

BOOK REVIEWS

THE MOSQUITOES OF LOUISIANA, H. C. Chapman and E. B. Johnson. 1986. Technical Bulletin No. 1 (Revised), 17 pp. Louisiana Mosquito Control Association, 6601 Lakeshore Drive, New Orleans, LA 70126. \$3.00.

This publication provides much useful information on the mosquitoes of Louisiana and is a thorough revision of the 1959 bulletin by E. B. Johnson. Brief paragraphs summarize the distribution, immature habitats, seasonal occurrence and importance of the 58 species recorded from the state. A 4-page table summarizes the distribution of species in the 64 Louisiana parishes.

New state records include *Anopheles perplexens* and *Aedes albopictus*. The latter species was not cited in the state list as it was only discovered while the bulletin was in press. Records are given for three parishes (Iberia, St. Tammany and Vermilion). Thus Chapman and Johnson receive credit for the first mention (April 1986) in an entomological publication of the presence of breeding populations of *Ae. albopictus* in the continental USA. One record of *Ae. dorsalis*, not listed by Darsie and Ward (1981), is mentioned. The authors state it has not been found since 1906 and perhaps may not be a valid record. The release of *Toxorhynchites amboinensis* for biocontrol of *Ae. aegypti* in New Orleans is mentioned and the authors state that future collectors should be aware of the possible establishment of the species.

The Louisiana Mosquito Control Association is to be commended for sponsoring this bulletin as it summarizes much local distributional data from records which are not available to investigators outside the state. In summary, I highly recommend the bulletin to those interested in the bionomics and distribution of North American mosquitoes.—R. A. Ward.

BIONOMICS AND PHYSIOLOGY OF *AEDES TAENIORHYNCHUS* AND *AEDES SOLLICITANS*, THE SALT MARSH MOSQUITOES OF FLORIDA. J. K. Nayar, Ed. 1985. Univ. Fla. Agric. Expt. Sta. Bull. 852:1-148.

The salt marsh *Aedes* which are the subjects of this bulletin are billion dollar insects that have justified extensive and intensive research. Results of such investigations have been recorded in thousands of pages. With several authors participating, the preparation of a summary of information about these mosquitoes might have been repetitious and uncoordinated. (Symposium volumes are sometimes referred to as non-books.) Fortunately the editor and his colleagues have produced a well organized collation.

There are 12 chapters: Introduction and Nomenclature and Distinguishing Characteristics both by J. K. Nayar; Distribution and Abundance, W. L. Bidlingmayer and J. S. Haeger; Development of Immature Stages and Larval Excretion, J. K. Nayar; Larval Behavior, J. R. Linley; Larval and Adult

Nutrition and Adult Excretion, J. K. Nayar and E. Van Handel; Field Flight Behavior and Energetics, J. K. Nayar and D. M. Sauerman, Jr.; Blood feeding Behavior, J. D. Edman; Sexual Behavior and Reproduction, G. F. O'Meara and J. S. Haeger; Control of Larvae, E. J. Beidler and G. D. Dodd; Control of Adults, C. B. Rathburn, Jr.

The content of each chapter has been carefully chosen so that up-to-date, salient information is presented, and insignificant details are excluded. Illustrative material is of good quality, and documentation is meticulous. Some previously unpublished information is included, e.g., data on larval behavior. In spite of the large amount of research that has been done the question arises: why don't we have a better understanding of feeding after the initial blood meal?—W. E. Bickley.

THE GENUS *COELOMOMYCES*. Edited by John N. Couch and Charles E. Bland. 1985. Academic Press, Inc., Orlando, FL 32887. 416 pp., \$84.50, ISBN: 0-12-192650-8.

The fungus *Coelomomyces* was discovered as a mosquito larva pathogen by D. Keilin in 1921. In 1960, Keilin as editor of the journal *Parasitology* requested a review of the literature which at that time consisted of about 24 published papers. Keilin never got the review as it has been in the works for the last 25 years and culminates in this book. In these pages is the accumulated knowledge on the genus *Coelomomyces*.

A pivotal date in *Coelomomyces* research was 1974-75 when H. C. Whisler and his associates published the complete life cycle of *Coelomomyces* which had eluded researchers for over 50 years. In the book, Whisler's chapter on the life history of *Coelomomyces*, details the heteromorphic alternation of the sporophytic and gametophytic generations between the respective mosquito and microcrustacean hosts. In a chapter well illustrated with schematic diagrams, photomicrographs and electron micrographs, C. E. Bland, and J. N. Couch describe and review the structure and development of the life cycle stages of *Coelomomyces* within and between the primary and alternate hosts. Couch and Bland also combined to write the chapter on the taxonomy of *Coelomomyces* which is the central piece of the book. In this chapter are described techniques for the collection, preservation, mounting on slides and fixation for scanning electron microscopy of species of *Coelomomyces*. Lists of species of *Coelomomyces* are provided according to mosquito host and geographic location. There is a well developed key and each species and variety is described and invariably accompanied by scanning electron micrographs and photomicrographs which clearly show the characteristic resting sporangia of each from several aspects. (I was disappointed, as the editors must have been, that the plates were not tooled as required.)

The unenviable tasks of reviewing the literature on

the physiology and ecology of *Coelomomyces* fell to R. A. Nolan and H. C. Chapman, respectively. I say unenviable because as Chapman points out (p. 361), "the ecology of ostracods and copepods, . . . is not well known, and practically nothing is known on . . . ecological parameters involving the fungus." This dearth of information is illustrated when one considers that of 108 references quoted by Nolan, 64 involve organisms other than *Coelomomyces*, and of the 44 directly concerned with *Coelomomyces*, 27 predate the discovery of the alternate host and many of the remaining 17 post-1975 papers deal with subjects other than physiology. The contributions of these authors are valuable in that they present what is known and indicate avenues of research which should be pursued. In fact, Bland (p. xiv) states that a purpose of the book is to ". . . serve as a catalyst for new and expanded studies on one of the most interesting organisms known in nature." The poten-

tial of such studies is illustrated in B. A. Federici's chapter on experimental systematics in which he describes his work on the temporal gating mechanisms of *C. dodgei* and *C. punctatus* gametophytes which are unique in the fungi and the use of heterothallism to create interspecific hybrids with interesting results.

In the two remaining chapters Bland discusses in vivo and in vitro culture of *Coelomomyces* and M. Laird describes his long term study of *Coelomomyces stegomyiae* introduction into Nukunono, Tokelau Islands.

This book will be of interest to not only mycologists and entomologists but also to any one interested in the complex interaction between pathogens and their host organisms. Highly recommended.—Christopher J. Lucarotti, Department of Biology, Mount Saint Vincent University, Halifax, NS B3M 2J6.