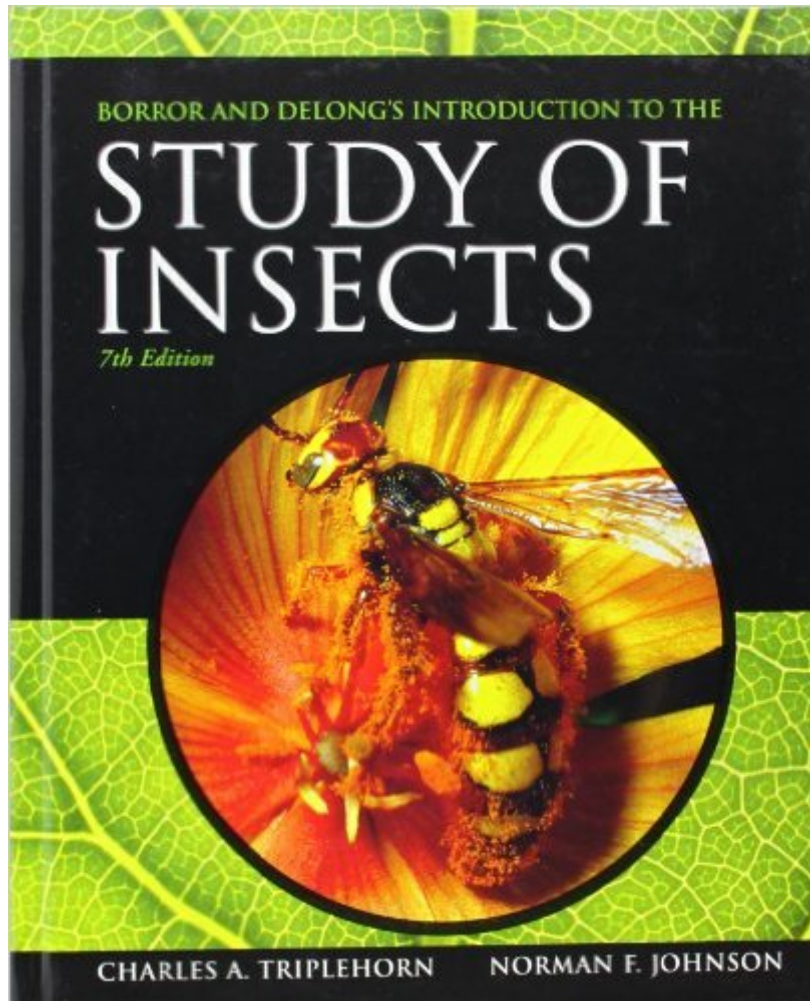


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# Borror And DeLong's Introduction To The Study Of Insects



## Synopsis

First published in the 1950s by the late James Borror and Dwight Moore DeLong, this classic text, *INTRODUCTION TO THE STUDY OF INSECTS 7TH EDITION*, combines the study of insects with clear and current insect identification. In this new edition (available in a bundle with InfoTrac College Edition), Johnson and Triplehorn supply updated information on phylogeny using systematics while adding a greater emphasis on insect biology and evolution. This greater concentration on insect systematics necessitated many content changes including an added chapter for a newly described order, the Mantophasmatodea, as well as a new chapter reclassifying Order Homoptera (Cicadas, Hoppers, Aphids and Hoppers Psyllids) into Order Hemiptera. Nearly every order has been modified, sometimes substantially, to reflect new discoveries and scientific hypotheses. Many new families have been added throughout the book, some reflecting revised classifications, but many are the result of the discovery of new groups within the United States and Canada, particularly from the New World tropics. These include the families Platystictidae (Odonata), Mackenziellidae (Collembola), Mantoididae (Mantodea), and Fauriellidae (Thysanoptera). The results of molecular analyses are beginning to substantively contribute to the development of a robust and predictive classification. Thus, the phylogeny of insects has changed drastically from the last edition due to the incorporation of molecular data. The most conspicuous of these changes, for example, is the recognition that the order Strepsiptera is most closely related to the true flies (Diptera), rather than to the Coleoptera. Since it was first published in the 1950s, this text has played an important role in understanding and preserving the diversity of the insect world. This title's long history, coupled with the authors' passion for currency and accuracy, make it once again the classic text and reference.

## Book Information

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## Customer Reviews

Borror and DeLong's weighty "Introduction to the Study of Insects" enters its 7th edition as the standard text for students of North American insect taxonomy. This latest edition is brought up to date by Charles Triplehorn and Norman Johnson after a 15 year gap. As in earlier editions, Borror and DeLong is a comprehensive survey of North American insect diversity, containing identification keys for the insects and other arthropods along with brief overviews of each family and tips for collection and specimen preparation. Keys are mostly at the order and family levels of the Linnean hierarchy, with subfamily keys presented for select groups. This text is not a field guide; many groups are not illustrated, or are represented only by line drawings of particular parts of their anatomy. Rather, it is best used as a laboratory reference, a single-volume source for identifying insects and spiders to family. No other single reference has the breadth of this text, so Borror and DeLong should retain its place on the shelf of any serious entomologist. "Introduction to the Study of Insects" also contains chapters on insect ecology, physiology, and systematics, but these are brief. More appropriate texts for these areas are available elsewhere (for instance, Gullan and Cranston's "An Outline of Entomology".) The 7th edition has been sorely needed. A recent wealth of DNA sequence data and rapid advances in the methodology and philosophy of systematics have produced a flowering of research on insect relationships. As taxonomic improvements accumulated, the 6th edition- the only resource of its kind- had grown increasingly out of touch with the state of the field.

Everything about insects is fascinating, and this book gives a comprehensive overview of their behavior, anatomy, and classification. For non-experts in entomology, such as this reviewer, the book provides the necessary background for further study. Topics such as the molecular genetics of insects and the genetic engineering of insects are not covered, but there are plenty of other books that treat these topics in detail. Only the first four chapters were read by this reviewer, but only chapter four will be discussed here. Early on in chapter four, the authors dispel the prejudice that since insects have small nervous systems and have short life spans, they are not automatons and can exhibit a remarkable degree of spontaneity. Insects can adjust to the circumstances of their environment and the organization of their activities can be extremely complex. What is most interesting about their discussion of insect behavior is the emphasis on how it depends on the

internal state of the insect, and not only its nervous system but also its internal organs. The authors view the basic unit of behavior in an insect as being a 'reflex'. A receptor that is stimulated will cause a particular group of insects to contract, which is observed as a body movement of the insect. A 'releaser' is the stimulus that actually triggers a specific collection of movements. This results in what is called a 'fixed-action pattern', which, as the name implies, occurs the same way every time it occurs. To be contrasted with these are the 'modal-action patterns' that adapt to changes in the body position of the insect relative to external objects. A 'central pattern generator' the authors write, is responsible for the leg and wing movements of insects, and allows them to navigate in noisy environments.

"Borror and DeLong's Introduction to the Study of Insects, 7th Edition" by Charles Triplehorn & Norman Johnson, Thompson-Brooks/Cole, Belmont, CA 2005. ISBN 0-03-096835-6. HC 864 pgs. 10 1/4" x 8 1/4" x 1 1/4" format on semi-glossy media to accommodate hundreds of black & white insect photographs and exacting images & sketches of insects with emphasis on detailed wing venation & discrete anatomical organ structures accompanied by short concise explanatory captions to help decipher the documented systematics. providing a wealth of informative detail on subject's organs photographed. In all, there are 35 chapters, the last devoted to collecting, preserving, and studying insects. The authors inform us this 7th Edition, "An Introduction to the Study of Insects", was based on prior editions by Borror & DeLong's text, used in North America by entomologists and biologists for over 50 years. The authors, both renowned biologists specializing in entomology from Ohio State University have greatly added to this compendium by focusing primarily on updating the area of Systematics (nomenclature) that includes the most recent data on insect evolution: - this area of expertise requires keen knowledge of Latin and Greek (for the authors) on nomenclature. Herein is provided an overview of insect behavior: - a discussion of their anatomy, physiology, & development; an overview of insect systematics, classification, nomenclature & identification, and finally descriptions of insects from the phylum Arthropoda to the Hexapoda and 26 Orders along with the distinguishing characteristics of many, many individual Genus species to be precisely characterized.

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