

BOOK REVIEWS

IDENTIFICATION AND GEOGRAPHICAL DISTRIBUTION OF THE MOSQUITOES OF NORTH AMERICA, NORTH OF MEXICO, by Richard F. Darsie, Jr. and Ronald A. Ward. 1981. Mosquito Systematics Supplement 1, 313 pp. American Mosquito Control Association, Fresno, CA. \$30.00, heavy paper cover; \$35.00, hard-bound, cloth cover.

Successful control of pest species is highly dependent on substantial knowledge of the taxonomy and the distribution of all potential vector species. Essential tools to achieve this are the production of good keys for identification of species by applied workers and also a critical compilation of faunistic records for distributional surveys of larger areas independent of state borders, but significant for the biogeography of pest species.

Within a single, manageable volume, yet well above the size of a field handbook, the authors have combined these two tools. With keys for female and larval identification of the 167 taxa recorded from North America furnished with 983 illustrations and 40 maps of distributions of species, they present information up to the most recent standards of mosquito taxonomy.

The preparation of keys without a complementary description of species, is a difficult task. To make keys to species comprehensible, there should be good introductory generic keys, the characters used should be easily found on the specimens and be of major importance for identification and well explained in text and figures, different sets of figures should be comparable to scale, preferably with magnification indicated and figures should be drawn in a pedagogical way rather than to display a naturalistic style. All these demands are well met with in the present book, except for scale comparison in a few, not very important cases. The artist has brought life to the figures concerning the female identification key by altering the style of illustration be-

tween different sets of mosquito body parts. This enhances the visual stimulation of the reader when scanning pages for comparable characters in different species (of significance because this is probably how an inexperienced student of culicids will use this pictorial key).

There are two main principles for illustrated keys and both have their advantages and drawbacks. One is to separate text and figures and to display figures on large plates with sets of the same characters from many species; the other is to interlock text and figures as intimately as possible. The authors have applied the latter method with good results of congruence of text and figures. But this has in some cases led to an overexploitation of the same figure. In one instance, the same figure is reproduced eight times with indications of different characters each time.

The selection of easily accessible characters on which the keys are founded is very adequate and terminology follows Harbach and Knight (1980). A pictorial key can easily give the impression that identification always is easy. An inexperienced reader would have been better aware of problems by addition of a short chapter on intraspecific variation in scaling patterns or variations between geographic areas in certain characters. Some species groups might call for deeper study of taxonomic literature. The 536 references in this volume give good opportunity to plunge into taxonomic or faunistic details on species or specific areas.

The value of this first critical compilation of distribution in all North American culicid species and the publication of distributional maps is immense. Here is a very painstaking and thorough contribution to the biogeography of Culicidae which will be the standard work for the continent. One can always dispute about the selection of species for one plate.

Usually three or four are given in one map. I suppose there have been practical reasons on the authors' minds, such as not to mix too similar distributional patterns and yet to keep genera together as close as possible. The 40 maps yield an immense wealth of information to applied workers about species ranges and distributional patterns, especially from central parts of the continent, where eastern and western species might overlap. This is knowledge essential for meaningful pest management on a nation-wide scale. Also, scientists interested in problems of biogeography will after this publication find Culicidae a most interesting group to work on. The incorporation of the Canadian records especially make the maps valuable for discussion of Holarctic distributional patterns in Culicidae.

There is nowadays a reluctance to publish faunistic records as superfluous. But when going through references in the bibliography of the present volume it became clear that development of critical evaluation of faunistic records in a certain area always has accelerated after the first lists had been published. One clearly understands that the present work would never have been written without these underlying patterns of faunistic research. There are still many areas where these initial studies scarcely have started or still need much complement. Maybe this book can help to convince all of us that it is worth while to continue to do good and critical recording of species distribution for the benefit of both successful pest control and biogeographic research.—Christine Dahl, University of Uppsala, Entomological Department, P.O. Box 561, S-751 22 Uppsala, Sweden.

ST. LOUIS ENCEPHALITIS. Edited by Thomas P. Monaht, 1980. American Public Health Association, Inc., 1015 15th Street NW, Washington, DC, 657 pp. \$20.00.

St. Louis encephalitis is a comprehensive treatise of man's unrelenting efforts

to conquer the most important mosquito-borne viral disease in North America. The coverage begins with an enlightening foreword by Dr. William C. Reeves in which he summarizes the basic ecological and epidemiological factors predisposing to the transmission of St. Louis encephalitis virus to man. According to Dr. Reeves, this knowledge and the existing technology could have prevented the majority of the 10,000 clinical cases and the 1,000 deaths attributed to SLE virus infections during the past 50 years. As in the past, SLE will continue to be a public health problem unless man utilizes existing knowledge and technology for the application of vector control measures and for the development of additional control programs.

The book consists of 5 logically arranged sections including chapters compiled by 21 experienced scientists. The first section vividly describes the history of SLE, including the scientists and respective technological developments that contributed to the understanding of the epidemiological and ecological features of this disease. This approach frequently relies on the personal experience of the author, Dr. Roy W. Chamberlain, which stimulates the interest of the readers and provides them with a framework for understanding the extensive subject matter presented in subsequent sections of the book. Section II traces the rapid and impressive advancements made concerning the morphologic, physico-chemical and antigenic properties of the virion, the biochemistry of replication and the pathogenesis of SLE virus in animal models.

A thorough review of the epidemiology and epizootiology of SLE is presented in section III including chapters on the epidemiology of human disease, the vector, the vertebrate hosts and the surveillance of SLE virus transmission in nature. Section IV describes the clinical and pathological manifestations associated with SLE virus infections of man and reviews the principles of laboratory diagnosis. The final section deals with vector