Book Reviews

Progress in the Chemistry of Organic Natural Products. vol. XII. L. Zechmeister, Ed. Springer, Vienna, 1955. x + 550 pp. $19.80.

The present volume continues to fulfill the twofold purpose of the valuable collection, which is to present the latest views and reviews on newly developed or well-explored fields written by the chief investigators themselves and to tear down the artificial barriers between organic chemistry or biochemistry and biology. Coverage by contributors from all continents extends to the following topics.

"Sesquiterpenes and diterpenes," by A. J. Haagen-Smit, Pasadena, California (43 pp., 240 references). The tectonic and comparative aspects of the compounds of this group are presented in a succinct and lucid fashion. Our understanding of the building principles of terpenes began with the oversimplified isoprene rule followed by the "biogenetic modification of this rule" (1953). The chapter ends with the challenge to apply the recently developed analytic and biochemical microtechniques to the study of isotopic terpene precursors in living systems.

"Tetracyclic triterpenes," by E. R. H. Jones and T. G. Halsall, Manchester (87 pp., 174 references). Detailed knowledge of this particular group of about 20 terpenes came to us only within the past 5 years. Lanosterol, which is contained in the unsaponifiable portion of wool fat and was suspected long ago by Windaus and Wieland to be a link in the biogenesis of sterols, is the best-known representative of the group. Shortly after its recognition as 4,4,14-trimethylzymosterol came the ingenious synthesis (1954). This chapter gives an impressive account of the development and refinement of steric analysis and stereoselective synthesis in modern organic chemistry.

"Neuere Vorstellungen auf dem Gebiete der Biosynthese der Steroide und verwandter Naturstoffe," by R. Tschesche, Hamburg (38 pp., 113 references). It is encouraging to see that the theory of the biogenesis of cholesterol and its congeners rests on firmer experimental ground than that of the lower terpenes. In fact, development in this field has been so rapid that many of the biogenetic hypotheses reviewed or advanced in this chapter are largely of historic interest only, since the squalene → (dihydro)-lanosterol-agnosterol → cholesterol sequence gains experimental support.

"Some biochemical aspects of fungal carotenoids," by F. T. Haxo, La Jolla, California (28 pp. 116 references). The microbial colored polyenes, their relationship to colorless precursors or hydrogenation products (phytofluene), their role in sexual reproductive processes, inhibition and activation of chromogenesis are some of the interesting subjects taken up in this chapter.

"The Pyrrolizidine alkaloids," by F. L. Warren Pietermaritzburg, Natal (59 pp., 195 references). This exhaustive review lucidly presents the latest information on the structure, stereochemistry, and interrelationships of the unusual senecio alkaloids, in which the acid component is structurally and biogenetically as interesting as the basic moieties.

"Paper chromatography in the study of the structure of peptides and proteins," by E. O. P. Thompson and A. R. Thompson, Melbourne (57 pp., 428 references). The signal progress in the elucidation of peptides, enzymes, and hormones as a result of the separation of amino acids and peptides after hydrolysis and their identification on a microscale, using chemical marking or enzymatic selectivity, is the topic of this excellent and exhaustive review, which will serve as an indispensable guide to the techniques and methods in the field of protein analysis.

"Acides aminés iodés et iodoprotéines," by J. Roche and R. Michel, Paris (47 pp., 177 references). That this field is being reviewed for the third time in this series is ample evidence of its importance as well as of its rapid development, especially the area related to the biogenesis of thyroxin and its metabolites.

"Chemistry and biochemistry of snake venoms," by K. Slotta (48 pp., 240 references). Although enzymes, as components of toxins in general and L-amino acid oxidase, cholinesterase, phosphatases, and so on, in particular, have been reviewed repeatedly, a comprehensive and up-to-date survey of all aspects of snake venoms as presented in this chapter has been lacking.

"Gene structure and gene action," by G. W. Beadle, Pasadena (16 pp., 52 references). This continuation of the fascinating story of the promising research on biochemical genetics shows the advances made during the 7 years since the author's last review in the same series. Although it is the briefest, this is the most exciting chapter, since it moves the frontiers of science so close to the very key problems of life, gene function and reproduction. The role of deoxyribonucleic acid is discussed from various viewpoints, with due emphasis on the bold and ingenious hypotheses of Watson and Crick.

We may look forward to many more excellent volumes in this series.

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Faune de France. 59. *Coleopteres Curculionides* (deuxième partie). Adolphe Hoffmann. Lechevalier, Paris, 1954. 722 pp. Illus. F. 6000.

This is the second volume by Hoffmann on the Curculionidae of France. It deals with the following groups as listed in the Junk *Coleopterum Catalogus*: Alophinae; Anthonominae; Baridiinae; Ceutorhynchinae; Cleoninae—Lixini and Rhinocyllini; Cossoninae; Curculioninae; Erirhininae—Acalyptini, Bagoini, and Tanysphyrini; Hylobiinae; Hyperinae; Magdalinae; Pissodinae; Raymondionyminae; Rhynchophorinae; Rhytirhininae; Trachodinae; Tychiinae; and Zygopinae.

There are recorded and described 563 species belonging to 96 genera. One species and one subgenus and many subspecies and varieties are described as new. The 438 text figures are excellent. Most are illustrations of the entire insect; at least one representative of each genus is illustrated. In some cases, male genitalia and other diagnostic characters are figured.

Keys to the tribes, genera, and species that are treated are presented, but no key to subfamilies is given, for this is in the first volume. The host plants, parasites, distribution, seasonal appearance, and relative abundance of each species are given. There is no bibliography; the references are listed after each taxonomic category with the exception of subfamilies. There is an index to subfamilies, tribes, subtribes, genera, and subgenera. The volume is paper bound and uncut, clearly printed on good quality paper.

It is interesting to note that the generic names *Hypera* and *Calendra* are used in the same sense as they are in the United States; while this usage seems to be correct, it has not been generally accepted in Europe.