

A NOTE ON THE LIFE HISTORY OF *CALIGO BRASILIENSIS BRASILIENSIS* (LEPIDOPTERA: NYMPHALIDAE, MORPHINAE)¹

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Abstract – The 5th larval instar and pupa of *Caligo brasiliensis brasiliensis* (C. Felder, 1862) (Lepidoptera: Nymphalidae: Morphinae) are described from material reared in Southern Brazil. Major foodplant genera are in the Musaceae and Marantaceae. The caterpillar morphology is compared with another *Caligo* species.

Key words: biology, Brazil, Cannaceae, hostplants, immature stages, larvae, Marantaceae, Musaceae, Neotropical, pupae, Santa Catarina, South America, Zingiberaceae.

Species of the genus *Caligo* Hübner, [1819] are large in size, none of them reaching less than 10cm of wingspan. Therefore, larvae from this genus are also large. The vast majority have gregarious habits, and the damages inflicted by some species on crops, such as bananas, are considerable. Insufficient knowledge about the biology of these insects and the lack of effective biological control contribute to the gravity of some agricultural situations (Malo and Willis, 1961).

This paper describes the 5th larval instar and the pupa of *Caligo brasiliensis brasiliensis* (C. Felder, 1862), and also includes figures of an adult from Rio Natal, São Bento do Sul, Santa Catarina, Brazil. The larval description follows the nomenclature of Peterson (1962) and the pupa nomenclature follows Casagrande (1979).

LARVA

The larvae in the last instar reach the maximum length of 13cm, including the head and the caudal projections.

Foodplant: In the laboratory the species was reared on *Musa* sp. (Musaceae), and also accepted leaves of *Calathea zebrina* (Marantaceae), *Canna indica* (Cannaceae), and, as quoted by Müller (1886), *Hedychium coronarium* (Zingiberaceae).

5th Instar (Fig. 1–5)

Head: generally beige with dark brown spots and stripes, the latter with beige bristles. The posterior side has four pairs of scoli located dorsally, latero-dorsally, laterally, and latero-ventrally. They are gradually reduced in size from the dorsal to the ventral pair. There are two dorso-ventral bands, the first one extending from the base of the dorsal scoli to the base of the mandible, following the epicranial suture. It is dark brown in color, and a beige line separates it from the suture. The second band is less striking, starting between the dorsal and lateral scoli and ending around the four latero-frontal stemmata. The mandibles are smooth and beige, with dark brown around the frontal region with a reddish wrinkled appearance and beige bristles.

Body: pubescent, grayish beige with dark brown spots. Dorsal area dark, almost black; longitudinally divided by a dark brown line along the thoracic segments. The dark brown line continues along the dorsal area of the body and ends between the caudal extensions, slightly narrower than in the middle of the body. The dorsal area has dark tegumentary projections from the third to the seventh abdominal segments, the fourth segment projection being twice the size of the others.

The dark supraspiracular area is marked dorsally and ventrally by a lighter line. From the second abdominal segment through the base of the suranal plate, the dark color blends into other, less marked colors. A light beige spiracular area clearly separates the dorsal and ventral region of the body, the latter in the color brown.

Thoracic legs reddish-brown, abdominal prolegs lighter in color and exhibiting crochets in mesal penellipse, triordinal and uniserial, exactly similar to those described by Casagrande (1979) for *Caligo beltrao* (Illiger, 1801). Anal plate projections beige with dark bristles.

PUPA (Fig. 6-8)

The ground color of the pupa is beige, blended with darkest tones of a brown and olive drab. The aspect is all marbled, and the thorax, including the protuberant case wing, is more orange and clearly delimited by a black line. The case wing have a polished

triangular blotch. Several bristles are distributed all over the body, some of which are larger and darker along the medial dorsal line of the body, on the vertex, and near the eyes.

The abdominal segments have the same design patterns of *Caligo illioneus illioneus* (Cramer, 1776), as described by Cleare (1926).

The length of the pupae varied between 4.8 and 5.2cm, and the width between 2.8 and 3.2cm.

DISCUSSION

The 5th instar larval of *Caligo b. brasiliensis* differ from these of *C. beltrao* because the former has a dark line along the whole dorsal area of the body, similarly to *C. i. illioneus*. However, it differs from the latter since the dark dorsal line divides and subsequently converges on the fourth abdominal segment. In addition, the suranal plate projections are larger in *C. i. illioneus*. *Caligo b. brasiliensis* differs from *C. e. eurilochus* (Cramer, 1775) because the dark dorsal line is distinctly pronounced, and by having oblique lateral lines that arise from the spiracular area on the posterior portion of each segment and continue forward until near the subdorsal area. In *C. e. eurilochus* these dark lines are transverse and continue across the whole segment.

The following differences between *C. b. brasiliensis* and *C. e. eurilochus* indicate that both are good and distinct species:

1. Different coloration in 5th instar larvae of *C. b. brasiliensis* (C. Felder, 1862) presented here and the 5th instar larvae of *C. e. eurilochus* presented by Malo and Willis (1961).
2. Their distinct geographical distribution (the first occurs from Espírito Santo and Rio de Janeiro to Southern Brazil and Misiones, Argentina (Hayward, 1973), while the second occurs in Northern Pará state in Brazil and in neighbor countries (French Guyana and Surinam)).
3. In adults (Fig. 9-10), the dark blotch surrounding the “eyes” on the ventral side of the hind wings of *C. b. brasiliensis* is absent in *C. e. eurilochus*.

REFERENCES CITED

- Casagrande, M. M.**
1979. Sobre *Caligo beltrao* (Illiger). I: Taxonomia, Biologia, Morfologia das Fases Imaturas e Distribuições Espacial e Temporal (Lepidoptera, Satyridae, Brassoliniae). *Revta. Brasil. Biol.* (Rio de Janeiro), 39:173-193.
- Cleare, L. D.**
1926. On the life-history of *Caligo illioneus illioneus*, Cram. (Lep., Morphidae). *Trans. Ent. Soc. London* (London), 74:361-366, pls. 81-83.
- Hayward, K. J.**
1973. Catálogo de Los Ropaloceros Argentinos. *Opera Lillioana* (Tucuman), 23:1-318.
- Malo, F., and E. R. Willis**
1961. Life history and biological control of *Caligo eurilochus*, a pest of banana. *J. Econ. Ent.* (), 54:530-536.
- Müller, W.**
1886. Südamerikanische Nymphalidenraupen. Versuch eines natürlichen systems der Nymphaliden. *Zool. Jahrb. (Syst.)* (Jena), 1:417-678, pls. 12-15.
- Peterson, A.**
1962. *Larvae of Insects. An Introduction to Nearctic Species. Part. I Lepidoptera and Plant Infesting Hymenoptera.* Ann Arbor. 315p.
- Young, A. M., and A. Muysmond**
1985. Notes on *Caligo memnon* Felder and *Caligo atreus* Kollar. (Lepidoptera: Nymphalidae: Brassoliniae) in Costa Rica and El Salvador. *J. Res. Lepid.* (Beverly Hills), 24:154-175.