

**FINAL INSTAR CATERPILLAR AND METAMORPHOSIS OF  
*PERICYMA CRUEGERI* (BUTLER, 1886) IN SINGAPORE  
(LEPIDOPTERA: NOCTUIDAE: CATOCALINAE)**

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**INTRODUCTION**

The noctuid moth, *Pericyma cruegeri* (Butler, 1886), belongs to the tribe Pericymini and has a broad Australasian distribution, having been documented from Hong Kong, Taiwan, Vietnam, Thailand, Sumatra, Peninsular Malaysia, Borneo, Philippines, New Guinea, and Queensland (Barlow, 1982; Holloway, 2005). The diagnostic final instar larva of this species is described and illustrated here, based on a specimen encountered at the Central Catchment Nature Reserve and subsequently reared to metamorphosis.

**OBSERVATIONS**

On the night of 9 Nov.2009 (ca. 2200 hours), a final instar larva of *Pericyma cruegeri* was spotted along the Terentang Trail at the MacRitchie Reservoir forest. It was observed at chest-level feeding upon the leaf tip of an albizia (*Falcataria moluccana*; family Fabaceae) sapling (Fig. 1). The ground colour of the larva was a uniform, translucent green. At its flanks, each segment was adorned with elongated white markings. Between the second thoracic segment (T2) and the sixth abdominal segment (A6), these lateral white markings were topped with a distinct, wavy black dash. All its spiracles were jet black and outlined with a thin, white margin. On its dorsum, a parallel series of five, closely spaced, longitudinal white lines were predominant (Fig. 2). The total length of its body was 51 mm and its width was 3 mm.



Fig. 1. Final instar larva of *Pericyma cruegeri*, feeding on the young leaf of a sapling of albizia *Falcataria moluccana* (Fabaceae) along the Terentang Trail (MacRitchie Reservoir forest) on the night of 9 Nov.2009. Body length = 51 mm.



Fig. 2. Dorsal view of final instar larva (as in Fig. 1). Its body length was 51 mm and body width: 3 mm.



Fig. 3. Lateral close-up of head and thoracic region of larva.

Its head shared the similar, jade green colour as the body, and displayed two pairs of creamy white stripes (Fig. 3). One pair was located at the ventro-lateral position and was contiguous with the lateral white stripe of T1. The other pair originated laterally from just behind the posterior-most larval eyes and continued to the rear of the head. There was a sparse distribution of soft setae over its head (Figs. 3, 4) and entire body as well. Consistent with the larval description by Holloway (2005), the abdominal segments A1 to A4 were particularly elongated. In segment A3, the prolegs have disappeared entirely, while those of A4 have been severely reduced and may be regarded as vestigial (Fig. 5). At segments A5 and A6, the typical proleg morphology and proportion have been retained and perform their function optimally.

On the morning of 12 Nov.2009, the larva had concealed itself within a whitish, silken cocoon that also incorporated the compound leaves of its hostplant to enhance the camouflage effect. By 14 Nov.2009, pupation was complete and the elongated cocoon was measured to be 28 mm by 12 mm. On the night of 22 Nov.2009, a male moth had successfully eclosed (Fig. 6). Its body and wings were brownish, with symmetrical wavy patterns on both its forewing and hindwing. As noted by Barlow (1982), dorsal crests of raised scales were discernible on its basal abdominal segments. This moth was preserved as a voucher specimen at the Zoological Reference Collection (ZRC) of the Raffles Museum of Biodiversity Research (RMBR), with measurements of its body length (BL) and forewing (FW) obtained. It was catalogued as ZRC.LEP.259 (BL: 19 mm, FW: 21 mm).

Upon eclosion, the empty pupal case and larval exuvia were carefully extracted from within the cocoon (Fig. 7). The pupa was measured to be 21 mm by 7 mm and exhibited a white, powdery bloom that was typical of this genus (Holloway, 2005). Thereafter, the pupa, cocoon and larval exuvia were preserved and catalogued (ZRC.LEP.259).

At the Lepidoptera collection of the ZRC, comparative material of adult *Pericyma cruegeri* was examined. These include: ZRC.LEP.255 (female, BL: 19 mm, FW: 20 mm, coll. G. A. B., Jan.1923, 'Singapore'); ZRC.LEP.256, 257 (both males, BL: 16, 17 mm respectively, FW: 18, 17 mm respectively, coll. unknown, 8 Jan.1923, 'Singapore'), ZRC.LEP.258 (female, BL: 16 mm, FW: 18 mm, coll. T. M. Leong & A. C. Diesmos, 18 Apr.2004, National University of Singapore Campus, Kent Ridge).

Upon comparison of male and female specimens, it was noted that the antennae of males are thickened for the proximal two-thirds of their length, whereas the antennae of females are thin, simple and straight. Another sexually dimorphic character may be observed in the extent of hair growth on the limbs. In males, there is a dense profusion of elongated hairs on their limbs, whereas in females, these hairs are shorter and not as tightly clustered.

The documented larval hostplants for the genus *Pericyma* Herrich-Schäffer point towards a strong preference for legumes (Fabaceae) (Holloway, 2005; Robinson et al., 2009). For *Pericyma cruegeri*, the leguminous genera include *Acacia*, *Caesalpinia*, *Delonix*, and *Peltophorum*. However, non-legumes have also been consumed and include *Nephelium* (Sapindaceae) and *Camellia* (Theaceae) (Holloway, 2005; Robinson et al., 2009).

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#### LITERATURE CITED

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Fig. 4. Frontal close-up of head of larva.



Fig. 5. Ventro-lateral close-up of mid-body (head towards left). The prolegs of the third abdominal segment (A3) are entirely absent, while those of A4 are drastically reduced and almost non-functional. Those of A5 and A6 have retained their regular proportion and function.



Fig. 6. Emergent male (ZRC.LEP.259, body length: 19 mm, forewing length: 21 mm), eclosed on the night of 22 Nov.2009. Note its antennae, which were thickened at the proximal two-thirds.



Fig. 7. Ventral view of vacated pupa (P), with remnants of the white cocoon (C) attached to its cremaster. The larval exuvia (E) of its final instar was also preserved. Note powdery bloom on the pupa, which was 21 mm by 7 mm.