth and C. S. Hudson. Zemplén was of this time, yet mysteriously removed and apart in his laboratory in Hungary. Death came in 1956. Now, with the passing of Hermann O. L. Fischer, another of the few remaining links with this era has been broken. Times change, and in the present excited attack on the enigmas of protein and nucleic acid chemistry, the classical carbohydrate chemist must speak with force to be heard. Through the pages of these "Advances" this voice comes with its most authoritative sound.

DEPARTMENT OF BIOCHEMISTRY  
UNIVERSITY OF CALIFORNIA  
BERKELEY 4, CALIFORNIA  
CLINTON E. BALLOU

**Handbook of Electrochemical Constants.** Compiled by ROGER PARSONS, A.R.C.S., Ph.D., Lecturer in Physical and Inorganic Chemistry, University of Bristol. Academic Press Inc., 111 Fifth Avenue, New York 3, N. Y. 1959. viii + 113 pp. 13 x 18 cm. Price, \$6.00.

The heading just above describes this little volume quite accurately, perhaps noting only that it should be of interest not only to electrochemists but to physical chemists generally. The confidence which the user places in the data given will necessarily depend on his confidence in Dr. Parsons' critical judgment with respect to these values since no references are given. On the basis of his carefully done published work as well as some direct contact with him, I am quite satisfied to accept his judgment. If it should be necessary the original sources of the data can probably be obtained without excessive difficulty.

There is no preface or introduction so delineation of the area to be covered is dependent solely on the title and on the assumption that only those data of truly reproducible character were to be included. It may be that this is the reason that such oft-needed information like half wave potentials for organic materials were not included. Undoubtedly there are other omissions which would become evident on normal, everyday use of the book, but in the 'force draft' perusal of it within the short review period available only one or two potentially useful items were found to be lacking. For instance, buffer solution pH values are often needed and temperature coefficients for reference half cells would be helpful, but neither is included, probably for quite acceptable reasons.

Having pointed out possible shortcomings it remains to say that this is a very handy little volume, about 5 x 7", which opens flat by virtue of a plastic spiral binding. The spiral binding is an advantage to be sure, but care must be exercised so as not to tear the page at the spiral. The book is clearly printed and easy to read. It contains a surprising amount of material, with appropriate explanation for use of tables where needed. A noteworthy aspect is that it provides considerable data on molten systems and on solutions in non-aqueous solvents. It is well worth having it readily available.

DEPARTMENT OF CHEMISTRY  
UNIVERSITY OF TEXAS  
AUSTIN 12, TEXAS  
NORMAN HACKERMAN