

additional specimens, suggesting strongly that this insect is established at this locale and is not merely a visitor.

In addition, I collected a single, fresh male *Anteos chlorinde* (Godart) in Jarabacoa, La Vega Province, in the afternoon of 24 June 1981. It was captured on *Hibiscus* blossoms along a roadside in the vicinity of the Hotel Pinar Dorado. Riley (1975, A Field Guide to the Butterflies of the West Indies, Demeter Press) indicates that this butterfly is not recorded from Hispaniola.

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#### HAND-PAIRING OF *BATTUS PHILENOR* (PAPILIONIDAE)

Hand-pairing is a useful technique in the laboratory rearing of butterflies (Clarke & Sheppard, 1956, *Lepid. News* 10:47-53) and has been applied in several families, most extensively in the Papilionidae. I have successfully used it for most eastern North American swallowtails but had been unable to hand-pair *Battus philenor* (L.) Recent observations of mating of caged *B. philenor* revealed the probable reason for my failure and suggested how I might be able to hand-pair the species, which has now been accomplished.

*B. philenor* males and females were released within a day of eclosion in a large outdoor flight cage (7.6 m × 4.6 m × 4.6 m high). Within a few minutes the following behavioral sequence was observed for two pairs: A motionless female sitting upright on a honeysuckle stem about 3 m from the ground was approached by a male, which quickly landed upside down on the stem beneath the female and in a few seconds had curved his abdomen up and locked in *copula*. He immediately hung free with folded wings in the usual way. Two aspects of this sequence were unexpected: There was no fluttering of wings by either individual; and the male approached from below with his body initially parallel to that of the female in a frontal position.

The usual technique in hand-pairing is to bring the tips of the abdomens together at about 180°, squeeze the male to open his claspers and join the two. If this technique is tried with *B. philenor*, both individuals curve the tips of their abdomens under, and the two cannot be joined. The observations in the flight cage suggested that the curvature facilitates copulation in the natural position. I, therefore, brought together a male and female in the frontal position, pressed the male's abdomen to open his claspers, and the two immediately joined. Several pairs were so mated and dissection revealed a spermatophore in each female. *B. philenor* seems to remain in *copula* somewhat longer than most other swallowtails, but, as in other species (Clarke & Sheppard, 1956, op. cit.), about 20 minutes is sufficient for the passage of a spermatophore.

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