

## BOOK REVIEW

**The Tetracyclic Diterpenes:** J. R. HANSON. International Series of Monographs in Organic Chemistry, Vol. 9. Pergamon Press Ltd., Oxford, 1968. pp. 133, 60s.

IT IS now clear that each of the successive terpene classes (mono-, sesqui-, etc.) contains at least *one* substance of general importance in plants. Geraniol and farnesol are needed to form squalene, the ubiquitous precursor of sterols, via cycloartenol in green plants, lanosterol in animals and fungi. The precursor of diterpenes, geranyl-geraniol, is formed from farnesol by a repetition of the condensation of isopentenyl units, rather than by the dimerization leading to squalene. It is only in the last 20 years that the ubiquity and important physiological role of one group of oxygenated derivatives of diterpenes, the gibberellins, have been uncovered. The tetracyclic diterpenes have thus become central to the family, whereas they were previously regarded as the slightly monstrous products of the uninhibited phantasy of odd individual species of plants (mostly of Australasian or Japanese origin). No recent review existed of this class of plant products, and Dr. Hanson's monograph is therefore very timely now that many structures are known and that the major synthetic and biosynthetic problems have been solved.

This short book presents first the key groups of kaurene derivatives, leading of course to a survey of the gibberellins. The stachene derivatives are then described, and the alkaloids (of *Delphinium*, *Garrya*, and mostly *Aconitum*) conclude this descriptive part, which is completed by an Appendix listing all the known naturally occurring tetracyclic diterpenes. The two final chapters are devoted to the synthesis and to the biosynthesis of tetracyclic diterpenes.

The active role played by the author (who, in his Preface, only concedes to have "been able to witness some of this development") in studying this series of natural products insures a critical and masterful presentation of the subject. This monograph is *the* monograph of the tetracyclic Diterpenes, and it is a good one. I only wonder whether it would not be more easily found on the book shelf as one chapter of, for instance, Zechmeister's "Fortschritte" series? As the co-author of a monograph on a very similar subject ("Tri-" instead of "Di-terpenes") maybe I should not have mentioned it.

Finally, one word of caution regarding the recent tendency to use monographs in graduate teaching; this monograph is explicitly intended "for the research worker in the terpenoid field of natural products". It is not meant to be easy reading, and for a good understanding of the topics covered, one must also consult the references cited (many of which are to the 1968 literature).

G. OURISSON