BOOK REVIEW


Hematophagous insects comprise a fascinating group of arthropods that have been studied intensely for the past 130 years, primarily because of their success as vectors of disease pathogens and their consequent toll on human and animal health. Efforts to understand, control, and prevent vector-borne diseases have been undertaken by researchers in a wide range of scientific disciplines, each focused on a specific aspect of the diseases. As a result, there is a wide variety of text books available on the topic, most tailored for a particular area of expertise and very few that span the boundaries to provide a unified perspective. The Biology of Blood-Sucking in Insects, first published in 1991, offers a topical summary of blood feeding in insects, the trait that facilitates the vector–host–pathogen interaction. This topic should be of interest to all devotees of the various vector-borne disease specialties. Michael Lehane, professor of molecular entomology and parasitology at the Liverpool School of Tropical Medicine and Hygiene, draws on his breadth of research experience with medically important insects to produce a concise, but well-referenced overview of the blood-feeding phenomenon.

Rather than organizing the content by taxonomic units, Lehane has structured the book by topics relevant to the biology of all hematophagous insects, incorporating aspects of behavior, ecology, physiology, and cell biology into each section. The initial chapters introduce the insect–vertebrate host association in terms of the evolution of hematophagy, development of host preference, and host-seeking capabilities. A description of blood meal acquisition and digestion follows, including relevant internal and external anatomy of the insect, components of vertebrate blood and insect saliva, and physical uptake and processing of the blood meal. Host body site selection and related insect morphological adaptations are addressed in the section on host–insect interactions, which also includes a synopsis of host immune responses and behavioral defenses. A thorough discussion of the types and biological mechanisms of vector-borne pathogens as they relate to transmission strategies and fitness consequences for the insect vector concludes the blood-sucking topic. The last chapter briefly describes the life cycle, distribution, and vector pathogens of the important blood-sucking insect groups, providing a conveniently organized taxonomic reference for readers of all levels of interest.

The second edition includes additional images, updated tables, and pertinent molecular data generated after the release of the first edition 14 years ago. The title was adjusted slightly (from Biology of Blood-Sucking Insects to The Biology of Blood-Sucking in Insects) to emphasize the focus on the hematophagous habit. Although it would benefit from a glossary of terms, this reasonably priced work ($60 paperback, $48 digital format) is well suited as a supplemental text for undergraduate and graduate medical and veterinary entomology or parasitology courses. The logically organized structure of subjects and fluid writing style tempt the reader to explore passages that may typically be passed over in protracted textbook chapters. The brevity of some topics is balanced with numerous current and historical references for further research. Interested readers can review the table of contents and lists of tables and figures at the Cambridge University Press website (www.cambridge.org).

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