

Book Review

The Encyclopedia of Land Invertebrate Behaviour.

Rod and Ken Preston-Mafham. The MIT Press, Cambridge, Massachusetts, 1993, 320pp. ISBN: 0-262-16137-0. \$45.00.

Any book that purports to be an encyclopedic treatment of the behavior of insects, arachnids, myriapods, and terrestrial representatives of other invertebrate phyla invites skepticism. That made it all the more pleasing to find this book to be remarkably comprehensive and scholarly. Adding to this pleasure were more than 200 full-color, original photographs of live invertebrates doing what land animals do and about 40 line illustrations redrawn from the primary literature.

The *Encyclopedia* has five sections, corresponding to five major modes of behavior—*viz.*, mating, egg laying, parental care, feeding, and defense. Except for the section on defense, the organization within each section is generally taxonomic. The section on sexual behavior is by far the longest (126 pp); parental care is second (70 pp). Within each taxonomic division of a section, there is a series of essays “describing in considerable detail as many types of behaviour as feasible.”

To get an idea of what was feasible, I turned to the essays of mating behavior in ensiferan Orthoptera, the group I know best. I found seven pages that included practically every topic that I would have thought to include and with references to papers as late as 1991. Topics under Tettigoniidae, for example, were Male leks and fighting, Tremulation, The katydid spermatophore and its role, Sex-role reversal, and Male body parts as nuptial gifts. Behavioral descriptions were reasonably detailed and always readable. For example, the last-listed tettigoniid topic begins, “Nuptial feeding takes rather a bizarre direction in the Russian *Bradyporus tuberculatus*—the female nibbles away at the male’s back and laps up the oozing blood. A variation on this vampire-like behaviour is found in the North American *Cyphoderris buckelli*. This is a member

of the very small and ‘primitive’ family Propalanguopsidae which pre-dates the more ‘modern’ Tettigoniidae and Gryllidae (Morris 1979). Consumption of a spermatophore could perhaps be considered a specialized form of sexual cannibalism *after* the appendage has left the male’s body; in *C. buckelli*, however, the female starts to gnaw away at part of the male’s body—his [hind]wing tips—while they are still in place.” The essay continues with a description of how the male facilitates this feeding by raising his [fore]wings and how he holds the female with a special clamping device preventing her from leaving before she accepts his spermatophore. The distinction between wings raised and wings eaten is not made, but inspecting the text and pictures in Morris’s article makes the oversight understandable. Paraphrasing and summarizing behavioral descriptions by other authors while avoiding technical terms (like tegmina) has costs as well as benefits.

As illustrated in the passage quoted above, the language throughout the book is direct and relatively nontechnical. One does not have to be a biologist to understand the essays—though it helps! The book makes good use of its 8½ x 11" pages and three-column format to present its essays and display and explain its illustrations. A feature that makes the *Encyclopedia* easy to browse is that the legends of photographs and drawings are sufficiently detailed to allow the browser to understand the illustrations without referring to the text.

This book is a remarkable value for those who want an enthralling synopsis of what is known about the most interesting behaviors of the most diverse terrestrial animals. The Preston-Mafhams are to be commended for making so much behavior so easily accessible.

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