

in the subgenera, complexes, and species. Under the text treatment of each species are given, the species' valid name, synonymies, change of status, literature references, type-locality, deposition of types and distributional range.

To my knowledge no other North American genus has been studied so long and so carefully. The format of the book is excellent. I cannot think of any subject the author has failed to cover, even to types of nests and preferred habitats. At least two criticisms might be justifiable—the unusual length of most of the keys and the lack of clear, well defined State boundaries of the regional maps. The high degree of variability of the species explains the necessity for long, detailed keys. The lack of clearly defined state boundaries in the maps is offset by the author's listing the range of each species by State names. The author is deserving of the highest praise for this excellent book, which should serve as a model for future publications in myrmecology. Copies should be in the hands of all myrmecologists as well as in all libraries that deal with biology and natural history.

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RESIDUE REVIEW, Volume 18. RESIDUES OF PESTICIDES AND OTHER FOREIGN CHEMICALS IN FOOD AND FEEDS, edited by Francis A. Gunther. 1967. Springer-Verlag New York Inc. 227 pp. including index. \$9.80.

This volume consists of six papers, three dealing with various aspects of pesticide residue analysis and three related to the metabolism and physiological effects of pesticides.

The paper by H. Beckman and W. O. Gauer (Solvent Purification for Residue Analysis by Non-distillation Methods) is concerned chiefly with the use of adsorbent columns to obtain solvents of the high purity required in pesticide-residue work. After a description of several common adsorbents and a discussion of precautions to be taken in the processing and storage of solvents, methods which have been employed for various solvents are reviewed.

In Chromogenic Spray Reagents for the Organophosphate Pesticides R. R. Watts reviews chemical and enzymatic methods used for detection for these pesticides on paper and thin-layer chromatograms.

W. E. Westlake and F. A. Gunther (Advances in Gas Chromatographic Detectors Illustrated from Applications to Pesticide Residue Evaluations) give a comprehensive discussion of detectors which have been used for pesticide residue analysis; they also comment briefly on collection devices and general gas chromatographic technique.

Mammalian toxicology of pesticides and interactions of pesticides with other factors which might modify their toxic effects are discussed in the extensive review by W. F. Durham (The Interaction of Pesticides with Other Factors). Many of these interactions are considered to be mediated at least partially through the liver microsomal enzyme systems, which are discussed in considerable detail. Factors which are considered include physiologic states (species, sex, age, nutritional status, heredity, disease), environmental conditions (temperature, light), routes of exposure, formulations, and other chemical agents. Organophosphorus pesticides, organochlorine compounds, carbamate pesticides, herbicides, fungicides, and synergists are included in the discussion.

In the paper on mammalian metabolism of pesticides (Der Stoffwechsel von Pesticiden in Säugetieren by W. Ernst) concise summaries of observed metabolites and mode of excretion are presented for 50 insecticides and herbicides. (A section of the material on dimethoate is misplaced and appears on the following page under Sumthion.)

Blood cholinesterase inhibition and the application of cholinesterase assays in monitoring for occupational exposure to organophosphorus and carbamate insecticides are

discussed by J. C. Gage (The Significance of Blood Cholinesterase Activity Measurements). After considering methods of assay and the observed variations in blood cholinesterase activity for normal populations and for given individuals, Gage proposes that an inhibition of 30% below a pre-exposure activity value for the same individual be regarded as a biological threshold limit—a degree of inhibition which, if exceeded, is evidence of sufficient exposure to indicate unsatisfactory working conditions or to be evidence of exposure, but which is not great enough to be evidence that the subject is at risk or to be associated with toxic manifestations.

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RESIDUE REVIEWS, Volume 22. RESIDUES OF PESTICIDES AND OTHER FOREIGN CHEMICALS IN FOODS AND FEEDS, edited by Francis A. Gunther. 1968. Springer-Verlag New York, Inc. 120 pp. including index. \$9.50.

The first of the two reviews contained in volume 22 (Properties, Effect, Residues and Analytics of the Insecticide Endosulfan, by H. Maier-Bode) is a compilation of information on endosulfan covering a variety of fields; it should be a valuable reference source. Topics discussed include physical and chemical properties; toxicity; action on insects; degradation and metabolism; the nature, concentration, and persistence of residues; tolerances in effect in 1967 in various countries; and methods of analysis for identification, detection, and quantitative determination in formulations and in residues. Residue analysis is discussed in considerable detail. Formulas are given for the two endosulfan isomers, but which is the lower melting α -endosulfan and which the higher melting β -isomer is not identified.

In the second paper (Einfluss von Nacherntefaktoren auf die Rückstände von Pflanzenschutzmitteln in Obst, Gemüse und einigen Sonderkulturen) H. Stobwasser, B. Rademacher, and E. Lange discuss changes in pesticide residue concentrations as they are affected by post-harvest treatments such as storage at various temperatures, freezing, washing, and processing. Much of the material presented deals with insecticides, but herbicides and fungicides are also included. A table summarizes the tolerances in effect in 1966 in the U.S.A., Netherlands, and West Germany for 50 pesticides. In many ways this paper and the one making up Volume 21 of Residue Reviews (Residues in Raw and Processed Foods Resulting from Postharvest Insecticidal Treatments by D. L. Lindgren, W. B. Sinclair, and L. E. Vincent) supplement each other. Both are concerned with post-harvest residues, but Stobwasser et al. deal with residues in fruits, vegetables and specialty crops (olives, peppermint, hops, mustard greens) resulting from pre- or post-harvest applications of pesticides, while Lindgren et al. are concerned exclusively with residues from post-harvest applications of insecticides and they include grains and nuts in their discussion. Surprisingly, there is essentially no duplication in the references cited in the two papers despite the correspondence in subject matter.

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DE. NEDERLANDSE BLADROLLERS (TORTRICIDAE) (THE LEAFROLLERS (TORTRICIDAE) OF THE NETHERLANDS), by G. A. Count Bentinck and A. Diakonoff. 1968. Monografieën van de Nederlandsche Entomologische Vereniging, no. 3, p. 1-201, pl. 1-99. \$20.00.

The authors present a current treatment of the 276 species of Tortricidae of the Netherlands. They point out that the latest review of their fauna was in 1882, and subsequent to that time such important structural char-