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BOOK REVIEW

SWALLOWTAIL BUTTERFLIES: AN ACTION PLAN FOR THEIR CONSERVATION,

compiled by T. R. New and N. M. Collins (for IUCN/SSC Lepidoptera Specialists Group).

1991. International Union for the Conservation of Nature and Natural Resources, Gland, Switzerland. 36 pp., 12 col. figs., softcover (21.5 x 28.0 cm). ISBN 2-8317-0061-2. Price: £5.95 (order from IUCN Publications Service Unit, 181a, Huntingdon Road, Cambridge, CB3 0DJ, United Kingdom; check or international money order payable to IUCN; add 15% for packing and Surface Mail costs).

From the spectacular cover reproduction of a large *Papilio homerus* adult in Jamaica to the detailed text and outstanding appendix listings, this new short book is the latest in a series of IUCN Species Survival Commission Action Plans for the Conservation of Biological Diversity. It is also the first IUCN/SSC Action Plan on invertebrates. As the Foreword (written by Ebbe S. Nielsen) aptly says, "Species such as the Homerus Swallowtail, Queen Alexandra's Birdwing, the Kaiser-I-Hind, and the Apollo are so spectacular that humankind surely has a major responsibility to insure their survival and recovery to safe and productive population levels." The roles which the 573 species of swallowtail butterflies have played in our understanding of fundamental evolutionary processes such as mimicry complexes, sexual dimorphism, and other polymorphisms (including insights into the inheritance of human blood groups), and the key role of these butterflies in habitat conservation plans such as in the Florida Keys and in butterfly ranching in such places as Papua New Guinea, also combine to make this publication extremely timely.

In the Introduction, New and Collins note that there are several very practical reasons for selecting swallowtail butterflies as the subject of this first insect Action Plan published by the IUCN Species Survival Commission. These are among the most attractive insects to non-entomologists, they are widely recognized, their taxonomy is in reasonable shape, the distributions are quite well known, and many are sensitive to habitat and environmental change. The earlier book by Collins and Michael Morris (1985, *Threatened Swallowtail Butterflies of the World*, IUCN Red Data Book Series) listed 170 species (out of a total of 573) as meriting concern for their conservation. Several species have been added to the list in that book because of new taxa being described since 1984, and because of taxonomic changes as well as habitat changes. In the present Action Plan, a highly readable overview of the problems is combined with a geographic survey of the 34 most critical areas, and of the species in those geographic areas that need to be conserved.

The book begins with an introduction to the project and a brief overview of the family of swallowtail butterflies. This overview section includes tabulations of the classification of the family, the latitudinal distribution of species, and a complete list of the Papilionidae in several threatened categories. The authors then proceed to discuss the various endangering processes which threaten the survival of swallowtails. The four processes identified as threatening the survival of swallowtails, along with many other terrestrial species, are: *habitat change and destruc-*

tion, pollution, introductions of exotic species, and commercial exploitation. Of these, the first is considered the most important and the most difficult to counter, while the second and third are difficult to assess and may represent relatively minor threats to swallowtails. The fourth poses problems which seem to be more severe for swallowtails than for any other insects. The discussion of commercial exploitation is divided into several very interesting sections on different categories of trade in deadstock and livestock.

Next, the authors classify the categories of swallowtails needing conservation action, and the approaches to action that can be taken, along with an indication of priority on a scale from 1 to 4 (priority 1 being the highest). The bulk of the book is taken up by a detailed listing of the projects for swallowtail conservation in different geographic areas. Included in each geographic area is a brief discussion of Aim, Background, Action Needed, Benefit to Related Swallowtails, and Procedure, including an estimation of duration of the needed project and the initial cost in U.S. dollars. Overall, this material presents exceptionally fascinating details on over 100 swallowtail species that need further investigation in order to save them from extinction, or at least to understand the reasons that they are endangered and how to move to ameliorate those.

This book represents an outstanding contribution to conservation biology and to the effort to preserve many of the most spectacular species of tropical Lepidoptera. Virtually every lepidopterist interested in tropical butterflies will want to have a copy of this inexpensive book in his or her library for repeated reference and interesting reading.

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