

PROJECT PONCEANUS: A REPORT ON FIRST EFFORTS TO  
SURVEY AND PRESERVE THE SCHAUS SWALLOWTAIL  
(PAPILIONIDAE) IN SOUTHERN FLORIDA<sup>1</sup>

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In this time of environmental awareness the subject of butterfly conservation is receiving increasing attention in the United States. Lepidopterists have long been concerned with decreasing numbers of certain species; but only recently have efforts been undertaken to protect habitats and rare butterflies that populate them. Although the English have accomplished much in this field (such as the reintroduction of the Large Copper, *Lycaena dispar* Haworth), Americans have made only small endeavors in the past. Rawson (1961) attempted unsuccessfully to introduce a small population of *Eumaeus atala florida* (Röber) into the Everglades National Park; but with more groundwork and support, future efforts along these lines may prove successful.

The Schaus Swallowtail, *Papilio aristodemus ponceanus*, was described by Schaus (1911) from specimens he collected in the Miami area in May, 1898. Originally considered a separate species, and considered so by Holland (1930, 1931), it was given subspecific rank by Barnes and McDunnough (1917). Bates (1934) and subsequent workers have continued referring to it as a subspecies of *aristodemus* Esper.

The popular and rather sensationalized report by Grimshawe (1940) of her discovery and rearing of *ponceanus*, with statement of its extinction on Lower Matecumbe Key (a paper considered by some to be the "last word" on the butterfly) did much to add to the impression among lepidopterists that *ponceanus* is a rare insect in Florida. The three articles by Henderson (1945a, b; 1946) summarized known information, and proved that the butterfly had not been rendered extinct by the September 1935 hurricane, as Grimshawe had claimed. Although some specimens were no doubt missed, Henderson's papers listed collecting localities, dates, and owners of known specimens taken through 1945. Additional records since then are apparently not recorded in the literature. Klots (1951) and Kimball (1965) discussed *ponceanus* as rare, and urged

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collectors to help preserve it. Young (1955) mentioned it as a butterfly one would be happy just to see, much less capture, and also recorded that the specimen figured in Holland (1931) was from Key West. C. V. Covell, Jr. took a ragged female on Key Largo on 31 March 1961 (reported in the Field Season Summary of the Lepidopterists' Society for that year)—an unusual date, since all other records apparently fall between mid-April and late June. Collections of *ponceanus* during the 1960's seem few, and may indeed reflect some degree of scarcity. We believe, however, that it was merely not sought much by collectors.

Rutkowski (1971) gave good new ecological and biological information, based on his 1970 experience with *ponceanus* on Key Largo. This article, plus a letter circulated by Kent H. Wilson urging that lepidopterists take a hand in preserving what he thought was the last population in the U.S. of *ponceanus*, stimulated the authors to undertake such a project.

#### The 1972 Survey Trip

We first decided to find out if *ponceanus* is really as threatened as people seemed to think. We planned to visit southern Florida in early May 1972, and look for the swallowtail in lands protected by the U.S. Government from both collectors and developers. Through personal communication with Dr. William B. Robertson, Research Biologist at Everglades National Park, we learned that Torchwood (*Amyris elemifera* L.), the primary foodplant of *ponceanus*, is not known to be common anywhere in the Everglades National Park, but is well established on some of the keys making up the Biscayne National Monument. A secondary foodplant, Wild Lime (*Xanthoxylum fagara* L.), while present in the Everglades National Park, was not thought to be very common. Robertson agreed to arrange a trip for us to Biscayne National Monument on 11 May.

Through a travel grant from the Tom Wallace Conservation Fund at the University of Louisville, Covell and student assistant Gregory Florence drove to Florida City, where a rendezvous with Rawson was accomplished on 10 May. After a preliminary planning session with Robertson and Dr. William Hendrickson, Ecologist, at Everglades National Park headquarters, the rest of the day was spent making camp at Long Pine Key campground, and seeking *ponceanus* in the Flamingo area of the Park (where *X. fagara* was reported to be growing). *Papilio cresphontes* Cramer was common, but no *ponceanus* were seen.

Early on 11 May we met Dale Engquist, Superintendent of Biscayne National Monument, and Ranger George Sites, at the Monument headquarters at Homestead Bayfront Park. Ranger Sites was to be our guide

and boatman on the expedition, and botanist George Avery from Miami's Fairchild Garden came along to seek two rare plant species. A few light showers preceded hot, humid weather as we motored toward the first of the keys we were to visit.

We tied the boat to the tangle of Red Mangrove (*Rhizophora mangle* L.) that completely surrounded the first island, and picked our way some distance through this dense vegetation. When we reached the higher hardwood hammock, George Avery pointed out some Torchwood trees. A swallowtail appearing to be *ponceanus* flew past at some distance; and another was netted by Covell as it flew beside him. The presence of the species there was verified; we saw about 15 more in as many minutes before we worked our way back to the boat. The second island was more easily penetrated, and *ponceanus* were seen (two taken) flying along or across paths which honeycombed the hammock. None were seen on a smaller, third key. Upon our return to the mainland, we were assured that Monument officials would be on the lookout for unauthorized collectors on these islands.

On 12 May we looked in other parts of the Everglades National Park for *ponceanus*, but found none. The following day took us to Key Largo, where we surveyed the *ponceanus* population along paths from Rt. 905 toward the Atlantic with Terry Dickel of Homestead. We took several specimens, all males, varying from fresh to slightly worn in condition. None were observed visiting blossoms, and they were not really abundant. Dickel informed us that the weekend before he had seen six collectors on Key Largo, apparently seeking *ponceanus*. We found very few eggs and larvae on the foodplants, and later learned that one collecting group had taken a large number of ova from foodplants there through systematic examination of the leaves. The Key is still not developed to any great extent; but we did find that the spot where Rutkowski had made his observations in 1970 is apparently gone now, bulldozed to form a marina-community called "Worlds Beyond." We determined this from careful directions kindly given us by Rutkowski through personal communication.

Other butterfly species recorded on 11 May in Biscayne National Monument included: *Epargyreus zestos* Geyer, *Battus polydamas* (Linnaeus), *Papilio cresphontes* Cramer, *Ascia monuste* (Linnaeus), *Phoebis agarithe maxima* (Neumoegen), *Hemiargus ammon bethunebakeri* Comstock and Huntington, *Eunica tatila tatilista* Kaye, *Phyciodes frisia* (Poey), *Heliconius charitonius tuckeri* Comstock and Brown, *Dryas julia cillene* (Cramer), and *Danaus gilippus berenice* (Cramer). On 13 May on Key Largo we recorded the same (except *B. polydamas*, *A. monuste*, *P. frisia* and *D. gilippus berenice*) plus the following: *Wallengrenia otho*

*otho* (Smith), *Polygonus leo* (Gmelin), *Appias drusilla* (Cramer), *Marpesia petreus* (Cramer), and *Agraulis vanillae* (Linnaeus).

#### DISCUSSION

We felt that we had accomplished our mission, in that *P. aristodemus ponceanus* seems to be well established on at least two of the islands in the Biscayne National Monument. Except for the uncontrollable phenomenon of climatic traumas (freezes and hurricanes), the Schaus Swallowtail seems safe from real or imagined threats of extinction via development, pesticides and overcollection. On Key Largo, developers do pose some threat, but probably not for some years to come. There are over nine miles of relatively undisturbed hardwood hammock along Rt. 905 from Rt. U.S. 1 to Ocean Reef at the northern tip. We feel that *ponceanus* is probably established in some other pockets in the keys, and hope to continue our survey activities. No efforts to introduce *ponceanus* to other sites seem to be necessary to the survival of the U.S. *ponceanus* population.

This butterfly does, however, have a tenuous foothold in the United States, and we urge collectors to give this species a conservationist's concern when collection or purchase of specimens are considered.

#### ACKNOWLEDGMENTS

As "Project Ponceanus" progressed, many people contributed to its implementation in various ways. We are grateful to all for their help, and especially to the following: Dr. William B. Robertson, Research Biologist, Everglades National Park, for making our visit possible; Superintendent Dale Engquist and Ranger George Sites of Biscayne National Monument; Mr. Terhume S. Dickel, Homestead, Fla.; Mr. Gregory G. Florence, Bardstown, Ky.; Dr. W. Hendrickson, Ecologist, Everglades National Park; and Mr. Frank Rutkowski, New York City. We are also indebted to Drs. William Clay and Burt Monroe, Jr. of the Biology Dept., University of Louisville, for making available to us funds from the Tom Wallace Conservation Fund.

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NOTES ON THE LIFE CYCLE AND NATURAL HISTORY  
OF BUTTERFLIES OF EL SALVADOR. I. *PREPONA*  
*OMPHALE OCTAVIA* (NYMPHALIDAE)

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For a number of years my sons and I have been collecting and breeding butterflies in the vicinity of San Salvador (600-900 m. altitude), capital city of El Salvador. Since the life cycle of many neotropical butterflies is not completely known, many species have been classified solely on the morphological characteristics of the adults. It seems desirable therefore to place on record the various facts that we have found. This we intend to do in a series of articles dealing with the life cycle, host plants, and general natural history of the species we have been able to breed.

A major difficulty has been the identification of the species described, as we are dependent on A. Seitz (ed.) (1924, *Macrolepidoptera of the World*, Vol. 5. The American Rhopalocera 1907-14), that is, according to many modern authors, "... replete with errors which cause much confusion." (Klots, 1960). To partially overcome this handicap, Drs. F. H. Rindge and A. B. Klots of the American Museum of Natural History, and L. D. Miller of the Allyn Museum of Entomology, have made at least