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Identification and Geographical Distribution of the Mosquitoes of North America, North of Mexico

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Identification and Geographical Distribution of the Mosquitoes of North America, North of Mexico. By Richard F. Darsie, Jr., and Ronald A. Ward, University of Florida Press, Gainesville, Florida. 2005. 384 pp. ISBN 0-8130-2784-5. $75.00 (hardback).

Review by Elizabeth Willott and Frank Ramberg

This book is worth noting by anyone working in the field of wildlife diseases. Understanding vectors and how they spread wildlife diseases is critical. The earlier edition of this book was published in 1981; however, the format for the maps has changed for this edition. This book, along with Carpenter and LaCasse (1955), serves as a key reference book on mosquitoes in the United States and Canada. Regional guides supplement these, giving more local detail and sometimes also complementary keys.

The book summarizes the distribution of mosquitoes in the United States and Canada. This is done in tables and with maps—both providing valuable information in an easily accessible format that includes references and comments (these are likely the key features of value to wildlife disease researchers). It also provides a key with detailed drawings of the relevant mosquito parts, although these are likely of lesser value for researchers not directly involved with mosquito research.

When considering how a disease is spread, it is essential to consider the possibility that mosquitoes (or other insects such as ticks, lice, and flies) can be vectors. Addressing the possibilities is an enormous task; just considering mosquitoes, there are about 180 species in North America north of Mexico. The maps and information provided in this book help a researcher limit the possibilities to a more manageable number and give the researcher names and references to narrow the range further. When used in conjunction with local mosquito experts and with region-directed publications, the number to consider becomes much more manageable.

Of great value is an 815-item reference list that allows access to most of the literature up to the publication date of the book. The reference list is especially helpful because this book does not summarize bionomic information for the species.

It is important to note that the distributions of several mosquito species are changing, and the book can show a distribution at only a particular time, so wildlife disease readers receive only a snapshot in time of their distribution. Other books showing distributions of mosquitoes over North America are sparse. An earlier book on mosquito distribution in the United States and Canada by Carpenter and LaCasse (1955) is one exception. No book can be expected to give up-to-date information for distributions that are changing rapidly, especially for introduced species that are still expanding their range. This book does, however, enable the wildlife disease researcher to learn enough to be able to confer with mosquito control personnel, to do literature searches, and thereby come to a better understanding of the relevant mosquitoes in a particular locale. Some examples of mosquitoes that continue to expand their range include *Aedes albopictus* (first found in the United States in 1985 and now widespread throughout the east and south and threatening the southwest), *Ochlerotatus japonicus* first seen in the late 1980's but now spreading westward from the Connecticut and New York area, and *Aedes aegypti*, which is expanding its range in Arizona.

If identification is the goal, the keys for mosquito adult and larval anatomy that form the greater part of the book are excellent. Mosquitoes are notoriously difficult to preserve and mount for identification. These keys are especially helpful because they illustrate each alternative at each couplet with clear line drawings. Missing, however, are keys to pupae and drawings of male genitalia for each species, which even if not included in the keys, can often help to solve a difficult identification. An added section to the book on preservation and, perhaps, collecting, would be of considerable use, especially to workers who expect to consult mosquito taxonomists. For mosquito aficionados, these keys to North American adult females and mature larvae will be an attraction; presumably most researchers of wildlife diseases will prefer to team up with someone else for identifying mosquitoes. Knowing this book as the key resource can help communication among those workers.

One reason you may wish to have this book on your bookshelf, rather than just consult the library when you are strictly focusing on mosquitoes as potential vectors, is that mosquito taxonomy has undergone considerable change since the first edition. This is important for accessing new and old literature on mosquitoes whose names have changed. Though mainly a reference resource, we found the style of this book quite readable and enjoyable and the $75 cost well worth the value. We highly recommend the book as a reference for all workers who deal with mosquitoes as potential vectors of wildlife disease.

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