

## BOOK REVIEWS

BIOLOGY, ECOLOGY, AND HOST SPECIFICITY OF MICROLEPIDOPTERA ASSOCIATED WITH *QUERCUS AGRIFOLIA* (FAGACEAE), by Paul A. Opler. 1974. University of California Press, v + 83 p., illus. + 7 plates. Price \$4.25 (U.S.).

This publication is a major contribution to our knowledge of the microlepidopterous fauna of the oaks of California. Emphasis is on the bionomics of 35 species of Microlepidoptera associated with the leaves of coast live oak. Also included is information in regard to the occurrence of these insects, and related described and undescribed species, on 18 other Fagaceae in California.

There is an initial consideration of the taxonomic status of the Microlepidoptera associated with coast live oak and other Fagaceae. This is followed by a treatment principally of the phenology of the more abundant California Fagaceae. Most of the volume is devoted to the biology of the coast live oak associated Microlepidoptera, including sections on general biology, and more specific information on the adults, larvae and pupae. Some illustrations of the leaf mines of several species and a number of diagrammatic figures representing oviposition sites are included. There are also intriguing sections on life cycle adaptations, host specificity, and speculation on the evolution of Fagaceae-associated Microlepidoptera and their hosts.

The plates that complete the volume consist of a series of photographs mostly of mines, other shelters, and eggs of several Microlepidoptera on their host. It is somewhat disappointing that the mines, etc. of only 14 of the 35 species associated with coast live oak are illustrated. Also, unfortunately, a photograph depicting a typical collecting site is included that presents, mostly because of its small size, a distorted, inadequate view of coast live oak and its surroundings. These deficiencies in the plates are minor, however, and, as a whole, the photographs are of good quality and add materially to the publication.

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BRITISH TORTRICOID MOTHS, COCHYLIDAE AND TORTRICIDAE: TORTRICINAE, by J. D. Bradley, W. G. Tremewan and Arthur Smith with additional color illustrations by Brian Hargreaves. 1973. Ray Society, c/o British Museum (Natural History), Cromwell Road, London S.W. 7, England, i-viii + 251 p., 51 figures, 47 plates (26 in color). Priced £11.50 (\$27.60 U.S.).

This splendid volume will undoubtedly rank as one of the outstanding contributions to the contemporary study of Microlepidoptera, and the authors and illustrators alike are to be congratulated. This will serve not only the non-specialist, at whom it is directed, but also a large segment of the professional community; and it will be useful on the continent as well as in the British Isles.

The authors are careful to describe pitfalls in the consideration of coloration and pattern. Following this there is a discussion of variation and the general characteristics of the Tortricoidea, including imago, genitalia, ovum, larva and pupa, with excellent structural illustrations. Next are discussions of biology, collecting and preparation of specimens, dissection and preparation of genitalia, preservation of larvae and pupae, phylogeny and nomenclature and synonymy.

Preceding the main body of the work is a key to the Tortricoidea, followed by a systematic list of the Cochylidae (Phaloniidae) and Tortricidae.

In the main body of this study the Cochylidae are dealt with first. Under each