PREFACE

Natural History and This Book

This is one of many new books in the University of California Press Natural History Guide series. It was written by two emeritus professors who taught courses annually in vertebrate natural history at our respective universities over a combined period of more than 80 years. One observation that we made during this tenure is that many people are not sure just what natural history really entails. A large part of this confusion may arise because "natural history" is an old-time term, so we felt that perhaps a couple of "old-timers" might be qualified to shed some light on this matter and, in doing so, introduce the theme and composition of this book as well.

The one factor most responsible for confusion here may well be the second word of this discipline: "history." When people think of history, it is nearly always in connection with an account of past human events, occurrences that have taken place and will never be repeated except in books, films, or reenactments. However, this revision and other natural history books like it contain accounts of the lives of animals in their natural habitats that, although based on previous observations, are still happening today and will continue tomorrow. Readers of these books therefore have a chance to witness firsthand enactments, not reenactments, of such natural events. In other words, this is "living" not "dead" animal history.

Unfortunately, most dictionaries do not point out this all-important fact. Webster, for instance, defines natural history as the natural development of something over a period of time. Another definition seen in numerous dictionaries states that natural history is the description and classification of objects in nature. This view most likely stems from the perception that natural history began with the pioneer taxonomic works of the Swedish physician Carl von Linné, known to us by the self-assigned Latin name *Linnaeus*. According to this latter definition, he and a host of other early taxonomists were the first "natural historians." Names like Wallace, Darwin, Audubon, and even Lewis and Clark are forever linked with the pioneer collections of animals and plants from areas formerly unexplored by Europeans and immigrants to the New World. Their work launched the great period of specimen collecting and species designations.

These massive early collections soon gave rise to a lineage of natural history museums, repositories where preserved specimens could be further measured, described, and finally assigned a place in a case or storage box. In one sense this is indeed the type of natural history to which a literal definition of the term refers, because all of the actual specimens are no longer alive. But is this what our book and several others in the Natural History Guide series address? We believe not.

For a very long time there has been another kind of natural history study in which the naming and categorizing of a species is only a first step. It also has not been the unique discipline of Europeans and their descendants but instead was, and in some areas still is, the practical science of all native peoples, past and present. Native Americans, regardless of geographic location or tribal affiliation, had to be very familiar with every aspect of the lives of the animals and plants upon which their very existence depended. For these people, natural history was an everyday practical application of facts, acquired from tribal elders and their own firsthand observations, to the never-ending task of obtaining plant and animal species for food, clothing, and shelter. Each group had its own set of animal and plant names, as valid as the Latin genus and species names that we use, but it was their knowledge of the lives of these organisms that was the key to their existence.

In the academic world a major shift from "museum" to "field" natural history began in the 1930s and 1940s. It was during this period that Aldo Leopold began recording the activities of wild vertebrates on his farm in Sauk County, Wisconsin; these records were to become the foundation for his classic book, *A Sand County Almanac*. At this same time the Dutch behaviorist Nikolaas "Niko" Tinbergen began emphasizing the observations of animals in their natural habitat instead of in laboratory cages, a theme that culminated in his book, *The Study of Instinct*, and inspired the wealth of field behavioral studies with which we are so familiar today.

The old and new approach to natural history is readily seen in two long-standing publications that use this term as their name. The *Journal of Natural History*, founded in 1841, is devoted primarily to the description of new species, animal and plant systematics, and the revisions of genera. In contrast, *Natural History* magazine presents accounts of various aspects of the lives of organisms written in a popular but still scientifically sound style. It is this latter approach that we have followed in writing this book.

One further area of confusion concerning the term natural history lies in the many secondary disciplines that have evolved from this original field of study. The term "ecology," classically defined as the relationship of an organism to its environment, is often the first to come to mind. Ecological studies that closely follow this definition are indeed synonymous with fieldwork in natural history. However, modern ecology texts are filled with formulas and statistical models, hopefully but not always

based on firsthand natural history observations, which attempt to explain such phenomena in a highly abstract form.

Ethology, the study of animal behavior, also has its roots in firsthand field observations of animals in their natural habitats but often relies on laboratory or controlled-enclosure studies. Population biology, conservation biology, environmental biology, and physiological ecology are additional parts of the discipline of natural history. However, it is from the initial study of organisms in their natural habitats that all valid questions within these areas arise, and only there can they ultimately be fully answered.

With all of the preceding in mind, we have organized this book along the lines of the authors' respective courses in vertebrate natural history at the University of California, Berkeley, and California State University, Hayward. These offerings contained the three standard zoology course segments: laboratory, lecture, and field trips. The laboratory sessions were to a large extent a mirror image of the "old-style" natural history, where students learned to identify both preserved specimens as well as small live species that could be successfully maintained in terrariums. Lectures, usually accompanied by slide presentations of wild animals in their natural habitats, were devoted to reviewing some of the highlights of the lives of California vertebrate species in preparation for the weekly full-morning and, occasionally, full-weekend field trip. These firsthand field experiences were the most important course segment, for here participants were required to make and record in field notes their own observations of segments of the lives of wild vertebrate species.

As for our book, the family keys, along with the illustrated species descriptions and range maps, represent the course laboratory or classic natural history portion of this guide to the 69 amphibian and 98 reptile species that inhabit California and its coastal waters. The natural history accounts, supplemented by illustrations and photos of species and their habitats, are the book's "lecture sessions." Additional chapters in this area address allied subjects such as amphibian and reptile watching and photography plus the limited capture and husbandry of locally abundant species for classroom and scientific study.

However, it is here that the authors' efforts must end and those of you, the reader, begin as you embark on your own field portion of this "course." We hope that this natural history guide will function as your own personal instructor to assist when needed as you make firsthand observations of the everyday lives of California's great wealth of amphibian and reptile species.

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