Review: Insect Societies

Reviewed Work(s):
Social Insect Populations by M. V. Brian
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Insect Societies[1]

The study of social insects is inherently a problem in population biology and Brian's short book is the first broad spectrum review which adopts this philosophy. He discusses the literature on ants, termites, and social bees and wasps in 17 chapters: Numbers and Density, Reproduction, Brood Periodicity, Age Structure, Dynamics: Worker Turnover, Geometric Growth, Intrinsic Limits, Maturation, Dynamics: Queen Turnover, Structural Limitations, Food Supply, Intraspecific Competition, Interspecific Competition, Intergeneric Competition, Predators and Parasites, and Population Regulation. This book is designed as a review for research workers presenting recent literature not covered in previous reviews; of the 421 references, only 57 predate 1950. Termites appear to be particularly understudied; there is rarely more than one paragraph on termites in each chapter, and there is no reference to termites in the chapter on Interspecific Competition.

The actual mechanisms of population dynamics are discussed where known, and the interpretation of these mechanisms gives insight into the special problems and advantages that can be gained from working with social insects as populations rather than as individual natural history subjects. For the most part, the reader is left to his own resources in relating the data on insects to the generally large information pool available on the population ecology of other organisms. While the avoidance of the word "niche" throughout the paper is to be commended, there is a tendency to use undefined jargon of the field. A few papers, such as those by Wilson dealing with colonization of islands by ants are conspicuous in their absence. In my opinion, a book dealing with social insect populations should include and incorporate studies already reviewed in other papers, provided that these studies contain information central to the central set of concepts that the book is developing; for example, the chapter on Age Strucure is disappointingly short (2.5 pages) and is terminated by the statement that a major portion of the subject is covered in other reviews. This book is especially valuable to those interested in population ecology in general and to the specialist who wishes to understand where a major emphasis needs to be placed in future research with social insects.

[1] Brian, M. V. 1965. Social insect populations. Academic Press, London and New York. vii + 135 pp., 2 figs. $6.00.

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Identification of Mammals

The general ecologist, who wishes to know the mammalian population of the area in which he works, has only a few authoritative books for reference. Fortunately for those in California, Oregon and Washington, this gap has been filled by Dr. Ingles' third volume.[1] The previous volumes dealt with land mammals in California, and with all California mammals, respectively.

The Preface shows that there is a need for a large amount of field work in mammology, not only from the taxonomist's point of view, but also from that of the ecologist and the biologist. Very little is known about life cycles of many mammals; however far too much is inferred from strains of one or two species of inbred laboratory animals.

The general distinguishing characteristics of mammals, their classification and life cycles, and methods of study, are summarized in brief early chapters. A chapter devoted to the ecology of mammals discusses population studies, biogeography, habitats and life zones. Two systems of life zone classification are presented for California: first the Merriam system is described, and second the system for California modified from that proposed by Munz. Similar systems for Oregon and Washington are presented. The former, which is easier to handle, is preferred by the author if not this reviewer. The distribution notes given with each species description in the main part of the text make this point obvious. A short chapter on mammals in geologic history gives information on the origin and rise of mammals and on their phylogentic development. The introductory chapters are concluded with an artificial key to the genera based on skulls of mammals except the Cetacea.

A large section of the book is devoted to species identification. Orders, families and genera are described with a minimum of technical terminology. Photographs, mostly taken by the author, are presented for many of the species and in some cases descriptions are supplemented by line drawings of important characteristics of bone structure. Drawings of the smaller animals show many of the important differences between species. Maps show that distribution of most of the species listed overlap into neighboring states but not the extent of that overlap. Keys to species give detailed information not always repeated in species characterizations. Drawings of the tracks of many species will aid the observer to determine members of the animal population in his area. Categories below the species level are not considered.

Six appendixes give additional information about species. First there is a set of instructions concerning the collection and preparation of specimens. Scats of 35 representative species are illustrated by line drawings. A guide is given to the pronunciation of several commonly used generic names. A brief discussion of the principles of zoological nomenclature is followed by a check list giving the classification of the native and introduced species of mammals found in the Pacific States. Dental formulae for all genera except those of the Cetacea are given. An extensive bibliography and an index complete the book.

This volume appears to be usable in the field as well as in the laboratory or library. It can be a useful addition to the library of anyone working with the natural history of the Pacific States.

[1] Ingles, Lloyd G. 1965. Mammals of the Pacific States, California, Oregon, and Washington. Stanford University Press, Stanford, California. xii + 506. With 259 figures and 105 distribution maps. $10.00.

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