Foreword

A Bat Man in the Tropics: Chasing El Duende is the seventh volume in the University of California Press's series on organisms and environments. Our main themes are the diversity of plants and animals, the ways in which they interact with one another and with their surroundings, and the broader implications of those relationships for science and society. We seek books that promote unusual, even unexpected, connections among seemingly disparate topics; we want to encourage writing that is special by virtue of the unique perspectives and talents of the author.

There are more than nine hundred species of bats, formally known to taxonomists as the Chiroptera; bats constitute about 20 percent of all mammals, and as one moves from temperate regions toward the equator, much of the increase in total species of furry, milk-producing vertebrates is represented by the amazing diversity of tropical chiropterans. One recently discovered species is among the smallest endothermic, or warm-blooded, animals; in contrast, some Old World flying "foxes" achieve the size of small dogs. There are bats with enormous ears, bats with bizarre leaf-shaped noses, and bats with beautiful, white-spotted color patterns. In terms of dietary adaptations, there are bats that can snatch fish from the surface of a pond, a species that eats venomous centipedes and scorpions, one that uses frog songs to locate its preferred amphibian prey, and many kinds that feed en-

tirely on either fruits or small insects. There are bats that build daytime roosting tents out of large understory leaves, bats that pinpoint their erratically flying prey by echolocation, and bats that migrate seasonally over substantial distances.

For at least the past several thousand years, the only mammals capable of powered flight—some of them in total darkness—have also terrified humans and inspired our art; even now, vampires and their legendary kin populate our myths and dreams. Real bats, however, are wonderfully interesting and almost never dangerous to people. As is the case with snakes, spiders, and other widely despised animals, bats need a favorable introduction before we can fully appreciate them.

As a graduate student, Ted Fleming studied tropical rodents and opossums, but soon thereafter switched to the bats that have captivated him for more than three decades. Much of his field research has focused on the ecology of the wet and dry forests of Costa Rica, but in recent years he has shifted emphasis to the essentially northward extension of tropical plants and animals into western North American desert regions. Blessed with the admirable combination of a naturalist's curiosity, a tenacious capacity for descriptive and experimental fieldwork, and a rich understanding of evolutionary and behavioral ecology, Fleming sees bats and asks, *Why are they doing that?* What circumstances make it possible for them to act in this manner, and what are the consequences of the biology of bats in the larger ecological communities in which they often are major players? Can we generalize about factors that influence organisms as different as nectar-feeding moths and nectar-feeding bats?

Broad conceptual issues and a number of more specific questions about bats have been at the center of Ted Fleming's distinguished career. *A Bat Man in the Tropics* is, accordingly, part scientific natural history; but it also is part personal memoir. Spanning as it does the last four decades of the twentieth century, this book is an account of some of the most important people and places significant to the rise of modern tropical biology. Ted lucidly explains the scientific issues that have inspired his labors, then takes readers through the nitty gritty details of the work: laying out and checking mist nets; measuring and banding bats; climbing ladders to examine the flowers of columnar cacti; and interacting with students, conservationists, and educators. Along the way, he candidly tells us about the shenanigans of fellow biologists, about simple but memorably delicious meals after a night of exhausting work, and about how his adventurous, resilient family accommodated the daily life of an ambitious teacher and scientist.

Books like this are at the heart of modern biology and conservation. Ted

Fleming's research clearly demonstrates that although hypothesis testing is the essence of science, discoveries of new organisms, new things about organisms, and previously unseen patterns in nature repeatedly revise the questions that fascinate biologists. By summarizing much of what we now know about a widespread, diverse, and ecologically important group of vertebrates, *A Bat Man in the Tropics* will promote still more research. In the course of providing readers with an accurate, modern view of these increasingly popular organisms, Fleming also illuminates the human side of science, the transformation of his childhood curiosity into the passion and scholarship of an accomplished professional. And perhaps most important, with its details of natural history and spectacular examples of interactions among organisms, this volume will make it possible for anyone who cares about the natural world to better understand, appreciate, and live with bats.

Harry W. Greene