Biotic Associations of Cockroaches 1960, which include an important summary of cave-dwelling Blattaria.

The 31 chapters are grouped in 6 parts, as follows: 1. Biospeleology; concerns many introductory and general matters, history, techniques, etc. 2. A list of cavernicolous species; occupies about 200 pages, is most useful, but is not intended to be a complete list of species recorded from caves, and for several insect groups, such as Grylloblattidae and Psocoptera, it appears to have been too sketchily prepared. 3. Geographical distribution and ecology of cavernicoles. 4. Physiology of cavernicoles; begins with the question “Are cavernicoles always starved animals?” 5. The behavior of cavernicoles; sensitivity and sense organs. 6. The evolution of cavernicoles; introduces several theoretical concepts, discusses relicts, and stimulates consideration of many broad questions.

Particularly for readers not familiar with the vocabulary of speleology, this book provides an excellent foundation. It goes into many basic facts regarding life in caves, and introduces some controversial questions, some of which are still unsettled. Cavernicoles occur in most regions of the world, but they are absent in extreme northern areas, a condition probably in some way correlated with past glaciation. The evolution of true cave species is more advanced in temperate than tropical regions. Relict species of several categories are discussed, and emphasis is placed on the significance of relicts in the development of a cave fauna. Certain media, such as artificially made soil, snow-pockets, mosses, and humus, are regarded as habitats where “preparation for cavernicolous life,” in an evolutionary sense, may take place. Thus, it is stated that “There seems to be no doubt that the ancestors of European cavernicoles lived in the Tertiary in humus of great humid mountain forests which would resemble the condition in Africa today. Experienced students of evolution doubtless will read the final chapters with a carefully appraising eye because of the author’s handling of “regressive evolution” and other aspects.

A few selected items noticed in the book may interest readers of this review: permanent traps for catching small cave creatures, such as tubes of preserving fluid used by the late H. S. Barber for collecting beetles, are discouraged because forgotten traps may destroy much of a population (p. 36); with some exceptions, South America remains the terra incognita of biospeleology (p. 26); bats are not considered true cavernicoles, though many species often enter caves (p. 238); the celebrated oil-bird or guacharo (Steatornis) which nests in caves in northern South America, finds its way deep in caves by echolocation (p. 238, 456); on a piece of moss, found in a Pyrenees cave an ancient artist of the Magdalenian culture had drawn a camel-cricket which the French orthopterist Chopard has recognized as the genus Troglyphus (p. 22, 180); the Gryllicriddoidea are referred to as a “tribe” (p. 7) in what seems a misunderstanding of taxonomic categories; the famous cave “glow-worm” of New Zealand (Arachnocampa luminosa) is stated to be unique among Mycetophila because its larvae are carnivorous instead of feeding on fungi (p. 306), but the author has overlooked Platya fultoni which the late B. B. Fulton found as luminous larvae spinning webs to ensnare their prey in the hills of North Carolina, and he published striking illustrations of them 25 years ago.

This is a substantially constructed book, well printed, illustrated, and indexed, which entomologists should have available for reference.


This handbook on the termites of the United States was written by Mrs. Weesner especially for the information of and use by commercial pest-control operators. It is not concerned with control, but it deals with the insects themselves, and is based on major advances in termite research by Mrs. Weesner and others.

Discussed are the classification and structure of termites, the cases, their behavior, habits, and introductions. With the cooperation of about 200 pest-control operators, who supplied the data, dates of the indoor flights of species of the subterranean genus Reticulitermes on a regional basis have been tabulated for 1964 and 1965. This valuable survey will be continued.

The various sections of the book have the subjects illustrated by drawings made by the author. These illustrations are very helpful, particularly in accounts of habits of various species and keys to identification.

Selected references are given on page 67.

A comprehensive treatise, Mrs. Weesner’s handbook should prove of interest to anyone who needs information on our native termites, and should be especially useful to termite-control operators.

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It is a privilege to direct the attention of entomologists and workers in related fields to this newly reprinted work. The first edition of this most useful and interesting history of entomology by the late E. O. Essig, Professor of Entomology Emeritus, University of California, Berkeley, was published in 1931 by the McMillan Co. Professor Essig possessed outstanding ability and had a long and distinguished career which spanned more than half a century (1909–64).

Some idea of the scope of Dr. Essig’s outstanding contribution in recording the early history of entomology may be gained from the chapter headings: Pre-historic Entomology; Pleistocene Insects From Asphalt Pits in California (p. 1–11); California Indians in Relation to Entomology (p. 12–47); Historical Background (p. 48–53); Principal Institutions in California Featuring Entomology (p. 54–81); Some Historical Facts Concerning the More Important Orchard Mites and Insects of California (p. 82–273); the Biological Control of Insect Pests (p. 274–402); Insecticides (p. 403–501); Entomological Legislation (p. 502–538); Bibliography (p. 539–810); and Chronological Table Showing the Development and Progress of Entomology in Relation to History and Other Sciences (p. 811–952).

Although this book reflects the history of entomology primarily from the viewpoint of the Western United States, an abundance of history from other sections of the United States and from other areas of the world is included. Space is not available in this review to list details of the many subjects of history covered. Among the topics included are fossil insects, insects used as food by American Indians and other peoples, useful data about entomology in Spain and Russia, biological control of insects including introduction of beneficial species, an excellent list of the pesticides in use prior to 1931, the discovery and development of hydrocyanic acid gas for fumigation of citrus trees and its later use for the fumigation of stored products in vacuum, an excellent review of early legislation to prevent the introduction of harmful insects, and actions taken for the development of State and Federal quarantines pertaining to insects.