

The amount of time and effort required to produce this catalogue must have been immense, and such enterprises are often thankless tasks. Bridges has done us a great favor by providing a careful, well-planned and exhaustive work. This catalogue is an indispensable reference that belongs in the library of all who work on the systematics of lycaenids and riodinids.

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PAPILLONS ET CHENILLES DU QUEBEC ET DE L'EST DU CANADA [Lepidoptera and Larvae of Quebec and of Eastern Canada], by Jean-Paul Laplante, 1985. 280 pp., 65 color plates, with many other color figures in text. Editions France-Amerique, 170 Benjamin Hudon, Montreal, Quebec H4N 1H8, Canada. Hardcover. About \$25.00.

This beautiful book makes an important contribution to our knowledge of the butterflies and moths of Quebec and of eastern Canada in general. Covering more than 300 species and subspecies of Lepidoptera with illustrations of the adults, eggs, larvae, pupae, and habitats (over 1000 separate color figures), this book would be of value to anyone with an interest in the Canadian fauna. It is currently available only in a French edition, but Latin insect and plant names, locality names that can be identified on any map, etc., make it readily usable even if one should not know French.

The author has worked for more than 30 years on the lepidopteran fauna of eastern Canada, especially Quebec, and has collaborated with many workers in Canada to assemble the knowledge and photographs displayed in this volume. He begins with a general introduction to the evolution and biogeography of butterflies and moths, their ecology, and life history. Excellent text drawings and scanning electron micrographs, as well as color photographs, illustrate scale structure and other features. Concise but well-done summaries of geographic and genetic variation of butterflies and moths are presented, along with a fascinating discussion of mimicry that includes unusual illustrations not appearing in any other book. Likewise, a short section is devoted to the enemies and diseases of Lepidoptera, and there is a valuable descriptive section on the characteristics of each family of butterflies and some of the major moth groups.

The author then presents a quite usable key to the species of diurnal Lepidoptera in Quebec as well as to species of certain genera in major moth families (Sphingidae, Lasiocampidae, Saturniidae, Arctiidae, Agaristidae, Notodontidae, and Lymantriidae). The last key, interestingly enough, is solely to the larvae of the species in the genus *Dasychira* in Quebec, because they offer the best distinguishing characters for the genus.

The outstanding and immaculately reproduced color plates, however, carry the major load of identification of specimens. The male, female, and underside of each species is shown, along with seasonal and geographic variation across eastern Canada. The plates are among the very best ever produced for a book on a North American faunal region. After the 34 color plates of adult specimens, photographed crisply on a blue background, the author includes a series of 30 plates of eggs, larvae, and pupae of the illustrated butterflies and moths, as well as a plate of eight habitat photographs. Technically, it would be hard to suggest any improvement that could be made in the beautiful photography that illustrates this book.

The author discusses in detail the vegetation zones of Quebec and northeastern Canada, north to Hudson Bay and west into Ontario as well as east into Labrador and Newfoundland. One of the most interesting features is a complex yet highly readable table presenting a summary of biological notes on 282 species and 11 subspecies of Lepidoptera, including 134 butterflies and 159 moth species. This table neatly shows the distribution, flight period, abundance in habitat, cross-references to illustrations in the text, number of annual generations, the hibernation or aestivation stage, and the larval characteristics, including host plants, period of activity, living habits (solitary, gregarious, etc.), and the average

body length, as well as cross-references again to the illustrations in the main text. The book closes with a brief but very adequate discussion on how to collect, prepare and preserve butterflies and moths. An excellent glossary and selected bibliography, as well as a comprehensive index, close the book.

Jean-Paul Laplante has produced an excellent book on the butterflies and many of the interesting larger moths found in Quebec and the other areas of eastern Canada. The wonderful color illustrations of the larvae of virtually all the species of butterflies and major moth groups in Quebec would make this book a sound investment on that basis alone. The extraordinarily low cost of this beautiful book and its ready intelligibility even to readers lacking a good reading knowledge of French should prompt many lepidopterists to purchase it for their personal libraries.

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SLUG AND NETTLE CATERpillars: THE BIOLOGY, TAXONOMY AND CONTROL OF THE LIMACODIDAE OF ECONOMIC IMPORTANCE ON PALMS IN SOUTH-EAST ASIA, edited by M. J. W. Cock, H. C. J. Godfray, and J. D. Holloway. 1987. 270 pp., 18 color plates. CAB International, Wallingford, Oxon, UK. Hardcover. \$99.00.

This book is an invaluable tool for tropical biologists in the coconut and oil palm industries of South-east Asia. It also is important in a broader geographic and economic sense because the larvae of Limacodidae, which are highly polyphagous, are pests of palms and other tropical plantation crops worldwide. Although less than comprehensive, the work presents a review of recent literature on natural enemies of New World limacodid palm pests along with a wealth of information on Limacodidae in general.

The organization of the book is as follows: chapters 1 and 2 present introductory information on Limacodidae; chapter 3 provides systematic accounts of palm pests of South-east Asia; and chapter 4 is a short, preliminary account of tropical Australasia pests. Chapters 5-17 deal with aspects of pest management and include systematic accounts of parasitoids and predators, and fungal, viral, and chemical control. Most of these final 13 chapters are brief, encompassing about half of the total text.

The book includes 36 plates comprising genitalic preparations, color photographs of spread specimens (with useful, identified black and white duplicates on facing pages), and striking photographs of live larvae, cocoons, natural enemies, and adults in natural postures.

As one who has reared limacodids for several years, I can appreciate the amount of intensive labor that the book represents. I found the information on rearing methods (chapter 2) particularly enlightening. A minor shortcoming, however, is a sense that larvae were reared by someone other than the authors. The statement that larvae appear "remarkably stupid" because they must be manually transferred to new host material is absurd, as this is a manifestation of rearing these specialized larvae in captivity. Slug caterpillars, especially in early instars, have a difficult time moving from one leaf to another because of the small thoracic legs and absence of abdominal prolegs. Difficulties in rearing slug caterpillars that the authors fail to mention include: 1) their tendency to become immobilized with frass due to the sticky nature of their ventral surface; and 2) their movement off the host material and onto the container, perhaps a preference for the smoothest available substrate (most limacodids are found on hosts with smooth leaves).

Chapter 3 on systematics of the South-east Asian pest species considerably expands our knowledge of the region's fauna, with 35 new species and four new genera described by Holloway, and 28 new synonyms, new combinations, and other nomenclatural changes. Relationships among genera are proposed on the basis of the signum type of the female genitalia as in Holloway (1986, *The moths of Borneo: Key to families; Cossidae, Metar-*