

BOOK REVIEWS

THE EVOLUTIONARY ECOLOGY OF ANIMAL MIGRATION. R. R. Baker. Holmes & Meier Publishing, New York. 1978. 1012 p. \$97.50.

Robin Baker, author of this monograph, recently wrote that if a book on animal migration "is to achieve more than ephemeral usefulness . . . , it has to score in at least one of two ways. Either it must contain new and original interpretations or theories, or it must be so aesthetically satisfying that it is a pleasure simply to own" (1981, *American Sci.* 69: 561). Baker's own book on animal migration succeeds in *both* ways and, in addition, is a monumental summary (1000+ pages) and synthesis of what's known about the subject.

Baker's book is handsome. It is illustrated with hundreds of original drawings, maps, and diagrams. Even the Taxonomic Index is illustrated—with drawings of migratory animals from aphids to zebras.

Baker's theory of insect migration is at odds with the one that C. G. Johnson (1969) developed in *Migration and Dispersal of Insects by Flight*. Johnson emphasized that most aerial movements of insects are at the mercy of the wind and suggested that even migrating butterflies may be moved more by synoptic weather systems than by their directed flights near the ground. Baker (p. 472), on the contrary, suggests that even the movement of moths may be a matter of their taking advantage of favorable winds and that no one has yet shown that any animals "migrate in any direction and delegate displacement solely to the prevailing winds."

An outstanding feature of Baker's treatment of insect migration is re-analysis of published data. For example, he plots Urquhart's (1960) data on Monarchs and suggests (p. 428) that a significant number of Monarchs may hibernate in tree crevices rather than migrate—an idea that seems as implausible as poor-wills hibernating in rock crevices. (Nonetheless, Baker earlier arrived at a similar conclusion concerning red admiral butterflies in Britain—and vindicated it.)

The book has 3 sections. The first deals with the definition of migration (34 p.) and concludes not so novelly that it is the "act of moving from one spatial unit to another." The second develops a migration model beginning with the concept of *lifetime tracks*—the path of an animal from birth to death—and continuing with mathematical formulae for most aspects of migration (54 p.). Finally the bulk of the book (834 p.) evaluates the model in light of examples from all major groups of animals. The indexes (90 p.) are thorough and are by author (incorporated with list of references cited), geographic locality, subject, and taxon.

This is a book that undergraduate biology majors will browse for enjoyment and that researchers in insect migration will benefit from studying.—T. J. WALKER, Dept. Entomology and Nematology, University of Florida, Gainesville, FL 32611 USA.

THE NORTH AMERICAN GRASSHOPPERS, VOLUME 1. ACRIDIDAE: GOMPHOCERINAE AND ACRIDINAE. 1981. Daniel Otte. Harvard University Press, 275 p. + 16 color plates, \$45.00.

This is the first of a planned 3 volume work on the identification of grasshoppers of America north of Panama, including the West Indies.