

## BOOK REVIEWS

ANNUAL REVIEW OF ENTOMOLOGY, Volume 19, 1974. R. F. Smith, T. E. Mittler, University of California, and C. N. Smith, USDA, Retired, Editors Annual Reviews, Inc. 4139 El Camino Way, Palo Alto, California 94306, in cooperation with the Entomological Society of America. 512 pages, Cloth, \$12.00 in U.S.A., \$12.50 elsewhere, postpaid.

This volume contains 22 chapters covering a wide variety of topics in entomology. Readers of *Mosquito News* will be especially interested in five of these chapters. As in previous years, reprints of papers in the Annual Reviews can be purchased for \$1.00 each with discounts for 20 or more copies.

*Biological Control of Mosquito Larvae.* H. C. Chapman, Gulf Coast Mosquito Research Laboratory. 27 pages. (Reprint No. 6058)

The author points out in the opening paragraph that biological control is an extremely broad subject and this discussion concentrates on pathogens and parasites (protozoa, bacteria, rickettsiae, viruses, fungi, and nematodes). Many instances of new host or parasite records are presented and there is frequent citing of unpublished observations. The perplexing problems of the taxonomy of Microsporidia, Coelomomyces, and mermithid nematodes are mentioned as well as the gaps in the known distribution of many parasites. These gaps: the author attributes to "the lack of interested collectors." A closing plea is made for more researchers and more research since the author views biological control agents as another approach against mosquitoes of special significance in view of insecticide resistance problems. The literature cited includes 188 references including a number of papers in press.

*The Operational Feasibility of Genetic Methods for Control of Insects of Medical and Veterinary Importance.* R. Pal and L. E. La Chance, Vector Biology and Control. WHO Geneva. 23 pages. (Reprint No. 6069)

This chapter is not a comprehensive review, but an attempt to evaluate critically the feasibility of genetic control techniques under field conditions. There is an opening discussion of the reasons for increasing emphasis on genetic control, namely: (1) concern about environmental contamination caused by pesticides; (2) increasing resistance to insecticides which has now reached as many as 110 species of disease vectors. The types of genetic control techniques are described briefly and 17 candidate species are listed (6 mosquito species). The factors affecting the application and success of genetic methods are discussed. Several graphs illustrating release ratios are presented. The results of research conducted by WHO/ICMR (Indian Council of Medical Re-

search) are referred to throughout this section, and knowledge gained by field studies is presented.

The complexity of the genetic approach, the species by species attack, the possibility of genetic resistance and requirement of a very high degree of proficiency and training of staff lead me to conclude this technique is still some time away from widespread application in most mosquito abatement programs.

This is a stimulating and thought provoking paper worth reading. Included are tables, graphs, models, and 83 references.

*Methods for Assessing the Density and Survival of Blood-sucking Diptera.* M. T. Gillies, University of Sussex. Brighton. 18 pages. (Reprint No. 6072)

This chapter is a review of sampling methods with special reference to the attractant stimuli employed. There is a detailed discussion of the problems inherent in assessing population density. Diagrams are presented showing: (1) the interaction of stimulus and activity phase of the insect; (2) relative ranges of attraction for light traps baited with CO<sub>2</sub>. There is an excellent discussion of the difficulties in obtaining valid samples for age analysis of populations and a conclusion of the author that broad spectrum sampling is required for a high level of accuracy. Many mosquito control workers would expect greater emphasis on light trap studies in a review of this type, but the author limits the light trap discussion to two pages, presenting a broad review of many assessment methods. The literature cited includes 165 papers.

*The Biology of Phlebotomidae in Relation to Leishmaniasis.* D. J. Lewis Medical Research Council, London. 22 pages. (Reprint No. 6073)

The author has made a noble effort to summarize a tremendous volume of information into 17 pages of text. I found the chapter difficult reading and feel the paper could have been improved had it been more limited in scope. The large number of sand fly species, their wide distribution throughout tropical and temperate regions, variations in biology, physiology, host preferences and vector potential coupled with the various species of *Leishmania*, diverse manifestations of disease in man and assorted reservoirs in nature provide a very complex picture. Additional topics such as taxonomy, anatomy, collection, mounting, and control of sand flies are also discussed. More than half of 140 selected references are from the 1970's making this a current and valuable reference.

*Predator-Prey Relationships Among Aquatic Insects.* E. C. Bay, University of Maryland. 13 pages. (Reprint 6076)

This chapter reviews a number of papers of special interest to mosquito control workers. Much of the knowledge of aquatic insect predator-prey relationships has resulted from studies of mosquito larvae as prey and also as predators. Simuliid larvae and chironomid larvae have also been studied as prey. The relationship of Coleoptera, Hemiptera, Odonata, Diptera, Trichoptera and other invertebrates in the aquatic environment is discussed, as well as factors influencing prey selection and population changes resulting from predation. The need for field confirmation of laboratory results is a point well taken. The author has included personal observations that add to this interesting paper. There are 75 references dated from 1917 to 1973.

A search of the index indicates that several other chapters contain brief reference to mosquitoes. These include: *Insect Biogeography* by J. L. Gressitt, *Isozymes in Insects* by R. P. Wagner and R. K. Selander, and *International Plant Pest Control* by L. Ling. The 1974 Review is in my estimation well worth the price.—Stanley R. Joseph, College Park, Maryland.

*INSECTS AND DISEASE* by Keith R. Snow. Halsted Press, Division of John Wiley and Sons, New York. 1974. 180 pp. \$9.50.

The preface to this book states that it is divided into two main parts, one dealing with the biology of insects that cause disease or transmit disease agents and the second part devoted to the biology of the pathogens. The chapter on mosquitoes consists of 14 pages; sand flies, midges, and black flies are dealt with in 11 pages; malaria and other mosquito-borne diseases are discussed in 24 pages. Obviously the treatment of each subject is very limited in scope. The information presented appears to be well chosen and accurate. The simple line-drawings are excellent.

The author, who is a lecturer at North East London Polytechnic, hopes the book will be of value to "those studying for qualifications in parasitology, entomology, and general zoology at degree or equivalent standard . . ." In the USA the book would be useful as a supplement to a traditional general entomology course but not a course in medical entomology.—W. E. Bickley.