

## ANNUAL REVIEW OF BIOCHEMISTRY

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 736. Price \$5.00.

TWENTY-SIX reviews covering about six hundred and sixty pages comprise the volume. Some of the newer aspects of biochemistry so far not discussed in previous volumes are to be found, e.g., the Chemistry of Visual Substances, Avian Biochemistry, Biochemistry of Teeth and Plant Tissue Cultures. Dubos has reviewed the subject of microbiology from the new standpoint of cell metabolism in relation to the anti-bacterial agents of synthetic, biological and microbial origins.

Special attention may be invited to Gyorgy's review on the Water-Soluble Vitamins to whose number new vitamins are being added year after year. The review commences with a pertinent discussion on the definition of a vitamin, and includes a critical appraisal of microbiological methods in the study and assay of vitamins. Those interested in the assay of Vitamins A and D will find the chapter on Fat-Soluble Vitamins by Morton, interesting and valuable. He invites attention to a new method of assaying D in liver oils; this involves a chromatographic adsorption of non-saponifiable matter from heptane solution on a column of "Hydriffin K<sub>1</sub>"—an active carbon from Lurgi G.m.b.H. Frankfurt a.M. The chromatogram is developed and eluted with heptane and the vitamin determined spectrographically by means of the ultra-violet maximum at 265 m $\mu$ .

Van Veen reviewing the subject of nutrition, has happily recognised the non-applicability of Western standards to nutrition problems arising in the tropics and in the Far East. He adds, "The reason for this is that these regions, which include such an extensive area of the earth's surface, differ considerably in climate, density of population, diet, nature of soil, etc. There are, however, certain circumstances which make it possible to speak about nutrition problems which most tropical countries and countries in the Far East have in common and which—at least in many respects—often differ from those in temperate regions, especially in North America and Europe." If nutrition workers will remember this in future, they will avoid the many pitfalls which their predecessors have encountered.

Mitchell's review on the metabolism of proteins and amino acids is extremely interesting and a valuable contribution. Discussing the theories of protein metabolism, he refers to the brilliant investigation of Schoenheimer and his collaborators, involving the employment of amino acids and other nitrogenous compounds containing strategically placed N<sup>15</sup> isotope and deuterium. This experimental mode of attack has revealed that urinary creatinine is derived from tissue creatine. Further "the major mechanism for urea formation was proven to be the ornithine-arginine cycle, the conversion of phenyl alanine to tyrosine was found to occur

readily in the body even in the presence of an excess of dietary tyrosine, the importance of glutamic and aspartic acids in transamination was established, the conversion of ornithine to proline and glutamic acids was shown to occur, and the anabolic utilisation of unnatural isomers by inversion to the natural form was demonstrated with *d* (+)-Leucine". The reviewer adds, "The most important discovery of the researches of Schoenheimer and his colleagues with labelled amino acids was the revelation of the existence of dynamic equilibrium between the tissues of the body and the surrounding nutrient media that had not previously been suspected".

Other reviews include Biological Oxidations and Reductions by E. G. Bull, X-ray studies of the Structure of Compounds of biochemical interest by M. L. Huggins, Hydrolytic Enzymes—non-proteolytic by D. Glick, the Chemistry of the Acyclic Constituents of Natural Fats and Oils by T. P. Hilditch, the Chemistry of Steroids by C. W. Shappe, the Chemistry of the Proteins and Amino Acids by J. T. Edsall, Lignin by Hibbert, the Chemistry and Metabolism of the Compounds of Phosphorus by J. C. Sowden and H. O. L. Fischer, Carbohydrate Metabolism by M. Somogyi, Fat Metabolism by E. Chargaff, the Chemistry of the Hormones by J. J. Pflüger and O. Kamm, the Clinical Aspects of Calcium and Phosphorus Metabolism by W. E. Cohn, E. T. Colm and J. C. Aub, the Chemistry of Muscle by G. A. Millikan, Animal Pigments by D. L. Drubkin, the Alkaloids by L. C. Craig, Mineral Nutrition of Plants by A. H. K. Petrie and Immunology by J. R. Marrack. The volume is as usual provided with a very helpful author and subject index.

With this volume under review, the Annual Review of Biochemistry enters upon its second decade of distinguished service in promoting the advancement of every phase of Biochemistry. The last decade has been one of the most eventful periods in the history of biochemical research as revealed by a study of the series which has faithfully portrayed the progress year after year.

There is one aspect of service which such reviews can render and that is one which is not generally comprehended and appreciated. We refer to the dynamic part played by the reviews in inspiring new lines of attack, in stimulating original thoughts and in directing the course of research in fruitful channels. It is not easy to assess this role but it may be stated that the Reviews have played a definite part in this.

On the occasion of the commencement of the second decade, it is only appropriate to recall that it was the genius of Dr. Luck that first conceived the idea of these reviews and his robust and wholehearted drive established it as a permanent Institute. Biochemists the world over will join with us in expressing our grateful appreciation of his devoted labours in this direction.