

A Text-Book of Organic Chemistry: Historical, Structural and Economic

By Prof. John Read. (Bell's Natural Science Series Second edition. Pp. xiv+703. (London: G. Bell and Sons, Ltd., 1935.) 12s. 6d. net.

PROF. READ'S textbook differs from many others on organic chemistry by its insistence on the importance of a knowledge of the early development of the subject, so that the student is enabled to follow the growth of the science from very ancient days to the present time. The theme has been presented in most attractive fashion by including in the text quotations of famous passages from documents of historical interest. Thus the problems, which were faced successively by Wöhler, Liebig, Kekulé, Pasteur, le Bel and van 't Hoff are set vividly before the reader. The rapidity with which chemical theory has been developed is most strikingly illustrated by a footnote on p. 276 from which we learn that Chevreul, who was born before the theory of phlogiston was abandoned, survived into the era of the asymmetric atom, the ionic hypothesis and synthetic indigo.

The historical aspect of the subject, however, has been by no means overstressed. The author has kept in mind not only the academic but also the industrial and economic interest, whilst biochemical discoveries have also received attention. Thus the chapter on carbohydrates includes an account of the economic aspect of sugar manufacture and a summary of the main features of interest in connexion with the various cellulose industries. The author does not discuss the actual structure of starch and cellulose, although a formula is given for the starch unit. It is rather surprising to find that the pyranose ring formulæ, which are so helpful to the student of stereochemistry, have not been adopted. Indeed, the chapter on stereochemistry might well have been expanded to include an account of some of the numerous types of molecular dissymmetry which are not associated with the asymmetric atom.

Turning to the polycyclic and heterocyclic compounds, we find useful summaries of the properties and composition of explosives, dyestuffs, drugs, perfumes, photographic chemicals and alkaloids, while a new chapter deals with the hormones and vitamins and another with the electronic theory of valency. The book provides a useful introduction to the subject, and should help the beginner to realise not only the practical value of certain organic products but also the important contribution which the organic chemist has made to the building up of chemical theory.

Paläohistologie der Pflanze:

Grundzüge einer Gewebelehre über fossile Pflanzen. Von Dr. Elise Hofmann. Pp. vii+308. (Wien und Berlin: Julius Springer, 1934.) 25.20 gold marks.

THE author presents a brief review of the anatomical structure of fossil plants, with a concluding section surveying the history of their various tissues and cell types. The descriptions are illustrated by numerous figures, some of which are original. Certain topics, such as the structure of fossil cuticles, receive fuller

consideration than in any earlier book of the same character, but other subjects, such as the structure of the elements described by palæobotanists as phloem, receive a rather superficial treatment. In several sections the author seems to have taken all her information from recent papers, to the neglect of older work in which more complete descriptions are to be found; but she gives references to all the more important papers.

The value of the work is difficult to estimate. It will probably be of considerable use to Continental students, who have often underestimated the value of anatomical work in relation to morphology and taxonomy. When compared with the English works which deal with the structure of fossil plants, it often seems rather poor, but on the other hand it covers a wide field and gives an adequate introduction to some of the modern aspects of palæobotanical research. It is not entirely free from mistakes, both in the naming of the specimens figured and in the text.

Erdöl-Muttersubstanz:

Beiträge zu dieser Frage. Von Dr. F. E. Hecht, Prof. Dr. K. Krejci-Graf, Prof. Dr. R. Potonié, Prof. Dr. H. Steinbrecher, Dr. A. Treibs, Dr. E. Wasmund, Dr. Dora Wolansky. (Schriften aus dem Gebiet der Brennstoff-Geologie, herausgegeben von Prof. Dr. Otto Stutzer, Heft 10.) Pp. vi+181. (Stuttgart: Ferdinand Enke, 1935.) 17 gold marks.

A VALUABLE collection of essays on the vexed question of petroleum origin has recently been made available through the good offices of Prof. Otto Stutzer. The collection includes articles by well-known chemists, geologists and hydrologists. Dr. Erich Wasmund gives his opinion as to the origin of adipocere ('corpse wax') and also advances the theory that anaerobic anabitumen bacteria can also originate in bitumen. Dr. Karl Krejci-Graf discusses the varied theories of origin of bituminous sediment, and projects interesting and novel conclusions for the attention of the reader. Dr. Hecht traces the chemical history of organic substance in the sea from the moment of death until final fossilisation and entombment. Dr. Treibs first reviews the works of J. E. Hackford and E. Berl on the transformation of plant substance, especially carbohydrates into oil, and then in his contentions that porphyrines are contained in petroleum derived from chlorophyll and hæmin, and that a higher formation temperature than 200°C. is out of the question for petroleum, shows that he differs from both. Prof. R. Potonié reports the results of geochemical investigations of sapropel from the Unterrücker Lake near Prenzlau and the Sakrower Lake near Potsdam. Prof. Steinbrecher emphasises the chemists' proved point of view that petroleum normally found in oilfields is not high temperature petroleum, since it contains constituents which would decompose at high temperatures. Finally, Dr. Dora Wolansky summarises such views as have appeared in Russian literature on petroleum origin, thereby giving a synopsis of valuable ideas which in their original form are incomprehensible or inaccessible to the majority of people.