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DESCRIPTION OF THE MATURE LARVA OF *ANCISTROCERUS SIKHIMENSIS* (HYMENOPTERA: EUMENIDAE)

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ABSTRACT

The mature larva of *A. sikhimensis* is described, illustrated, and compared with that of other species of the genus so far described. The final-instar of this species and the different species recently described, or redescribed, in this genus are *A. kitcheneri*, *A. longispinosus*, and *A. trifasciatus*, and all can be differentiated on the basis of the following characters: (a) the development of antennae; (b) the development of the atrium with respect to the subatrium; (c) the number of the sensilla of the labrum and galea, and (d) the presence/absence of spinules and papillae on the labium.

Key Words: Hymenoptera, Eumenidae, *Ancistrocerus*, mature larva, Nepal

RESUMEN

Se describe, y compara con las ya descritas del género, la larva madura de *Ancistrocerus sikhimensis*. Los caracteres que permiten distinguir las larvas maduras, recientemente descritas o redescritas, del género *Ancistrocerus*: *A. kitcheneri*, *A. longispinosus*, y *A. trifasciatus*, radican en: (a) desarrollo de las antenas y del atrium con respecto al subatrium; (b) número de sensilas del labrum y galeas, y (c) presencia/ausencia de espínulas y papilas en el labium.

Translation provided by the authors.

Most of the taxonomy of eumenid wasps is based on external adult morphology, and relatively little attention has been paid to interspecific differences in larval characters, even though they could be useful. In this respect, of 2500-3500 species described (Yamane 1990), larval morphology is only known for 42 (Tormos et al. 1998). Within this set, only five species of the genus *Ancistrocerus* Wesmael, 1836, have been described: *A. trifasciatus* (Müller, 1776) (Enslin 1921; Jørgensen 1942; Tormos et al. 1998); *A. oviventris* (Wesmael, 1836) (Micheli 1930); *A. gazella* (Panzer, 1793) (Grandi 1961), *A. kitcheneri* (Dusmet, 1917) and *A. longispinosus* (de Saussure, 1885) (Tormos et al. 1998). This study addresses the larval morphology of *A. sikhimensis* Bingham, 1898, obtained during a study on the fauna of rubicolous species of Nepal.

MATERIALS AND METHODS

The methods employed to prepare larval specimens as well as the terminology for larval morphology and the format used in the descriptions follow Evans (1987) and Sime and Wahl (1998). The following abbreviations are employed: d = diameter, h = height, l = length, w = width. The material is deposited at the "Torres-Sala" Entomological Foundation (Valencia, Spain).

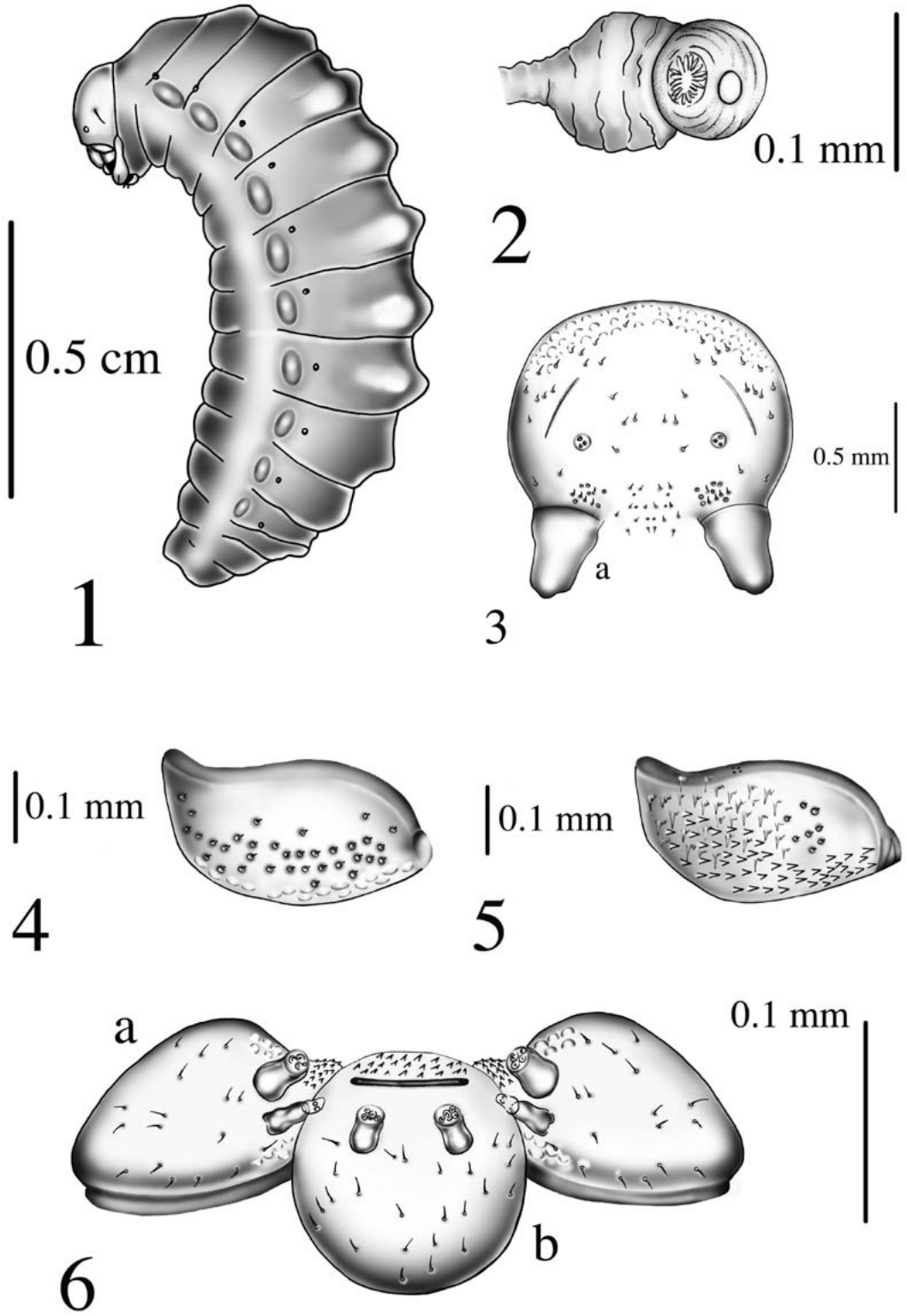
The description is based on four mature larvae obtained by R. Boesi in Nepal in 2003. Absolute measurements, except for the body width and length, are based on data for the one specimen.

DESCRIPTION OF MATURE LARVA

A. sikhimensis Bingham, 1898 (Figs. 1-6)

Body (Fig. 1) (l = 11.7-12.6 mm, maximum w = 2.1-2.3 mm) robust; first five abdominal segments divided into two annulets by a transverse crease. Anus terminal, in central position, as a transverse slit. Pleural lobes developed. Integument with scanty and disperse setae (l = 9-11 µm) and punctures. Spiracles (Fig. 2) with walls of atrium with ridges and asperities; opening into subatrium spinulose; subatrium (d = 84 µm) as wide as atrium (d = 81 µm).

Cranium (Fig. 3) (w = 1.4 mm, h (exclusive of labrum) = 1.1 mm) with sparse setae (l = 9-12 µm) and punctures. Coronal suture absent and parietal bands present. Antennae (d = 65 µm) almost



Figs. 1-6. Mature larva of *Ancistrocerus sikhimensis*: (1) Body, lateral view; (2) Anterior thoracic spiracle (side view) (atrium, subatrium and tracheal trunk); (3) Cranium (frontal view); (3 a) mandible; (4) Labrum; (5) Epipharynx; (6 a) Maxilla; (6 b) Labium.

flat, circular, with 3 sensilla. Clypeus with setae (l = 4 µm) and punctures. Labrum (Fig. 4) (w = 685 µm) emarginate, with around 68 conical sensilla (w = 8 µm). Epipharynx (Fig. 5) spinulose, with 16 sensilla (d = 2 µm).

Mouthparts. Mandible (Fig. 3a) (l = 410 µm, w = 250 µm) weakly tridentate. Maxilla (Fig. 6a) (w = 292 µm) spinulose on the lacinial area and with16 setae (l = 5-8 µm) on external part. Maxillary palpus conical (h = 87 µm, w = 45 µm) with 4 protuberant apical sensilla (w = 3-6 µm); galea (l = 130 µm, w = 50 µm) long, attenuated at apex, with 2 apical sensilla. Labium (Fig. 6b) (w = 375 µm) spinulose dorsally to salivary orifice; labial palpus (l = 80 µm, w = 60 µm) with 4 apical sensilla (w = 3-6 µm); prementum with setae (l = 12-15 µm); salivary orifice a transverse slit (w = 130 µm).

Discussion

The present description of the morphology of the mature larva of *A. sikhimensis*, together with previous descriptions carried out by our team or some of its members (Tormos et al. 1998), show that the mature larvae of *Ancistrocerus* are very similar, differing in (a) the presence/absence of the coronal suture and setae of the labrum; (b) more or less developed parietal bands; (c) the number and arrangement of the sensilla of the epipharynx, and (d) the development of apical sensilla of the galeae (Table 1). Additionally, other differences can be observed between *A. sikhimensis* and *A. kitcheneri*, *A. longispinosus*, and *A. trifasciatus*, recently described or redescribed, by the authors. These differences are (a) the development of antennae; (b) the development of the atrium with respect to the subatrium; (c) the number of the sensilla of the labrum and galea, and (d) the presence/absence of spinules and papillae on the labium.

Table 1. Characters used in the discussion of the mature larvae of *Ancistrocerus*.

	1	2	3	4	5	6	7
A. gazella	A	A	B	A	A	B	A
A. kitcheneri	A	B	A	B	B	B	A
A. longispinosus	A	B	B	B	B	B	B
A. oviventris	B	B	B	A	A	A	B
A. sikhimensis	B	A	A	B	A	B	A
A. trifasciatus	A	A	A	A	B	B	A

Coronal suture: (1) present (A); absent (B). Epipharynx: (2) with 16 sensilla (A); with 8 to 10-12 sensilla (B). Galea: (3) longer (higher) than the maxillary palpus (A); as long as or shorter than the maxillary palpus (B). Labrum: (4) with setae (A); without setae (B). Maxillae: (5) with more than 6 setae on the external margin (A); with 6 setae on the external margin (B). Maxillary palpus: (6) with 6 sensilla at apex (A); with 4 sensilla at apex (B). Parietal bands: (7) well developed (A); very weakly developed (practically absent) (B).

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References Cited

Enslin, E. 1921. Beiträge zur kenntnis der Hymenopteren II. 3. Biologie von *Symmorphus sinuatus* F. 4. Biologie von *Ancistrocerus trifasciatus* F. Deutsch entomologische Zeitschr. 279-285.

Grandi, G. 1961. Studi di un entomologo sugli imenotteri superiori. Bollettino dell'Istituto di Entomologia della Università di Bologna XXV: 1-659.

Jørgensen, P. 1942. Biological observations on some solitary vespides. Ent. Meddv. 22: 299-335.

Micheli, L. 1930. Note biologiche e morfologiche sugli imenotteri (contributo 2). Memorie della Società Entomologica Italiana 9: 46-66.

Sime, R. K., and D. B. Wahl. 1998. Taxonomy, mature larva, and observations on the biology of *Gnamptopelta obsidianator* (Brullé) (Hymenoptera: Ichneumonidae, Ichneumoninae). J. Hymenoptera Res. 7(2): 157-164.

Tormos, J., J. D. Asís, S. F. Gayubo, and F. Torres. 1998. Description of the mature larvae of *Ancistrocerus kitcheneri* (Dusmet, 1917), *A. longispinosus longispinosus* (Saussure, 1885) and redescription of that of *A. trifasciatus* (Müller, 1776). (Hymenoptera, Vespidae). Nouvelle Revue d'Entomologie (NS) 15: 31-36.

Evans, H. E. 1987. Order Hymenoptera, pp. 597-710 *In* F. W. Stehr [ed.], Immature Insects, Kendall/Hunt Publishing Company, Dubuque, Iowa.

Yamane, Sk. 1990. A revision of the Japanese Eumenidae (Hymenoptera, Vespoidea). Insecta-matsumurana, N.S. 43: 1-189.