

Book Reviews

ZOOLOGY

Bees and Beekeeping

By Roger A. Morse. 1975. Cornell University Press. 295 pp. \$13.50.

This is a very readable book, presented in an interesting manner. The title may be somewhat misleading, as less than half the content is related to actual beekeeping. This is just as well since too many books have already been written on this subject, each repetitious of the other. The book starts off with a very good introduction of the honeybees and their various relatives, particularly relating to some of those found in countries other than America. This is followed by the life cycle which leads directly into the various senses of the honeybee including the senses of communication, sound, taste, color, etc., followed by a section on the pheromones and their relationship to the social insects. In each case a very good reference is made back to the effect of these various characteristics on commercial beekeeping. The information is quite up-to-date and supported by a reasonable list of references. The scientific material is presented in such a manner that the layman can readily understand and enjoy reading it, thus learning why the bees do certain things.

It might have been better if Part 2 of the contents had been considerably reduced with respect to management, and the elementary biology part expanded. Much of the information in Part 2 is readily available elsewhere in free government circulars and other books, although it is covered in a very acceptable free-flowing manner, again with readily understandable scientific background information.

The text is written as though it were taken from a set of notes for a course in introductory apiculture. If some of the author's personal views, which in some cases have very little support but are good for classroom discussion, were removed, it could very well have made a text which might have had wide use as a reference for an introductory course in apiculture at university level.

For the beekeeping enthusiast or commercial beekeeper who wants to delve into the scientific approach to modern beekeeping methods, this is the most up-to-date, easily-read book yet published.

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Porpoise, Dolphin and Small Whale Fisheries of the World: Status and Problems

By Edward Mitchell. 1975. IUCN Monograph Number 3, Morges, Switzerland. 129 pp. \$3.50.

The 1970s have seen growth of unprecedented public awareness concerning commercial over-exploitation of the large cetaceans, and the blue whale in particular has become a *cause célèbre*. With the exception of the large catches of dolphins made incidentally by the tropical Pacific tuna industry of the United States, the plight of smaller cetaceans attracts much less attention.

In this singularly useful monograph Dr. Mitchell has attempted to bring together the voluminous (although often inadequate) information on the sixty-eight species which can be categorized as "small cetaceans," and has provided an excellent bibliography which will prove valuable to those interested in this field.

He has erected four practical categories for consideration: A, those species which are currently heavily fished, or have been significantly exploited in the recent past (13 species); B, species taken in small or moderate numbers which might significantly affect

local populations, but not global stocks as a whole (16 species); C, those exploited at low levels (18 species); D, species rarely taken, or those which are rare or otherwise distributed so that they are not available to fisheries (21 species).

Since research funds are always totally inadequate for cetaceans studies—ocean-going research being one of the most expensive pastimes of the biologist—Dr. Mitchell's classification will assist agencies to direct such research monies as are available into studies of those species which present us with the most urgent problems. Five of those in category A are already giving cause for concern.

With the greatly reduced availability of large baleen whales, commercial whaling interest has switched quite rapidly to the minke whale, and there is danger that exploitation in some regions is already outstripping research on the species. Other cetaceans at risk include Dall's porpoise, of which coastal Japanese fisheries may take up to ten thousand a year; and those dolphins of the genus *Stenella* which are taken during seining operations for tuna in the tropical

Pacific. Estimates of the number of *Stenella* killed each year range from one hundred thousand to a quarter of a million, and authorities warn that the age structure in the populations now resembles that which characterized the Black Sea dolphin fishery shortly before its collapse as a result of over-fishing. Research is in progress with the hope of modifying tuna gear in such a way that dolphins can be released from the seines unharmed, without releasing the tuna at the same time. Naturally the industry is dragging its feet since it feels any such measures will increase costs; yet at the same time it is alarmed by the growing hostile pressure from environmental lobbies.

Dr. Mitchell concludes his discussion with a list of concrete recommendations concerning the data required, and the need for much more international cooperation in the collation of information, and the necessity for nations taking large numbers of small cetaceans to assume responsibility for the consequences of their actions.

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Mites of Moths and Butterflies

By Asher E. Treat. 1975. Cornell University Press, New York. 362 pp. \$35.00 (20% discount on prepaid individual orders).

This excellent book is of unique importance to the developing study of mite-insect associations. In it the author summarizes the available information about the mites associated with Lepidoptera. This represents the first modern attempt at comprehensive treatment of the interactions of mites with insects of an entire order, and, as such, is of value not only to students of Acari or Lepidoptera, but also to all interested in the ecology of mites and insects.

The book begins with a concise and thorough historical review of the subject from 1759 to the present. This is followed by exceptionally effective chapters describing equipment and methods, and introducing acarology to the non-specialist. These three opening chapters should serve to orient lepidopterologists regardless of their previous familiarity with mites.

Chapters 4 through 8 deal with the mesostigmatic mites. The author has chosen to subdivide his account of the phoretic and facultatively parasitic species according to the nature of the host relationship rather than taxonomic boundaries. The allocation of these mites to his three categories is necessarily arbitrary, and initially unfamiliar. By presenting these chapters in order of increasing intimacy of the relationship, however, he is able to bring attention to possible evolutionary patterns.

Chapter 7 deserves special consideration. Here the author discusses his own research specialty, the parasites of the noctuid auditory organs, the mite genus *Dicrocheles*. Extensive original observations and inferences on the biology of these mites are presented with an attitude of infective enthusiasm tempered by rigorous attention to factual detail. This chapter represents the high point of the volume, and fully justifies its size and format.

The tempo of presentation is maintained through Chapter 8 which deals with the recent discoveries in the systematics and ecology of the Otopheidomenidae, or "ear-sparing" mites, parasites primarily of tropical sphingid moths.

In Chapters 9 through 12, Dr. Treat admirably rounds out his account with the acariform mites of the suborders Prostigmata and Astigmata. Throughout this part, he brings a refreshingly cautious approach to what is essentially a critical commentary on previous literature, supplemented by his own observations. The author properly emphasizes the fragmentary state of knowledge of the parasitengones, whose larvae are parasitic, and clearly identifies the problems encountered in studying these mites. The chapters dealing with adult prostigmata (phoretic or parasitic), and astigmata (phoretic hypopodial deutonymphs or scavenging adults) are comprehensive, and successfully set the stage for future research on these species.

Useful appendices are included providing keys to mites both in life and after slide-mounting, and tables summarizing known associations both by host species and by mite species.

The author's expertise with both Lepidoptera and their mite associates is reflected clearly throughout this fine volume. The book will be an essential reference for all serious students of mite-insect ecology. At the same time, it should encourage lepidopterologists to discover and report new data on the subject, regardless of the taxonomic or geographic scope of their interests. For these reasons, it is hoped that the considerable price will not restrict its availability to potential investigators.

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