

**A revision of the Chilean Brachyglutini – Part 4. Revision of *Achilia* Reitter, 1890:  
*A. puncticeps* and *A. approximans* species groups, with description of seven new species  
(Coleoptera: Staphylinidae: Pselaphinae)**

Giorgio Sabella<sup>1</sup>, Giulio Cuccodoro<sup>2\*</sup> & Sergey A. Kurbatov<sup>3</sup>

<sup>1</sup> Dipartimento di Scienze Biologiche, Geologiche ed Ambientali dell'Università – sezione Biologia Animale, via Androne 81, I-95124 Catania, Italy. E-mail: sabellag@unict.it

<sup>2</sup> Muséum d'histoire naturelle, C.P. 6434, CH-1211 Genève 6, Switzerland.

<sup>3</sup> Museum of Entomology, All-Russian Plant Quarantine Center, Pogranichnaya 32, Bykovo 140150, Russia. E-mail: pselaphidae@yandex.ru

\* Corresponding author: giulio.cuccodoro@ville-ge.ch

**Abstract:** The *Achilia approximans* and *A. puncticeps* species groups *sensu* Jeannel (1962) of the species-rich genus *Achilia* Reitter, 1890 are revised. *Achilia puncticeps* (Reitter, 1883) is redescribed, and *A. approximans* (Reitter, 1885) synonymized with it (syn. nov.). Six new species – *A. adorabilis* n. sp., *A. baburra* n. sp., *A. cunniceps* n. sp., *A. nippobrythoides* n. sp., *A. reitteri* n. sp., and *A. trulla* n. sp. – sharing a unique combination of characters with *A. puncticeps* are described, as well as a seventh new species – *A. zaurda* n. sp. – whose male was initially confused with that of *A. puncticeps*. For these species the distribution is detailed, and the habitat/collecting data are summarized.

**Keywords:** *Achilia* - Chile - taxonomy - new species - distribution.

## INTRODUCTION

This article is the fourth contribution to our series aiming at a taxonomic revision of the Brachyglutini of the temperate region of southern South America, and the third that is dedicated to the genus *Achilia* Reitter, 1890 (Kurbatov & Sabella, 2015; Sabella *et al.*, 2017; Kurbatov *et al.*, 2018).

We here focus on the *Achilia approximans* and *A. puncticeps* species groups *sensu* Jeannel (1962). The types of the constitutive members of these two remove informal groups of species – *i.e.* *A. puncticeps* (Reitter, 1883) and *A. approximans* (Reitter, 1885) – are critically reexamined. We present six new species sharing a unique combination of external and aedeagal features with *A. puncticeps*, as well as a seventh new species, whose males have been consistently confused with those of *A. puncticeps* (Reitter, 1885; Jeannel, 1962). Descriptions or redescriptions are given for all of these species, with drawings of their aedeagus and other key characters, as well as images of the male sexually dimorphic heads. Their distributions are detailed, and the collecting data are summarized.

The species groups of *Achilia* as defined by Jeannel (1962), which are mainly based on male sexual dimorphism, as well as their possible phylogenetic relationships will be reassessed later. A key to identification of the species of *Achilia* will be provided only at the end of this series of contributions.

## MATERIAL AND METHODS

This study is based on the examination of 790 specimens. The acronyms used in the present study refer to the following collections (relevant curators/collection managers are acknowledged in parentheses):

DBUC	Department of Biological, Geological and Environmental Sciences, University of Catania, Italy
FMNH	Field Museum of Natural History, Chicago, U.S.A. (J. Boone)
JEBC	Colección Entomológica Y Museo Juan Enrique Barriga-Tuñón, Curicó, Chile (J. E. Barriga-Tuñón)

MHNG	Muséum d'Histoire Naturelle, Genève, Switzerland
MNHN	Muséum National d'Histoire Naturelle, Paris, France (T. Deuve and A. Taghavian)
MNHS	Museo Nacional de Historia Natural, Santiago, Chile (M. Elgueta Donoso and Y. J. Sepulveda Guaico)
MSNG	Museo Civico di Storia Naturale "G. Doria", Genova, Italy (R. Poggi)
NHMW	Naturhistorisches Museum, Wien, Austria (H. Schillhammer)
PHPC	Private collection of Peter Hlaváč, Prague, Czech Republic (P. Hlaváč)
UNHC	University of New Hampshire Arthropod Collection, Durham, NH, U.S.A. (D.S. Chandler)

Under the sections “type material” or “additional material” the locality data are standardized, with indications of major administrative units (regions and provinces) and names of collectors; for the holotypes of older specimens the labels are also given verbatim. For the method of selection of the type material see Sabella *et al.* (2017).

Images were taken using a Leica DFC425 camera in conjunction with a Leica M205-C compound microscope. Zerene Stacker (version 1.04) was used for image stacking. All images were modified and grouped using Adobe Photoshop and Illustrator CS6.

The body length is measured from the anterior clypeal margin to the posterior margin of the last visible abdominal tergite. The length and width of the body parts were measured between points of maximum extension, *e.g.* the head length is measured between the anterior clypeal margin and the posterior margin of the neck; the head width includes the eyes, the elytral length along the suture line, and the elytral width is the total width of the two elytra taken together. The abdominal tergites are numbered based on order of visibility. Morphological terminology follows that of Chandler (2001), except our use of “ventrite” instead of “sternite” when describing meso- and metathoracic structures, and that the sclerotized features of the dorsal plate of the aedeagus termed “dorsal strips” in Sabella *et al.* (2017) are here termed “longitudinal struts”.

## TAXONOMY

### *Achilia approximans* and *A. puncticeps* species groups

Reitter (1883: 51, pl. I fig. 10) described and illustrated the new species *Bryaxis puncticeps* on the basis of a single specimen from Valdivia, that he considered to be a female. Two years later he described and illustrated the male of *B. puncticeps* (Reitter, 1885: 324, 326, pl. II fig. 5), as well as the new species *B. approximans* (Reitter, 1885: 324, 326, pl. II fig. 4) based on a single female from Valdivia, two taxa he transferred subsequently to *Achilia*

(Reitter, 1890). Then Jeannel (1962: 414, figs 166-168) redescribed and illustrated the two sexes of *A. puncticeps* based on the specimens identified as such by Reitter, as well as the male of *A. approximans* (Jeannel, 1962: 437, figs 212-213), placing each of these two taxa in its own species group.

However our study of the types of these two taxa led us to conclude that *A. approximans* is a junior synonym of *A. puncticeps* (see comments under that species). It also appeared that Jeannel (1962) defined his *A. puncticeps* species group using mainly male features pertaining to a distinct, very different new species (see comments under *A. puncticeps*, and *A. zaurda* n. sp.). His concept of the *A. puncticeps* species group is thus chimeric and, to eliminate confusion, we will therefore consider his *A. approximans* species group to consist solely of *A. puncticeps*.

According to Jeannel (1962: 398, 437) the *A. approximans* species group, which was thus defined using features pertaining to true males of *A. puncticeps*, is characterized by: 3 elytral basal foveae; basal striae of abdominal tergite I separate at most by 1/4 of tergal width; anterior portion of the front of the male flattened and pubescent; antennomeres of male unmodified with those from 3 to 8 distinctly wider than long; distal edge of parameres of aedeagus not denticulate, internal sac with three or four macrospines. However, besides that the characters defining the *A. approximans* species group were extrapolated from the only included species, some of them were also incorrectly observed, such as the number of elytral basal fovea which are 4 instead of 3.

As mentioned in the introduction our research plan is to investigate the phylogenetic significance of morphological characters within *Achilia* only after completing a thorough assessment of its diversity, and therefore we prefer here to refrain from redefining Jeannel's species groups, or propose new ones. Nevertheless, in the extensive material examined so far, we have recognized six new species – *i.e.* *A. adorabilis* n. sp., *A. baburra* n. sp., *A. cunniceps* n. sp., *A. nipponobythoides* n. sp., *A. reitteri* n. sp. and *A. trulla* n. sp. – resembling *A. puncticeps* closely with respect to several external male characters and the conformation of their aedeagi to justify inclusion of their descriptions in this paper. These seven species share in common the following unique set of characters: pubescence decumbent, consisting of long setae uniform over entire body; head wider than long; pronotum wider than long; anterior portion of lateral margins of pronotum convergent, posterior portion subparallel and sinuate; pronotal disc slightly convex, smooth and shiny with some punctures; basal margin of pronotum bordered with row of contiguous shallow impressions; elytra together wider than long, with protruding humeri; elytral disc smooth, shiny, with punctures; presence of four basal foveae (two lateral foveae very close); sutural stria entire; discal stria extending to about elytral midlength; abdomen smooth, with some minute punctures; basal

striae of first abdominal tergite separate at least by one-quarter of tergal width; first tergite with short and sparse setal brush between diverging basal striae; aedeagus with dorsal plate ovoid, and dorsal longitudinal struts divergent; ventral lamina with upper margin bent anteriorly and forming apically two short lateral spines (this lamina lacking in *A. baburra*); internal sac with pair of long medial sclerites recurved and strongly sclerotized at base (except *A. baburra* in which the medial sclerites are fused, and *A. cunniceps* in which the medial sclerites end apically with 5-6 spines), associated on each side with other sclerites, different in form and number in each species. Parameres thin and curved inwards, bearing three long subapical setae (except in *A. trulla* in which there are four).

In order to keep the text more concise, these features are not repeated in their respective descriptions.

The specimens matching the males identified and illustrated as those of *A. puncticeps* by Reitter (1885) and Jeannel (1962) are described at the end of this paper (i.e. *A. zaurda* n. sp.).

#### *Achilia puncticeps* (Reitter, 1883)

Figs 1, 13, 25, 29-30, 57

*Bryaxis puncticeps* Reitter, 1883: 51, pl. I fig. 10 (head and antennae).

*Achilia puncticeps*. — Jeannel, 1962: 414-415 (pro parte, description of female) fig. 167 (head and antennae).

*Bryaxis approximans* Reitter, 1885: 324, 326, pl. II fig. 4 (head and antennae) (**syn. nov.**).

*Achilia approximans*. — Jeannel, 1962: 437, figs 212 (head and antennae) and 213 (aedeagus).

**Type material (2 ex.)**: MNHN (ex coll. Raffray); 1 ♂ (holotype of *Achilia puncticeps*); Chili; labels verbatim “Type / Chili / Muséum de Paris, 1917, coll. A. Raffray / *A. puncticeps*, A. Raffray det. / *puncticeps* Reitt. (handwritten by Jeannel) / female symbol”. — MNHN (ex coll. Raffray); 1 ♀ (holotype of *Achilia approximans*): CENTRAL CHILI: Región Los Ríos: Valdivia prov.: labels verbatim “Type / *B. approximans* m., Valdivia (handwritten by Reitter) / Muséum de Paris, 1917, coll. A. Raffray / *A. approximans*, A. Raffray det. / *approximans* Reitt. (handwritten by Jeannel)”.

**Additional material examined (70 ex.)**: MNHN (coll. Raffray); 3 ♂; Chili. — SOUTHERN AND CENTRAL CHILI: Región Aysén: Aysén prov.: MHNG; 1 ♂; Rio Simpson National Park, 33 km E Puerto Aysén; 70 m; 26.I.1985; S. & J. Peck; forest, sifted moss on stumps. — MHNG; 1 ♂ and 1 ♀; 30 km N Puyuhuapi, station 107; 100 m; 29.I.1985; S. & J. Peck; sifted moss on logs. — MNHG; 8 ♂; 15 km S Las Juntas, 30 km N Puyuhuapi; 100 m; 30.XII.1984/29.I.1985; S. & J. Peck; FIT, *Nothofagus* forest. — Región Los Lagos: Palena prov.: FMNH (FMHD #85-991, #85-108); 1 ♂; 4 km

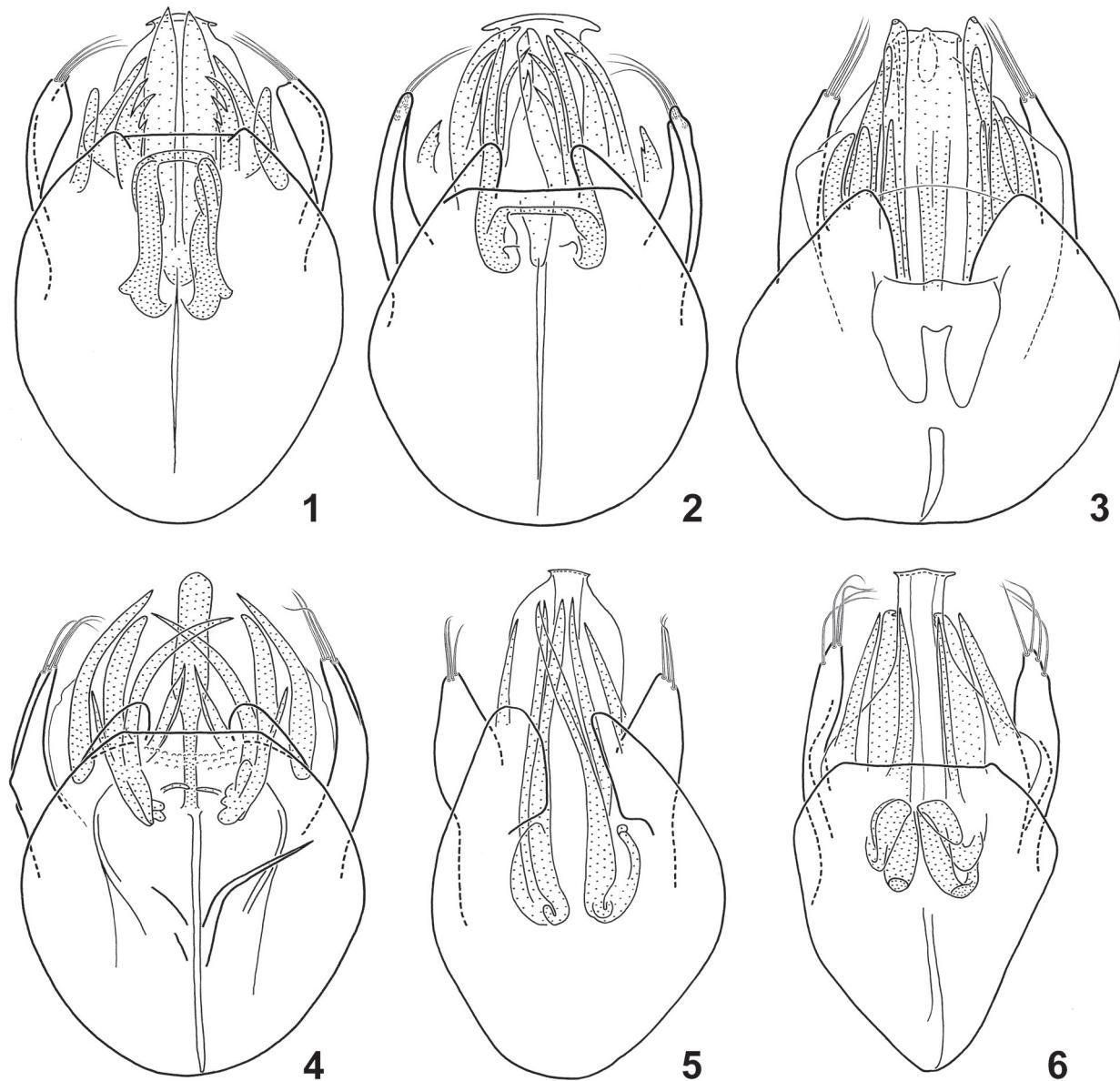
NW Chaitén; 10 m; 30.I.1985; S. & J. Peck; mixed forest litter, sooty fungus, Berlese. — Llanquihue prov.: MNHN (coll. Raffray, sub *A. approximans*); 1 ♂ and 2 ♀; Los Riscos; 41° 13'S; 11.IV.1954; G. Kuschel. — MNHS; 2 ♀; same data. — FMNH; 2 ♂; Lago Chapo, 13.5 km E Correntoso, site 656; 310 m; 16-27.XII.1982; A. Newton & M. Thayer; Valdivian rainforest, flight intercept (windows) trap. — UHNC; 3 ♂; same data. — FMNH; 1 ♂; same data, but Berlese, leaf & log litter, forest floor. — UHNC; 1 ♂; same data. — FMNH (FMHD #97-28); 2 ♂; Alerce Andino National Park, near Sargazo entrance, 11.4 km from Correntoso; 41° 30'S 72° 37'W; 350 m; 19.I.1997; A. Newton & M. Thayer 998; Valdivian rainforest, Berlese, leaf & log litter. — FMNH (FMHD #97-14); 3 ♂; Lago Chapo, near SE end, km 9.9 on road from Rollizo; 41° 30.63'S 72° 23.98'W; 385 m; 04-26.I.1997; A. Newton & M. Thayer 989; Valdivian rainforest on steep slope, flight intercept trap. — Chiloé prov.: MNSG; 2 ♂; Chiloé Island, Estero Llicaldad; TC-608; 19.I.2000; T. Cekalovic. — MHNG; 1 ♂; Chiloé National Park, near Cucao, 30 km SW Castro, station 34b; 42° 37'S 74° 08'W; 10-70 m; 28.XII.1992/01.I.1993; D. Burckhardt; sifting of moss on forest floor trees and dead trunks and vegetational debris. — FMNH (FMHD #2002-72); 1 ♂; S side of Huillínco lake, road to Bellavista; 1.3 km S road of Cucao; 42° 41.81'S 73° 55.88'W; 45 m; 12-22.XII.2002; A. Newton & M. Thayer 1062; Valdivian rainforest w/emergent *Saxegothea conspicua*, flight intercept trap. — FMNH (FMHD #2002-066); 1 ♂; Quemchi, 11 km W of (11 km E Hwy 5); 42° 10.40'S 73° 35.73'W; 140 m; 10-21.XII.2002; A. Newton, M. Thayer & D. J. Clarke; Valdivian rainforest remnant w/thick bamboo understory; flight intercept trap. — FMNH (FMHD #97-24); 1 ♂; Colonia Yungay road to (3.6 km W Hwy 5); 42° 59'S 73° 41'W; 90 m; 17.I.1997; A. Newton & M. Thayer 995; grazed secondary Valdivian rainforest remnants, Berlese, leaf & log litter. — Osorno prov.: FMNH; 1 ♂; 7.7 km NE Termas de Puyehue, site 664; 200 m; 19-25.XII.1982; A. Newton & M. Thayer; Valdivian rainforest, Berlese, leaf & log litter, forest floor. — FMNH (FMHD # 97-5); 1 ♂; Puyehue National Park, 4 km E Anticura; 40° 39.73'S 72° 08.10'W; 460 m; 30.I.1997; A. Newton & M. Thayer 985-3; Valdivian rainforest w/large, *Saxegothea*, flight intercept trap. — FMNH; 4 ♀; Puyehue National Park, 4.1 km E Anticura, trap site 662; 430 m; 19-26.XII.1982; A. Newton & M. Thayer; Valdivian rainforest, screen sweeping at dusk. — MHNG; 4 ♂ and 14 ♀; Puyehue National Park, Antillanca Road; 500-1000 m; 18-20.XII.1984; S. & J. Peck; car netting. — FMNH (FMHD #85-923, #85-38); 1 ♂; same data. — FMNH; 1 ♂; Chincay, 10 km E of Bahía Mansa; 50 m; 21.XII.1982; A. Newton & M. Thayer; 2nd Valdivian forest, Berlese, leaf & log litter, forest floor. — Región Los Lagos: Valdivia prov.: JEBC; 2 ♂; Valdivia, Chaihuin, Camino a Huaicolla;

S 39° 59.926' W 73° 38.976'; 107 m; 12.I.2007; J.E. Barriga-Tuñón; fogging *Nothofagus dombeyi*. – JEBC; 1 ♀; Valdivia, Parque Oncol, casa visitas; S 39° 42.303' W 73° 18.704'; 473 m; 07.I.2007; J.E. Barriga-Tuñón; fogging s/ *Nothofagus pumilio*. – FMNH; 1 ♂; 4.1 km W Anticura, site 663; 270 m; 19-25.XII.1982; A. Newton & M. Thayer; Valdivian rainforest, flight intercept (windows) trap. – UHNC; 1 ♂; same data. – MHNG; 1 ♂; Alerce Costero National Park, near Chaihuin; 0-100 m; 16.II.2018; S. Kurbatov; forest litter. – MHNG; 1 ♂; Alerce Costero National Park, near Chaihuin; 500 m; 15.II.2018; G. Sabella & D. Mifsud; forest litter.

**Description:** Body 1.30-1.45 mm long, entirely dark

brown with reddish elytra darker at base and along sutural stria; antennae, palpi and legs reddish-brown. Head with vertexal sulcus deeply impressed; eyes moderately protruding, shorter than slightly convex temples. Pronotum as wide as head; median antebasal fovea as large as lateral ones. First abdominal tergite with basal striae extending to about one-quarter of paratergal length, and separated at base by about one-quarter of tergal width.

**Male:** Head as in Figs 29-30; frons flattened, densely punctate and pubescent, disc with broad V-shaped impression with distinctly raised margins; frontal lobe short and raised. Antennae (Fig. 13) with scape and pedicel longer than wide; all funicular antennomeres



Figs 1-6. Aedeagi of *Achilia* species. (1) *A. puncticeps*. (2) *A. reitteri* n. sp. (3) *A. adorabilis* n. sp. (4) *A. baburra* n. sp. (5) *A. nipponobythoides* n. sp. (6) *A. trulla* n. sp.

wider than long, except antennomere V as long as wide; antennomeres IX and X strongly transverse with protruding mesal margins; antennomere XI very elongate and distinctly longer than VI-X combined, bearing long and thin subbasal seta inserted in deep impression, its surface with some tubercles. Metaventrite raised at middle, this area with some fine punctures, distally pubescent and divided by wide median longitudinal sulcus. Legs with trochanters very elongate; surface of protrochanters and mesotrochanters bearing numerous long bristles; ventral margin of mesotrochanters projecting posteriorly in a spine (Fig. 25); profemora and mesofemora slightly thickened; distal half of mesotibiae slightly sinuate and with long and thick bristles; distal half of metatibiae slightly sinuate. Abdominal tergites and ventrites unmodified. Aedeagus (Fig. 1, dorsal longitudinal struts not shown) 0.26-0.29 mm long, medial sclerites apically pointed, and associated on each side with three pointed sclerites, the proximal trifid.

*Female*: Similar to male except: head with frons slightly convex (not flattened) without punctures, and with large vertexal fovea beside each eye; antennae shorter and thinner than male; metaventrite and legs unmodified.

**Collecting data:** Collected from December to April, mainly in Valdivian rainforests, but also in *Saxegothaea* forests, where it was found in remnants and in boundary forests at elevations ranging from sea level to 1000 m. Most specimens came from flight intercept traps but also by sifted samples of leaf and log litter, moss, dead trunks, vegetable debris and mushrooms, and by car netting.

**Distribution:** *Achilia puncticeps* is known from Southern and Central Chile (Fig. 57: red circles), ranging from Aysén to Valdivia provinces.

**Comments:** Our study of the types of *A. puncticeps* and *A. approximans*, as well as those specimens identified as such by Reitter (1883, 1885) and Jeannel (1962), revealed that the “female” holotype of *A. puncticeps* is indeed a male conspecific with the female holotype of *A. approximans*. Consequently *A. approximans* (Reitter, 1885) is here placed as a junior synonym of *A. puncticeps* (Reitter, 1883) (**syn. nov.**). It also appeared that the males identified and illustrated as pertaining to *A. puncticeps* by Reitter (1885: 324, 326, pl. II, fig. 5) and Jeannel (1962: 414, figs 166-168) belong indeed to a quite different species, which is described as new at the end of this paper (i.e. *A. zaurda* n. sp.). See also the previous section dedicated to the definition of the *A. puncticeps* species group.

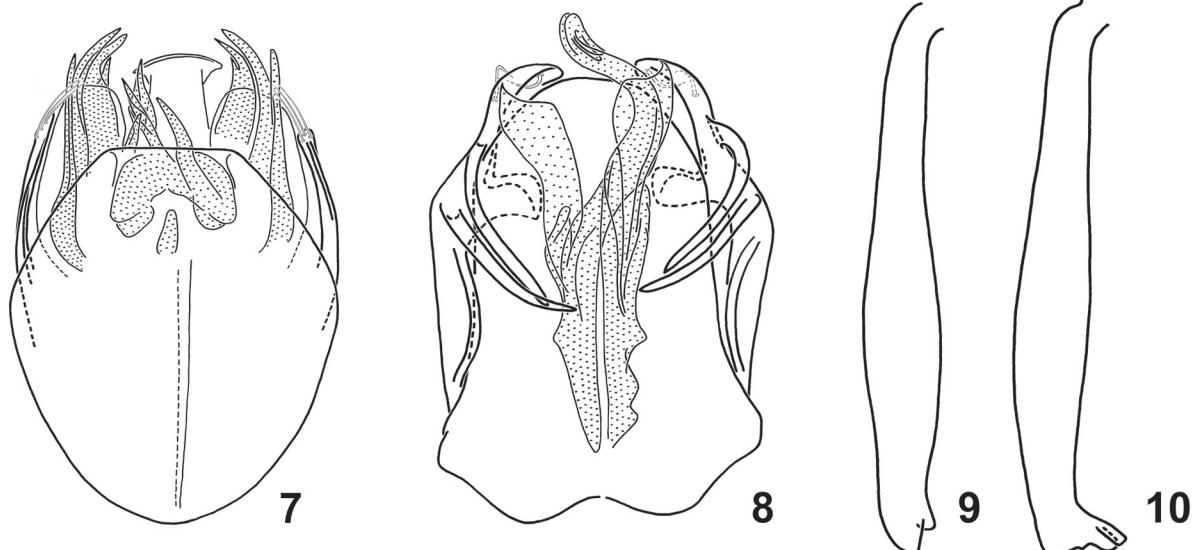
*Achilia puncticeps* can be distinguished from the other members of the genus by the morphology of the male head (Figs 29-30), features of the antennae (Fig. 13), and the copulatory pieces of the aedeagus (Fig. 1).

#### *Achilia reitteri* n. sp.

Figs 2, 9, 14, 21, 31-32, 57

**Holotype:** MHNG (# MHNG-ENTO-1383); 1 ♂; SOUTHERN CHILI: Región Los Lagos: Osorno prov.: Puyehue National Park, Antillanca road; 500-1000 m; 18-20.XII.1984; S. & J. Peck; car netting.

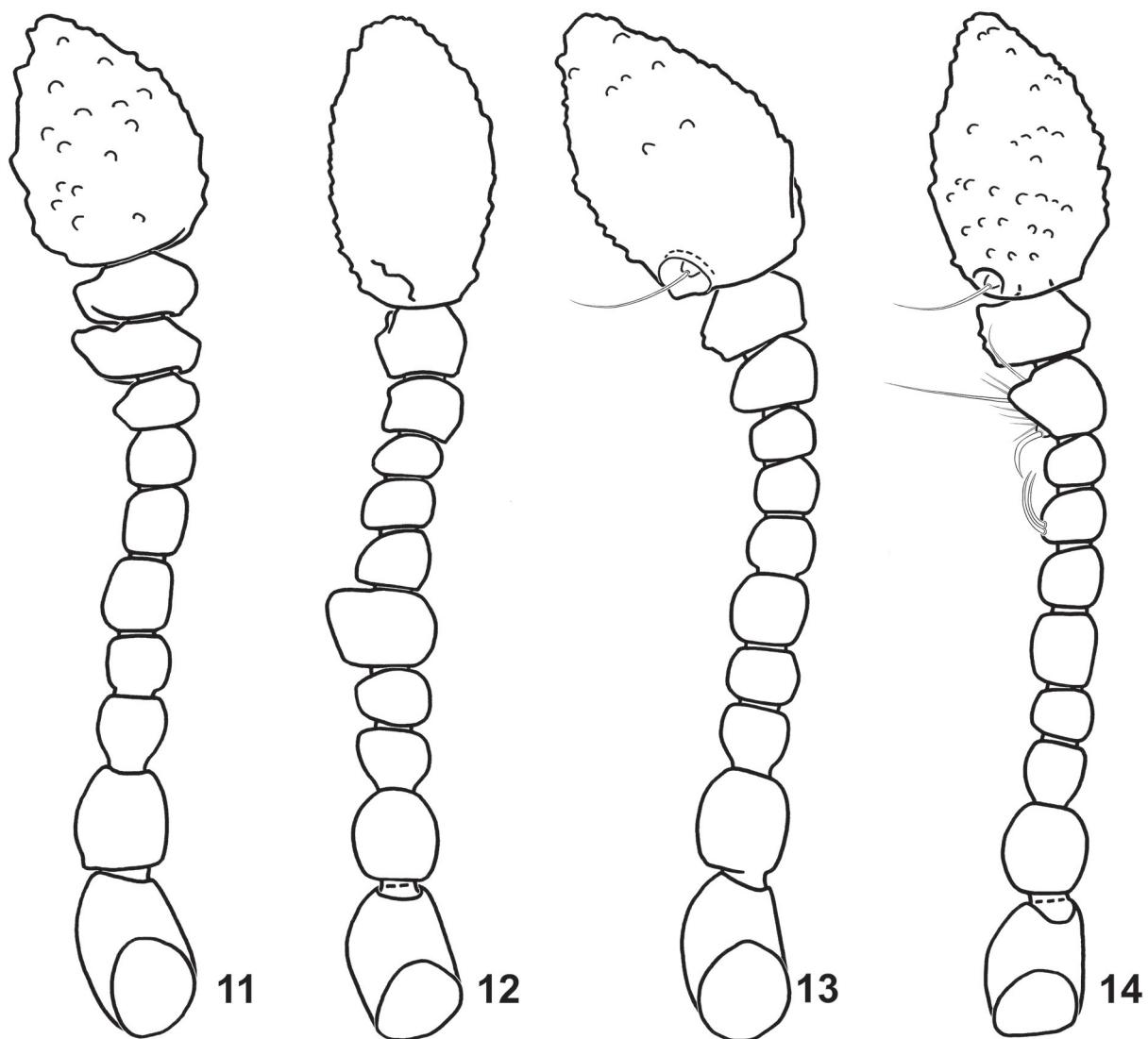
**Paratypes (96):** SOUTHERN AND CENTRAL CHILI: Región Aysén: Aysén prov.: MHNG; 1 ♂; 16 km NW Cisnes Medio, Río Grande; 200 m; 30.XII.1984-28.I.1985; S. & J. Peck; FIT mature beech forest. – MHNG; 1 ♂; Rio Simpson National Park, 33 km E Puerto Aysén; 70 m; 31.XII.1984/26.I.1985; S. & J. Peck; FIT, select cut forest. – Región Los Lagos: Llanquihue prov.: UNHC; 1 ♂; Salto Petrohué, 6.4 km



Figs 7-10. Aedeagi (7-8) and mesotibiae (9-10) of *Achilia* species. (7) *A. cunniceps* n. sp. (8, 10) *A. zaurda* n. sp. (9) *A. reitteri* n. sp.

SW Petrohué; 140 m; 28.XII.1982; A. Newton & M. Thayer; Valdivian rainforest, Berlese, leaf & log litter, forest floor. – FMNH; 1 ♂; Lago Chapo, 13.5 km E Correntoso, site 656; 310 m; 16-27.XII.1982; A. Newton & M. Thayer; Valdivian rainforest, flight intercept (windows) trap. – FMNH; 1 ♀; same data, but Berlese, leaf & log litter, forest floor. – Chiloé prov.: FMNH; 1 ♂; Ahoni Alto; 70 m; 22.II.1988; L. Masner, primary forest. – Osorno prov.: UNHC; 1 ♂; 7.7 km NE Termas de Puyehue, site 664; 200 m; 19-25.XII.1982; A. Newton & M. Thayer; Valdivian rainforest, Berlese, leaf & log litter, forest floor. – FMNH (FMHD #85-923, #85-38); 3 ♂; Puyehue National Park, Antillanca road; 500-1000 m; 18-20.XII.1984; S. & J. Peck; car netting. – MHNG; 24 ♂ and 38 ♀; same data. – MHNS, 1 ♂ and 1 ♀; same data. – FMNH; 3 ♂ and 3 ♀; Puyehue National Park, Antillanca road, site 659;

720 m; 18-24.XII.1982; A. Newton & M. Thayer; *Nothofagus* spp. forest, flight intercept. – UNHC; 2 ♂ and 2 ♀; same data. – FMNH; 1 ♀; Puyehue National Park, Antillanca road; 470-720 m; 18-24.XII.1982; A. Newton & M. Thayer; Valdivian rainforest, screen sweeping at dusk. – MHNG; 5 ♂; Puyehue National Park, Antillanca road; 600-1000 m; 20.XII.1984; S. & J. Peck; car netting. – MHNG; 1 ♂; Puyehue National Park, Aguas Calientes; 500 m; 20.XII.1984; S. & J. Peck; forest litter on trail, sifting. – MHNG; 1 ♂; Puyehue National Park, Aguas Calientes, station 25a; 400-500 m; 31.XII.1990/01.I.1991; D. Agosti & D. Burckhardt. – FMNH (FMHD # 97-5); 1 ♂; Puyehue National Park, 4 km E Anticura; 40° 39.73'S 72° 08.10'W; 460 m; 30.I.1997; A. Newton & M. Thayer 985-3; Valdivian rainforest w/large, *Saxegothea*, flight intercept trap. – Región Los Ríos: Valdivia prov.:

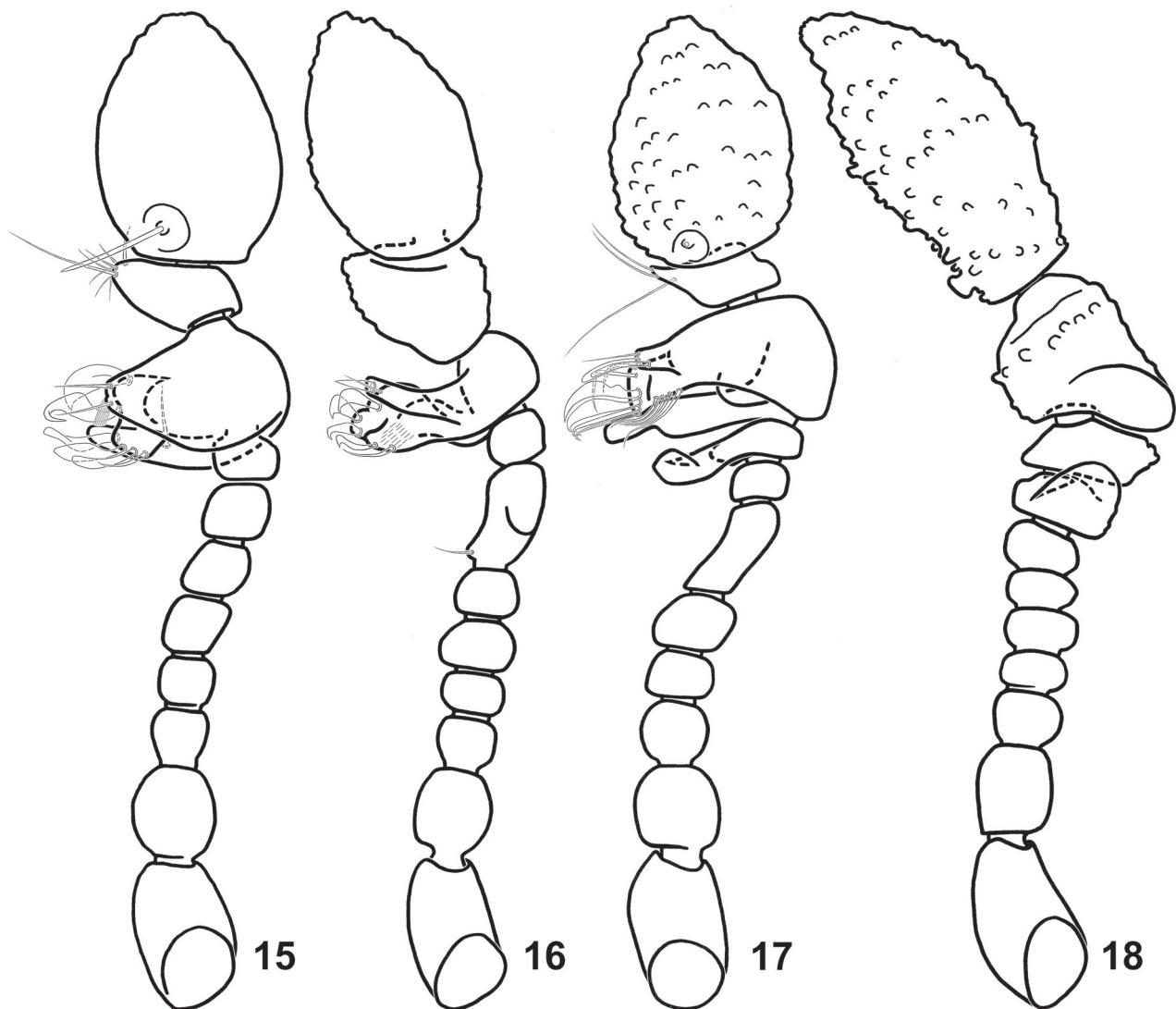


Figs 11-14. Antennae of *Achilia* species. (11) *A. cunniceps* n. sp. (12) *A. baburra* n. sp. (13) *A. puncticeps*. (14) *A. reitteri* n. sp.

MHNG; 1 ♂; Alerce Costiero National Park, near Chaihuin; 500 m; 15.II.2018; G. Sabella & D. Mifsud; forest litter. — Región Araucanía: Malleco prov.: MHNG; 1 ♂; Puren, Contulmo Natural Monument; 350 m; 11.XII.1984-13.II.1985; S. & J. Peck 85-16; FIT, mixed evergreen forest & MT *Nothofagus*. — Región Bío Bío: Concepción prov.: MSNG; 1 ♂; El Manzano; TC-189; 03.I.1988; T. Cekalovic.

**Description:** Body 1.30-1.40 mm long, entirely dark brown with reddish elytra darker at base and along sutural stria; antennae, palpi, and legs reddish-brown. Head with eyes moderately protruding, distinctly shorter than slightly convex temples. Pronotum as wide as head; median antebasal fovea as large as lateral ones. First abdominal tergite with basal striae extending to about one-quarter of paratergal length, and separated at base by more than one-quarter of tergal width.

*Male:* Head as in Figs 31-32; frons flattened, densely punctate and pubescent, disc with broad V-shaped depression with distinctly raised margins; vertexal sulcus shallowly impressed; frontal lobe wide and flattened. Antennae (Fig. 14) with scape and pedicel longer than wide; antennomere III as long as wide, antennomere IV wider than long; antennomere V longer than wide, antennomeres VI-VIII wider than long, VII bearing two long setae on its mesal margin; antennomere IX transverse with protruding distal mesal margin and bearing setae on its mesal margin; antennomere X strongly transverse; antennomere XI very elongate and distinctly longer than VI-X combined, bearing long and thin subbasal seta inserted in deep impression, its surface with many tubercles. Metaventrite raised at middle, this area with some fine punctures, distally pubescent, and divided by wide median sulcus. Legs with trochanters very elongate;

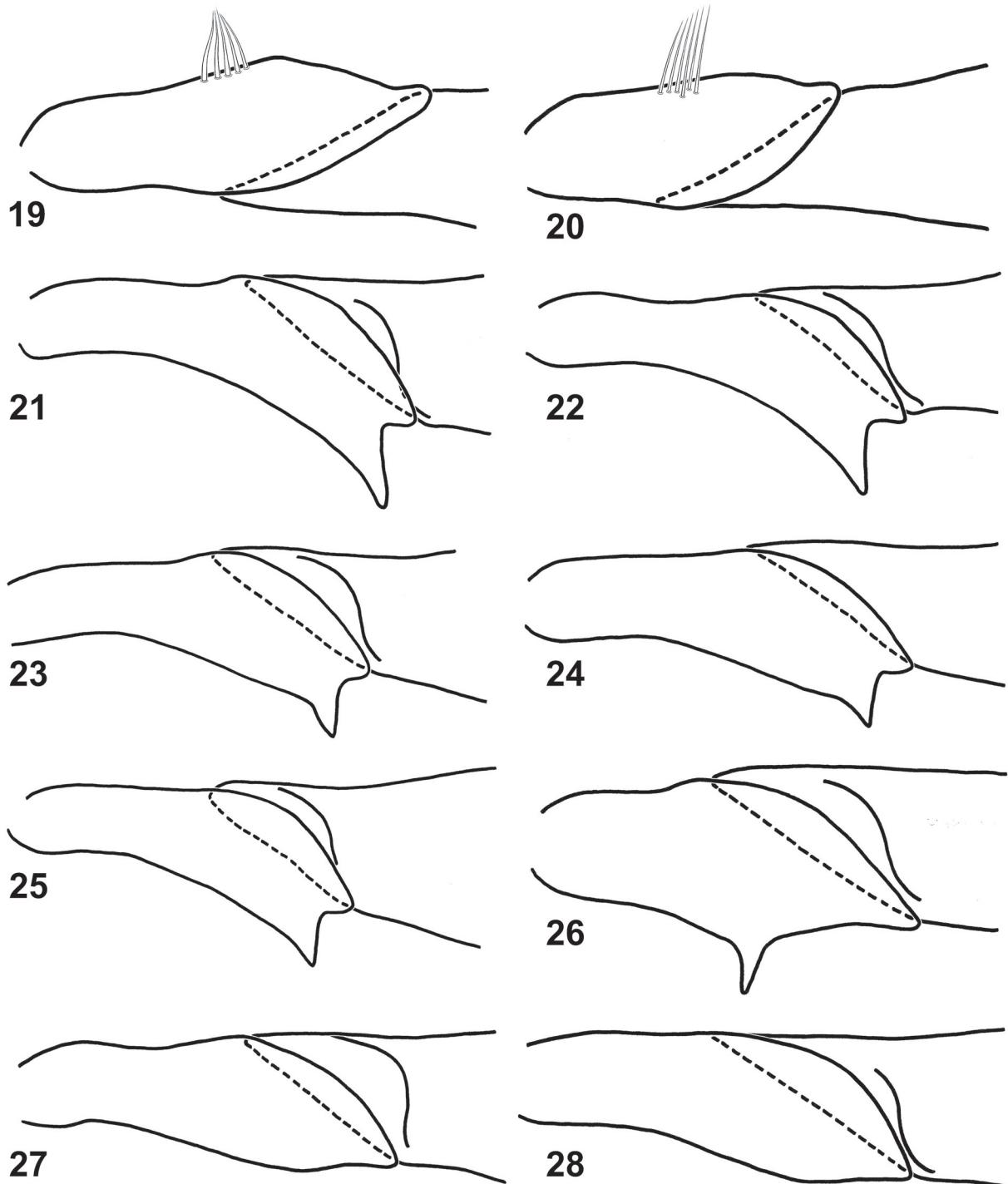


Figs 15-18. Antennae of *Achilia* species. (15) *A. nipponobythoides* n. sp. (16) *A. adorabilis* n. sp. (17) *A. trulla* n. sp. (18) *A. zaurda* n. sp.

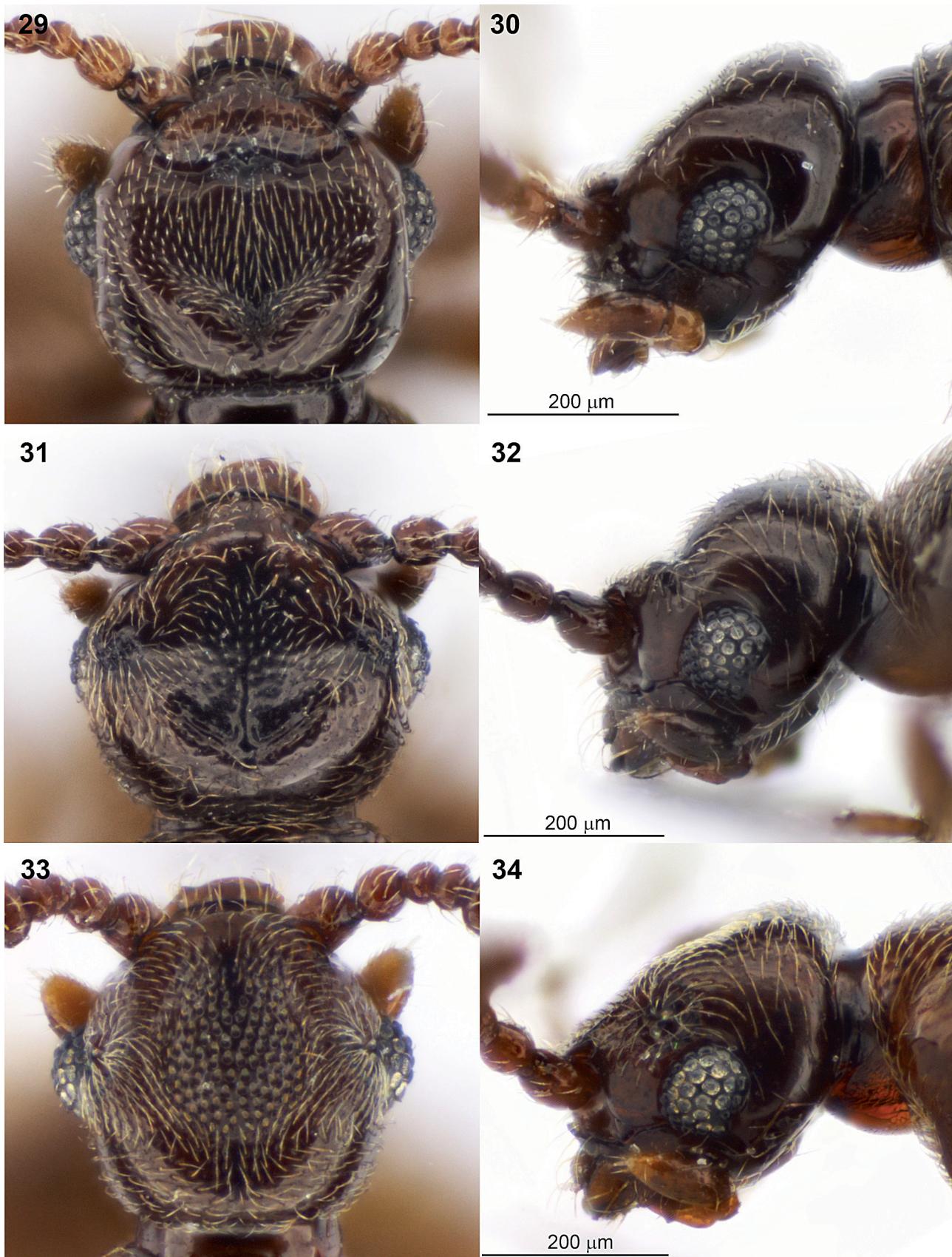
surface of protrochanters and mesotrochanters bearing numerous long bristles; ventral margin of mesotrochanters projecting posteriorly as spine (Fig. 21); profemora and mesofemora slightly thickened; mesotibiae with short subapical spur on medial margin (Fig. 9), distal half slightly sinuate bearing long and thick bristles and long and wide macroseta; distal half of metatibiae slightly

sinuate. Abdominal tergites and ventrites unmodified. Aedeagus (Fig. 2, dorsal longitudinal struts not shown) 0.27–0.30 mm long; long bifid medial sclerites associated on each side with four pointed sclerites.

*Female:* Similar to male except: head with frons slightly convex (not flattened) without punctures and with large vertexal fovea beside each eye; vertexal sulcus present,



Figs 19–28. Protrochanters (19–20) and mesotrochanters (21–28) of *Achilia* species. (19, 22) *A. baburra* n. sp. (20, 28) *A. nipponobythoides* n. sp. (21) *A. reitteri* n. sp. (23) *A. cunniceps* n. sp. (24) *A. trulla* n. sp. (25) *A. puncticeps*. (26) *A. zaurda* n. sp. (27) *A. adorabilis* n. sp.



Figs 29–30. (29–30) *Achilia puncticeps*. (31–32) *A. reitteri* n. sp. (33–34) *A. baburra* n. sp. Male head in (29, 31, 33) dorsal and (30, 32, 34) lateral views.



Figs 35-40. (35, 37, 39) *Achilia cunniceps* n. sp. (36, 38, 40) *A. nipponobythoides* n. sp. Male head in (35-36) dorsal, (37-38) lateral and (39-40) frontal views.

well-impressed; antennae shorter and thinner than male; metaventrite, and legs unmodified.

**Collecting data:** Collected from December to February, mainly in Valdivian rainforests, at elevations ranging from 70 m to 1000 m. Most specimens came from car netting and flight intercept traps, but also by sifted samples of leaf and log litter.

**Distribution:** *Achilia reitteri* n. sp. is known from Southern and Central Chile (Fig. 57: green diamonds), ranging from Aysén to Concepción provinces.

**Comments:** *Achilia reitteri* n. sp. is similar to *A. puncticeps* from which it is easily distinguished by the male features of the head (compare Figs 29-30 and 31-32), antennae (compare Figs 13 and 14), mesotrochanters (compare Figs 21 and 25), and the copulatory pieces of the aedeagus (compare Figs 1 and 2). The females of the two species are distinguished because *A. puncticeps* has the sides of the frontal lobe clearly narrowed (slightly narrowed in *A. reitteri* n. sp.)

#### *Achilia cunniceps* n. sp.

Figs 7, 11, 23, 35, 37, 39, 57

**Holotype:** MHNG (# MHNG-ENTO-13837); 1 ♂; SOUTHERN CHILI: Región Los Lagos: Osorno prov.: Puyehue National Park, Antillanca road; 500-1000 m; 18-20.XII.1984; S. & J. Peck; car netting.

**Paratypes (3):** MHNG (# MHNG-ENTO-13838 & 13839); 2 ♂; SOUTHERN CHILI: Región Los Lagos: Osorno prov.: same data as holotype. – Chiloé prov.: FMNH (FMHD #2002-77); 1 ♂; road to Miraflores, about 0.6 km W road 5; 42° 46.74'S 73° 47.70'W; 130 m; 12.XII.2002; A. Newton & M. Thayer 1063; secondary Valdivian forest with few conifers, Berlese, leaf & log litter.

**Description:** Body 1.35-1.40 mm long, entirely dark with reddish brown elytra, antennae, palpi, and legs. Head with eyes moderately protruding, about long as convex temples. Pronotum slightly wider than head; median antebasal fovea smaller than lateral ones. First abdominal tergite with basal striae extending to about one-third of paratergal length, and separated at base by about one-third of tergal width.

**Male:** Head as in Figs 35, 37, 39, with anterior part flattened; vertexal sulcus indistinct; posterior part conspicuously raised, strongly convex in lateral view (Fig. 37), this hump anteriorly flattened, densely punctate, pubescent, and sulcate medially. Antennae (Fig. 11) with scape longer than wide and pedicel only slightly longer than wide; antennomeres III-IV and VII slightly wider than long; antennomeres V-VI longer than wide, antennomere VIII strongly transverse with mesal margin protruding at middle; antennomeres IX and X strongly transverse with protruding mesal

margins; antennomere XI very elongate and distinctly longer than VI-X combined, its surfaces with tubercles. Metaventrite raised at middle, this area distally pubescent and densely punctate, divided by very wide median sulcus. Legs with trochanters very elongate; surface of mesotrochanters bearing numerous long bristles; ventral margin of mesotrochanters projecting posteriorly in a spine (Fig. 23); profemora and mesofemora slightly thickened; protibiae with short subapical spur on medial margin, distal half slightly sinuate and bearing long and thick bristles; distal half of metatibiae slightly sinuate. Abdominal tergites and ventrites unmodified. Aedeagus (Fig. 7, dorsal longitudinal struts not shown) 0.26-0.27 mm long; medial sclerites with 5-6 apical spines, associated on each side with three pointed sclerites, the first with two tips.

**Female:** Unknown.

**Collecting data:** Collected in December, at elevations ranging from 130 to 1000 m, by car netting, and by sifting in Valdivian rainforests.

**Distribution:** *Achilia cunniceps* n. sp. is known from Southern Chile (Fig. 57: blue triangles) only in Región Los Lagos (Chiloé and Osorno provinces).

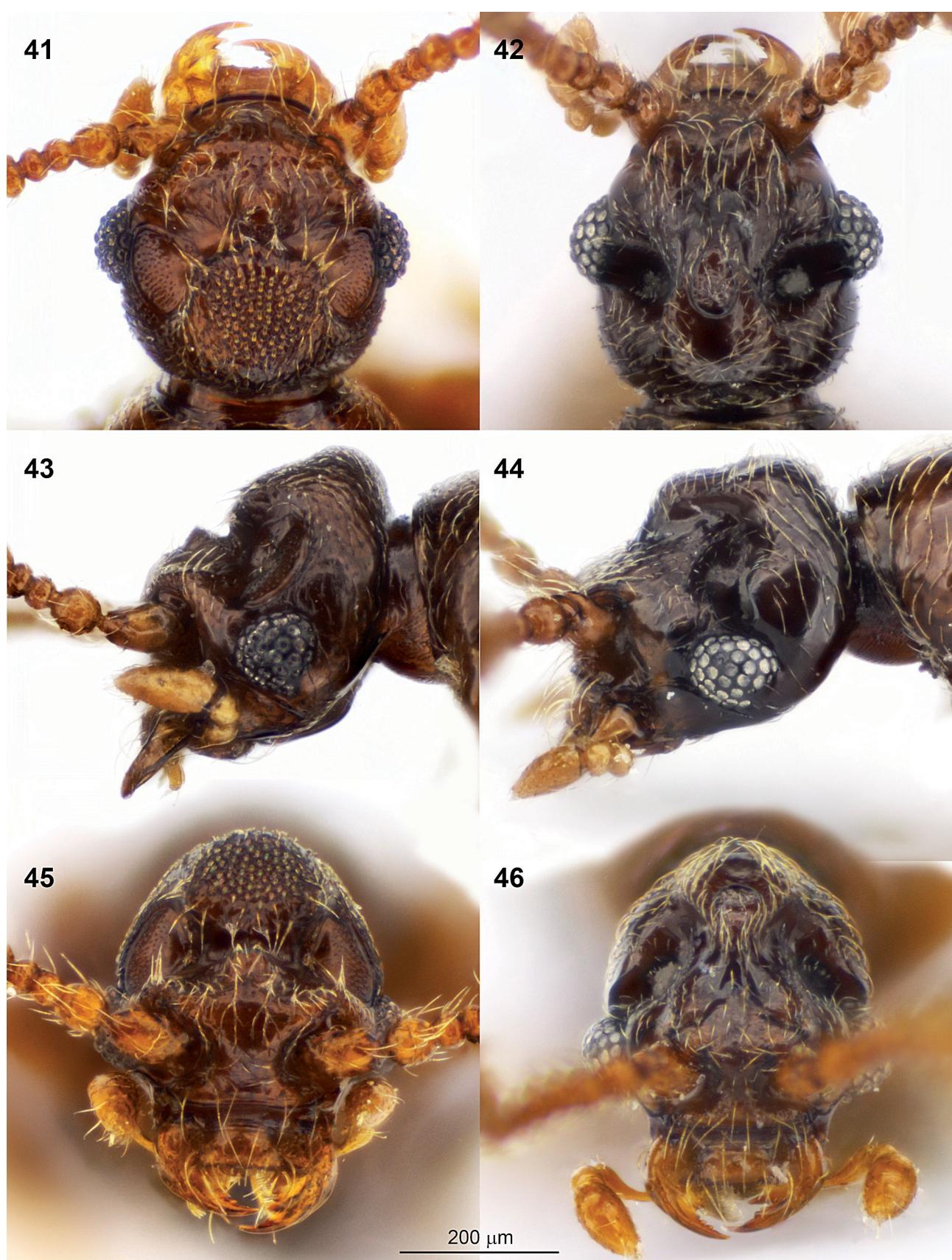
**Comments:** *Achilia cunniceps* n. sp. is easily distinguished from the other members of the genus by the very peculiar morphology of the male head (Figs 35, 37, 39), features of the antennae (Fig. 11), and the copulatory pieces of the aedeagus (Fig. 7).

#### *Achilia baburra* n. sp.

Figs 4, 12, 19, 22, 33-34, 58

**Holotype:** MHNG (# MHNG-ENTO-13840); 1 ♂; SOUTHERN CHILI: Región Los Lagos: Osorno prov.: Puyehue National Park, Antillanca road; 500-1000 m; 18-20.XII.1984; S. & J. Peck; car netting.

**Paratypes (99):** SOUTHERN AND CENTRAL CHILI: Región Aysén: Aysén prov.: MHNG; 1 ♂; Rio Simpson National Park, 33 km E Puerto Aysén; 70 m; 31.XII.1984/26.I.1985; S. & J. Peck; FIT, select cut forest. – FMNH; 1 ♂; Rio Cisnes, 01-08.II.1958; L. Peña – Región Los Lagos: Llanquihue prov.: FMNH; 1 ♂; Salto Petrohué, 6.4 km SW Petrohué; 140 m; 28.XII.1982; A. Newton & M. Thayer; Valdivian rainforest, Berlese, leaf & log litter, forest floor. – MHNG; 1 ♂; Vicente Pérez National Park, Salto Petrohué; 150 m; 23.XII.1984/06.II.1985; S. & J. Peck; FIT, mixed moist forest. – Osorno prov.: MHNG; 2 ♂ and 1 ♀; Puyehue National Park, Aguas Calientes; 500 m; 20.XII.1984/08.II.1985; S. & J. Peck; FIT, derrumbes forest trail. – MHNG; 2 ♀; Puyehue National Park, road Aguas Calientes-Antillanca, station 19b; 40° 45'S 72° 15-20'W; 750-850 m; 30.XI/01.XII.1992; D. Burckhardt; sifting of moss on tree trunks and forest



Figs 41–46. (41, 43, 45) *Achilia adorabilis* n. sp. (42, 44, 46) *A. zaurda* n. sp. Male head in (41–42) dorsal, (43–44) lateral and (45–46) frontal views.

floor and vegetational debris. – MHNG; 1 ♀; Puyehue National Park, Aguas Calientes, station 25a; 400-500 m; 31.XII.1990/01.I.1991; D. Agosti & D. Burckhardt. – FMNH (FMHD #85-923, #85-38); 2 ♂; Puyehue National Park, Antillanca road; 500-1000 m; 18-20. XII.1984; S. & J. Peck; car netting. – MHNG; 44 ♂ and 27 ♀; same data. – MHNS; 1 ♂ and 1 ♀; same data. – MHNG; 4 ♂; Puyehue National Park, Antillanca road; 600-1000 m; 18-20.XII.1984; S. & J. Peck; car netting. – FMNH; 1 ♂; 7.7 km NE Termas de Puyehue; site 664; 200 m; 19-25.XII.1982; A. Newton & M. Thayer; Valdivian rainforest, Berlese, leaf & log litter, forest floor. – FMNH; 2 ♂; Puyehue National Park, Antillanca road, site 659; 720 m; 18-24.XII.1982; A. Newton & M. Thayer; *Nothofagus* ssp. forest, flight intercept (windows) trap. – UHNC; 3 ♂; same data. – FMNH; 1 ♂; Puyehue National Park, Antillanca road; 720-1000 m; 18-24.XII.1982; A. Newton & M. Thayer; *Nothofagus* ssp. forest, screen sweeping at dusk. – UHNC; 1 ♂; same data. – Región Los Ríos: Valdivia prov.: FMNH; 1 ♂; 4.1 km W Anticura, site 663; 270 m; 19-25.XII.1982; A. Newton & M. Thayer; Valdivian rainforest, flight intercept (windows) trap. – FMNH (#97-5); 2 ♂; 4 km W Anticura; 460 m; 40° 39.73' S 72° 08.10' W; 01-30.I.1997; A. Newton & M. Thayer 985-3; Valdivian rainforest w/large, *Saxegothea*, flight intercept trap. – Región Araucanía: Cautín prov.: FMNH; 1 ♂; Volcán Villarica, site 653; 1250 m; 15-29.XII.1982; A. Newton & M. Thayer; *Nothofagus dombey pumilio* w/*Chusquea*, Berlese, leaf & log litter, forest floor.

**Description:** Body 1.35-1.40 mm long, entirely dark brown with reddish elytra darker at base and along sutural stria; antennae, palpi and legs reddish-brown. Head with moderately protruding eyes shorter than slightly convex temples. Pronotum about as wide as head; median antebasal fovea smaller than lateral ones. First abdominal tergite with basal striae extending to about one-third of paratergal length, and separated at base by one-third of tergal width.

**Male:** Head as in Figs 33-34; frons densely punctate and pubescent, flattened from occipital region to frontal lobe, with distinctly raised margins; vertexal sulcus indistinct. Antennae (Fig. 12) with scape longer than wide and pedicel only slightly longer than wide; antennomeres III-IV distinctly transverse; antennomere V strongly transverse with protruding mesal margin; antennomeres VI-VIII transverse with protruding mesal margins; antennomeres IX and X transverse; antennomere XI very elongate and distinctly longer than VI-X combined. Metaventrite slightly raised at middle, with faint median sulcus. Legs with trochanters very elongate; ventral margin of protrochanters with a tuft of setae at middle (Fig. 19); mesotrochanters bearing numerous long bristles, with ventral margin projecting posteriorly as spine (Fig. 22); profemora and mesofemora slightly thickened; distal half of metatibiae slightly sinuate. Abdominal tergites and ventrites unmodified. Aedeagus

(Fig. 4) 0.26-0.28 mm long; medial sclerite enlarged in apical half, and associated on each side with two pointed sclerites, first with four spines.

**Female:** Similar to male except: head with frons slightly convex (not flattened) without punctures and with large vertexal fovea beside each eye; vertexal sulcus present and well-impressed, antennae shorter and thinner than male, antennomere V unmodified; metaventrite and legs unmodified.

**Collecting data:** Collected in December and January, mainly in Valdivian rainforest, at elevations ranging from 70 m to 1000 m. Most specimens came from car netting and flight intercept traps, but also by sifted samples of leaf and log litter.

**Distribution:** *Achilia baburra* n. sp. is known from Southern and Central Chile (Fig. 58: green diamonds), ranging from Aysén to Cautín provinces.

**Comments:** *Achilia baburra* n. sp. is similar to *A. puncticeps* from which it is easily distinguished by the male features of the head (compare Figs 33-34 and 29-30), the antennae (compare Figs 12 and 13), and the copulatory pieces of the aedeagus (compare Figs 1 and 4). The females of the two species are distinguished because *baburra* n. sp. has the frontal lobe longer and the temple more rounded than *A. puncticeps*.

#### *Achilia adorabilis* n. sp.

Figs 3, 16, 27, 41, 43, 45, 51-53, 57

**Holotype:** MHNG (# MHNG-ENTO-13841); 1 ♂; SOUTHERN CHILI: Región Los Lagos: Osorno prov.: Puyehue National Park, Aguas Calientes, station 25a; 400-500 m; 31.XII.1990/01.I.1991; D. Agosti & D. Burckhardt.

**Paratypes (3):** SOUTHERN CHILI: MHNG (# MHNG-ENTO-13842); 1 ♂; same data as holotype. – Región Aysén: Aysén prov.: MHNG (# MHNG-ENTO-13843 & 13844); 1 ♂ and 1 ♀; 16 km NW Cisnes Medio, Río Grande; 200 m; 30.XII.1984-28.I.1985; S. & J. Peck; FIT mature beech forest.

**Description:** Body 1.45-1.60 mm long, reddish-brown, with darker abdomen, reddish elytra, antennae and legs; palpi yellowish. Head with protruding eyes almost as long as convex temples. Pronotum slightly wider than head; median antebasal fovea smaller than lateral ones. First abdominal tergite with basal striae extending to about one-third of paratergal length, and separated at base by about one-third of tergal width.

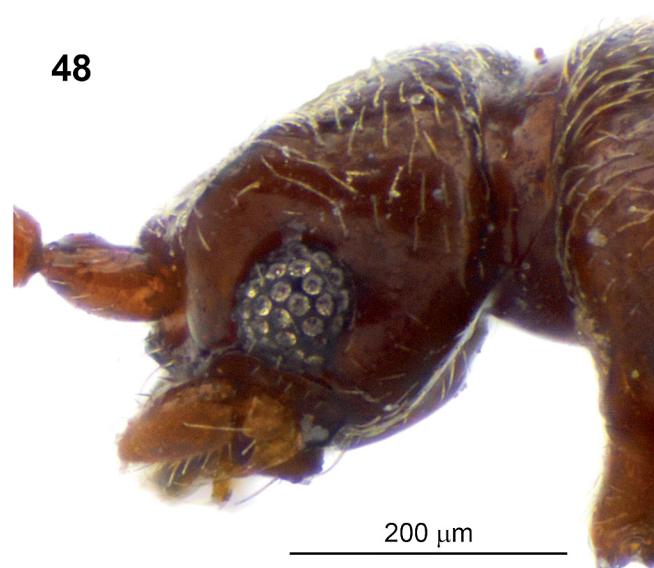
**Male:** Head as in Figs 41, 43 and 45, with posterior half distinctly elevated at center, dorsally flattened and densely punctate, semicircular depression with finely punctate bottom on each side just above eyes; anterior part of head also elevated towards center forming two protuberances divided by carina, and separated from

posterior region by very deep and narrow transverse sulcus. Antennae (Figs 16, 51-53) with scape distinctly longer than wide and pedicel slightly longer than wide; antennomeres III-IV wider than long; antennomere V transverse with protruding mesal margin; antennomere VI slightly wider than long, antennomere VII about two times longer than wide with concave mesal margin bearing thin subbasal seta; antennomere VIII transverse;

antennomere IX only slightly wider than long, its mesal margin projecting in a long bilobed lamina bearing large apical setae; antennomere X very big and slightly longer than wide, its mesal margin distinctly protruding in the apical half; antennomere XI elongate and longer than VIII-X combined. Metaventrite raised at middle, this area depressed, punctate and densely pubescent. Legs with trochanters very elongate; mesotrochanters



47



48



49



50

Figs 47-50. *Achilia trulla* n. sp. Male head in (47) dorsal and (48) lateral views. Male left antenna in (49) dorsal and (50) frontal views.

(Fig. 27) unarmed; profemora and mesofemora slightly thickened; distal half of metatibiae slightly sinuate. Abdominal tergites and ventrites unmodified. Aedeagus (Fig. 3, dorsal longitudinal struts not shown) 0.35 mm long; medial sclerites apically rounded, and associated on each side with four pointed sclerites.

**Female:** Similar to male except: head unmodified with large vertexal fovea beside each eye; vertexal sulcus present; antennae, metaventrite, and legs unmodified.

**Collecting data:** Collected in December and January by flight intercept traps and by sifting in Valdivian rainforests.

**Distribution:** *Achilia adorabilis* n. sp. is known from Southern Chile (Fig. 57: yellow stars) only in Aysén and Los Lagos Regions.

**Comments:** *Achilia adorabilis* n. sp. is easily distinguished from the other members of the genus by the very peculiar morphology of the male head (Figs 41, 43, 45), features of the antennae (Figs 16, 51-53), and the copulatory pieces of the aedeagus (Fig. 3).

#### *Achilia nipponobythoides* n. sp.

Figs 5, 15, 20, 28, 36, 38, 40, 54-56, 58

**Holotype:** MHNG (# MHNG-ENTO-13845); 1 ♂; SOUTHERN CHILI: Región Los Lagos: Osorno prov.: Puyehue National Park, Antillanca road; 500-1000 m; 18-20.XII.1984; S. & J. Peck; car netting.

**Paratypes (3):** SOUTHERN CHILI: Región Los Lagos: Llanquihue prov.: FMNH (FMHD #97-11); 1 ♂; Vicente Perez Rosales National Park, SW slope Volcán Osorno, km 10.1 to La Burbuja; 41° 08.30'S 72° 32.15'W; 925 m; 03-27.I.1997; A. Newton & M. Thayer 988; *Nothofagus dombeyi* & *Podocarpus nubigena* w/Valdivian rainforest understory, flight intercept trap. – Osorno prov.: FMNH; 1 ♂; Puyehue National Park, Antillanca road; 720-1000 m; 18-24.XII.1982; A. Newton & M. Thayer; *Nothofagus* ssp. forest, screen sweeping at dusk. – FMNH; 1 ♂; Vicente Perez Rosales National Park, N slope Volcán Osorno, road to Ref. La Picada; 41° 03.25'S 72° 30.18'W; 660 m; 16.XII.2002; A. Solodovnikov, A. Newton & M. Thayer 1067; *Nothofagus dombeyi* w/conifers dense *Chusquea* bamboo understory, flat area, Berlese, leaf & log litter.

**Description:** Body 1.45-1.60 mm long, reddish-brown, with darker abdomen, reddish elytra, antennae and legs, and yellowish palpi. Head with protruding eyes about as long as convex temples. Pronotum slightly wider than head; median antebasal fovea smaller than lateral ones. First abdominal tergite with basal striae extending to about one-third of paratergal length, and separated at base by about one-third of tergal width.

**Male:** Head as in Figs 36, 38 and 40; posterior part raised, slightly punctate and pubescent; anterior part at middle

flattened, densely punctate and pubescent, expanded just above eyes in two round shallow depression more densely punctate and finely pubescent, and with strongly convergent anterior margins giving a triangular-shaped forehead; vertexal sulcus absent. Antennae (Figs 15, 54-56) with scape and pedicel distinctly longer than wide; antennomere III as wide as long; antennomere IV slightly wider than long; antennomere V slightly longer than wide; antennomere VI-VII wider than long with protruding lateral margins; antennomere VII transverse; antennomere VIII as wide as long; antennomere IX with mesal margin projecting in bilobed lamina with large apical setae; antennomere X strongly transverse, apical half of mesal margin projecting and bearing a tuft of setae, one of which particularly long and thin; antennomere XI elongate and longer than VIII-X combined, bearing long and thin subbasal seta inserted in deep impression. Metaventrite slightly raised at middle, this area with median depression. Legs with trochanters very elongate; protrochanters (Fig. 20) bearing tuft of setae; mesotrochanters (Fig. 28) unarmed; profemora and mesofemora slightly thickened; distal half of metatibiae slightly sinuate. Abdominal tergites unmodified. First abdominal ventrite with distinct median carina extending from posterior margin to about one-third of ventrite length. Aedeagus (Fig. 5, dorsal longitudinal struts not shown) 0.30 mm long; medial sclerites apically pointed, and associated on each side with one pointed sclerite.

**Female:** Unknown.

**Collecting data:** Collected in December and January in *Nothofagus* ssp. mixed forests by flight intercept traps and screen sweeping at dusk, and also by car netting and sifting.

**Distribution:** *Achilia nipponobythoides* n. sp. is known from Southern Chile (Fig. 58: blue triangles) only in the Region of Los Lagos (Llanquihue and Osorno provinces).

**Comments:** *Achilia nipponobythoides* n. sp. is easily distinguished from the other members of the genus by the very peculiar morphology of the male head (Figs 36, 38, 40), features of the antennae (Figs 15, 54-56), and the copulatory pieces of the aedeagus (Fig. 5).

#### *Achilia trulla* n. sp.

Figs 6, 17, 24, 47-50, 58

**Holotype:** FMNH; 1 ♂; SOUTHERN CHILI: Región Los Lagos: Osorno prov.: Puyehue National Park, Antillanca road, site 659; 720 m; 18-24.XII.1982; A. Newton & M. Thayer; *Nothofagus* ssp. forest, flight intercept trap.

**Description:** Body 1.45 mm long, reddish-brown, with darker abdomen, and reddish elytra; antennae, palpi and legs yellowish. Head with weakly protruding eyes,



Figs 51-56. (51-53) *Achilia adorabilis* n. sp. (54-56) *A. nipponobythoides* n. sp. Male left antenna in (51, 54) dorsal, (55) oblique, (52, 56) frontal and (53) ventral views.

shorter than convex temples. Pronotum as wide as head; median antebasal fovea smaller than lateral ones. First abdominal tergite with basal striae extending to about one-third of paratergal length, and separated at base by about one-third of tergal width.

**Male:** Head as in Figs 47-48; frons with finely punctate and pubescent median depression with margins markedly raised and punctate, slightly expanded above eyes, the latter areas flattened and more densely punctate; anterior sides of head convergent. Antennae (Figs 17, 49-50) with scape and pedicel distinctly longer than wide; antennomere III as wide as long, antennomeres IV-V transverse; antennomere VI more than two times longer than wide with concave mesal margin; antennomere VII distinctly transverse; antennomere VIII transverse, its mesal margin projecting in large lamina; antennomere IX with mesal margin projecting in a long bilobed lamina bearing long and large apical setae; antennomere X strongly transverse, apical third of mesal margin projecting and bearing three long and thin setae; antennomere XI elongate and longer than VII-X combined, its surface with many tubercles. Metaventrite at middle slightly raised with faint median sulcus. Legs with trochanters very elongate; protrochanters bearing tuft of setae; ventral margin of mesotrochanters projecting posteriorly as short spine (Fig. 24); profemora and mesofemora slightly thickened; distal half of metatibiae slightly sinuate. Abdominal tergites and ventrites unmodified. Aedeagus (Fig. 6, dorsal longitudinal struts not shown) 0.30 mm long; medial sclerites apically pointed, and associated on each side with one pointed sclerite.

**Female:** Unknown.

**Collecting data:** Only one specimen collected in December in *Nothofagus* ssp. forest by flight intercept traps.

**Distribution:** *Achilia trulla* n. sp. is known only for the type locality in Region of Los Lagos (Osorno province) (Fig. 58: yellow stars).

**Comments:** *Achilia trulla* n. sp. is easily distinguished from the other members of the genus by the morphology of the male head (Figs 47-48), features of the antennae (Figs 17, 49-50), and shape of the aedeagus (Fig. 6).

#### *Achilia zaurda* n. sp.

Figs 8, 10, 18, 26, 42, 44, 46, 58

*Bryaxis puncticeps*. – Reitter, 1885: 324, 326 pl. II fig. 5 (head and antennae) (nec *Bryaxis puncticeps* Reitter, 1883).

*Achilia puncticeps*. – Jeannel, 1962: 414-415 (pro parte, description of male) figs 166 (habitus), 168 (aedeagus). – Kurbatov & Sabella, 2015: 304, fig. 63 (habitus).

**Holotype:** MHNG (# MHNG-ENTO-13846); 1 ♂; SOUTHERN CHILI: Región Los Lagos: Llanquihue prov.: Vicente Pérez Rosales National Park, Salto Petrohué; 150 m; 23.XII.1984; S. & J. Peck; mixed forest litter, Berlese.

**Paratypes (507):** MNHN (ex coll. Raffray, sub *A. puncticeps*); 5 ♂; Chili. – SOUTHERN AND CENTRAL CHILI: Región Los Lagos: Llanquihue prov.: MHNG; 24 ♂ and 28 ♀; same data as holotype. – FMNH (FMHD #85-938, #85-54) 2 ♂ and 5 ♀; same data as holotype. – MHNG; 1 ♂; same data, but FIT. – FMNH (FMHD #85-939, #85-55); 1 ♂; same locality; 23.XII.1984/04.II.1985; S. & J. Peck; FIT mixed moist forest. – FMNH (FMHD #97-8); 4 ♂; Vicente Pérez Rosales National Park, 9.2 km NE Ensenada, on road to Petrohué; 41° 10.20'S 72° 27.10'W; 125 m; 02-28.I.1997; A. Newton & M. Thayer 987; Valdivian rainforest w/*Nothofagus* ssp., flight intercept trap. – MHNG; 1 ♂; Frutillar Bajo, Universidad Chile Forest Reserve; 100 m; 22.XII.1984/02.II.1985; S. & J. Peck; FIT ravine mixed forest. – Chiloé prov.: MHNS (n. 1801); 1 ♂ (mislabelled as paratype of *Achilia monstrata chilota* n. 1801); Chiloé. – Osorno prov.: MHNG; 1 ♂; Puyehue National Park, Aguas Calientes, station 25a; 400-500 m; 31.XII.1990/01.I.1991; D. Agosti & D. Burckhardt. – UNHC; 4 ♂; Puyehue National Park, Aguas Calientes; 440 m; 26.XII.1982; A. Newton & M. Thayer; Valdivian rainforest, at UV light. – FMNH; 4 ♂; same data. – MHNG; 1 ♀; Puyehue National Park, road Aguas Calientes-Antillanca, station 19b; 40° 45'S 72° 15-20'W; 750-850 m; 30.XI/01.XII.1992; D. Burckhardt; sifting of moss on tree trunks and forest floor and vegetational debris. – Región Araucanía: Cautín prov.: MHNG; 4 ♂; 15 km NE Villarrica, Flor del Lake; 300 m; 14.XII.1984/10.II.1985; S. & J. Peck; FIT *Nothofagus* forest. – MSNG; 2 ♂; Rio Pedregoso, Fundo Nueva Pomerania; TC-433; 25.I.1995; T. Cekalovic. – Región Bío Bío: Concepción prov.: FMNH; 62 ♂ and 137 ♀; Patagual; TC-369; 29.XI.1993; T. Cekalovic. – MSNG; 5 ♂ and 25 ♀; Puente Pelun; TC-358; 21.II.1993; T. Cekalovic. – MSNG; 32 ♂ and 154 ♀; Fundo El Manzano; TC-503; 17.XI.1996; T. Cekalovic. – MHNS; 2 ♂ and 2 ♀; same data.

**Description:** Body 1.50-1.60 mm long, entirely dark brown with reddish elytra darker at base and along sutural stria, or entirely reddish with darker head and sometimes abdomen, or entirely reddish, with legs and antennae reddish, and yellowish palpi. Head with protruding eyes, shorter than convex temples. Pronotum as wide as head; median antebasal fovea smaller than lateral ones. First abdominal tergite with basal striae extending to about one-third of paratergal length, and separated at base by about a one-third of tergal width.

**Male:** Head as in Figs 42, 44 and 46, posterior region raised in apically truncated and laterally rounded subconic median protuberance, the latter dorsally flattened and densely punctuate; frontal lobe with convergent sides. Antennae (Fig. 18) with scape and pedicel longer than wide; all funicular antennomeres wider than long with antennomere VIII strongly transverse; antennomeres

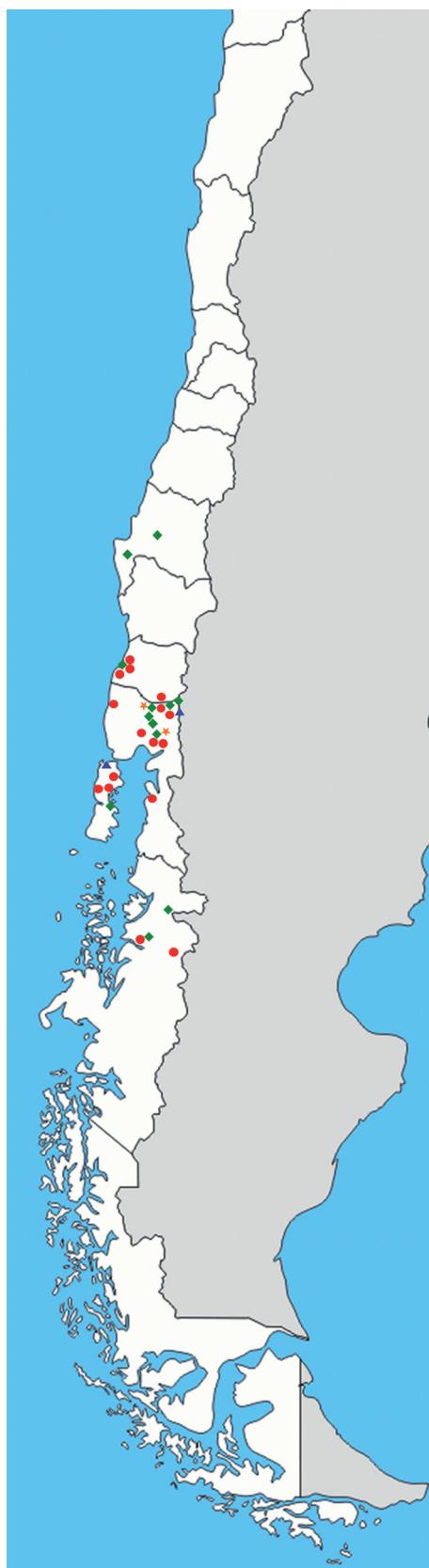


Fig. 57. Distribution map. (● red circles) *Achilia puncticeps*.  
 (▲ blue triangles) *A. cunniceps* n. sp. (◆ green diamonds) *A. reitteri* n. sp. (★ yellow stars)  
*A. adorabilis* n. sp.

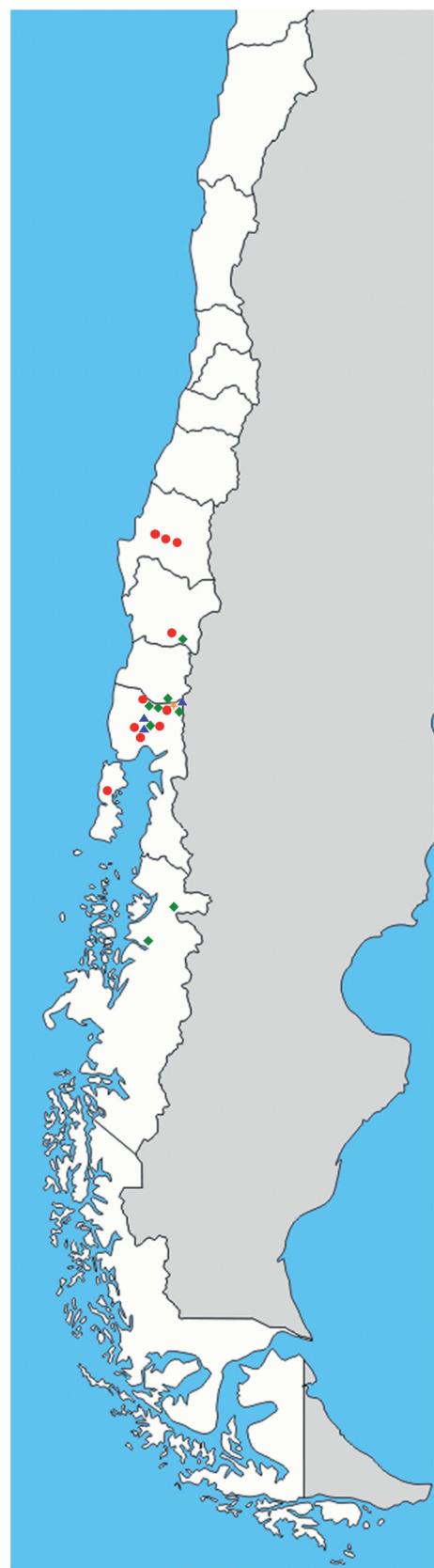


Fig. 58. Distribution map. (● red circles) *Achilia zaurda* n. sp.  
 (▲ blue triangles) *A. nipponobythoides* n. sp. (◆ green diamonds) *A. baburra* n. sp. (★ yellow stars) *A. trulla*  
 n. sp.

IX two times wider than long; antennomere X very big, slightly wider than long, its surface with some tubercles; antennomere XI very elongate and distinctly longer than VI-X combined, its surface with many tubercles. Metaventrite raised at middle, this area punctuate and depressed; posterior margin densely covered with long backward bristles. Legs with trochanters elongates; ventral margin of mesotrochanters projecting at middle as spine (Fig. 26); profemora and mesofemora slightly thickened; distal third of mesotibiae (Fig. 10) sinuate and with long and thick bristles; its medial margin projecting as large and stout spur; distal half of metatibiae slightly sinuate. Abdominal tergites unmodified; surface of first abdominal ventrite raised and flattened at middle with distinct and stout median carina extending from posterior margin to more than third of ventrite length; second and third ventrites slightly flattened at middle; fourth abdominal ventrite hollowed at middle. Aedeagus (Fig. 8) 0.40-0.42 mm long with dorsal plate quadrangular with slightly sinuate sides, apical part narrowed and rounded; dorsal longitudinal struts divergent (not shown in Fig. 8). Copulatory pieces consisting of pair of long and large medially sinuated sclerites slightly enlarged apically and with pointed lateral margin; a robust spine-like process with distal third strongly curved laterally projects from middle of left sclerite, apex of this process bifid and forming two small spines directed ventrally. Parameres sinuate and bearing two short subapical setae, and two long spines directed ventrally and medially projecting from distal third.

**Female:** Similar to male except: head unmodified with frons slightly convex and with small vertexal fovea beside each eye, vertexal sulcus present. Antennae unmodified, with shorter and less thickened antennomeres, thinner than male; metaventrite, abdominal ventrites and legs unmodified.

**Collecting data:** Collected from November to February in Valdivian rainforests, *Nothofagus* ssp., and mixed forests, at elevations ranging from 100 m to 850 m. Most specimens came from sifted samples of leaf and log litter, moss, dead trunks, vegetable debris, and sometimes mushrooms, but also were collected by flight intercept traps and UV light.

**Distribution:** *Achilia zaurda* n. sp. is known from Southern and Central Chile (Fig. 58: red circles), ranging from Llanquihue to Concepción provinces.

**Comments:** The males of this species have been described and illustrated under the name *A. puncticeps* by Reitter (1885: 324, 326, pl. II, fig. 5) and Jeannel (1962: 414, figs 166-168). See also comments under *Achilia approximans* and *A. puncticeps* species groups, and under *A. puncticeps*.

*Achilia zaurda* n. sp. differs from all the other species treated above with respect to various characters, notably by the presence of two spines on the distal edge of the parameres. The structure of the aedeagus as well as the shape of the male head and antennae are diagnostic.

## ACKNOWLEDGEMENTS

For the loan of materials we thank J. E. Barriga-Tuñón (JEBC), J. H. Boone (FMNH), T. Deuve and A. Taghavian (MNHN), M. Elgueta Donoso and Y. J. Sepulveda Guaico (MNHS), H. Schillhammer (NHMW), P. Hlaváč (PHPC), D.S. Chandler (UNHC), and R. Poggi (MSNG). This research received support from the SYNTHESYS Project (<http://www.synthesys.info/>), which is financed by the European Community Research Infrastructure Action under FP7 Integrating Activities Programme (applications FR-TAF-3522).

## REFERENCES

- Chandler D.S. 2001. Biology, Morphology, and Systematics of the Ant-like Litter Beetle Genera of Australia (Coleoptera: Staphylinidae: Pselaphinae). *Memoirs on Entomology, International* 15: i-viii, 1-560.
- Franz H. 1996. Neue Beiträge zur Kenntnis der Pselaphidenfauna von Chile und Argentinien (Coleoptera: Pselaphidae). *Koleopterologische Rundschau* 66: 83-146.
- Jeannel R. 1962. Les Psélaphides de la Paléantarctide Occidentale [pp. 295-479]. In: Deboutteville C.D., Rapoport E. (eds), Biologie de l'Amérique Australe. Vol. I. Etude sur la Faune du Sol. *Centre National de la Recherche Scientifique*, Paris.
- Kurbatov S. A., Sabella G. 2015. A revision of the Chilean Brachyglutini – Part 1. Some taxonomic changes in Brachyglutini and preliminary diagnosis of *Achilia* Reitter, 1890 (Coleoptera: Staphylinidae: Pselaphinae). *Revue suisse de Zoologie* 122(2): 297-306.
- Kurbatov S. A., Cuccodoro G., Sabella G. 2018. A revision of the Chilean Brachyglutini – Part 3. Revision of *Achilia* Reitter, 1890: *A. frontalis* species group (Coleoptera: Staphylinidae: Pselaphinae). *Revue suisse de Zoologie* 125(1): 165-188.
- Reitter E. 1883. Beitrag zur Kenntniss der Pselaphiden-Fauna von Valdivia. *Deutsche Entomologische Zeitschrift* 27: 47-54, pl. I.
- Reitter E. 1885. Beitrag zur Kenntniss der Pselaphiden-Fauna von Valdivia, Zweiter Theil. *Deutsche Entomologische Zeitschrift* 29: 321-332, pl. II.
- Reitter E. 1890. Coleopterologische Notizen. XXXVIII. *Wiener Entomologische Zeitung* 9: 210-213.
- Sabella G., Kurbatov S. A., Cuccodoro G. 2017. A revision of the Chilean Brachyglutini – Part 2. Revision of *Achilia* Reitter, 1890: *A. crassicornis*, *A. tumidifrons*, *A. bifossifrons* and *A. lobifera* species group (Coleoptera: Staphylinidae: Pselaphinae). *Revue suisse de Zoologie* 124(1): 119-140.