

BOOK REVIEWS

Proceedings of the Fifth International Symposium on Insect-Plant Relationships: edited by J. H. VISSER and A. K. MINKS. Pudoc, Wageningen, 1982. 464 pp. Dfl. 130.

The meeting, of which these are the proceedings, was held in early March 1982 so that the editors and publishers have to be congratulated on preparing this handsomely produced, typeset volume so quickly, in fact within *ca* 9 months. Most of the proceedings consists of a variety of fully illustrated and referenced articles, which are either research papers or minireviews. They are grouped together under five headings: physiology, behaviour, ecology, evolution and plant resistance. The final 100 pages contain brief summaries (1–2 pages) of the poster presentations.

As L. M. Schoonhoven mentions in the introduction, entomologists have only fairly recently realized the importance of host plant chemistry to insects and indeed the first symposium in this series, organized by Jan der Wilde, was held as recently as 1958. The interest that has developed since then has been considerable and the present volume with nearly 100 contributions is eloquent witness of the growth of this research area. Although the emphasis in the volume is entomological, plant chemistry is involved directly or indirectly in most contributions and it is quite impossible here to mention more than a few of the many phytochemically-oriented papers.

The importance of secondary substances in determining insect feeding preferences is now widely accepted and further examples of such interactions are discussed in a number of articles. Less obvious to most observers are the more subtle effects that secondary substances may have on insect communication systems. H. E. Hummel and S. F. Anderson present a paper indicating that males of the spotted cucumber beetle when feeding on corn plants fail to respond fully to the sex pheromone of the female if cucurbitacins are released in the neighbourhood. Since the bitter-tasting cucurbitacins are feeding stimulants to these beetles, this would seem to be a case of food coming before sex! What is remarkable about this observation is that such relatively involatile triterpenoid constituents should

interact with highly volatile pheromonal signals in this way.

The problems of determining chemical factors responsible for oviposition preferences are considerable and their chemistry has yet to be worked out for most insects. Earlier, E. Stadler and his colleagues in Switzerland considered that the female carrot root fly was stimulated to oviposit near carrot plants by two propenylbenzenes, methylisoeugenol and isoasarone, present in leaf washings. More recent work reported here indicates that other active compounds are present in the leaf wax of carrot, including the acetylene faltarindiol and several linear furanocoumarins, such as bergapten. Thus, the response appears to be a multiple one and it is possible that the compounds are variously perceived at different receptor sites within the insect.

The utilization of secondary compounds obtained from host plants as defence agents by insects is now a familiar phenomenon, particularly with regard to cardiac glycosides and alkaloids, and several papers report new work on such sequestration. Less well-known is the fact that a salix-feeding chrysomelid depends on its host plant for the salicylaldehyde that the larvae defensively secrete. M. Rowell-Rahier and J. M. Pasteels show that salicin-containing *Salix* species are expectably preferred host plants over species lacking salicin. Interestingly, however, larvae will develop on the leaves of a non-host species if the leaf hairs are previously removed by shaving; needless to say, such larvae lack salicylaldehyde in their defensive secretions. Thus, although salicin is an essential plant precursor for the larval defense secretion, it is not apparently obligatory for food acceptance by this beetle.

These three examples indicate the range and interest of the many papers published in this excellent symposium volume. Overall, this book provides a well-balanced panoramic view of current research at the plant-insect interface. It can be warmly recommended to all interested in the many fascinating plant-insect interactions that are mediated by plant chemicals.

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Seed Proteins: edited by J. DAUSSANT, J. MOSSÉ and J. G. VAUGHAN. Volume 20 in the Phytochemical Society of Europe Symposia Series, Academic Press, London, 1983. 350 pp. £28.

In choosing the storage proteins of seeds as the subject matter of their symposium held in Versailles, France during September 1981, the Phytochemical Society could hardly have chosen a more immediately important and practical topic. Not only are the seed proteins of considerable scientific interest, because of their highly com-

plex structures, their function as a nitrogen store and their many enzymic and immunological activities, they are also of immense practical significance since they represent the major source of food protein in both human and animal nutrition. In addition, of course, many research programmes have been initiated during the last decade to improve, or modify, the quality and quantity of proteins laid down in legume seeds or cereal grains. Much of this activity is represented in the 12 review chapters which make up this volume and the whole is a successful blend of the pure and applied knowledge that has recently accrued in this field.