SCIENTIFIC COMMUNICATION

Description of the last instar larva of *Tachysphex inconspicuus* (Kirby) (Hymenoptera, Crabronidae) from Brazil

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ABSTRACT. The last instar larva of *Tachysphex inconspicuus* (Kirby, 1890) is described and illustrated. Minute spines on the anterior dorsal annulets of abdominal segments and different types of setae on prothorax and mesothorax are remarkable features observed in the larva of *T. inconspicuus* which were not reported in previously descriptions of larvae of the genus. Distribution of spines and sensilla on the epipharynx and distribution of setae on head and body seem also useful to distinguish *Tachysphex* larvae.
KEY WORDS. Immature; morphology; taxonomy; systematic; wasp.

RESUMO. **Descrição da larva de último estádio de *Tachysphex inconspicuus* (Kirby) (Hymenoptera, Crabronidae) do Brasil.** A larva de último estádio de *Tachysphex inconspicuus* (Kirby, 1890) é descrita e ilustrada. Pequenos espinhos nos anéis dorsais anteriores dos segmentos abdominais e diferentes tipos de cerdas no protórax e mesotórax são características destacáveis observadas na larva de *T. inconspicuus*, as quais não foram registradas em descrições anteriores de larvas do gênero. Distribuição de espinhos e sensilas na epifaringe e distribuição de cerdas na cabeça e no corpo também parecem úteis para distingüir larvas de *Tachysphex*.
PALAVRAS-CHAVE. Imaturo; morfologia; taxonomia; sistemática; vespa.

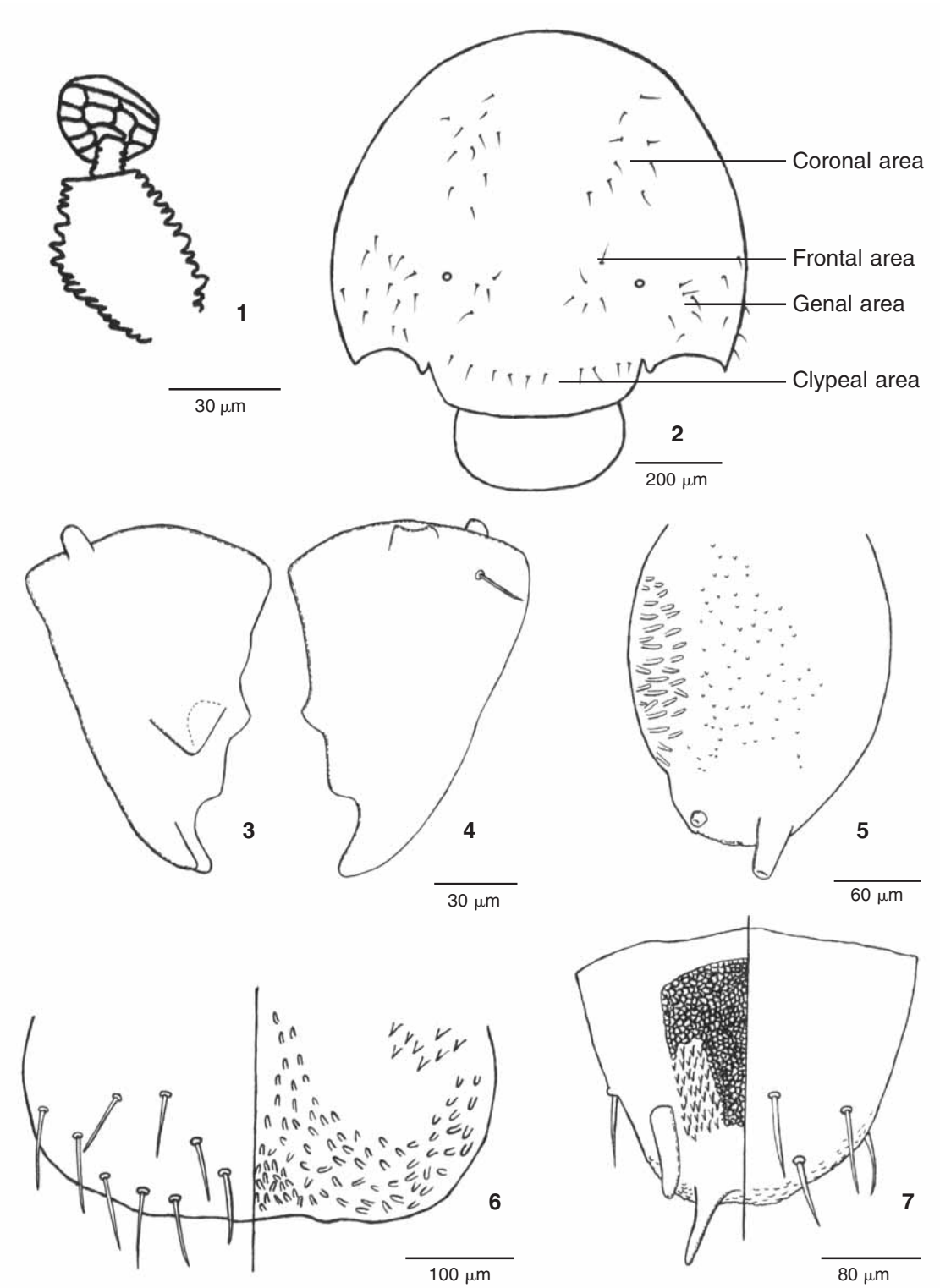
Tachysphex Kohl, 1883 is a very large and complex genus of solitary wasps. In recent years the Polish entomologist Wojciech Pulawski reviewed the systematics of the worldwide species of the genus in a series of papers (references in Pulawski 1988). However, the morphology of the immature instars of *Tachysphex* species is still very poorly known. Lasts instar larvae of only seven species were described, namely *T. obscuripennis* (Shenck, 1857), *T. nitidus* (Spinola, 1805), *T. pompiliformis* (Panzer, 1805), *T. costae* (Stefani, 1882) (Grandi 1961), *T. terminatus* (Smith, 1856) (Evans 1958), *T. apicalis* (Fox, 1893) (Evans 1964), and *T. albocinctus* (Lucas, 1849) (Asís *et al*. 1987). *Tachysphex inconspicuus* (Kirby, 1890) is a cockroach hunting species that digs her nests in sandy substratum (Callan 1942, Pulawski 1974). Herein the last instar larva of this species is described and illustrated.

An adult *Chorisoneura excelsa* Albuquerque & Silva, 1977 (Blattodea, Blatellidae) bearing an egg of *T. inconspicuus* was collected from the wasp's nest in the Biological Reserve of Poço das Antas, Rio de Janeiro State, southeastern Brazil. It was maintained in creation in laboratory until the larvae reached maturity. In order to study the morphology of the larva her head and her body were separately heated in KOH (10%) for about 15 minutes and mounted in slides with glycerine. The mandibles were dissected and measured from the apex to the internal mandibular articulation. Since the setae on the head are distributed in patches bilaterally symetrical, the number of setae on the cephalic areas respectively on the left side of the head and of the right side of the head were put in the description separated by a slash. A voucher specimen has been deposited in the entomological collection of the Museu Nacional, Universidade Federal do Rio de Janeiro (MNRJ), Rio de Janeiro, Brasil.

Tachysphex inconspicuus (Kirby, 1890)

Mature larva (Figs 1-7)

Body: White yellowish. Pleural lobes conic on thorax and rounded on abdomen; prothorax with additional pair of smaller sublateral lobes. Prothoracic pleural lobes with six setae (25-55 µm long); mesothoracic one with 10 setae (28-55 µm long); metathoracic one with six setae (15-38 µm long); additional sub-lateral prothoracic lobes bare; abdominal pleural lobes with some setae (up to 38 µm long). Prothorax and mesothorax dorsally with two types of setae clearly distinct by class of size, on metathorax this distinction is not so clear; prothorax with 55 large setae (63-102 µm long, up to 3 µm wide at the base) and seven small ones (with 15-38 µm long, about 1 µm wide at



Figs 1-7. *Tachysphex incospicuus*, last instar larva: (1) spiracle, lateral view; (2) head, frontal view, showing distribution of setae; (3-4) mandible, dorsal (right) and ventral (left) views; (5) maxilla, frontal view; (6) labrum/epipharynx, frontal view; (7) labium, dorsal (left) and ventral (right) views.

the base); mesothorax with 28 large setae (55-95 µm long) and 16 small ones (25-50 µm long); metathorax with 24 setae (18-55 µm long). Abdominal segments dorsally divided in two annulets, the anterior one with minute spines, the posterior one with about 20 setae (13-38 µm long) distributed regularly in two parallel rows, except on the anal segment, in which the setae are irregularly scattered. Spiracles slightly pigmented; first thoracic spiracles with 55 µm in diameter, second ones with 45 µm, other spiracles with about 30 m in diameter; atrium wall ornamented with quadrangular sculptures; opening to the subatrium not armed with spines. Anus ventral.

Head: 1.150 µm wide and 1.050 µm height. Coronal suture and parietal bands absent. Coronal area with 11/9 setae. Frontal area with pair of inconspicuous concavities; with 4/5 setae (50-100 µm long). Clypeal area with 11 setae aligned (up to 68 µm long); with punctures. Genal areas with 13/16 setae (up to 105 µm long). Antennal orbits unpigmented, circular, 30 µm in diameter, with 3 sensilla. Pleurostoma unpigmented, with some punctures; anterior tentorial arms and hypostoma lightly pigmented. Epistomal suture weakly distinct.

Mouthparts: Labrum rounded, 400 µm wide and 250 µm high; with 25 setae (63-75 µm long), the most on apical portion; basiconic sensilla near marginal portion. Epipharynx with apically rounded spines (2.5 µm wide and 8-20 µm long) in lateral, marginal and basal portions; acute spines (5-8 µm wide on base and up to 25 µm long) on basal portions; with small bare area on central portion bearing some basiconic sensilla. Mandibles pigmented, darker from middle to apex and in the internal mandibular articulation; 118 µm long; with 5 teeth, the two apical ones juxtapositioned, a small tooth in the inner mandibular surface; a setae near base (50 µm long). Maxillae with spines on dorsal portion; with a prominent lobe covered with elongated apically rounded spines (up to 20 µm long and about 2 µm wide); lateral portion with about nine setae (60-90 µm long); maxillary palpi pigmented, 85 µm long and 28 µm wide; galeae pigmented, about 13 µm long. Labium with pair of densely spinulose areas on oral surface, delimiting a papilose central area, which reaches the basal portion of labium; papillose on marginal portion; ventral portion with 4/4 setae (about 70-80 µm long); labial palpi pigmented, 25 µm wide and 80 µm long; spinnerets bifid, 80 µm long.

The known larvae of *Tachysphex* species are quite uniform morphologically, being hard to differentiate them. Two remarkable features observed in the larva of *T. incospicuus* were not reported in descriptions of other larvae of the genus: minute spines on the dorsal anterior annulets of abdominal segments and different types of setae on prothorax and mesothorax. The other described larvae of *Tachysphex* seem to be devoid of spines on body, except those of *T. terminatus*, which bears parts of venter clothed with minute spinule (Evans 1958). The distribution of spines on epipharynx is somewhat variable among distinct larvae of *Tachysphex*. Evans (1958) comments that the larvae of *T. nitidus*, *T. pompiliformis*, and *T. terminatus* have an area devoid of spines on the median portion of epipharynx larger than those of *T. obscuripennis* and *T. costae*. The larva of *T. insconspicuus* is more similar to the later two species. *T. apicalis* is very similar to *T. terminatus*, but can be distinguished by the arrangement of the epipharyngeal sensillae (Evans 1964). *T. albocinctus* is distinguishable from the other species in bearing three areas with sensilla on epipharnyx (Asís *et al*. 1987). Although number and distribution of setae on the head and body of larvae have not been used in systematic of Crabronidae and related families, this character seems to be useful to recognise larvae of *Tachysphex*. The illustrations by Grandi (1961) show that the setae on head of the larvae of *T. obscuripennis*, *T. costae*, *T. pompiliformis*, and *T. nitidus* have somewhat regular patterns of distribution, similarly to the observed in *T. incospicuus*. However, the number and topography of setae are different among these larvae.

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