

BOOK REVIEWS

RECENT DEVELOPMENTS IN THE GENETICS OF INSECT DISEASE VECTORS. A Symposium Proceedings. Edited by William W. M. Steiner, Walter J. Tabachnick, Karimjit S. Rai and Sudhir Narang. 1982. Stipes Publishing Company, 10-12 Chester Street, Champaign, IL 61820. 665 pp. \$26.00.

More than 15 years have elapsed since the last publication summarizing the results of research in genetics of insect vectors of disease. The reviewed book, "Recent Developments in the Genetics of Insect Disease Vectors," contains papers presented at the conference held at the Rockefeller Foundation's Villa Serbelloni Conference and Study Center, in Bellagio, Italy from April 20 to 24, 1981. The book is organized into three sections: 1) Cytogenetics and Cell Biology; 2) Genetic Analysis of Genome, and 3) Population Genetics and Evolution. Introductions to the conference are given in three individual papers by Drs. W. G. Downs, R. Pal and G. Davidson. The section on "Cytogenetics and Cell Biology" comprises seven papers: two papers on polytene chromosomes of *Anopheles*, one paper on mitotic drive and sex ratio distortion in mosquitoes, one paper on symbiont control of reproduction in *Culex pipiens* and one paper on cytogenetics of ticks. Two of the papers in this section deal with subjects one would not expect to find under the Cytogenetics and Cell Biology heading; one on use of genetics in insect control and the other on genetics of speciation in *Aedes* mosquitoes.

The second section, "Genetic Analysis of the Genome" comprises six papers: two papers deal with description of morphological and biochemical mutants of *Anopheles* and *Culex* mosquitoes, one paper on the mechanism of hybrid male sterility from crosses in the *Anopheles gambiae* and *Glossina morsitans* complexes. The fourth paper is on cytoplasmic incompatibility and concentrates predominantly on cytoplasmic incompatibility in *Culex* mosquitoes. The paper on arthropod vector competence-epidemiological, cytogenetic and biological consideration represents a literature review of susceptibility/refractoriness of mosquito vectors to malarial and filarial parasites as well as past and current research on susceptibility of mosquitoes to dengue viruses. The last paper in this section is a comprehensive report on genetic systems for integrated control programs of *Culex tarsalis*.

The third section, "Population Genetics and Evolution" is the largest one, comprising 14 papers on species complexes in *Anopheles* (four papers) and *Culex pipiens* (three papers). Three papers in this section are of instructional character; teaching the use of enzyme electrophoresis in genetic analysis of vector populations, the design of experiments for selection of a desired trait and the interpretation of data. Enzyme electrophoresis was used in genetic analysis of *Anopheles*, *Aedes* and *Culex* mosquito populations as well as in triatomid bugs, black flies and cockroaches.

Leafing through the book one finds very few typographical errors. A change in nomenclature from "Triatomid bugs" to "Triatomid beetles" (Preface, p. 4, end of the second paragraph) may not be appreciated by medical entomologists. Titles of all but two presentations each in Sections I and II are too broad. The authors did not deliver what the titles suggested. The titles should be more specific. Two papers on

vector competence, one presented in the Section II and the other in the Section III deal only with susceptibility or refractoriness of mosquito vectors to pathogens and should be titled accordingly. "Vector Competence" is a complex phenomenon comprising not only susceptibility or refractoriness of vector hosts to pathogens but also elements of vector behavior such as vector-man contact, dispersal and other phenomena concerning vector ecology and ecological physiology of vectors. Some of the papers are well known to vector genetics readers. They have been published and presented at different scientific meetings with minor variations. However, most of the papers are original, others introduce new aspects of ongoing research in vector genetics and these are much appreciated. Genetics of vector behavior and some other branches of vector genetics were not included in the program.

This book is dedicated to three pioneers in vector genetics: Drs. G. Frizzi, J. B. Kitzmiller and G. B. Craig. Resolutions from the conference (Appendix I) contain some direction of future research in vector genetics. Most of the credit for organizing the conference as well as the editorial work should be given to Dr. William W. M. Steiner. In spite of rather minor deficiencies mentioned above, I consider this book a very valuable one to researchers and students in vector genetics and I recommend purchasing it.—M. Trpis, The Johns Hopkins University, Department of Immunology and Infectious Diseases, Baltimore, MD 21205.

PROCEDURES TO INVESTIGATE ARTHROPOD-BORNE AND RODENT-BORNE ILLNESS. 1983. International Association of Milk, Food, and Environmental Sanitarians, Inc., P.O. Box 701, Ames, IA 50010. 93 pp. Price \$2.00 for single copy, reduced price for larger quantities.

This manual is companion to "Procedures to Investigate Foodborne Illness" and "Procedures to Investigate Waterborne Illness" already published by the International Association of Milk, Food, and Environmental Sanitarians and widely used by public health workers.

This new publication provides step-by-step procedures for investigating cases and outbreaks of suspected or confirmed arthropod-borne or rodent-borne diseases, particularly when epidemiologists and/or other professional public health workers are not available. The instructions include methods of handling illness reports, interviewing persons, conducting vector surveys, analyzing data, and reporting cases and outbreaks. One section deals with factors that influence transmission of pathogens that cause vector-borne diseases. A table summarizes important etiologic agents and pertinent epidemiologic and clinical data. Another table describes reactions to stinging and biting arthropods. Many forms developed by the military and Public Health Service for recording data about cases, specimens, and surveys are included as samples that others may adapt for their own use. There is a list of equipment needed to

conduct investigations, for example: Adult Mosquito Surveys, Mosquito Larval Surveys, Mosquito Egg Surveys, Infected Bird Surveys and Domestic Rodent Surveys.

The booklet covers vector-borne diseases throughout the world. Thus AMCA members will be interested in sections on malaria, many types of encephalitis, yellow fever, dengue and filariasis. Other public health workers will find helpful information on plague, murine and epidemic typhus, Chagas' disease and African sleeping sickness. Information

about identification of arthropods and rodents is not included in this manual, but it may be obtained by consulting publications cited in the Further Reading section.

Beyond its primary purpose, this manual will have great value for training, both in universities and in on-going vector control organizations. Even experienced professional public health workers may find it a useful review before beginning, and a quick reference during, investigations.—Harry D. Pratt, 879 Glen Arden Way NE, Atlanta, GA 30306.

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The VMCA has aided mosquito control agencies in Virginia since 1947.