

BOOK REVIEW—BUCHBESPRECHUNG

M. L. WOLFROM: *Kohlenhydratchemie biologisch wichtiger Substanzen*

Pergamon Press, London—New York 1959, 206 Seiten

»Kohlenhydratchemie biologisch wichtiger Substanzen« ist der Titel des ersten Bandes der Veröffentlichungen des Vierten Internationalen Kongresses für Biochemie, Wien, herausgegeben im Auftrage des Kongresses und der Internationalen Union für Biochemie. Zweck und Ziel dieses Symposions war es, eine Übersicht über die moderne Kohlenhydratchemie in ihrem Zusammenhang mit der Biologie zu geben, und diese Zielsetzung wurde gut erfüllt. Einer kurzen Einleitung des Herausgebers folgen zwölf interessante Arbeiten über »Heimzellulosen« von R. L. Whistler und J. L. Sannella; »Meeresalgen-Polysaccharide« von C. Araki; »Pflanzengummi« von E. L. Hirst, ferner Abhandlungen unter dem Titel »Alle Polysaccharide sind immun-spezifisch« von M. Heidelberger; »Über die biologische Bedeutung der Aminozucker« von R. Kuhn; »Biosynthese und natürliches Vorkommen

der Monosaccharide« von J. K. N. Jones; »Sialinsäure« von G. Blix; »Über die Kohlenhydrate der Nukleinsäuren« von M. Stacey; »Die Zucker der herzaktiven Glykoside« von T. Reichstein; »Die nicht-reduzierenden Oligosaccharide, die Galaktose enthalten« von J. E. Courtois; »Phenylhydrazone und verwandte Derivate der Zucker« von L. Mester und »Über die enzymatische Synthese und den Abbau der Lävane« von S. Hestrin. Eine sehr gute Zusammenfassung aus der vorzüglichen Feder des Herausgebers M. L. Wolfrom schließt den Band ab, der mit den vielen neuen Forschungsergebnissen und Literaturzitaten all jenen gute Dienste leisten kann, die sich mit der Kohlenhydratforschung beschäftigen. Die Ausstattung des Buches ist der Tradition der Verlagsgesellschaft würdig.

Prof. Dr. L. TELEGDY KOVÁTS

J. A. V. BUTLER and B. KATZ: *Progress in Biophysics and Biophysical Chemistry. Vol. 9.*

Pergamon Press, London—New York 1959, 388 pp.

Editors' aim was — as expressed in the preface to the previous volumes — to make a choice from the wide range of subjects which come under the heading of biophysical research and to strike a fair balance between articles which are primarily devoted to physiological problems and those dealing more particularly with physico-chemical processes. There are seven very interesting contributions; of which the following ones

belong to the former category: Visual pigments in man and animals and their relation to seeing by W. A. H. Rushton; Hydrodynamics of the arterial circulation by D. A. McDonald and M. G. Taylor; Mechanical into electrical energy in certain mechanoreceptors by J. A. B. Gray. In the latter group discussions will be found on The kinetics of reactions between haemoglobin and gases by Q. H. Gibson; Diffusion and simultaneous

chemical reaction velocity in haemoglobin solution and red cell suspensions by F. J. W. Roughton; Determination of molecular dimensions from light scattering data by A. Peterlin; Gradient centrifugation of cell particles: theory and applications by C. de Duve, J. Berthet and H. Beaufay. Though the contents between the two categories are perhaps not very well balanced, the

collection of these critical reviews give considerable help to all those scientists who are interested in the applications of physical principles in biology. The editors made a successful effort to publish ably written and properly guided contributions; the excellent typography of the book maintains the high standards of the publishers.

Prof. Dr. L. TELEGDY KOVÁTS

Vistas in Free Radical Chemistry

(In memoriam Dr. Morris S. Kharasch), ed. W. A. Waters F. R. S., Pergamon Press London—New York—Paris—Los Angeles, 1959, IX + 251 pages. (International Series of Monographs on Organic Chemistry, Ed. D. H. R. Barton and W. Doering, Vol. 1.)

This collective volume commemorates the work and the outstanding achievements of the late Professor Kharasch in the field of organic free-radicals. However, not simply by collecting and reprinting some of the papers of Kharasch, but by selecting the most important papers that demonstrate how Kharasch conceived and elaborated his main ideas in organic research. These concern the relative degree of the electronegativity of organic radicals, the role of peroxides in the addition and also in the polymerisation reactions of olefins, the mechanism of the peroxide effect, the effect of cobaltous halides on Grignard reactions etc., *i. e.* a wealth of reactions that are nowadays integral parts of any text-book course. The collection of twelve representative papers from Kharasch's publications (out of a total of about 230 papers) serves mainly to illustrate the way and the growth of Kharasch's contribution to the chemistry of free-radicals. The collection comprises one paper (with R. Marker) on establishing the relative electronegativity of organic radicals, eight papers on the mechanism of peroxide influence: addition of hydrogen bromide to allylbromide (with F. R. Mayo), addition of thioglycolic acid to styrene and isobutylene (with A. Tanner Read and F. R. Mayo), addition of polyhalomethanes to olefine (with E. V. Jensen and W. H. Urry),

a summary on the role of peroxides in addition and polymerization reactions of olefins, further, on catalytic bromination of toluene (with P. C. White and F. R. Mayo) and on peroxide catalyzed chlorination of hydrocarbons (with H. C. Brown), followed by a paper on the chlorination of primary active amyl chloride (with H. C. Brown and T. H. Chao) and another on the decomposition of acetyl peroxide in acetic or in isobutyric acid (with M. T. Gladstone). The last three papers deal with the reduction processes of (S. Weinhouse), and with the cobaltous haloid addition to Grignard reactions (E. K. Fields, R. L. Huang, resp.). This collection is headed by a fine summarization given by W. A. Waters and F. R. Mayo.

The main value of this compilation lies, however, in the fact that the said original papers are accompanied by contributions from a number of well-known researchers in this field, dealing with related topics.

While F. R. Mayo contributes an interesting personal account of the discovery of the peroxide effect, and C. Walling appreciates the contributions of Kharasch to the chemistry of polymers, for papers deal with the general aspects of free-radical chemistry (W. A. Waters, on trends in the study of free-radical reactions in solution, K. O. Kutschke and E. W. R. Steacie on the chemistry of free radicals in the gas phase,

H. C. Brown and D. H. Hey on homolytic aliphatic and aromatic substitution). Chain reactions induced by acyl peroxide are discussed by G. A. Rasuwajew, addition to trichloropropene by A. N. Nesmejanov and co-workers and, finally, the action of tert-butoxy radicals on benzyl ethers by R. L. Huang and Miss S. S. Si-Hoe.

These contributions while serving as an impressive background to Kharasch's work and far reaching influence on the stepping up of the development in research on radical mechanisms, elevate the volume to a useful general survey of up-to-date free radical chemistry.

Prof. Dr. S. MÜLLER