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Tettigoniidae: Pseudophyllinae) from Guatemala

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**A new species of the genus *Onychopygia* Beier (Orthoptera: Tettigoniidae: Pseudophyllinae) from Guatemala**

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**Abstract.** A new species of the genus *Onychopygia* Beier, 1962 (Orthoptera: Tettigoniidae: Pseudophyllinae) from the northern slopes of Los Cuchumatanes Mountains, Huehuetenango, Guatemala is described and illustrated. The morphological differences and peculiarities between *O. panamensis* Beier, 1962 and *O. brachyptera* n. sp. are discussed. The finding of this new taxa extends considerably into Central America our previous knowledge on the distribution of the Eucocconotini tribe. Finally we provide a revised taxonomic key to the Eucocconotini tribe.

**Key words.** Central America, brachypterism, Eucocconotini, *Onychopygia panamensis*, *Onychopygia brachyptera* n. sp.

**Resumen.** Se describe e ilustra una nueva especie del género *Onychopygia* Beier, 1962 proveniente de la parte norte de la sierra Los Cuchumatanes, Huehuetenango, Guatemala. Las diferencias y peculiaridades morfológicas entre *O. panamensis* Beier, 1962 y *O. brachyptera* n. sp., son abordadas. El descubrimiento de este nuevo taxa extiende considerablemente nuestro conocimiento sobre el rango de distribución de la tribu Eucocconotini hacia Centro América. Finalmente se provee una clave taxonómica actualizada de la tribu Eucocconotini.

**Palabras clave.** Centro América, braquipterismo, Eucocconotini, *Onychopygia panamensis*, *Onychopygia brachyptera* n. sp.

## **Introduction**

Currently the tribe Eucocconotini (Orthoptera: Tettigoniidae: Pseudophyllinae) is represented by 17 described species in eight genera, with known distributions from Panama to Peru, including the Amazonian region in Brazil, part of Surinam and Guiana in the Guiana Shield (Eades et al. 2012). Members of this tribe present a high variability within genera; comprising very large and surprising species like the genus *Panoploscelis* Scudder, 1869, where the females also have acoustic communication analogous to the one in the males (Montealegre et al. 2003). Others are very small and delicate like *Ottotettix* Braun, 2011 recently described from the Ecuadorian Andes. In this article we describe a new species from Guatemala of the genus *Onychopygia* Beier, 1962, previously known as a monotypic genus. This new taxa extends considerably the known distribution of this tribe into northern Central America contributing to the poorly known Orthoptera of Guatemala.

## **Methods**

The specimens studied are deposited in the Natural History Museum of the Francisco José de Caldas Distrital University, Entomology and Arachnology Collection Bogota, Colombia (**MUD**); and in the Universidad del Valle de Guatemala Collection of Arthropods, Guatemala City, Guatemala (**UVGC**).

Illustrations were performed with Corel DRAW and photographs taken with a Sony 300 camera.

**Measurements.** The specimens were measured with a Vernier caliper. Characters measured are as follows: *total length*, the distance between the frons and the apex of the abdomen; *length of pronotal disc*, the distance from the anterior to posterior margin; *length of tegmina*, the distance from the humeral sinus to the apex; *length of hind femur*, from the base to base of genicular lobe; *length of hind tibia*, from the base to the apex; *subgenital plate*, the distance from the base to the apex. For the females was measured the *length of the ovipositor*, the distance from the apex of the subgenital plate to the apex of the ovipositor.

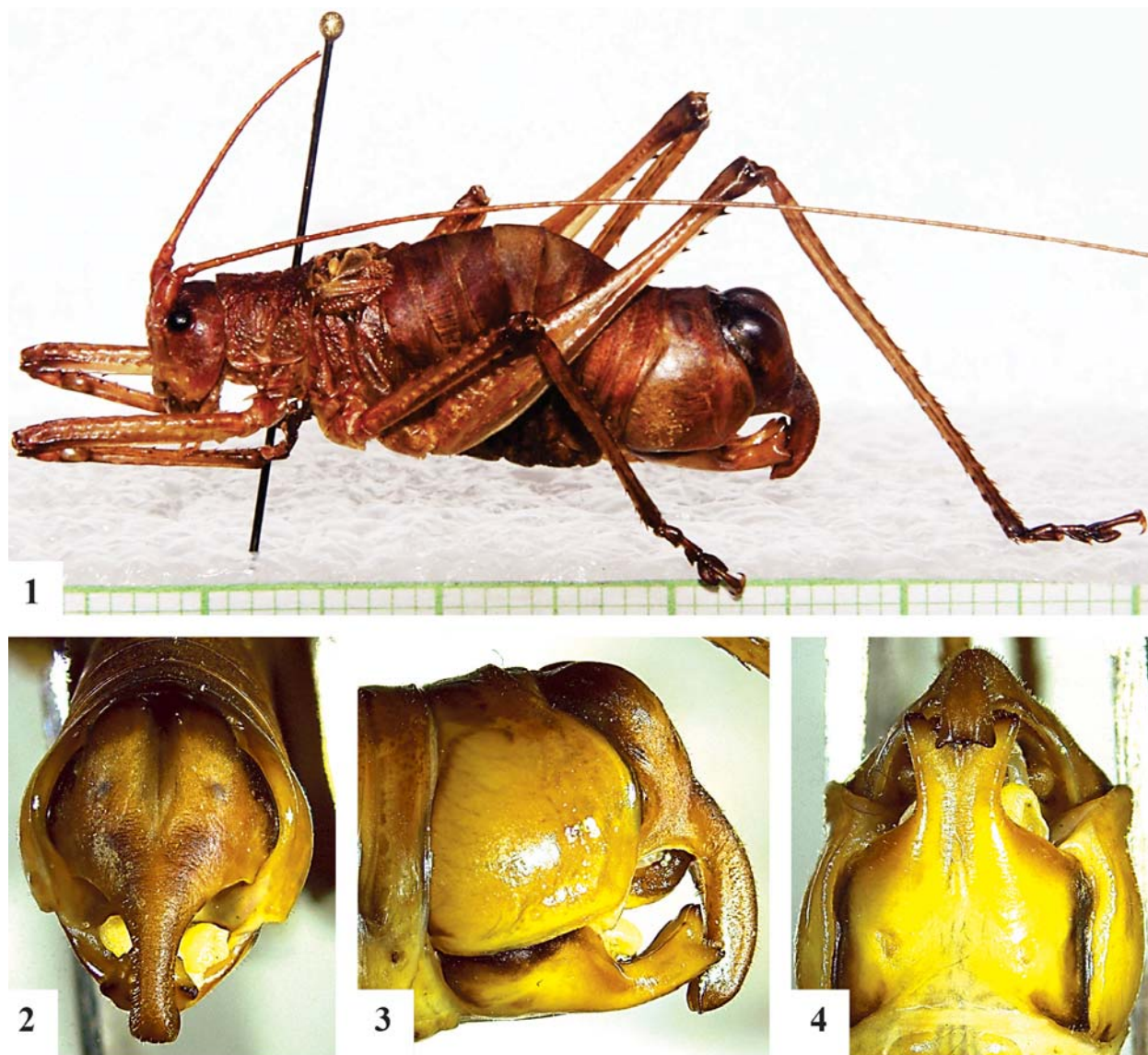
## Results

The following generic key to the tribe Eucocconotini includes the genera *Onychopygia* and *Ottotettix* that were unknown when Beier (1960) created this tribe. Thereafter we describe *O. brachyptera* n. sp.

### Key to genera to the Tribe Eucocconotini

(Adapted from Beier 1960)

1. Anterior and medial femora with dorsal surface unarmed, tegmina variable in length, female without stridulatory organ, body medium sized (18-40mm) and slender ..... **2**
- Anterior and medial femora with dorsal surface armed, tegmina almost as long as pronotum, females with stridulatory organ, body large (60-63mm) and robust ..... **Panoploscelis Scudder, 1869**
  
- 2(10). Mandibles well developed in both sexes, anterior femora with internal genicular lobe armed with a spine, dorsal surface of anterior tibiae smooth ..... **3**
- Mandibles strongly developed (specially in males), anterior femora with internal genicular lobe unarmed, dorsal surface of anterior tibiae granular or with distinctive tubercles ..... **7**
  
- 3(2). Tegmina reduced or not beyond abdomen's length ..... **4**
- Tegmina extending widely beyond abdomen's length ..... **5**
  
- 4(3). Body slender, abdomen cylindrical and uniform, terminalia well developed, male cerci bifurcated, ovipositor wide and strong ..... **Ottotettix Braun, 2011**
- Body robust, abdomen wide and broad shaped, terminalia developed prominently; tenth tergite and epiproctum pronounced, male cerci not bifurcated, ovipositor slightly curved and narrow ..... **Onychopygia Beier, 1962**
  
- 5(3). Medial tibiae dorsal surface unarmed, anal margin of tegmina stained ..... **6**
- Medial tibiae dorsal surface with internal face armed, anal margin of tegmina unicolored ..... **Eucocconotideus Beier, 1960**
  
- 6(5). Posterior femora armed with small spines, preapical femoral rings yellow, male cerci simple ..... **Eucocconotus Hebard, 1926**
- Posterior femora armed with big and prominent spines, femora without preapical femoral rings, male cerci with medial tooth and terminal spine ..... **Myopophyllum Beier, 1960**
  
- 7(2). Middle tibia dorsally unarmed, mandibles of male strongly elongated mostly with dorsal lobe to hump ..... **Gnathoclita Haan, 1842**
- Middle tibiae with some spines on each side, mandibles in both sexes with long, coniform (horn-shaped) band-like process ..... **Dicranostomus Dohrn, 1888**



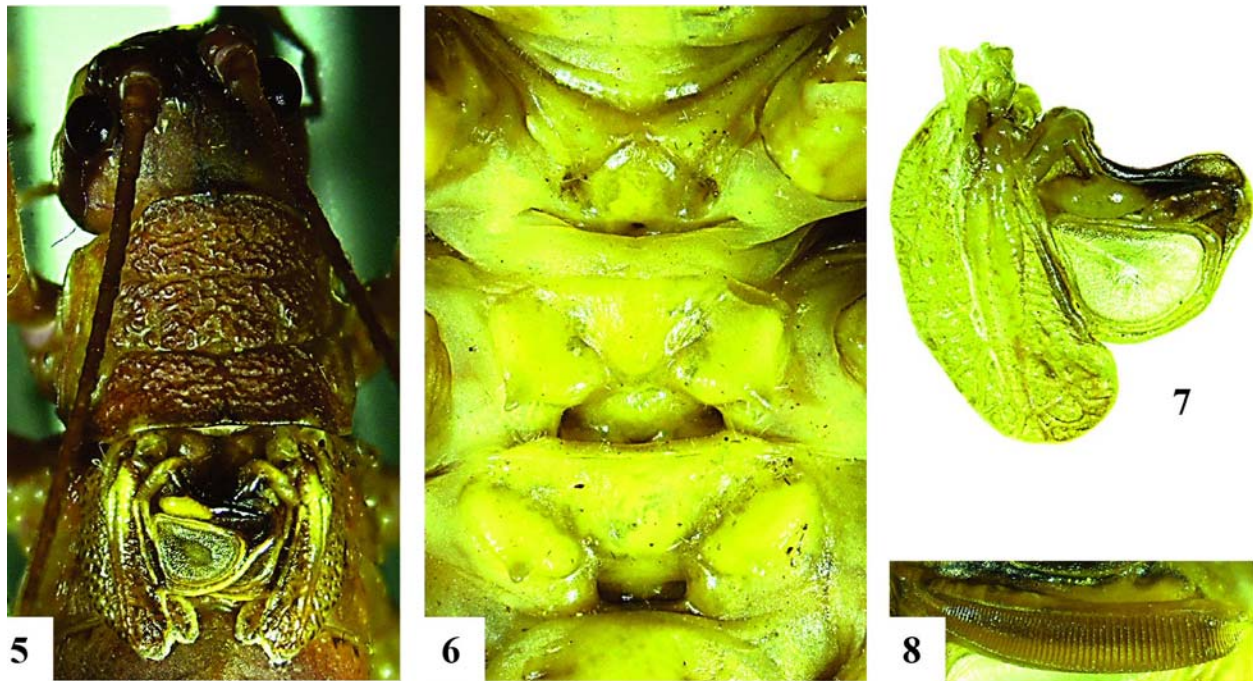
**Figures 1-4.** *Onychopygia brachyptera* n. sp. (Male). **1)** Habitus lateral. Terminalia: **2)** Posterior view. **3)** Lateral view. **4)** Subgenital plate.

***Onychopygia brachyptera* Cadena-Castañeda & Monzón-Sierra, new species**

Figures 1-13

**Type material.** Holotype male (Natural History Museum of the Universidad Distrital Francisco José de Caldas (MUD)) labeled “Guatemala, Huehuetenango, Barillas, Unión Las Palmas. 1,444 m., 15.9311000° -91.2993100°. May, 15, 2012. J. Monzón & F. Camposeco Col.”. Allotype female (Universidad del Valle de Guatemala Collection of Arthropods (UVGC)) labeled as holotype. Paratypes two males labeled as holotype deposited in MUD.

**Description. Holotype male.** General color is light brown, femora with apical area black, wings’ venation yellowish. *Head:* Fastigium slightly pronounced scape and pedicel unarmed, frontal ocellus oval, lateral ocelli inconspicuous. *Thorax:* Pronotum softly granular with pronotal regions distinct (Fig. 5). Prosternum armed with two small pyramidal spines. Mesosternum rectangular, mesosternal striae separated by the anterior lobe, not connecting with the lateral ones. Metasternum hexagonal, wider than

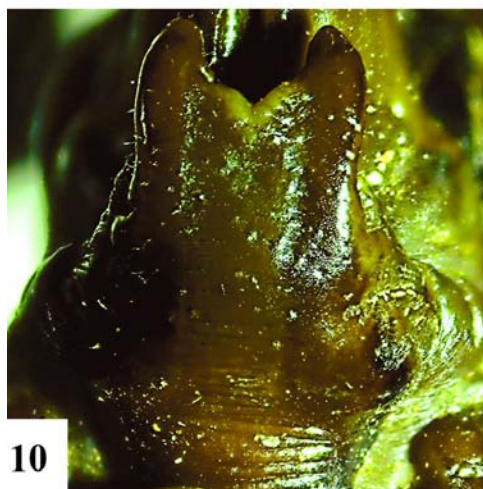


**Figures 5-8.** *Onychopygia brachyptera* n. sp. **5)** Dorsal view. **6)** Sternum (pro, meso and metasternum). **7)** Male tegmina. **8)** Stridulatory file.

long; anterior lobe expanded, separating the lateral lobes, metafurcal furrow deep and elongated, as wide as the inferior lateral margin of the anterior lobe, anterior lobes of meso and metasternum armed with one spine subelevated over each infero-external margin (Fig. 6). Coxae armed with typical Eucocconotini tribe tubercula. Anterior and medial femora and tibiae cylindrical and slender, posterior femora with regular shape and armed with three or four ventral spines close to the apex, posterior tibiae armed with spines above ventral and dorsal margin. Posterior femora genicular lobes armed, anterior femora unarmed, middle tibiae genicular lobes' external margin armed on the internal face. *Wings:* Tegmina barely covering the first abdominal tergite, venation reticulated, M vein and base of the R strongly sclerotized and prominent (Fig. 7). Stridulatory region sclerotized with the exception of the mirror which is membranous and notorious in both tegmen. Stridulatory crest prominent, thinning from left to right, stridulatory row with 103 laminar and elongated teeth, tight spaced (Fig. 8). *Abdomen:* wide, ninth and tenth tergites fussed and as wide as the sixth, seventh and eight tergites together, compressing slightly on the posterior margin above the dorsum, forming a wide "U" shaped emargination (Fig. 2); epiproctum widened, covering the cerci and thinning from the medial region in the whole length, forming from there on a cylindrical prolongation that curves moderately, fitting in the emargination of the subgenital plate, apex truncate and in sucker shape (Fig. 3). Subgenital plate rectangular up to mesal region where it narrows down abruptly, apex bifurcated in lateral view, emargination "U" shaped (Fig. 4). Cerci are minute, curving towards their posterior margin.

**Allotype female.** Similar in shape and color to the male (Fig. 9). Epiproctum lanceolate, apex truncate and covering the anal aperture. Ovipositor as long as a fourth part of the total length of the body, curving gradually towards the sharp apex, ventral and dorsal margin without denticulations (Fig. 11). Subgenital plate rectangular, apex prominent and "U" shaped (Fig. 10).

**Measurements:** (mm) **Holotype:** Total length 37.0; pronotum 4.0; tegmina 4.0; hind femora 17.0; hind tibiae 20.0; subgenital plate 8.0; cerci 0.9. **Allotype:** Total length 39.0; pronotum 5.0; tegmina 3.2; hind femora 18.0; hind tibiae 20.0; subgenital plate 4.2; ovipositor 12.0. **Paratypes:** Total length 36.0-37.0; pronotum 4.0; tegmina 3.8-4.0; hind femora 17.0-17.5; hind tibiae 20.0-21.0; subgenital plate 8.0; cerci 0.9.



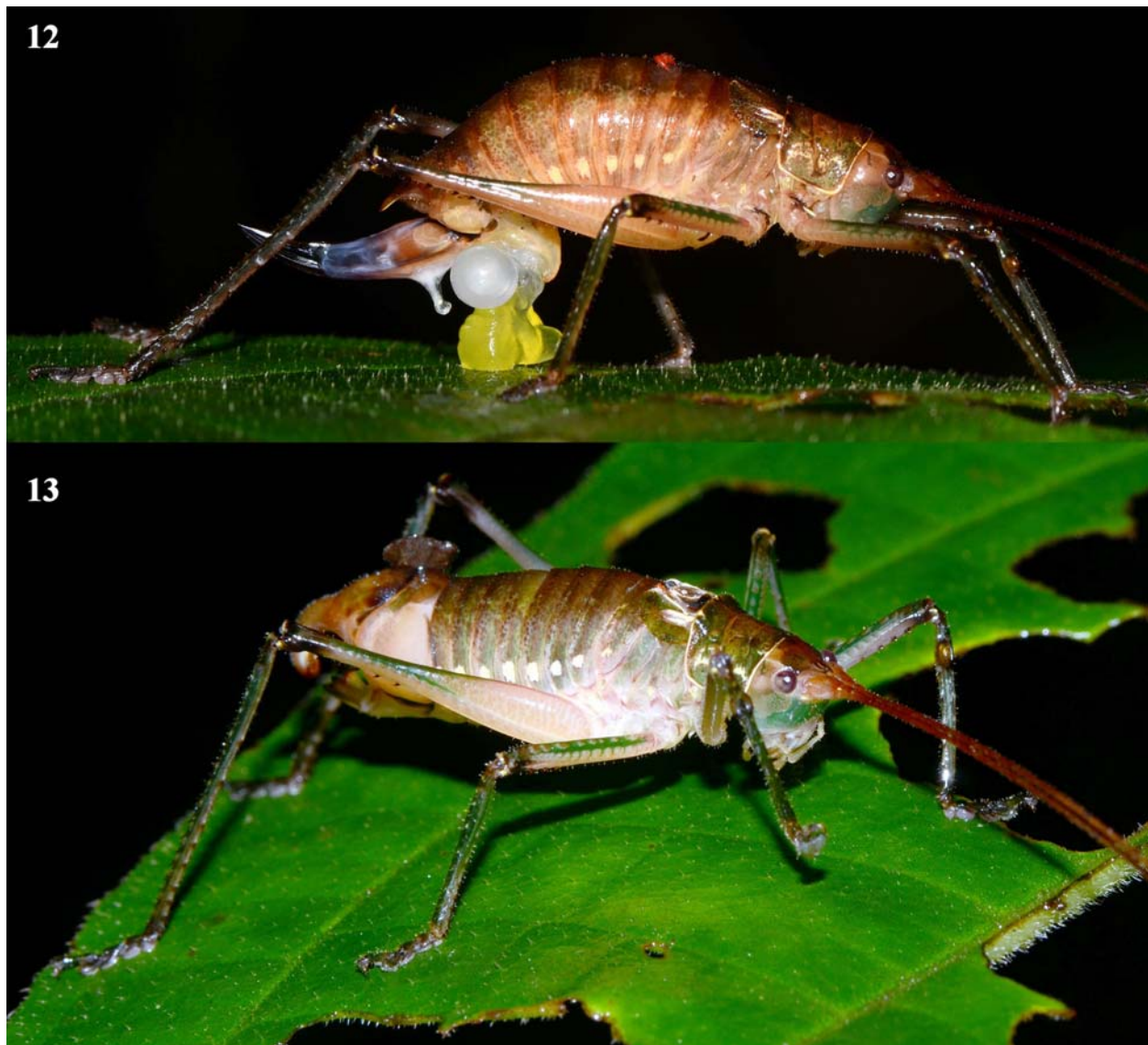
**Figures 9-11.** *Onychopygia brachyptera* n. sp. (Female). **9)** Habitus lateral. **10)** Subgenital plate. **11)** Ovipositor.

**Etymology.** The name makes reference to the brachypterous condition of the species.

**Distribution and remarks.** Currently *Onychopygia brachyptera* n. sp. is only known from the type locality and can be separated from *O. panamensis* by several important characters (Table 1).

**Discussion.** With the description of *O. brachyptera* the known distribution of the tribe Eucocconotini is extended considerably in Central America. It was previously known only from Peru, Ecuador, Colombia, northern Brazil, Surinam, Guiana and Panama (Eades et al. 2012). Additional field work is necessary as there might be other interesting species of this tribe between Panama (where *O. panamensis* is found) and Guatemala.

The taxonomic status of the tribe Eucocconotini needs revision as members are very similar to the members of the tribe Cocconotini. The main characters that separate these two tribes are in Eucocconotini the anterior and medial bicuspid coxae and generally the lateral lobes of the meso and metasternum are erected or sharpened; these characters are variable in Cocconotini. Gorocho (1988) proposed a different classification for the Pseudophyllinae, although it has not been used, except for himself in his most recent publication (Gorocho 2012). This new classification is not appropriate to separate satisfactorily the tribal characters of the subfamily Pleminae (*sensu* Gorocho) because the Gorocho was concerned



**Figures 12-13.** Living *Onychopygia brachyptera* n. sp. 12) Female with spermatophore. 13) Male.

with the higher classification of Ensifera, from suborder to subfamilies, and did not take into consideration the tribes. Further studies are necessary to establish the relationship and organization of this subfamily and its tribes.

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**Table 1.** Basic features to distinguish *Onychopygia* species.

	<i>O. brachyptera</i> n. sp.	<i>O. panamensis</i>
<b>Wing development</b>	Slightly covering the first abdominal tergite in both sexes.	Covering up to the eight tergite in males and slightly longer than the abdomen apex in the female.
<b>Stridulatory crest</b>	Notorious and strongly sclerotized.	Simple and slightly sclerotized.
<b>Ninth tergite</b>	Dorsal margin unarmed and constricted forming a “U” shaped emargination. Lateral lobes slightly pronounced.	Dorsal margin armed with two slightly prominences. Side lobes not pronounced.
<b>Tenth tergite</b>	Base wide and rounded, prolonging from the mesal region to the apex, slender and snout shaped; apex sucker shape.	With a slight bilobed prolongation, different from epiproctum.
<b>Paraproctal prolongations</b>	Covered by the tenth tergite prolongation, curved and rod shaped, with the apex blunt.	Visible, curved and sickle shaped with the apex sharp and with a slight meso-external prolongation.
<b>Cerci</b>	Covered by the ninth tergite, reduced curving towards posterior margin.	Exposed, not covered by the ninth tergite, conical shaped.
<b>Male subgenital plate</b>	Apex bifurcated in lateral view, emargination “U” shaped.	Apex simple in lateral view, strongly prolonging upwards, emargination “V” shaped.

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