

Description of the last instar larva of *Trypoxylon (Trypargilum) albitarse* Fabricius (Hymenoptera, Crabronidae) from Brazil

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ABSTRACT. The last instar larva of *Trypoxylon (Trypargilum) albitarse* Fabricius, 1804 is described and illustrated, based on one specimen collected in southeastern Brazil. This larva can be distinguished from other described larvae of the subgenus *Trypargilum* Richards, 1934 for the following combination of features: integument of the body with spines; labrum and epipharynx with sensillae; medio-apical and latero-basal portions of the epipharynx devoid of spines.

KEY WORDS. Immature, morphology, taxonomy, wasp.

RESUMO. Descrição da larva de último estágio de *Trypoxylon (Trypargilum) albitarse* Fabricius (Hymenoptera, Crabronidae) do Brasil. A larva de último estágio de *Trypoxylon (Trypargilum) albitarse* Fabricius, 1804 é descrita e ilustrada, com base em um exemplar coletado do sudeste do Brasil. Esta larva pode ser distinta de outras larvas do subgênero *Trypargilum* Richards, 1934 descritas pela seguinte combinação de caracteres: tegumento do corpo com espinhos; labro e epifaringe com sensilas; porções medio-apical e latero-basal da epifaringe sem espinhos. **PALAVRAS CHAVES.** Imaturo, morfologia, taxonomia, vespa.

Larval morphology of only a few species of the large genus *Trypoxylon* Latreille, 1796 is known (WILLIAMS 1919, SOIKA 1934, MARÉCHAL 1936, EVANS 1957, 1959, YOSHIMOTO 1964, IIDA 1969, ASÍS *et al.* 1994, BUYS 2003). This genus is usually split into two subgenera, *Trypoxylon* and *Trypargilum* Richards, 1934. Larvae of the following species and subspecies of the subgenus *Trypargilum* have been described: *T. californicum* Saussure, 1867 (EVANS 1957, as *T. arizonense* FOX, 1891); *T. clavatum* Say, 1837 (EVANS 1957, 1959); *T. clavatum johannis* Richards, 1934 (EVANS 1957, 1959, in both as *T. johannis*); *T. collinum* Smith, 1856 (EVANS 1959); *T. collinum rubrocinctum* Packard, 1867 (EVANS 1957, 1959, in both as *T. rubro-cinctum*); *T. lactitarse* Saussure, 1867 (EVANS 1957, 1959, in both as *T. striatum* Provancher, 1888); *T. politum* Say, 1837 (EVANS 1957, 1959); *T. spinosum* Cameron, 1889 (EVANS 1957); *T. texense* Saussure, 1887 (EVANS 1959); *T. tridentatum* Packard, 1867 (EVANS 1957, 1959).

Trypoxylon (Trypargilum) albitarse Fabricius, 1804 is widely distributed in South America (AMARANTE 2002) and it is conspicuous in southeastern Brazil. Herein the last instar larva of this species is described and illustrated.

METHODS

The techniques follow in general lines EVANS & LIN (1956). The head and the entire body of the larva were separately heated in KOH (10%) for about 15 minutes to eliminate the soft tis-

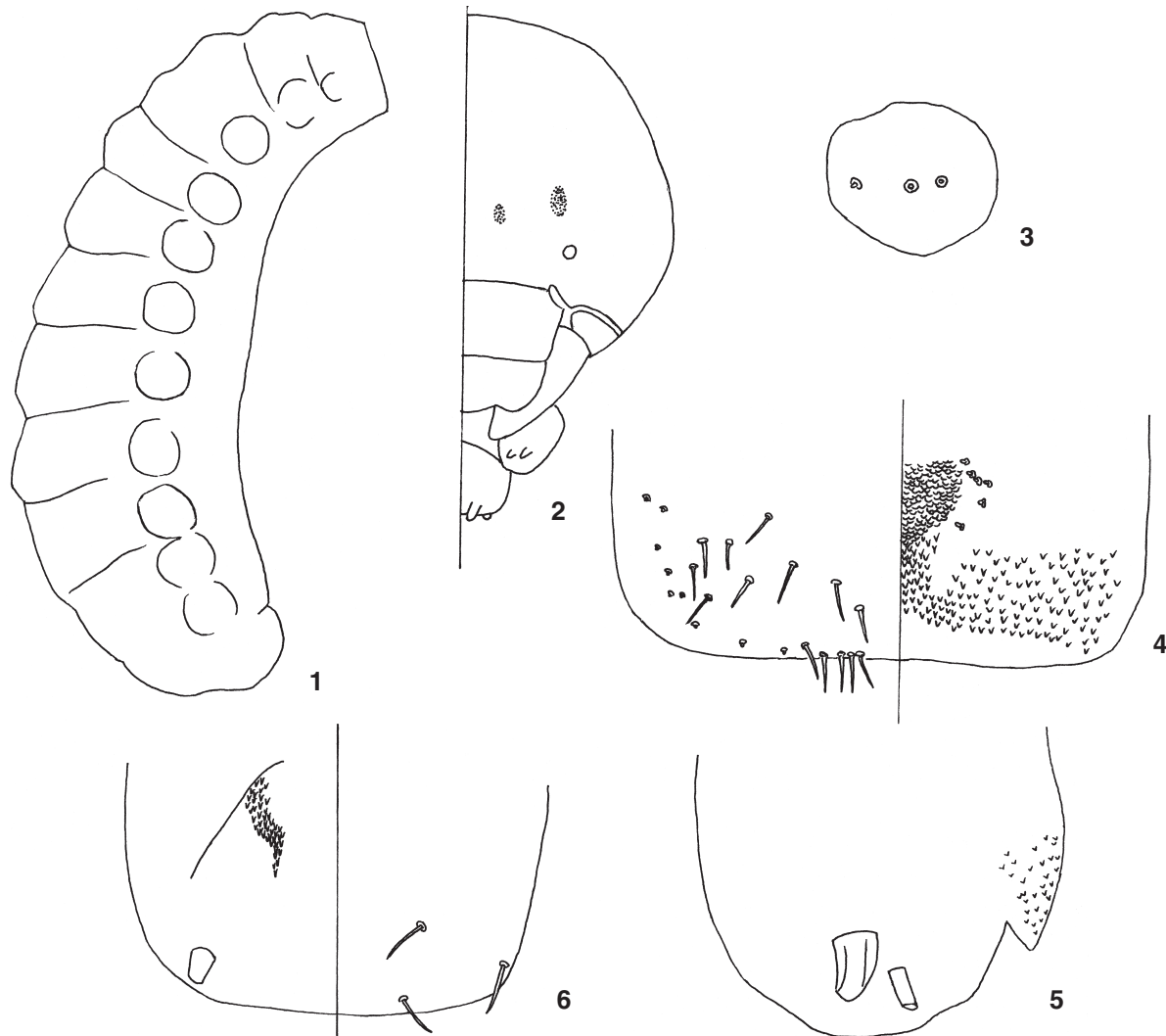
sues. The head and the mouthparts were mounted in slides with glycerine. The number of punctures and setae on the general areas on the left side of the head and of the right side of the head was put in the description separated by a slash. The palpi, galeae, and setae were measured at the base. The examined material and associated adults are deposited in the Museu de Zoologia da Universidade de São Paulo (MZUSP), São Paulo State, Brazil.

RESULTS

Last instar larva (Figs 1-6)

Body: White. Length 1.7 cm; width 0.5 cm. Intersegmental lines distinct. Pleural lobes developed, rounded, isolated, smaller on segments TII and TIII, absent on segment AX. Spines on integument with 7-15 μm long and 2-5 μm wide, different kinds of spines not distinguished. Integument with two kinds of setae without a detectable regular pattern of distribution: small setae with 6-12 μm long and about 2 μm wide; large setae with 37-68 μm and 2-5 μm wide. Spiracles with 120-150 μm in diameter; not noticeably sculptured. Anus ventral.

Head capsule: Height about 1.7 mm; width about 1.8 mm. Coronal suture indistinct. Parietal bands unpigmented. Antennal orbits pigmented; 65 μm wide and 55 μm in height, with three sensilla distributed in a straight line. Antennal and frontal concavities lightly pigmented. Cephalic rugosity (small con-



Figs 1-6. Last instar larva of *Trypoxylon albitarse*: (1) body without the head, lateral view; (2) head, frontal view; (3) antennal orbit, frontal view; (4) labrum and epipharynx, frontal view; (5) apical portion of the maxilla, lateral view; (6) labium, dorsal and ventral views.

vexities on the integument of the coronal area of the head) weakly developed. Coronal area without punctures; with four setae (about 45 μm long and 5 μm wide). Frontal area with five setae (37-50 μm long and 3-5 μm wide). Genal areas with about 40/38 punctures (5-9 μm in diameter); without setae. Clypeal area with about 10 setae (55-60 μm long and 5 μm wide) and 12 punctures (about 8 μm in diameter). Setae on the head without a detectable regular pattern of distribution. Pleurostoma partially pigmented, especially in the points of articulations with the mandibles; anterior tentorial arms unpigmented; hypostoma pigmented.

Mouthparts: Labrum quadrangular, 710 μm in width and 400 μm in height; without punctures; with 30 setae (38-63 μm long and 6 μm wide) and about 26 basiconic sensillae with

about 5 μm wide. Epipharynx without pigmented areas; marginal, lateral and central portions with spines up to 10 μm long, all the spines turned to the apex; a strongly papillose area basally on the central portion; about 12 basiconic sensilla near the papillose area. Mandibles pigmented, especially in apical portions and in mandibular articulations; with five teeth; 620 μm long; one basal setae (50 μm long and 5 μm wide); strongly verrucose on the superior portion. Maxillae without pigmented areas; apical portion not papillose; with two setae (55 μm long and 5 μm wide); spines basally on dorsal, ventral, inner, and external portions about 10 μm long; maxillary palpi pigmented, larger on the base and slightly tapering toward the apex, 85 μm long and 50 μm wide; galeae pigmented, approximately cylindrical, 48 μm long and 25 μm wide; lacinal area with

scattered spines up to 8 μm long, with an angular lobe distinct. Labium with 520 μm in maximum width; a pair of small spinulose areas on the central portion, the spines up to 25 μm long; ventral portion with six setae (38-45 μm long); labial palpi about 50 μm long and 30 μm wide. Spinnerets apically truncate, slightly longer than the labial palpi.

Examined material: BRAZIL, *São Paulo*: São Paulo (Campus of the Museu de Zoologia da Universidade de São Paulo); 27/XII/1988; S.T.P. Amarante *leg.*, one last instar larva with the mandibles worn.

DISCUSSION

The larva of *T. albitarse* differs from other known larvae of the subgenus *Trypargilum* (EVANS 1957, 1959) for the following features: (1) integument of the body with spines (except from those of *T. texense* and *T. clavatum johannis*); (2) labrum with sensillae laterally; (3) epipharynx with sensillae medially (except from those of *T. texense*); (4) medio-apical portion of the epipharynx devoid of spines (distinguished only from *T. lactitarse*); (5) latero-basal portion epipharynx devoid of spines (except from those of *T. californicum*).

Some characters observed in the larva of *T. albitarse*, which apparently were not adequately treated in previously larval descriptions of *Trypargilum*, are remarked as follows, since apparently they are useful to the systematics of the subgenus. (1) Setae on the integument of the body were related in larvae of *Trypargilum* in the comprehensive papers by EVANS (1957, 1959). Although this author commented about differences in the length of the setae among some species, he did not measure the setae. Therefore, comparisons with his observations are not possible. (2) Sensillae on the labrum were not previously found among larvae of *Trypargilum* (EVANS 1957, 1959) and (3) sensillae on the epipharynx were mentioned only *T. texense* (EVANS 1959). However, it is necessary to have caution with these observations, since small basiconic sensilla are easily confounded with pores or punctures. (4) Spines basally on the maxillae, as herein related in *T. albitarse*, were not found in larvae of *Trypargilum* (EVANS 1957, 1959). Structures somewhat similar have been found in the inner portion of the maxilla of some larva of Sphecidae and bees (e.g. BUYS 2005, BUYS *et al.* 2004). It is possible that the basal spines on the maxillae had been overpassed in previously description of *Trypargilum*.

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