

## DIAZONIUM AND KINDRED ORGANIC COMPOUNDS

### Methoden der Organischen Chemie

Von Houben/Weyl. Vierte völlig neu gestaltete Auflage. Herausgegeben von Eugen Müller. Band 10, Teil 3: Stickstoffverbindungen, 1/3. Herausgegeben von Rudolf Stroh. Pp. xliii + 971. (Stuttgart: Georg Thieme Verlag, 1965.) 255 D.M.

IN the new edition of *Methoden der Organischen Chemie*, two volumes, 10 and 11, are devoted to the preparation and reactions of organic nitrogen compounds. The work reviewed here is Part 3 of Volume 10, and its publication has preceded that of Parts 1 and 2 of this volume. Parts 1 and 2 of Volume 11 have already appeared: Part 1 deals solely with amines and Part 2 with alkylinimines, amino-acids, lactams, quaternary ammonium salts, and nitrogen-sulphur compounds.

Part 3 of Volume 10 is a substantial work of 971 pages, of which almost the first half is devoted to the two most important chapters, namely, those on aromatic diazonium salts (212 pp.) and on diarylazo compounds (254 pp.) respectively. The first chapter deals in detail with the preparation of diazonium salts from amines by diazotization under various conditions, according to the nature of the amine used, and by other methods such as oxidation of aromatic hydrazines or reduction of aryl nitramines: a short section deals with the diazotization of heterocyclic amines. The second part of the chapter deals with the reactions of diazonium salts with a large number of reagents under a variety of conditions and thus illustrates fully their synthetic applications, other than those discussed later in the book.

The second chapter, on diarylazo compounds, describes the formation of these compounds by the coupling of diazonium salts again with a wide variety of compounds, with the special conditions which the nature and position of substituents in these compounds may make necessary. Other reactions are surveyed, and a very interesting discussion is given of the types of complexes which diarylazo compounds, with suitable substituents to form chelating groups, may form with metallic salts, particularly with those of chromium, cobalt and nickel.

This very concise summary of these two important chapters cannot do justice to their contents. It must be emphasized that in this volume, as in others in the series, an exhaustive and up-to-date account is given of almost all recorded synthetic methods, both of the main compounds and the products to which they can give rise, and this account includes experimental details for various typical preparations, and tables listing the known examples of the compounds prepared by particular reactions, the whole accompanied by a wealth of references. Each of these two chapters could well be published as a separate book, and each would be of considerable value to the organic chemist.

Other shorter sections deal with aromatic-aliphatic azo- and azoxy-compounds, aryl hydrazones, formazanes, aromatic triazenes and higher azo homologues, aromatic azoxy compounds, organic azido compounds, and nitrile oxides.

It is noteworthy that in this volume, as in earlier ones, the potentially dangerous nature of a compound is emphasized, as in "Das (*cancerogene*)  $\beta$ -Naphthylamine".

This volume will be invaluable to chemists engaged mainly in synthetic work involving aromatic nitrogen compounds, and will be of particular interest to those in the dyestuffs industry.

The excellent presentation and printing of the text are of the same very high standard as that of earlier volumes.

F. G. MANN

## PROTEINS AND THE ALIMENTARY TRACT

### The Role of the Gastrointestinal Tract in Protein Metabolism

Edited by H. N. Munro. (A Symposium organized by the Council for International Organizations of Medical Sciences, established under the joint auspices of UNESCO and WHO.) Pp. xviii + 402. (Oxford: Blackwell Scientific Publications, 1964.) 75s. net.

THE *Role of the Gastrointestinal Tract in Protein Metabolism* presents the twenty-five papers delivered at a three-day international symposium held in Glasgow in August 1963. The objective of the meeting was "to provide a comprehensive picture of the role of the gastrointestinal tract in protein metabolism". To this end the subject was divided into six sections, but all thirty-four participants listened to each paper and this ensured a lively multi-disciplinary discussion which is faithfully reported in the book.

Section 1 deals with the digestion of proteins and has papers on factors affecting transfer rates along the gastrointestinal tract, on the heterogeneity of gastric proteinases and on the effect of soybean trypsin inhibitor on amino-acid availability.

Section 2 has five papers on the origin, magnitude and nutritional significance of endogenous secretion in non-ruminants. There was general agreement that such secretion is equivalent to a significant proportion of the normal dietary protein intake and therefore of great importance under conditions either of dietary inadequacy or of pathological failure to reabsorb the protein secreted into the gut. There was less unanimity on the suggested homeostatic function of endogenous nitrogen secretion in maintaining a uniform concentration and pattern of amino-acids for absorption.

Section 3 extends this discussion to ruminants in which the obligatory loss of nitrogen in faeces is shown to be a major determinant of nitrogen requirements. On the other hand, microbial activity in ruminants may actually enhance the value of dietary protein by amino-acid supplementation. It was suggested in the discussion that because the intestinal flora is quantitatively less important in healthy non-ruminants this does not exclude the flora assuming disproportionate importance under conditions of malnutrition and in the pathogenesis of the malabsorption syndrome.

Section 4 deals with protein digestion in relation to nutrition. It has a paper showing that the gastrointestinal hypertrophy of lactation is related to the increased intake of food. At the other end of the nutritional scale were three papers dealing with the biochemical and morphological changes in the gastrointestinal tract in experimental and clinical protein-calorie deficiency. A fifth paper reviews modern work on the diet-host relationships of the digestive flora, particularly in relationship to the use of antibiotics as growth stimulants.

Section 5 has four papers on the absorption of amino-acids, including fundamental studies on the mechanism of absorption and the practical possibility of using variations in portal amino-acid concentrations to investigate factors in feeds and rations affecting the digestion and absorption of dietary protein.

Section 6 deals with protein metabolism in subjects with enteropathies and other alimentary diseases, and has four papers on the progress being made in differentiating the metabolic lesions in diseases with common symptoms and end results.

Some of the papers represent the polished products of years of research; some are more in the nature of stop-press articles or progress reports. This, together with the discussion, makes for lively reading which can easily be extended because of the adequate treatment of references