

ABSTRACT

The Biology and Ecology of the Endangered Giant Swallowtail Butterfly, *Papilio (Pterourus) homerus* (Lepidoptera: Papilionidae) in Jamaica

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Papilio (Pterourus) homerus is an endangered swallowtail butterfly which is endemic to Jamaica. The biology and ecology of the species were studied between 1991-2000. Laboratory and field research were carried out in the Rio Grande Valley and along the southwestern slopes of the John Crow Mountains at Fishbrook. The main study sites were tributaries along the Rio Grande River; Island Spring, White River and Bruck Foot. The results showed that adults were multivoltine and were present throughout the year with numbers fluctuating monthly and annually. Adults oviposit eggs singly on the upper surfaces of the leaves of *Hernandia catalpifolia*. The egg distribution at all study sites is aggregated and adults discriminate between individual plants. The development from egg to adult is 84 days with larvae passing through five instars and changing from a basic ground colour of brown-black to green and brown. The size of the egg is 1.98 ± 0.06 mm wide and 1.81 ± 0.8 mm high (N=109). Larvae range in body length from 3 mm in the first instar (N=30) to 49 mm in the fifth (N=45). Adult males can live for at least 6 days and all adults feed on the nectar of flowers which range in size and shape. The mortality factors in the immature stages were mainly parasitoids in the egg stage with mortality of 63% recorded during the study period. The most important parasitoid species were *Chrysonotomyia* and *Ooencyrtus* sp. nr *submetallicus*. Larvae were killed by three species of bacteria and preyed on by the ant, *Camponotus* sp. The data revealed that population numbers have fluctuated over the years. The possible reasons for the fluctuation in numbers are discussed. Finally past, present and proposed conservation measures are discussed and the importance of habitat protection highlighted.

Keywords: Audette Judette Ann Bailey; *Papilio (Pterourus) homerus*; endangered; aggregated distribution; oviposition sites; mortality factors; conservation measures.