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IMMATURES OF *PHOEBEMIMA ENSIFERA* TIPPMMANN, 1960 (CERAMBYCIDAE, LAMIINAE, HEMILOPHINI)

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ABSTRACT

The larva and pupa of Phoebemima ensifera Tippmann, 1960, collected in Samanea tubulosa (Benth.) and Inga sp. (Mimosaceae) are described and illustrated. This is the first species of Hemilophini with described immatures.

KEY-WORDS: Bolivia; Coleoptera; Pacay del Rio; Penoco; South America.

INTRODUCTION

The tribe Hemilophini Thomson, 1868 is formed by 184 genera and about 507 species, recorded from North, Central and South America. From South America are recorded 99 genera and about 333 species (Monné & Hovore, 2006).

The knowledge of the immatures of this tribe is related especially to the biology and host plants of some species. Recently, Clarke & Zamalloa (2009) described in detail the life cycle of *Phoebemima ensifera* Tippman from Santa Cruz, Bolivia, based on observations of host plants in the field and laboratory. They also included the references of the host plants.

Here, the larva and pupa of *P. ensifera* are described and illustrated based on material studied by Clark & Zamalloa (*l.c.*). This is the first description of immatures for the tribe Hemilophini.

MATERIAL AND METHODS

The studied material was obtained while studying the life cycle of *Phoebemima ensifera* (Clark &

Zamalloa, 2009). The fifty instar larva was collected in *Samanea tubulosa* (Benth.) (Mimosaceae), known locally as "Penoco". The pupa was found in "Pacay del Rio", in specimens of *Inga* sp. (Mimosaceae).

The studied material is housed at the Museu de Zoologia da Universidade de São Paulo (MZSP).

The terminology follows Duffy (1960).

RESULTS

Fifty instar larva (Figs. 1-15): Length: 39 mm; width of prothorax: 5.2 mm. Elongate (Figs. 1-3), cylindrical, slightly flattened. After fixation, slightly brownish; head yellowish; apex of cephalic capsule and mandibles black; maxillae and labium partially brown. Pubescence ferruginous or golden yellow, sparse, moderately long or short; some areas with microspines. Thorax and abdomen with ambulatory ampullae dorsally and ventrally; ampullae tuberculate and with microspines.

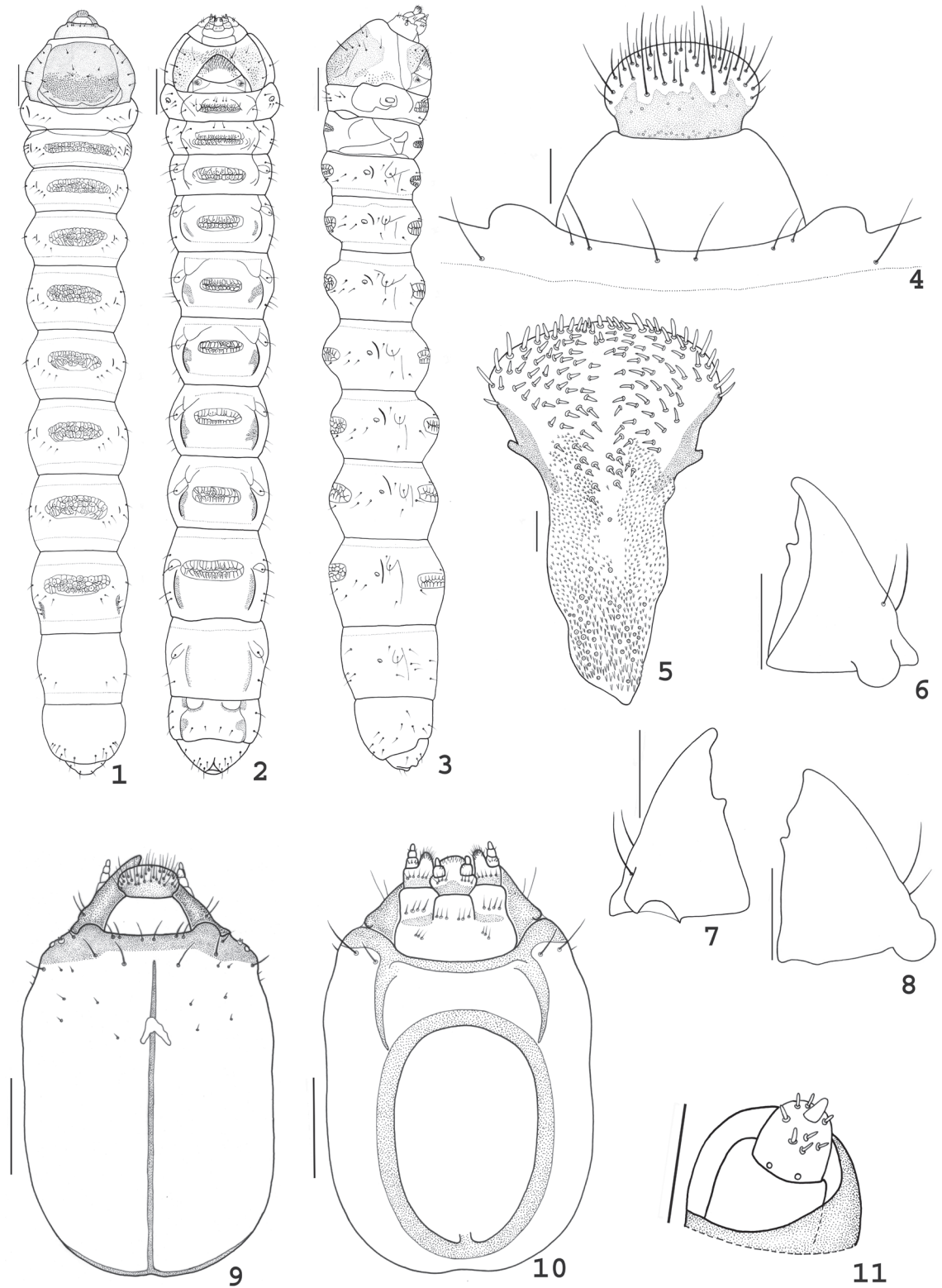
Head (Figs. 1-3, 9, 10) deeply retracted into prothorax; elongate, prognathous and strongly depressed; retracted portion 3/5 of head length; occipital foramen entire. Dorsal surface of head composed

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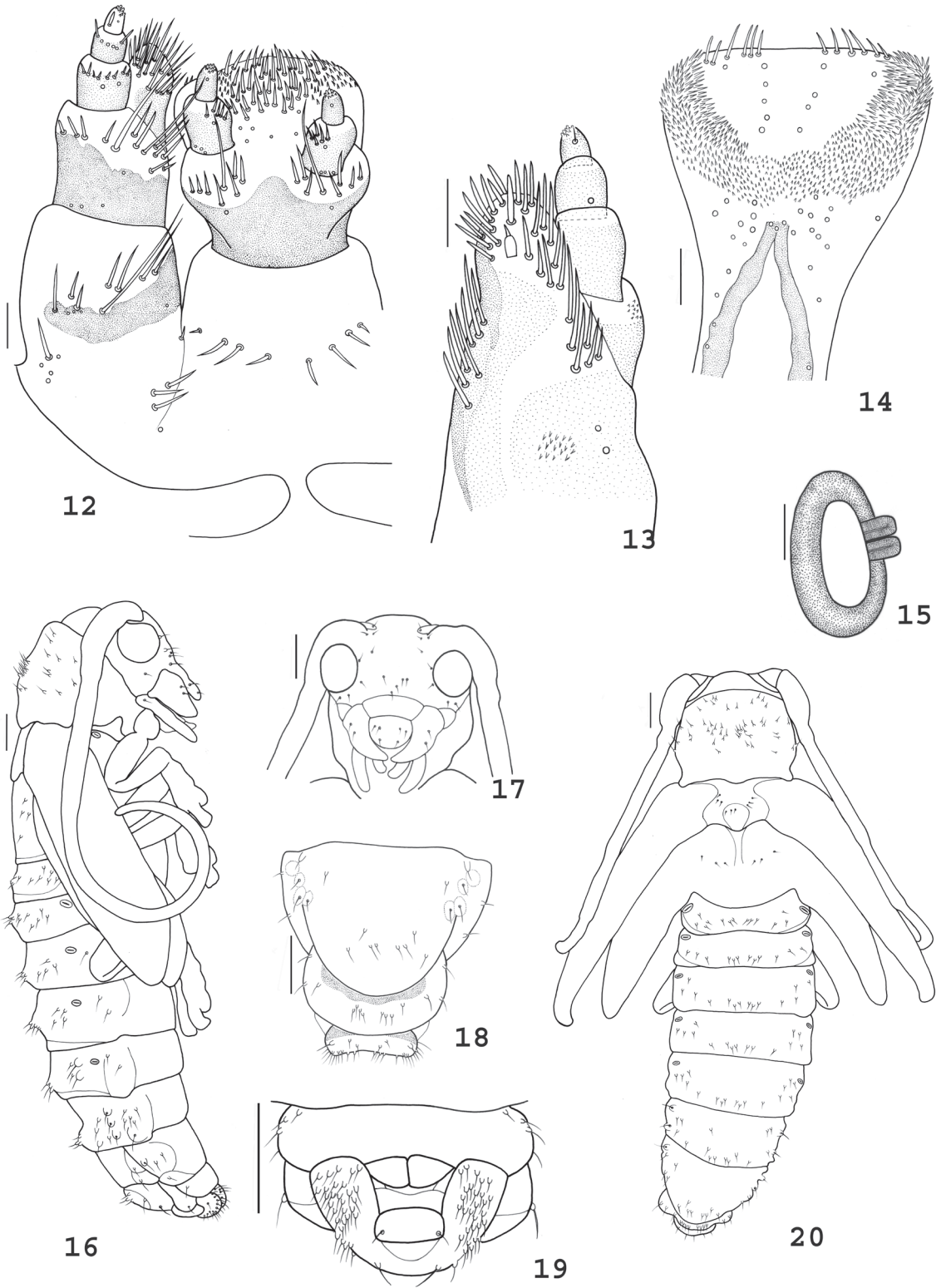
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FIGURES 1-11: *Phoebemima ensifera* Tippmann, 1960. Larva: (1-3) dorsal, ventral, lateral; (4) clypeus and labrum; (5) epipharynx; (6-8) mandible (ventral, dorsal, mesal); (9-10) head (dorsal, ventral); (11) antenna (dorsal). Bars = 2 mm, except figures 5, 11 = 1 mm; 6-8 = 5 mm; 9, 10 = 10 mm.



FIGURES 12-20: *Phoebemima ensifera* Tippmann, 1960. Larva: (12) maxila and labium (ventral); (13) maxila (dorsal); (14) hypopharynx; (15) abdominal spiracle V. Pupa: (16, 20) lateral, dorsal; (17) head (ventral); (18) segments VII-IX (dorsal); (19) segments VIII-X (ventral). Bars = 1 mm.

by two epicranial halves; median suture long, continuous with endocarina almost reaching frontoclypeal suture. Frontoclypeal suture distinct and almost straight; six epistomal setae; each epicranial half with three moderately long setae near frons (one shortest), one lateral below stemma and some tiny setae. Each side with one lateral stemma below antenna. Ventral surface with two anterior setae on each side. Antennae (Fig. 11) very short and retractile; with two antennomeres; antennomere basal almost totally retracted; antennomere distal almost as wide as long, bearing dorsally two campaniform sensilla near base and at apex, one well developed sensorial membranous appendix and eight or nine setae. Clypeus (Fig. 4) trap-ezoidal, translucent and glabrous. Labrum (Fig. 4) semielliptical; sclerotized at basal half; setae of varied



FIGURE 21: *Phoebemima ensifera* Tippmann, 1960. Adult, habitus dorsal.

sizes on distal 2/3; campaniform sensilla near base. Epipharynx (Fig. 5) with anterior margin rounded, gradually narrowed basad; one sclerite on each side at anterior half; distal half with many stout setae and basal half with microspines and campaniform sensilla. Mandible (Figs. 6-8) symmetrical with rounded apex; dorsally with one subapical small lobe and one tooth below apical tooth; two lateral setae. Maxilla (Figs. 12, 13) basally fused with labium; cardo indistinct; stipes membranous with sclerotized transversal semicircular median band; long setae near band and more basally, one setae and four campaniform sensilla latero-externally and three setae and one campaniform sensillum laterointernally; palpifer ventrally almost as long as wide, partially sclerotized, bearing near apex, irregular row of long setae (one longest); three campaniform sensilla near base and one near middle, below long setae; maxillary lobe elongate, shorter than palpus, with rounded apex; many wide long setae at apex dorsally and ventrally; dorsally with one short pedunculate seta near middle. Maxillary palpi with three palpomeres: basal elongate, bearing ventrally transverse row of short setae and two campaniform sensilla; median wider than long, bearing ventrally one row of four campaniform sensilla and one seta on each side, and dorsally, one campaniform sensillum; distal narrower and elongate, bearing ventrally one wide seta and one campaniform sensillum, dorsally one seta and at apex, several peg-like sensilla. Labium (Fig. 12): mentum fused to submentum, translucent, with transverse row of setae near middle; prementum transverse, partially sclerotized and narrowed at base; palpiger with many long setae; ligula wide and membranous with distal margin slightly rounded; bearing many wide long setae at middle of distal half, microspines laterally and some campaniform sensilla between palpi. Labial palpi with two palpomeres: basal elongate, bearing ventrally five setae and one campaniform sensillum internally near apex and three campaniform sensilla near base. Hypopharynx (Fig. 14): each side of anterior margin with one row of six long setae; with a semicircular band of microspines from one fore angle to another; many campaniform sensilla inside and outside of microspined band; two sclerites at middle, divergent basally.

Prothorax wider than long, strongly narrow anteriad, slightly narrowed at base, making lateral margins rounded and wider at basal third. Pronotum partially sclerotized with scattered setae and basal band with sclerotized microspines; microspines sparse laterobasally. Prothorax ventrally: presternum with sparse short setae; laterally microspined area and five setae each side; eusternum densely setous on distal

two thirds; sternellum with a tuft of setae each side, at leg position. Meso- and metathorax band-like. Mesothorax dorsally with three setae and one longitudinal scar on each side; ventrally with one transversal tuberculate ampulla at middle and setae of varied sizes; each side with lateroanteriorly elliptical spiracle with two accessory chambers. Metathorax with transversal tuberculate ampulla dorsal and ventral; scars and setae dorsally and setae ventrally.

Segments I-VIII with lateral spiracle (Fig. 15) having two accessory chambers; ventrally with one longitudinal carina and one setous tubercle on each side. Segments I-VII with transversal tuberculate ampullae dorsally and ventrally; dorsally with one longitudinal dorsal scar on each side. Segment X distal, smaller and triangular, partially visible dorsally; with trilobed apex; anal opening triangular.

Pupa (Figs. 16-20): Length: 19 mm. Coloration after fixation brownish-cream: Pubescence stout, ferruginous of varied sizes; majority inserted in small tubercles; tubercles on dorsal surface of abdomen increasing in size apicad; glabrous on ventral surface except segments IX-X.

Head (Figs. 16, 17) hypognathous, partially visible dorsally; glabrous dorsally; some short setae on frons, labrum and mandibles. Pronotum wider than long with many setae, denser near middle. Trochanters with dentiform prominence distally at internal margin. Segments I-VI band-like, dorsally with setae, denser at middle near basal margin; segments I-V with dorsolateral elliptical spiracle; segments V-IX with dorsolateral and lateral tubercles; segment VII longest with apex rounded and prominent, with setae laterally and near middle; segment VIII (Figs. 16, 18-20) band-like, narrow, dorsally partly covered by distal region of segment VII, with distal margin rounded; setae more concentrated near middle; segment IX (Figs. 16, 18, 19) narrower and shorter involving segment X; many setae at distal angles; segment X (Fig. 19) ventral, trilobed and glabrous; anal opening transverse.

Material examined: BOLIVIA. Santa Cruz, Buena Vista, Hotel Flora & Fauna, 06.V.2007, 1 larva (MZSP); 10 km S of Buena Vista, Camino Pallilo-Huaytu Junction, 18.IX.2007, 1 pupa, 1 exuvia (MZSP).

DISCUSSION

Phoebemima ensifera is the first species of Hemilophini with described immatures. Comparing the larva of this species with the known larvae of the

other tribes of Lamiinae it is possible to verify that it presents spiracles elliptical with two accessory chambers. In Lamiinae, the spiracles are usually without marginal chambers. Circular or elliptical spiracles with several subcontiguous marginal chambers are present in some species of Acanthoderini (*Dryoctenes scrupulosus* (Germar), *Hedyphates betulinus* (Klug), *Oreodera* (*Orepdera*) *glauca* (Linnaeus)), Acanthocini (*Acanthocinus* (*A.*) *oblique* LeConte, *A. triangulifer* (Erichson), *Lepturges sejunctimaculata* Bates, *Lophopoeum timbouvae* Lameere), Adetini, Apodasyini, Colobothini (*Priscilla hypsiomoides* Thomson), Estolini (*Estola albicincta* Melzer), Hippopsini, Spalacopsini and Tetraopini (*Tetraopes tetrophthalmus* (Forster)). Spiracles with paired chambers are present, besides in Hemilophini (*Phoebemima ensifera*), only in Aerenicini (*Phaula thomsoni* Lacordaire, *Aerenicopsis championi* Bates) (Duffy, 1960).

RESUMO

A larva e a pupa de Phoebemima ensifera Tippmann, 1960, coletadas em Samanea tubulosa (Benth.) e Inga sp. (Mimosaceae) são descritas e ilustradas. Essa é a primeira espécie de Hemilophini com imaturos descritos.

PALAVRAS-CHAVE: América do Sul; Bolívia; Coleoptera; Pacay del Rio; Penoco.

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