

NOTES ON THE BIOLOGY AND IMMATURE STAGES OF THE
WHITE PEACOCK BUTTERFLY, *ANARTIA JATROPHAE*
GUANTANAMO (NYMPHALIDAE)

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Observations on the white peacock butterfly, *Anartia jatrophae guantanamo* Munroe, are recorded here to fill gaps in the documentation of this species' life history. A small colony near New Smyrna Beach, Florida was studied in June 1970.

Anartia jatrophae guantanamo was described from Guantanamo, Cuba (Munroe, 1942). Distributed locally in Florida, it is sometimes common in the east and west coastal areas. It has been reported as far north as Tampa on the west coast, and on the east coast it occurs in decreasing numbers not much farther north than Daytona. Strays have been taken by collectors as far north as Savannah, Georgia and southern New England. The range in the United States extends as far south as the Everglades and Keys.

Local distribution of the butterfly in Florida is confined to low ground along shallow ditches and the borders of ponds and streams where its larval food plant, *Bacopa Monniera* (L.) Wettst. (Scrophulariaceae) grows. Because the food plant, commonly called hedge or water hysop, depends on adequate moisture for survival, relative scarcity of the butterfly during drought may result from adverse effects of dry weather on the plant as well as on the butterfly itself. Usually a gravid female oviposits a single ovum on the ventral surface of a water hysop leaf and flies to a plant some distance away to deposit another single ovum. This scattered distribution of eggs may provide a higher rate of survival.

Descriptions

Ovum (Figs. 1A, B). Color pale pearly yellow, turns darker usually on second or third day. Shape similar to squat barrel; ten (\pm) evenly spaced longitudinal keeled ribs arise from flattened base and expand upward in conformity to wider portion of ovum, then narrow toward top where each rib ends abruptly at boundary of flattened micropile.

Dimensions: Height 0.60 mm, width 0.50 mm.

First instar (Figs. 1C, D). On emerging from ovum, larva has large black head capsule, about one-third larger than first thoracic segment; disproportion becomes less evident as larva grows.

Color of body pale greenish-yellow, at first; after completely consuming its egg shell and feeding on succulent green leaves of water hysop, color changes to darker green, then brown just prior to ecdysis.

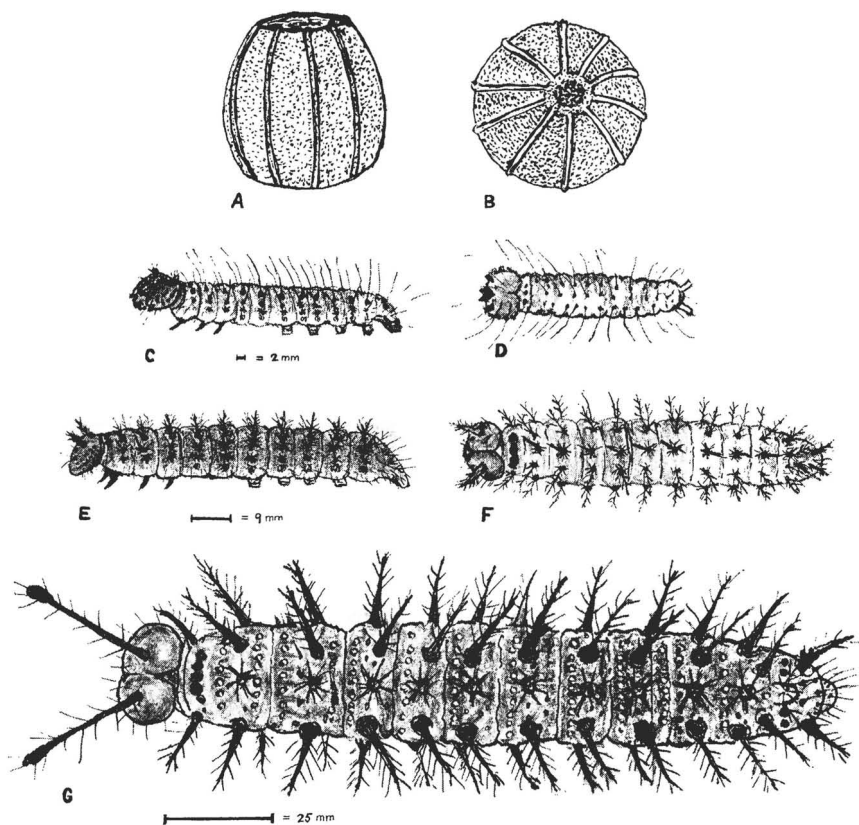


Fig. 1. *Anartia jatrophae guantanamo* Munroe. (A) ovum, lateral view; (B) ovum, dorsal view; (C) larva, first instar, lateral view; (D) larva, first instar, dorsal view; (E) larva, second instar, lateral view; (F) larva, second instar, dorsal view; (G) larva, third instar, dorsal view.

Throughout first instar, shiny black head contrasts with lighter body; entire larva covered by fine blackish hair-like spines arising from dark pyramid-like bases; spines bend over the back in a gentle curve toward the head.

Dimensions: Length of newly-emerged larva, 1.5 mm (\pm); full-grown, 3.0 mm (\pm).

Duration of first stadium: 4 days (\pm).

Second instar (Figs. 1E, F). Head, mandibles, and forelegs shiny black; head somewhat rounded, its two branched spines appreciably longer and thicker than in first instar, as are branched spines on body. Cervical shield on first thoracic segment has chain of four, dark, wartlike nodules. Anal segment bears two dorsolateral branched spines surrounded by short hair-like bristles.

Dimensions: Length of newly emerged larva, 3.0 mm (\pm); full-grown, 8–10 mm.

Duration of second stadium: 4 days.

Third instar (Figs. 1G, 2A, B, C). It is difficult to determine the change from second to third instar unless, in ecdysis, the cast skin is noticed. Careful observation is needed here because the skin soon is consumed by the larva after ecdysis.

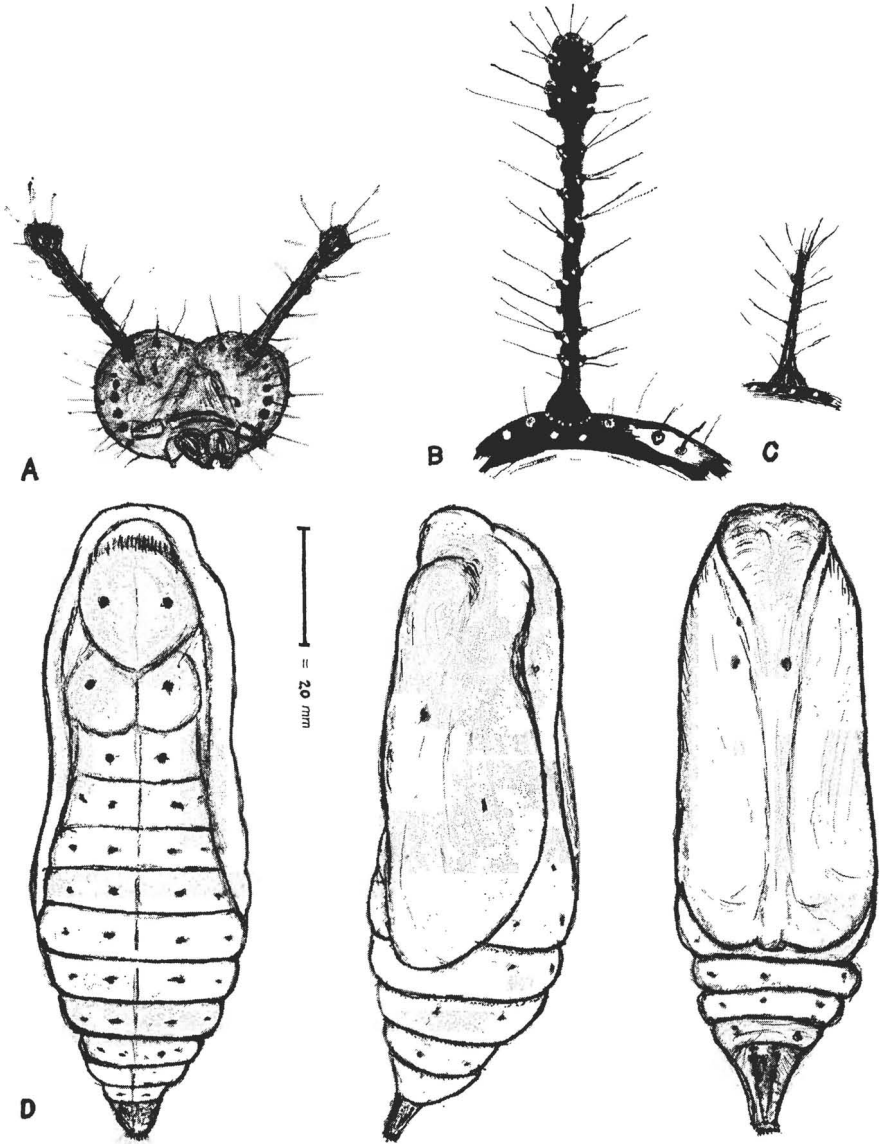


Fig. 2. *Anartia jatrophae guantanamo* Munroe. (A) larva, third instar, facial mask; (B) larva, third instar, one of dorsal branched spines on head; (C) larva, third instar, one of branched spines on body; (D) pupa, from left to right, dorsal, lateral, ventral views.

Immediately after ecdysis, head, branched spines, legs, and prolegs conspicuous dull yellow; within 30 (\pm) minutes, the same structures turn dark brown to black.

Basic body color dark brown to black, but ventral surface lighter dull yellowish-brown; chain of very small silver spots runs closely parallel to anterior and posterior margins of each body segment on dorsal and ventral surfaces; papillae or bases of spines and prolegs dull orange. Anal segment equipped with curved hooklets. From mesothorax to next-to-last abdominal segment, five parallel rows of spines run lengthwise along body; median dorsal row is flanked left and right by two dorso-lateral rows of somewhat larger spines. From head, prothorax, and anal segment arises a pair of dorsolateral spines, the cephalic ones terminating in clubs.

Dimensions: Length of newly emerged larva, 10.0–12.0 mm; full-grown, 27.0–30.0 mm. Length of full-grown third instar larvae indicates sex, as larger individuals develop into female imagoes.

Duration of third stadium: 4–5 days.

Pupa (Fig. 2D). Surface smooth, unornamented, light green but darkens in color nearing time of eclusion; dorsal surface has 2–4 light spots on each segment divided by black central line extending from head to tail; scattered white spots on wing pads and on ventral surface. Posterior end of body terminates in dark brown cremaster.

Dimensions: average length, 17.5–20.0 mm.

Duration of pupal stadium: 7–10 days.

Pupa hangs head down suspended by cremaster embedded in pad of silk attached to some support. Eclusion of imago takes place in about 15 min., and 20 min. or more pass before its wings can sustain flight.

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LITERATURE CITED

- MUNROE, E. G. 1942. The Caribbean Races of *Anartia jatrophae* Johansson (Lepidoptera: Nymphalidae). Amer. Mus. Nov. no. 1179. 4 p.