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A revision of the Chilean Brachyglutini – Part 7. Revision of *Achilia* Reitter, 1890: *A. cosmoptera* species group (Coleoptera: Staphylinidae: Pselaphinae)

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Abstract: The *Achilia cosmoptera* species group *sensu* Jeannel (1962) of the species-rich genus *Achilia* Reitter, 1890 is revised. Of the twelve taxa placed so far in this informal group, four species – *A. andina* Franz, 1996, *A. maiopensis* Franz, 1996, *A. pseudangularis* Franz, 1996, and *A. quinteroi* Franz, 1996 – belong to different genera and will be treated in forthcoming papers, and one name is placed in synonymy – *A. picea* Raffray, 1904 = *A. elfridae* Raffray, 1904 **syn. nov.** The remaining seven species are redescribed, and three new species fitting the concept of the *A. cosmoptera* group are described – *A. covidia* **n. sp.**, *A. pandemica* **n. sp.**, and *A. quarantena* **n. sp.** The lectotypes of *A. cosmoptera* (Blanchard, 1851), *A. blanchardi* Raffray, 1904, *A. elfridae* Raffray, 1904, *A. bifrons* Jeannel, 1962, and *A. nahuelbutae* Franz, 1996 are designated, and the new synonymies *A. nahuelbutae* Franz, 1996 = *A. angularis* Jeannel, 1962 **syn. nov.**, and *A. caneloi* Franz, 1996 = *A. temporalis* Jeannel, 1962 **syn. nov.** are also established. For all these species of the *A. cosmoptera* group their distribution is detailed and mapped, and habitat/collecting data are summarized.

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

INTRODUCTION

This article is the seventh contribution to our series aiming at a taxonomic revision of the Brachyglutini of the temperate region of southern South America, and the sixth dedicated to the genus *Achilia* Reitter, 1890 (Kurbatov & Sabella, 2015; Sabella *et al.*, 2017; Kurbatov *et al.*, 2018; Sabella *et al.*, 2019; Kurbatov *et al.*, 2019; Sabella *et al.*, 2020).

We here focus on the *A. cosmoptera* species group (*sensu* Jeannel, 1962). All the members of these group are critically reexamined and their synonymic framework is detailed, and these species are redescribed. Three new species placed in the group are described.

Regarding the prevalence of the spelling of the genus *Achilia* versus *Achillia* see Sabella *et al.* (2017: 120). 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 900 specimens. The acronyms used in the present study refer to the following collections (relevant curator/collection manager 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. (M. Turcatel)
HNHM	Hungarian Natural History Museum, Budapest, Hungary (O. Merkl)
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)

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MSNG Museo Civico di Storia Naturale "G. Doria", Genova, Italy (R. Poggi)
NHMW Naturhistorische Museum, Wien, Austria (H. Schillhammer)
PCTS Private collection of Tim Struyve, Mechelen, Belgium (T. Struyve)
PCVB Private collection of Volker Brachat, Geretsried, Germany (V. Brachat)
PHPC Private collection of Peter Hlavác, Prague, Czech Republic (P. Hlavác)
UNHC University of New Hampshire Arthropod Collection, Durham, NH, U.S.A. (D.S. Chandler).

Only critical references are cited for the species. 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 MHNG materials additional informations pertaining to sampling sites are enriched from unpublished locality lists when available.

For the method of selection of the type material see Sabella *et al*. (2017).

The aedeagi and other body parts illustrated here were mounted in Canada balsam on acetate slides, and drawn using a drawing tube mounted on a Zeiss Axioskop compound microscope. 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 CC 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 aedeagus termed "dorsal strips" in Sabella *et al*. (2017) are here termed "longitudinal struts".

TAXONOMY

Achilia cosmoptera species group

Remarks: Jeannel (1962: 398, 425) characterized this group as follows: elytra with two basal foveae; basal striae of first abdominal tergite separated at most by a quarter of tergal width; frontal lobe of males modified, male's antennomeres unmodified; aedeagal parameres with long setae.

Franz (1996: 118) proposed a new group of species – i.e. the *A. angularis* group – to accomodate *Achilia* species in which the internal sac of aedeagus bears a complex of ramified spines. In addition to *A. angularis*, previously attributed by Jeannel (1962: 426) to the *A. cosmoptera* group, he included in this new group *A. pseudangularis* Franz, 1996, *A. quinteroi* Franz, 1996, *A. andina* Franz, 1996 and *A. maiopensis* Franz, 1996. However the delimitation of this *A. angularis* group overlaps that of the *A. cosmoptera* group of Jeannel, and moreover Franz placed in it species having little in common in our opinion. For convenience we treat here all the species included by Franz in his *A. angularis* group as members of the *A. cosmoptera* group, which would thus consist of: *A. andina* Franz, 1996, *A. angularis* Jeannel, 1962, *A. bifrons* Jeannel, 1962, *A blanchardi* Raffray, 1904, *A. cosmoptera* (Blanchard, 1851), *A. elfridae* Raffray, 1904, *A. maiopensis* Franz, 1996, *A. melanocephala* Jeannel, 1963, *A. picea* Raffray, 1904, *A. pseudoangularis* Franz, 1996, *A. quinteroi* Franz, 1996, and *A. temporalis* Jeannel, 1962.

However, after examination of the types we concluded that *A. andina* Franz, 1996 and *A. maiopensis* Franz, 1996 resemble members of *Pseudachillia* Jeannel, 1964, while *A. pseudangularis* Franz 1996 and *A. quinteroi* Franz, 1996 resemble members of *Achillidia* Jeannel, 1962; we will deal in more depth with these four species as well as assess the opportunity of their transfer in our forthcoming reviews of these genera. Also, one name is placed in synonymy – *Achilia picea* Raffray, 1904 = *Achilia elfridae* Raffray, 1904 (**syn. nov.**). As a result, the *A. cosmoptera* group is reduced to *A. cosmoptera* (Blanchard, 1851), *A. blanchardi* Raffray, 1904, *A. elfridae* Raffray, 1904, *A. bifrons* Jeannel, 1962, *A. temporalis* Jeannel, 1962, *A. angularis* Jeannel, 1962, and *A. melanocephala* Jeannel, 1963, to which we add three new species described below – i. e. *A. covidia* n. sp., *A. pandemica* n. sp. and *A. quarantena* n. sp. – for a total of ten species.

The species of the *A. cosmoptera* group possess the following common features: pubescence decumbent, consisting of long setae sparse over the body, and very sparse on the elytra (except in *A. bifrons, A. temporalis,* and *A. angularis*); head distinctly wider than long (only slightly wider than long in *A. angularis* and *A. quarantena* n. sp.) with two big vertexal foveae, eyes fairly protruding and longer than temples; antennae with antennomeres III-VIII about the same width; pronotum wider than long, slightly wider than head, and with slightly convex disc, its surface smooth and shiny with some punctures; median antebasal fovea slightly smaller than lateral foveae; anterior portion of lateral margins of pronotum distinctly convergent and sinuate anteriorly; posterior portion of lateral margins of pronotum slightly convergent; basal margin of pronotum bordered with row of contiguous shallow impressions; elytra together wider than long with protruding humeri; elytral disc smooth, shiny, with very

few punctures (except in *A. angularis* for which they are more densely punctate); elytra with two big basal foveae, sometimes with two small more medial foveae (as for example in the holotype of *A. melanocephala*); sutural stria entire; elytral discal stria extended to about elytral mid-length; abdomen smooth, with some minute punctures; first abdominal tergite with diverging basal striae extending to about one-fourth of paratergal length (except in *A. angularis* in which they are longer than one-fourth of paratergal length), and separated at base by about one-fourth of tergal width (except in *A. angularis*, *A. pandemica* n. sp. and *A. melanocephala*, in which they are wider than one-fourth of tergal width); short and sparse setal brush between basal striae. Many specimens of both sexes of *A. cosmoptera*, *A. elfridae*, *A. pandemica* n. sp. and *A. angularis* bear also a bundle of long setae on lateral side of first visible abdominal sternite (see Figs 49-50: arrows).

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

Achilia angularis Jeannel, 1962

Figs 8-12, 15, 21, 24, 30, 32, 33-36, 64

Achilia angularis Jeannel, 1962: 426, 430, figs 198 (head and antenna of male), 199 (aedeagus).

Achilia nahuelbutae Franz, 1996: 115, fig. 62 (aedeagus) **syn. nov.**

Type material (2 ex.): CENTRAL CHILE: Región Bío Bío: Ñuble Prov.: MNHN; 1 ♂ (holotype of *A. angularis*); labels verbatim "Holotype / Chile; Chillan / *Achillia angularis* (handwritten by Jeannel)". – Región Araucanía: Malleco Prov.: NHMW; 1 ♂ (lectotype of *A. nahuelbutae*, here designated); labels verbatim "Lectotype / Cordillera; Nahuelbuta; lg. H. Franz / *Achillia nahuelbutae* m. (handwritten by Franz) / *Achilia nahuelbutae* Franz, 1996 = *Achilia angulari*s Jeannel 1962; det. Sabella, Cuccodoro & Kurbatov 2019".

Additional material examined (244 ex.): SOUTHERN ARGENTINA: Neuquén Prov.: MNHN; 1 ♂; San Martín de los Andes; 15.IV.1959; C. Delamare. – CENTRAL CHILE: Región Araucanía*:* Cautín Prov.*:* FMNH (FMHD# 96-239); 1 ♂ and 2 ♀; Villarica National Park, Volcán Villarica, road to sky center; 39° 22.48'S 71° 58.30'W; 1180 m; 26.XII.1996; *Nothofagus dombeyi* forest w/*Chusquea*, Berlese, leaf & log litter; A. Newton & M. Thayer 980. – MHNG; 1 ♂; Villarica National Park, Volcán Villarica, 10 km S Pucón; 900 m; 15.XII.1984/10.II.1985; *Nothofagus* grove on ash; S. & J. Peck. – PCVB; 1 ♂; Pucón, Volcán Villarica; 1300 m; 23.XI.2004; Bergwald; K. Renner. – UNHC; 3 ♂; Volcán Villarica; 1250 m; site 653; 15-29.XII.1982; *Nothofagus dombeyi pumilio* forest w/*Chusquea*, Berlese, leaf & log litter, forest floor; A. Newton & M. Thayer. – PCTS; 1 ♂; Palguin, 39,43°S 71,79°W; 05.XII.2013; litter layer. – MHNG; 5 ♂ and 17 ♀; Huerquehue National Park; 800-900 m; station 16a; 22-24.XII.1980; forest litter; D. Agosti & D. Burckhardt. – FMNH (FMHD# 96-232); 1 ♂; Conguillío National Park, 4.0 km E Laguna Captrén guard sta.; 38° 38.98'S 71° 39.77'W; 1255 m; 23.XII.1996; *Nothofagus dombeyi* forest, Berlese, flood debris along stream; A. Newton & M. Thayer. – Malleco Prov. – MHNG; 1 ♂; Cordillera Nahuelbuta; H. Franz. – NHMW; 6 ♂ (2 identified as *A. nahuelbutae*) and 39 ♀; same data. – MHNG; 3 ♂; Nahuelbuta National Park, 40 km W Angol; 1200-1500 m; 19.XII.1984/17.II.1985; *Nothofagus-Araucaria*; for FIT; S. & J. Peck. – MHNG; 8 ♂; Nahuelbuta National Park, 45 km W Angol; 1400 m; 09.XII.1984/16.II.1985; *Nothofagus-Araucaria* forest, car trap; S. & J. Peck. – FMNH (FMHD P#85-13); 1 ♂; same locality; 09.XII.1984; *Nothofagus-Araucaria* forest, Berlese, litter; S. & J. Peck. – JEBC; 2 ♂; National Park, Nahuelbuta (entrance); 37° 49.555'S 72° 58.008' W; III.2001; soil; J. E. Barriga-Tuñón. – JEBC; 1 ♂; National Park, Nahuelbuta; 36° 52' 34''S 71° 28' 3''W; 06.XII.2008; fogging lenga *Nothofagus obliqua*; J. E. Barriga-Tuñón. – JEBC; 1 ♂ and 2 ♀; Arauco, National Park Nahuelbuta, Pichinahuel; 37° 47'S 73° 00'W; 1200 m; 22.IX.2001; Berlese trap, *Araucaria araucana*; J. E. Barriga-Tuñón. – FMNH (FMHD #2002-041); 2 ♂ and 7 ♀; Nahuelbuta National Park, E of Guarderia Pichinahuel; 37° 48.20'S 73° 01.41'W; 1290 m; 05-24.XII.2002; *Araucaria-Nothofagus dombeyi* with *Chusquea* bamboo, flight intercept trap; A. Newton, M. Thayer, A. Solodovnikov; D. J. Clarke & M. Chani 1054. – MHNG; 2 ♂ and 2 ♀; same data. – FMNH (FMHD #2002-042); 1 ♀; same data but carrion trap (octopus); M. Thayer & A. Newton 1054. – FMNH (FMHD #2002-054); 6 ♂ and 52 ♀; Nahuelbuta National Park, Comallín area, between Guardería and picnic area; 37° 48.33'S 73° 00.98'W; 1200 m; 06.XII.2002; *Nothofagus-Araucaria*-bamboo, sun-extracted, sifted litter; A. Solodovnikov. – MHNG; 3 ♂ and 6 ♀; same data. – FMNH (FMHD #2002-053); 1 ♂ and 21 ♀; same data but pitfall traps (10); A. Solodovnikov. – MHNG; 1 ♂ and 3 ♀; same data. – FMNH (FMHD #96-219); 2 ♂; Nahuelbuta National Park, Comallín, 8.2 km NW Los Portones entrance; area; 37° 48.21'S 73° 00.89'W; 1260 m; 21.XII.1996/07.II.1997; *Nothofagus* spp. *Araucaria araucana* forest, flight intercept trap; A. Newton & M. Thayer 974. – MHNG; 2 ♂; same data. – FMNH (FMHD #96-221); 2 ♂; same data but 21.XII.1996; leaf & log litter. – MHNG; 1 ♂; same data. – FMNH (FMHD #96-222); 2 ♂; Nahuelbuta National Park, 4.5 km W Los Portones entrance; 37° 49.25'S 72° 59.82'W; 1300 m; 21.XII.1996/07.II.1997; *Nothofagus* spp. emergent *Araucaria araucana, Chusquea* understory, flight intercept trap; A. Newton & M. Thayer 975. – MHNG; 1 ♂; same data. – FMNH (FMHD #96-224); 1 ♂ and 3 ♀; same data but 21.XII.1996; Berlese, leaf & log litter. – FMNH (FMHD #97-48); 3 ♂ and 8 ♀; Nahuelbuta National Park, 2.3 km W Los Portones entrance; 37° 49.32'S 72° 58.73'W; 1190 m; 07.II.1997; *Nothofagus* spp. forest (evergreen and deciduous), Berlese, leaf & log litter; A. Newton & M. Thayer, 1010. – FMNH (FMHD #2002-051); 1 ♂ and 1 ♀; Nahuelbuta National Park, Comallín, 8.2 km NW Los Portones entrance area; 37° 48.10'S 73° 00.93'W; 1210 m; 06.XII.2002; *Nothofagus antarctica* w/ *Araucaria* & *Chusquea* bamboo, sun-extracted, leaf & log litter; A. Solodovnikov 1058. – FMNH (FMHD #2002-052); 3 ♀; same data but 06-08.XII.2002; pitfall trap (10). – FMNH (FMHD #2002-056); 3 ♂; Nahuelbuta National Park, 2.3 km W Los Portones entrance; 37° 49.41'S 72° 58.95'W; 1150 m; 07-25.XII.2002; *Nothofagus dombeyi* + *antarctica*, mostly open understory, flight intercept trap; A. Newton & M. Thayer 1057. – MHNG; 2 ♂; same data. – FMNH (FMHD #2002-045); 1 ♂; Nahuelbuta National Park, road to Piedra del Águila; 37° 49.29'S 73° 01.90'W; 1360 m; 06-24.XII.2002; *Nothofagus dombeyi* & *pumilio*, large *Araucaria*, bamboo + shrub understory, flight intercept trap; M. Thayer, A. Newton, A. Solodovnikov, D. J. Clarke & M. Chani 1055. – FMNH (FMHD #2002-048); 1 ♂ and 4 ♀; Nahuelbuta

National Park, Vic Pehuenco (Centro Visitantes); 37° 49.06'S 73° 00.47'W; 1130 m; 06-25.XII.2002; *Nothofagus* sp. (decid.), w/shrubby understory, no bamboo, flight intercept trap; M. Thayer, A. Newton, A. Solodovnikov, D. J. Clarke & M. Chani 1056.

Description: Body 1.35-1.65 mm long, reddish with darkened head and abdomen; antennae and legs reddish; palpi yellowish.
Male: Head as in Figs 33-36, subrectangular with slightly convex occipital region; frons and frontal lobe punctate; transverse frontal sulcus narrow and shallow, limited to the area posterior to antennal tubercles; temporal angles prolonged as spiniform process directed upwards. Antennae (Fig. 21) with scape distinctly longer than wide; pedicel slightly longer than wide; antennomere III slightly wider than long; antennomeres IV-VIII wider than long; antennomere IX wider than VIII and wider than long, with some tubercles and setae; antennomere X distinctly wider than long and wider than IX, with some tubercles and setae; antennomere XI moderately elongate, longer than VIII-X combined. Metaventrite with very shallow mediobasal impression. First abdominal sternite slightly raised and flattened at middle. Profemora (Fig. 15) enlarged and densely pubescent; protibiae (Fig. 24) with distal half swollen and densely pubescent, with acute apical spine; mesotibiae (Fig. 30) with distal half slightly bulging, with group of dense setae near basal third of medial margin, medial margin indented and ending as subapical spine; metatibiae (Fig. 32) with medial margin expanded on basal third as pubescent lamina and ending with very short subapical spine. Aedeagus (Fig. 8) 0.25-0.26 mm long, with ovoidal dorsal plate; dorsal longitudinal struts divergent. Parameres relatively wide with one seta on short outer lobe; apical portion of parameres recurved anteriorly, bearing one ventral medial seta. Copulatory pieces consisting of two subequal sclerites basally recurved and more robust, and apically pointed with some short subapical spines; these sclerites associated with two lateral sclerites variable in shape and forming apically two or three spines (Figs 8-12).
Female: Similar to male except head not modified; antennae shorter; eyes smaller; metaventrite, abdominal sternites, and legs unmodified.

Collecting data: Collected from December to April; found in different types of forests of *Nothofagus* spp., sometimes with *Araucaria araucana* and *Chusquea* at elevations ranging from 800 m to 1500 m. Most of the material come from sifted samples of leaf and log litter; some specimens were collected with pitfall traps, and several males have also been collected by flight intercept traps, and car netting.

Distribution: *Achilia angularis* is known from Southern Argentina (Neuquén Prov.) and Central Chile (Araucanía and Bío Bío Regións) (Fig. 64: squares edged in blue).

Comments: In a previous article (Sabella *et al*., 2017: 123) we claimed to have examined the type series of *Achilia nahuelbutae* Franz, 1996 housed in the NHMW, which included three different species of *Achilia* and one specimen of the tribe Euplectini; all 56 specimens are labeled as "Cordillera Nahuelbuta / lg. H. Franz.". In the original description Franz (1996: 115) mentions a holotype male and 39 paratypes, but in Franz's collection none of the specimens examined bear holotype or paratypes labels, and only 3 males – the only specimens dissected and pinned with the aedeagus preparation – have an identification label handwritten by Franz "*Achillia nahuelbutae* m.". Among these three males, which are very similar both in exoskeletal morphology and the shape of the aedeagus, we designate one as the lectotype of *A. nahuelbutae* Franz, 1996. The comparison between this lectotype of *A. nahuelbutae* Franz, 1966 and the holotype of *A. angularis* Jeannel, 1962 showed that they are conspecific, and therefore we place *Achilia nahuelbutae* Franz, 1996 as a junior synonym of *A. angularis* Jeannel, 1962 (**syn. nov.**). The remaining 54 specimens, excluding the member of Euplectini, belong to *A. angularis* (3 male and 30 females), to *A. jeanneli* Sabella, Cuccodoro & Kurbatov, 2019 (1 male and 15 females), to *A. pachycera* Jeannel, 1963 (3 females), and to *A. bicornis* Jeannel, 1962 (2 females).
The males of *A. angularis* are easily distinguished from those of the other species of the *A. cosmoptera* group by the shape of the head (Figs 33-36), antennae (Fig. 21), profemora (Fig. 15), protibiae (Fig. 24), mesotibiae (Fig. 30), metabiae (Fig. 32), and aedeagus (Fig. 8). The females of *A. angularis* strongly resemble those of *A. quarantena* n. sp.; for characters to distinguish females of these two species see the "Comments" section of the latter species.

Achilia bifrons Jeannel, 1962
Figs 5, 18, 37, 39, 41, 63

Achilia bifrons Jeannel, 1962: 426, 428, fig. 192 (aedeagus).

Type material (2 ex.): CENTRAL CHILE: Región Bío Bío: Concepción Prov.: MHHN; 1 ♂ (Lectotype, here designated) labels verbatim "Lectotype / Boca del Biobio / Concepcion; 26.V.1957 / *Achillia bifrons* (handwritten by Jeannel)". – MNHN, 1 ♂ (Paralectotype, here designated); labels verbatim "Paralectotype / El Caracol; Conc.; 26.V.1957 / 2 Fb".

Additional material examined (4 ex.): CENTRAL CHILE: Región Bío Bío: Concepción Prov.: MSNG; 1 ♂ and 1 ♀; Lomas Coloradas; 21.V.1988; site TC- 208; T. Cekalovic. – MHNG; 1 ♂ and 1 ♀; same data.

Description: Body 1.55-1.60 mm long, entirely reddish with slightly darkened abdomen; palpi yellowish.
Male: Head as in Figs 37, 39 & 41, wide, surface with scattered punctures; occipital region and basal half of frons raised with U-shaped median notch; basal half of

frons very long and convex, and separated from distal half of frons by transverse sulcus; anterior margin of this sulcus raised and pointed at middle, bearing tuft of long setae. Antennae (Fig. 18) with scape and pedicel longer than wide; antennomeres III-IV slightly longer than wide; antennomeres V-VII longer than wide; antennomere VIII about as long as wide; antennomere IX only slightly wider than VIII and slightly wider than long; antennomere X wider than long and wider than IX; antennomere XI elongate, about as long as VII-X combined. Metaventrite with wide medial sulcus on apical on two-thirds, sulcus densely pubescent. Mesotibiae with distal half swollen and densely pubescent. Aedeagus (Fig. 5) 0.31-0.32 mm long, with subrectangular dorsal plate slightly narrowed apically; dorsal longitudinal struts slightly divergent. Parameres relatively wide with large and long recurved seta on well-developed and relatively long outer lobe; apical portion of parameres slightly recurved anteriorly; apex bearing one ventral medial seta. Copulatory pieces consisting of two subequal bifid sclerites basally recurved and more robust, topped with medial sclerites with rounded apical sides.

Female: Similar to male except head not modified; antennae shorter; eyes smaller; metaventrite, and legs unmodified.

Collecting data: The data in our possession do not allow statements in this regard other than members of this species are active in May.

Distribution: *Achilia bifrons* is only known from Concepción Province (Región Bío Bío) (Fig. 63: blue inverted triangles).

Comments: Jeannel (1962: 428) described *A. bifrons* on the basis of two males collected in Concepción Province, respectively at Bocas del Biobio and at Cerro Caracol. He stated that the holotype of *A. bifrons* was housed in the MNHS and the paratype in the MNHN. However in the MNHS we couldn't find any specimens of *A. bifrons*, and moreover this taxon is not listed in the catalog of the MHNS holotypes of insects (Camousseight, 1980). Instead we found in the MNHN two males of this species identified as such by Jeannel and labeled as from Bocas del Biobio and Cerro Caracol, but not bearing any type labels. Considering that Jeannel (1962: 428) indicated the type locality as generically from Concepción, we designate here the male labeled "Boca del Biobio / Concepcion; 26.V.1957 / *Achillia bifrons* (handwritten by Jeannel)" as the lectotype of *A. bifrons*, and the other male from Cerro Caracol as paralectotype.

The males of *A. bifrons* are easily distinguished from other species of the *A. cosmoptera* group by the shape of the head (Figs 37, 39, 41), antennae (Fig. 18), and aedeagus (Fig. 5). The females of this species are similar to those of *A. temporalis* from which they can be easily distinguished by their very long frontal lobe with the anterior margin slightly pointed at the middle, while the frontal lobe is short with a straight anterior margin in *A. temporalis*.

Achilia blanchardi Raffray, 1904

Figs 3, 17, 27, 38, 40, 42, 63

Bryaxis valdiviensis Reitter, 1883: 50, pl. 1 fig. 8 (head and antenna) (nec *valdiviensis* Blanchard, 1851). – Reitter, 1885: 326; 330, pl. 2 fig. 14 (head and antenna).

Achilia clavata Raffray, 1904: 137, fig. 53 (head and antenna) (synonymized by Jeannel, 1962: 429).

Achilia blanchardi Raffray, 1904: 138 (new name for *Bryaxis valdiviensis* Reitter, 1883). – Jeannel, 1962: 426, 430, figs 195 (head and antenna of male), 196 (head and antenna of female), 197 (aedeagus).

Type material (12 ex.): MNHN; 1 ♀ (Holotype of *A. clavata*); labels verbatim "Museum de Paris; 1917; coll. Raffray / Chili / Type / *clavata*; det. A. Raffray / *clavata* (handwritten by Jeannel)". – SOUTHERN CHILE: Región Los Ríos: Valdivia Prov.: MNHN; 1 ♂ (lectotype of *A. blanchardi* here designated); labels verbatim "Lectotype / Type / 1880; Chili; Valdivia; leg. Kindermann/ *Bryaxis*; *valdiviensis*; m. Valdivia / Museum de Paris; 1917; coll. Raffray / *A. blanchardi*; A. Raffray det.". – MNHN; 1 ♂ and 9 ♀ (Paralectotypes of *A. blanchardi* here designated); labels verbatim "Paralectotype / Chili / Museum de Paris; 1917; coll. Raffray / *A. blanchardi*; A. Raffray det.".

Additional material examined (5 ex.): FMNH; 1 ♀; Field Mus. Nat. Hist.; Orlando Park; Pselaphidae Colln.; F. C. Fletcher Collection. – MNHN; 1 ♀; Chile; P. Germain. – HNHM; 1 ♂; "Chili". – MNHN; 2 ♀; "Chili"; Gay; 1849.

Description: Body 1.35-1.40 mm long, dark brown with reddish elytra; antennae and legs reddish; palpi yellowish.

Male: Head as in Figs 38, 40 & 42, very wide, surface with some very scattered punctures; occipital region raised, frons flattened and separated by large transverse sulcus from large frontal lobe; anterior margin of frontal sulcus slightly raised and pointed at middle. Antennae (Fig. 17) with scape and pedicel longer than wide; antennomere III distinctly longer than wide; antennomere IV about as long as wide; antennomeres V-VII slightly longer than wide; antennomere VIII as long as wide; antennomere IX wider than VIII and wider than long; antennomere X distinctly wider than long, shorter and wider than IX; antennomere XI elongate, longer than VII-X combined. Metaventrite with deep and wide transverse sulcus on apical two-thirds, sulcus with deflected and posteriorly prominent margins forming sort of tubercles. First abdominal sternite slightly raised and flattened at middle; remaining abdominal sternites slightly flattened at middle. Protibiae with distal half slightly swollen; mesotibiae (Fig. 27) with distal half swollen and densely pubescent. Aedeagus (Fig. 3) 0.23 mm long, with dorsal plate subrectangular; dorsal longitudinal struts divergent. Parameres relatively wide with very large and long recurved seta on well-developed outer lobe, this seta bifid and very swollen

on basal third; apical portion of parameres slightly recurved anteriorly and prolonged laterally at tip; apex of parameres bearing one long ventral medial seta associated with wider and shorter seta. Copulatory pieces consisting of two subequal short sclerites slightly enlarged apically, recurved and more robust basally.
Female: Similar to male except head not modified; antennae shorter with antennomere XI shorter; metaventrite, abdominal sternites, and legs unmodified.

Collecting data: The data in our possession do not allow us to make statements in this regard.

Distribution: *Achilia blanchardi* is only known from Valdivia (Región Los Ríos: Valdivia Prov.) (Fig. 63: green diamonds).

Comments: Raffray (1904: 138) proposed the new name *Achilia blanchardi* for *Bryaxis valdiviensis* Reitter, 1883, described on an unspecified number of specimens from Valdivia, because this name was preoccupied by *Pselaphus valdiviensis* Blanchard, 1851 [now *Achilia valdiviensis* (Blanchard, 1851)] (see Sabella *et al*., 2020: 140, 144-145).
Jeannel (1962: 430) listed *Achilia clavata* Raffray, 1904 as a junior synonym of *A. blanchardi*, but without justifying this action. We have examined the holotype of *A. clavata*, which is a female resembling in all features those of *A. blanchardi*, and therefore we confirm the synonymy proposed by Jeannel.
Jeannel (1962: 430) stated that the type of *Achilia blanchardi* Raffray, 1904 was housed in the MNHN collections. In the MNHN we found in Raffray's collection a series of 11 specimens identified by Raffray as *Achilia blanchardi*; the first specimen of the series is a male labeled "Type / 1880; Chili; Valdivia; leg. Kindermann/ *Bryaxis*; *valdiviensis*; m. Valdivia / Museum de Paris; 1917; coll. Raffray / *A. blanchardi*; A. Raffray det." which we designate here as the lectotype of *A. blanchardi* Raffray, 1904 (Blanchard, 1851), and the remaining 10 specimens (1 male and 9 females) labeled "Chili" without further label data are designated as paralectotypes.
Within the *A. cosmoptera* group the males of *A. blanchardi* are easily distinguished from other species by the shape of the head (Figs 38, 40, 42), antennae (Fig. 17) and aedeagus (Fig. 3). The females of this species are very similar to those of *A. elfridae*, from which they can be distinguished by their wider head with a wider frontal sulcus, and their slightly longer antennomere XI (0.16 mm for *A. blanchard*i vs 0.14-0.15 mm for *A. elfridae*).

Achilia cosmoptera (Blanchard, 1851)
Figs 1, 43, 45, 47, 63

Pselaphus cosmopterus Blanchard, 1851: 563.
Achilia cosmoptera Raffray, 1904: 138; Jeannel, 1962: 426, 428, figs 193 (habitus), 194 (aedeagus); Jeannel, 1963: 353; Jeannel, 1964: 10.
Bryaxis chilensis Reitter, 1883: 49, pl. 1 figs 11 (head and antenna), 12 (palpus), 13 (leg). – Reitter, 1885: 326 (synonymized by Raffray, 1904: 138).
Bryaxis tripunctata Reitter, 1885: 326, 330 (synonymized by Jeannel, 1962: 429).

Type material (2 ex.): MNHN; 1 ♂ (lectotype of *Achilia cosmoptera*, here designated); labels verbatim: "Lectotype / Chile; Gay 1849 / 4 / 40 / *cosmoptera* / Gen. *Achilia* Reitt. = *Bryaxis* aut. Raffray = *Pselaphus* Blanchard / *cosmoptera* Blanch. = *chilensis*; A. Raffray det. 1904". – SOUTHERN CHILE: Región Los Ríos: Valdivia Prov.: MNHN; 1 ♀ (Holotype of *Bryaxis tripunctata*); labels verbatim: "*Bryaxis tripunctata;* m. Valdivia 1880 / Type / *tripunctata* Reitt. (handwritten by Jeannel) / *B. tripunctata*; A. Raffray det. / Museum de Paris; 1917; coll. Raffray".

Additional material examined (83 ex.): HNHM; 1 ♂; "Chili". – MNHN; 8 ♂ and 2 ♀; "Chili" [Valdivia?]. – PCVB; 1 ♂; "Chili". – SOUTHERN AND CENTRAL CHILE: Región Los Lagos: Palena Prov.: PCTS; 1 ♂ and 6 ♀; Homopirén; 41° 87'S 72° 36'W; 17.XII.2013; forest layer. – Chiloé Prov: MHNG; 2 ♂; Chiloé; H. Franz. – NHMW; 1 ♂; Chiloé; H. Franz. – PCVB; 4 ♂; Isla Chiloé, Mocopulli; 04.II.1983; ex *Berberis buxifolia*; T. Cekalovic. – NHMW; 1 ♂ (identified as *A. bifossifrons*); Quinchao Island. – MSNG; 1 ♂; 1 km W of Lago Huillinco; 24.I.1998; site TC-564; T. Cekalovic. – FMNH (FMHD #2002-72); 3 ♂; S side of Huillinco 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; valdivian rainforest w/emergent *Saxegothea conspicua*, flight intercept trap; A. Newton, M. Thayer & M. Chani 1062. – MSNG; 1 ♂; Rio Pudeto; 21.II.1989; site SyTC-226; S. & T. Cekalovic. – FMNH; 1 ♂; 2 km N of Puente Pudeto; TC-554; 17.I.1998; Berlese; T. Cekalovic. – FMNH (FMHD #2002-91); 1 ♂ and 2 ♀; Castro, S of Cabañas Trayen; 42° 31'S 73° 48'W; 20.XII.2002; grassy yard on hill, some tres nearby, Berlese, cut grass pile ca. one week old; A. Solodovnikov, M. Chani, A. Newton & M. Thayer. – MSNG; 2 ♂; Chepu; 26.I.2000; site TC-624; T. Cekalovic. – FMNH (FMHD# 97-21); 1 ♂; Puente La Caldera, 9.8 km E of Cucao; 42° 39.96'S 74° 00.70'W; 10 m; 14.I.1997; valdivian rainforest, Berlese, leaf & log litter; A. Newton & M. Thayer 991. – Osorno Prov: MHNG; 1 ♂ and 1 ♀; Puyehue National Park, Aguas Calientes, station 20b; 40° 40'S 72° 20'W; 450-600 m; 01-03.XII.1992; sifting of moss on dead tree trunks, branches and rocks and vegetational debris; D. Burckhardt. – Región Los Ríos, Valdivia Prov: MHNG; 4 ♂; Corral, 39° 95'S 73° 20'W; 06.XII.2013; car net. – MHNG; 4 ♂; Corral, 39° 95'S 73° 20'W; 06.XII.2013; car net. – PCTS; 1 ♂; Caleta Chaihuín, 39° 963'S 73° 586'W; 76.XII.2013; litter layer. – MHNG; 1 ♂; Parque Nacional Alerce Costero, Chaihuín; 0-100 m; 16.II.2018; forest litter; S. Kurbatov. – JEBC; 1 ♂; Chaihuín, Camino a Huaicolla; 39° 59.926'S 73° 38.976W; 107 m; 12.I.2007; fogging *Nothofagus dombeyi*; J. E. Barriga-Tuñón. – JEBC; 5 ♂ and 3 ♀; Chaihuín, Reserva Costiera Valdiviana, en estero; 39° 58.186'S 73° 34.230'W; 30 m; 28.II.2008; J. E. Barriga-Tuñón. – PCVB; 1 ♂ and 1 ♀; Panguipulli. – Región Araucanía: Malleco Prov. – FMNH (FMHD #96-222); 1 ♂; Nahuelbuta National Park, 4.5 km W Los Portones entrance; 37° 49.25'S 72° 59.82'W; 1300 m; 21.XII.1996/07.II.1997; *Nothofagus* spp. emergent *Araucaria araucana, Chusquea* understory, flight intercept trap; A. Newton & M. Thayer 975. – Cautín Prov: NHMW; 1 ♂ (identified as *Achilia approximans*); Rio Pedregoso. – Región Bío Bío: Concepción Prov. – PCVB; 1 ♂; Parque Hualpén;

29.III.1986; site TC-165; T. Cekalovic. – MHNG; 1 ♂; same data; T. Cekalovic. – PCVB; 2 ♂; Concepción; 05.XI.1987; T. Cekalovic. – MHNG; 1 ♂; Periquillo; 21.IX.1996; site TC-486; T. Cekalovic. – MSNG; 1 ♂; same data. – MNHN; 1 ♀; Cerro Caracol; 23.V.1957. – Ñuble Prov.: MNHN; 2 ♂ and 2 ♀; Chillán; P. Germain. – MNHS; 4 ♀ (2 ♀ identified as *A. testacea*); same data. – MHNG; 1 ♂; near Recinto, about 60 km E Chillán; station 7a; 400-450 m; 12.XII.1990; forest litter; M. Agosti & D. Burckhardt. – Región Maule: Cauquenes Prov. – JEBC; 1 ♂ and 2 ♀; Los Ruiles, 20 km W of Cauquenes; 01.X.2003; J. E. Barriga-Tuñón.

Description: Body 1.20-1.40 mm long, dark brown with reddish elytra, generally with darker head and sometimes also darker pronotum, some specimens brown with darker abdomen; antennae and legs reddish; palpi reddish or yellowish.

Male: Head as in Figs 43, 45 & 47, wide, surface with distinct but very scattered fine punctures; occipital region and basal half of frons raised at middle, with flattened and slanting anterior margins; basal half of frons separated by deep transverse sulcus from anterior half of frons, the latter prolonged posteriorly as large median process reaching transverse sulcus and producing median constriction; vertexal foveae lacking. Antennae with scape and pedicel longer than wide; antennomeres III-VI longer than wide; antennomere VII about as long as wide; antennomere VIII slightly wider than long; antennomere IX slightly wider than VIII and wider than long; antennomere X distinctly wider than long and wider than IX; antennomere XI elongate, about as long as VII-X combined. Metaventrite with deep and wide transverse sulcus on apical two-thirds, sulcus with prominent margins. First abdominal sternite slightly raised and flattened at middle; remaining abdominal sternites slightly flattened at middle. Protibiae with distal two-thirds swollen, distal third densely pubescent; mesotibiae with small subapical spur on medial margin, distal half swollen and densely pubescent. Aedeagus (Fig. 1) 0.20-0.21 mm long, with suboval dorsal plate distinctly narrower apically; dorsal longitudinal struts divergent. Parameres relatively wide with very large and long recurved seta on well-developed outer lobe; apical portion of parameres slightly recurved posteriorly, prolonged laterally as short tip; apex bearing one ventral medial seta. Copulatory pieces consisting of two subequal pointed sclerites recurved at both ends and more robust basally.

Female: Similar to male except head not modified. Antennae shorter with antennomere XI much shorter; metaventrite, abdominal sternites, and legs unmodified.

Collecting data: Collected from September to March, in different types of forests (i.e. *Berberis buxifolia*; Valdivian rainforest with *Saxegothea conspicua; Nothofagus* spp. forest sometimes with *Araucaria araucana* and *Chusquea*) at elevations ranging from 0 m to 1300 m. Most specimens come from sifted samples of leaf and log litter, sometimes with moss and vegetational debris, and males have also been collected by flight intercept traps, window traps, and car netting.

Distribution: *Achilia cosmoptera* is distributed in Southern and Central Chile (Fig. 63: red square) from Palena Province to Cauquenes Province. Jeannel (1962: 429) mentions that this species occurs in Valdivia based on 8 males and 2 females, which probably refers to the specimens we identified as such from the Raffray collection labeled "Chili" without further label data.

Jeannel mentions the presence of specimens of *A. cosmoptera* from Nahuelbuta (1963: 353, 1 ♀ collected by F. Castri in 14.XII.1961) and Tiltil (1964:10-11, 1 ♀ collected by F. Castri in VIII.1962), that appear to be based on two misidentified females of *A. testacea*.

Comments: Blanchard described *Pselaphus cosmopterus* (1851: 563) based on an unspecified number of specimens from San Cárlos (Region Bío Bío, Ñuble Province). The description was so imprecise that subsequent authors (Reitter, 1885; Schaufuss, 1886; and Raffray, 1895) thought the species belonged in the Tyrini.

Reitter (1883: 50) described *Bryaxis chilensis* based on an unspecified number of specimens from Valdivia. Raffray (1904: 138), having studied the type of *Pselaphus cosmopterus* Blanchard, 1851, which he mentions as being housed in the MNHN collections, established that this species was not a member of Tyrini and should be transferred to *Achilia* in the Brachyglutini, pointing out that *Bryaxis chilensis* Reitter, 1883 was the same taxon as *Achilia cosmoptera* (Blanchard, 1851).

Jeannel (1962: 429) claimed that *Bryaxis tripunctata* Reitter, 1885, which was described based on one single female from Valdivia, was indeed a female of *A. cosmoptera* but was darker and had a small pit on the head vertex. These characters are apparently variable within this species.

Jeannel (1962: 428) affirmed that the types of *Achilia cosmoptera* (Blanchard, 1851), *Bryaxis chilensis* Reitter, 1883, and *Bryaxis tripunctata* Reitter, 1885 were present in the MNHN collections. In the MNHN we found in the Raffray collection the holotype female of *Bryaxis tripunctata* Reitter, 1885. We also found 8 females (the first bearing a red label Type) and 2 males with the label locality "Chili" without further data, identified by Raffray as *A. cosmoptera*, these ten specimens could well represent the type series of *B. chilensis* Reitter, 1883, or possibly part of it. Finally, we found in the general collection 1 male labeled "Chile; Gay 1849/ 4 / 40 / *cosmoptera* / Gen. *Achilia* Reitt. =; *Bryaxis* aut. Raffray =; / *Pselaphus* Blanchard / *cosmoptera* Blanch. =; *chilensis*; A. Raffray det. 1904". We think that this male, which was collected by Gay and studied by Raffray, belongs to the type series of *Achilia cosmoptera* (Blanchard, 1851), and therefore we designate it as the lectotype of *Pselaphus cosmopterus* Blanchard, 1851.

The males of *A. cosmoptera* are easily distinguished from other species of the *A. cosmoptera* group by the shape of the head (Figs 43, 45, 47), and aedeagus (Fig. 1).

The females of this species are very similar to those of *A. elfridae*, from which they can be distinguished by their more convex frons, smaller vertexal foveae, and narrower frontal sulcus.

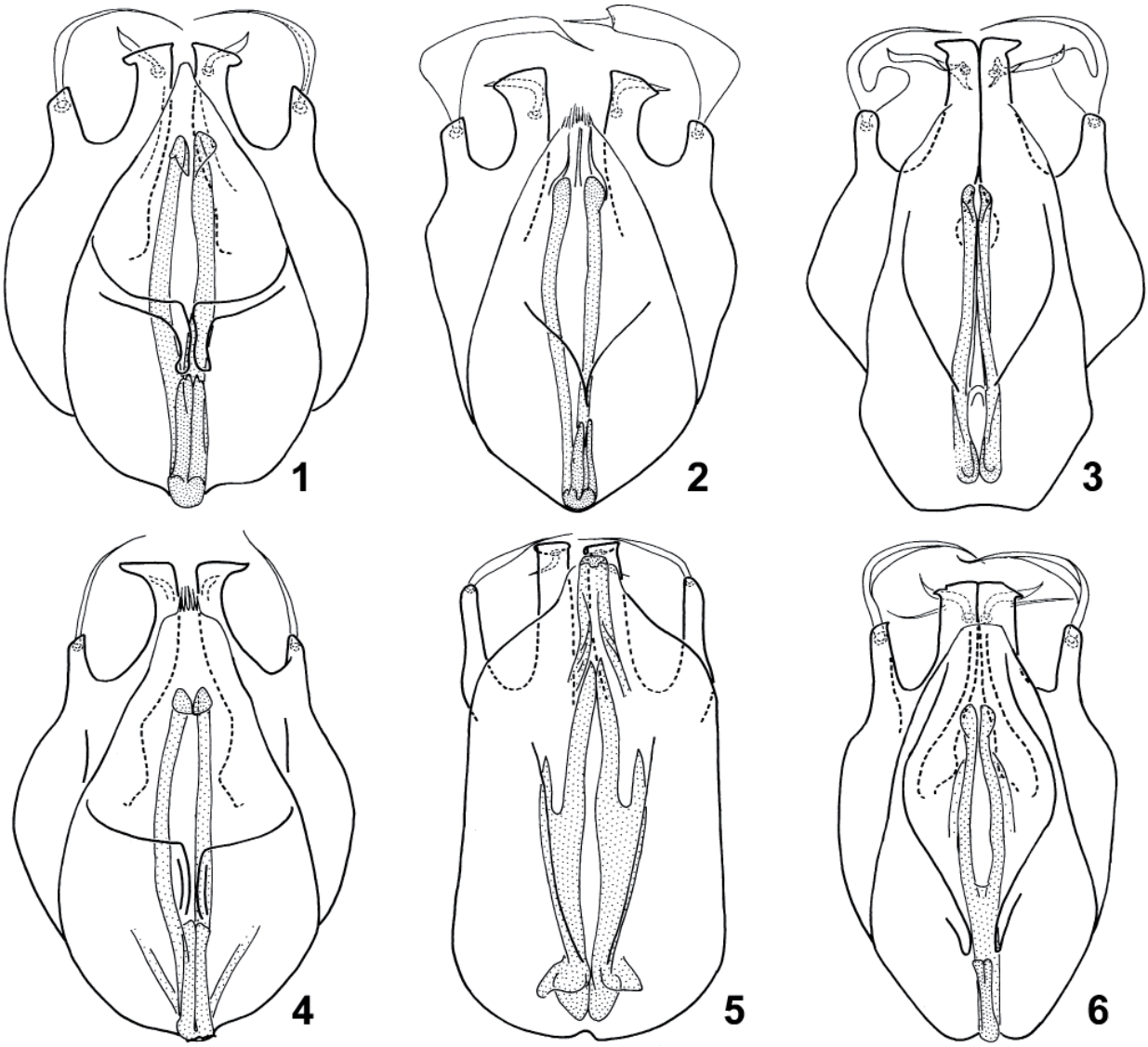
Achilia covidia n. sp.

Figs 2, 16, 26, 44, 46, 48, 63

Holotype: MHNG (# MHNG-ENTO-85480); 1 ♂; SOUTHERN CHILE: Región Los Lagos: Osorno Prov.: Puyehue National Park, Antillanca road; 500-1000 m; 18-20. XII.1984; car netting; S. & J. Peck.

Description: Body 1.15 mm long, dark with dark reddish elytra, antennae, legs, and palpi.

Male: Head as in Figs 44, 46 & 48, wide. Occipital region and median part of frons raised; frons flattened laterally and confluent with deep and large transverse sulcus delimiting it from frontal lobe; anterior part of frontal lobe prolonged posteriorly as short median process; sides of frons slightly sharp; surface of frontal lobe with sparse punctures. Antennae (Fig. 16) with scape distinctly longer than wide; pedicel slightly longer than wide; antennomeres III and V about as long as wide; antennomeres IV and VI-VII slightly wider than long; antennomere VIII wider than long; antennomere IX wider than VIII and distinctly wider than long; antennomere X distinctly wider than long and wider than IX; antennomere XI elongate, longer than VII-X combined. Metaventrite with deep and wide medial semioval impression on apical half, impression sparsely pubescent and punctate. Protibiae with distal half slightly swollen; mesotibiae (Fig. 26) with two small subapical spurs on medial margin, distal half swollen and densely pubescent; metatibiae with distal half slightly arcuate. Aedeagus (Fig. 2) 0.21 mm long, with suboval dorsal plate distinctly narrowed and frayed apically; dorsal longitudinal struts divergent. Parameres



Figs 1-6. Aedeagi of *Achilia*. (1) *A. cosmoptera*. (2) *A. covidia*. (3) *A. blanchardi*. (4) *A. elfridae*. (5) *A. bifrons*. (6) *A. temporalis*.

relatively wide with very large and long recurved seta on well-developed outer lobe; apical portion of parameres prolonged laterally as short tip; apex bearing one ventral long medial seta. Copulatory pieces consisting of a pair of subequal sclerites that are rounded apically, recurved and more robust basally.
Female: Unknown.

Collecting data: The only specimen was collected in December by car netting at an elevation of 500-1000 meters.

Distribution: *Achilia covidia* n. sp. is only known from Puyehue National Park (Región Los Lagos: Osorno prov.) (Fig. 63: blue triangles).

Comments: The males of *A. covidia* n. sp. are easily distinguished from other species of the *A. cosmoptera* group by the shape of the head (Figs 44, 46, 48), antennae (Fig. 16), and aedeagus (Fig. 2).

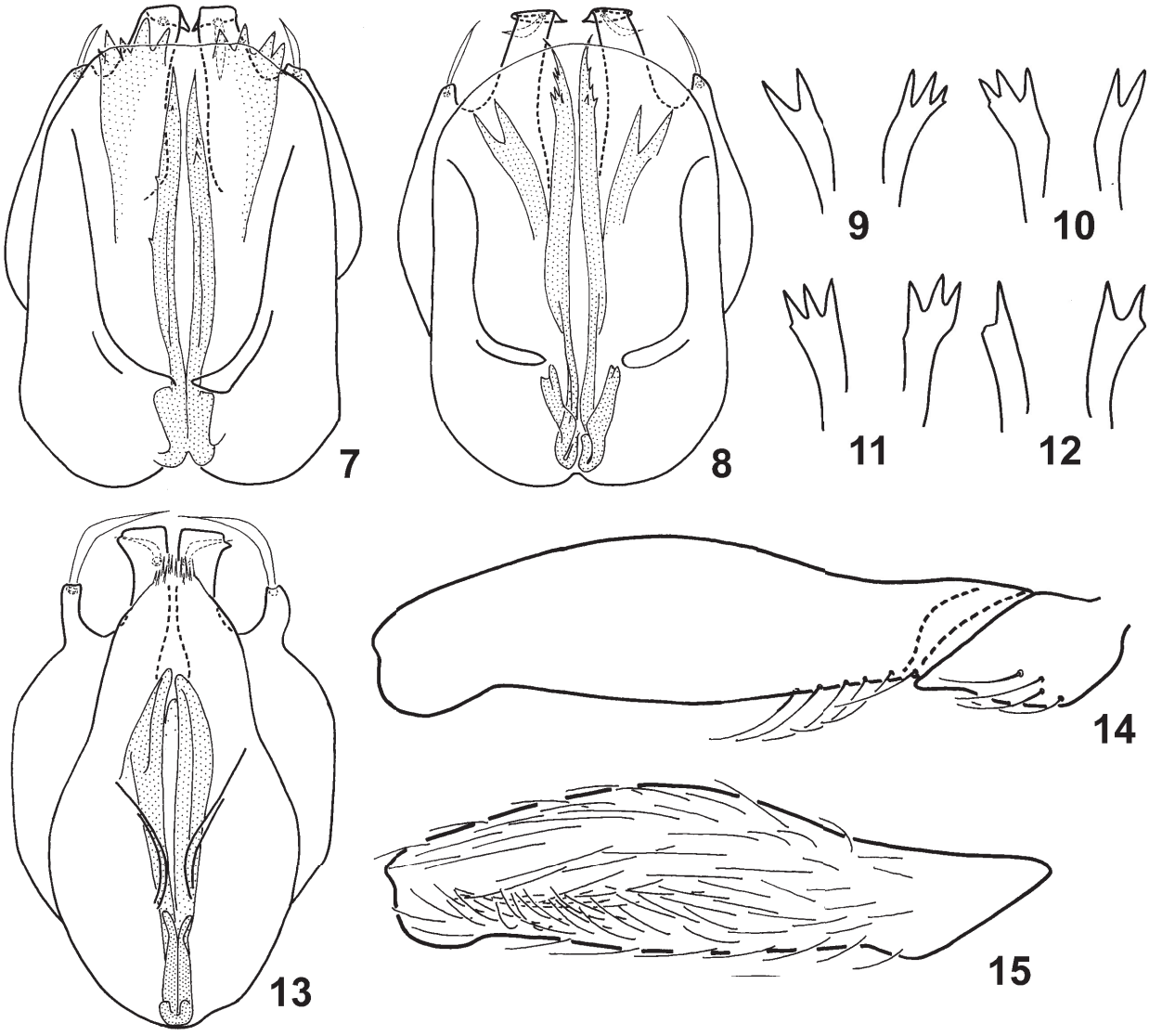
Etymology: The epithet of this new species refers to the COVID-19 pandemic and the periods of quarantine during which this study was carried out by the authors.

Achilia elfridae Raffray, 1904

Figs 4, 23, 28, 49-51, 53, 55, 64

Achilia elfridae Raffray, 1904: 139, fig. 54 (head and antenna of male). – Jeannel, 1962: 426, figs 190 (head), 191 (aedeagus).
Achilia picea Raffray, 1904: 139. – Jeannel, 1962: 426-427 (**syn. nov.**).

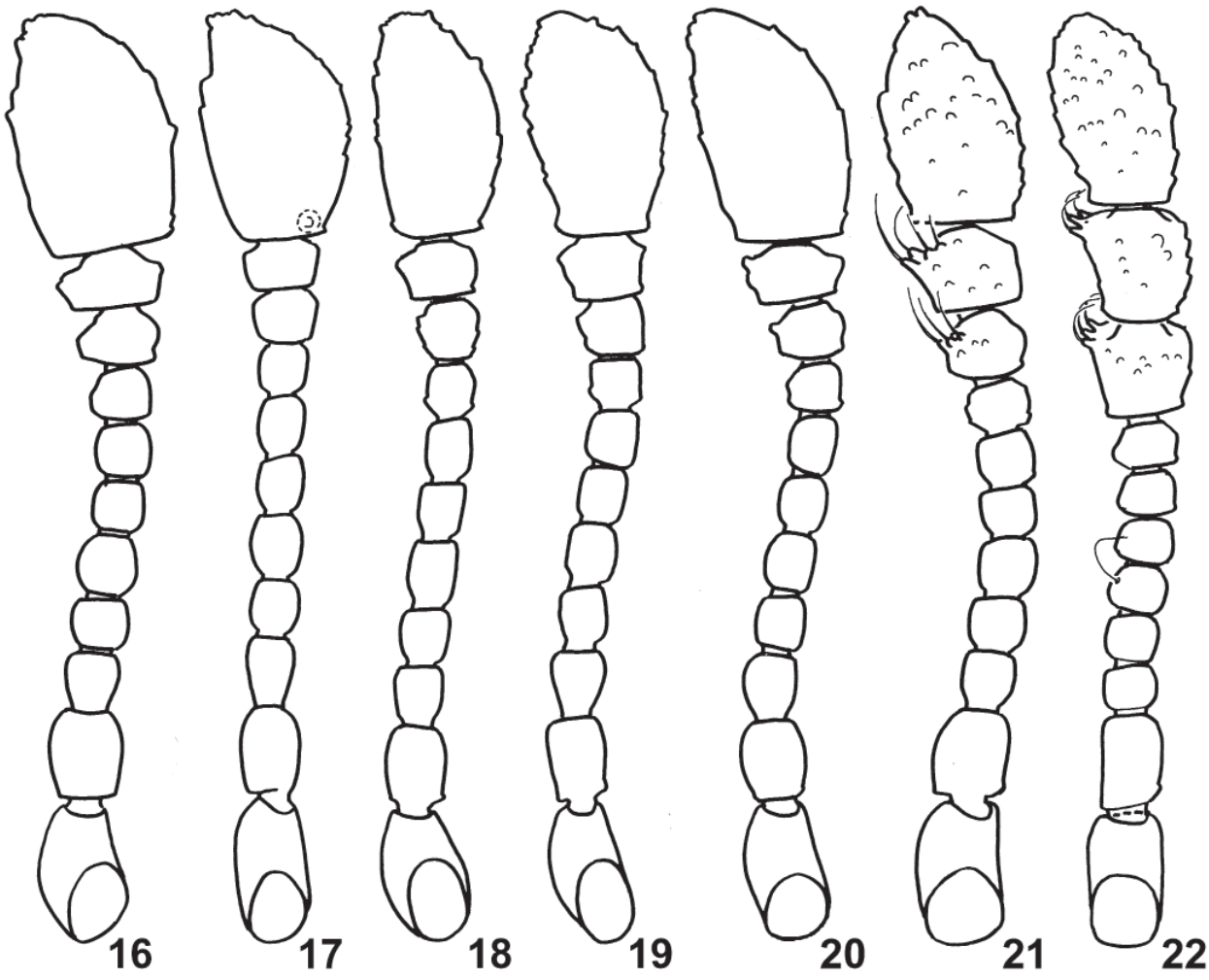
Type material (7 ex.): SOUTHERN CHILE: Región Los Ríos: Valdivia Prov.: MNHN; 1 ♂ (lectotype of *A. elfridae*, here



Figs 7-15. Aedeagi (7, 8, 13), their internal sacs (9-12), and profemora (14, 15) of *Achilia*. (7, 14) *A. quarantena*. (8-12, 15) *A. angularis*, specimens from Malleco, Nahuelbuta National Park. (10) *A. angularis*, type from Chillan. (13) *A. pandemica*.

designated); labels verbatim "Lectotype / Type / *Bryaxis elfridae* m.; Valdivia / Museum Paris; 1917; coll. Raffray / *A. elfridae*; A. Raffray det.". – MNHN; 3 ♂ and 2 ♀ (Paralectotypes of *A. elfridae*, here designated); labels verbatim "Paralectotype / Chili". – MNHN; 1 ♀ (holotype of *Achilia picea*); labels verbatim "Type/ Valdivia, var. *valdiviensis*; / Museum Paris; 1917; coll. Raffray/ *A. picea*; A. Raffray det. / *picea* Raff. (handwritten by Jeannel)".

Additional material examined (67 ex.): SOUTHERN ARGENTINA: Rio Negro Prov.: MHNG; 1 ♂; El Bolsón, Topal, n. 51; 06.II.1961. – SOUTHERN AND CENTRAL CHILE: Región Los Lagos: Llanquihue Prov.: MHNG; 28 ♂; Frutillar Bajo, Universidad Chile Forest Reserve; 100 m; 22.XII.1984/02.II.1985; FIT, ravine mixed forest; S. & J. Peck. – Chiloé Prov.: MSNG; 1 ♂; Piruquina; 22.II.1991; site TC-280; T. Cekalovic. – Región Los Ríos: Valdivia Prov.: PCTS; 1 ♂; Corral, 39° 95''S 73° 20''W; 06.XII.2013; car net. – PCVB; 1 ♂ and 1 ♀; Panguipulli. – FMNH (FMHD #97-18); 2 ♂; Rincón de La Piedra, turnoff, 14.8 km SE Valdivia; 39° 55' 32''S 73° 06' 27''W; 50 m; 11.I-01.II.1997; disturbed Valdivian rainforest, with *Nothofagus dombeyi* and *Podocarpus saligna*, flight intercept (windows) trap; A. Newton & M. Thayer 990. – Región Araucanía: Cautín Prov.: UNHC; 1 ♂; Volcàn Villarica; 1120 m; site 654; 15-29.XII.1982; *Nothofagus dombeyi* and *Saxegothea* forest with *Drimys*, flight intercept (windows) trap; A. Newton & M. Thayer. – Malleco Prov.: MHNG; 1 ♂; Purén, Contulmo Natural Monument; station 17; 350 m; 11.XII.1984; S. & J. Peck. – MHNG; 2 ♂; same locality; 11.XII.1984-13. II.1985; S. & J. Peck 85-16. – MHNG; 3 ♂; same locality; 13.II.1985; mixed forest litter; S. & J. Peck. – MHNG; 1 ♂; 40 km W CuraCautín; 1500 m, 12.XII.1984/16.II.1985; *Notophagus* and *Araucaria* forest, malaise trap; S. & J. Peck. – FMNH (FMHD #85-905, #85-19); 1 ♂; Curaracautín (40 km E); 1500 m; 12.XII.1984/16.II.1985; *Nothofagus-Araucaria* forest, malaise trap; S. & J. Peck #85-19. – MHNG; 1 ♂; E Malalcahuello, 38° 26,0'S 71° 30,2'W; 1200 m; 11.II.2018; litter near stream; S. Kurbatov. – FMNH (FMHD #2002-041); 2 ♂; Nahuelbuta National Park, E of Guarderia Pichinahuel; 37° 48.20'S 73° 01.41'W; 1290 m; 05-24.XII.2002; *Araucaria-Nothofagus dombeyi* with *Chusquea* bamboo, flight intercept trap; A. Newton, M. Thayer, A. Solodovnikov; D. J. Clarke & M. Chani 1054. – Región Bío Bío: Ñuble Prov.: MNHN; 3 ♂ and 7 ♀; Chillàn. – MNHS; 4 ♂ and 5 ♀; Chillàn; P. Germain.



Figs 16-22. Male antennae of *Achilia*. (16) *A. covidia*. (17) *A. blanchardi*. (18) *A. bifrons*. (19) *A. temporalis*. (20) *A. pandemica*. (21) *A. angularis*. (22) *A. quarantena*.

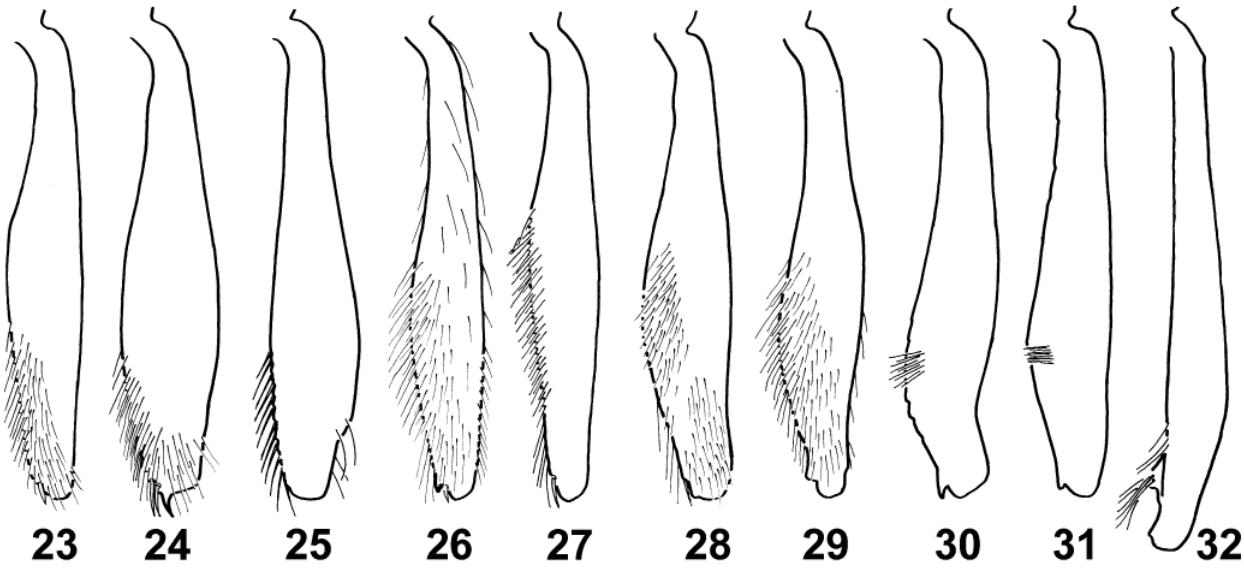
– Región Maule: Curicó Prov.: MHNG; 1 ♂; 30 km SE Curicó; 35° 13.3'S 70° 59.3'W; 200 m; 08.II.2018; litter near stream; S. Kurbatov.

Description: Body 1.25-1.35 mm long, brown with reddish elytra, generally with darker head and sometimes also darker pronotum, some specimens brown with darker abdomen; antennae and legs reddish; palpi reddish or yellowish.
Male: Head as in Figs 51, 53, 55, wide, with occipital region slightly raised; frons flattened with enlarged and carinate sides on anterior half, and shallow triangular impression at middle; frons separated from enlarged frontal lobe by wide transverse sulcus. Antennae with scape and pedicel longer than wide; antennomere III longer than wide; remaining funicular articles slightly varying from antennomeres IV-VII slightly longer than wide to distinctly longer than wide and thinner, and from antennomere VIII wider than long to as long as wide; antennomere IX slightly wider than VIII and wider than long; antennomere X wider than long, and slightly wider than IX; antennomere XI elongate, about as long as VII-X combined. Metaventrite with deep and wide transverse sulcus on apical two-thirds, sulcus with prominent margins. First abdominal sternite slightly raised and flattened at middle (Fig. 50); remaining abdominal sternites distinctly flattened at middle. Protibiae (Fig. 23) with distal half swollen, distal third densely pubescent; mesotibiae (Fig. 28) with distal half swollen and densely pubescent. Aedeagus (Fig. 4) 0.24-0.26 mm long, with suboval dorsal plate narrowed and frayed at apex; dorsal longitudinal struts divergent. Parameres relatively wide with long recurved seta on well-developed outer lobe; apical portion of parameres prolonged laterally as long tip; apex bearing ventral medial seta. Copulatory pieces consisting of pair of subequal sclerites curved at both ends and more robust basally.
Female: Similar to male except head not modified; antennae shorter with antennomere XI shorter; metaventrite, abdominal sternites, and legs unmodified.

Collecting data: Collected from November to February in different type of forests (mixed forest, disturbed Valdivian rainforest, *Nothofagus dombeyi* and *Saxegothea* forest with *Drimys*, *Nothophagus* and *Araucaria* forest, *Araucaria-Nothofagus dombeyi* with *Chusquea* bamboo), at elevations ranging from 50 m to 1290 m. Some specimens come from sifted samples of leaf and log litter, but most males have been collected by flight intercept traps, window traps, car netting, and malaise traps.

Distribution: *Achilia elfridae* is distributed in Southern Argentina (Rio Negro Province) and Southern and Central Chile (from Llanquihue to Curicó Provinces) (Fig. 64: red circles).

Comments: Raffray (1904: 139) described *A. elfridae* based on an unspecified number of specimens from Chile, without further indication of locality, claiming to use the unpublished name attributed by Reitter to the specimens in his collection (now in Raffray's collection). Jeannel (1962: 426-427) affirmed that the type of *Achilia elfridae* Raffray, 1904 collected in Valdivia was housed in the MNHN collections. In the MNHN we found in the Raffray collection a series of 6 specimens identified by Raffray as *Achilia elfridae*; the first specimen is a male labeled "Type / *Bryaxis elfridae* m.; Valdivia / Museum Paris; 1917; coll. Raffray / *A. elfridae*; A. Raffray det." that we designate here as the lectotype of *Achilia elfridae* Raffray, 1904, and the



Figs 23-32. Male protibiae (23-25), mesotibiae (26-31) and metatibiae (32) of *Achilia*. (23, 28) *A. elfridae*. (24, 30, 32) *A. angularis*. (25, 31) *A. quarantena*. (26) *A. covidia*. (27) *A. blanchardi*. (29) *A. pandemica*.

remaining 5 specimens (4 males and 1 female) labeled "Chili" without further label data are designated as paralectotypes.

Raffray (1904: 136) described *Achilia picea* on the basis of one female that Reitter had in his collection (now in Raffray's collection) and placed it as a variety of *Bryaxis valdiviensis* Reitter, 1883 (= *Achilia blanchardi* Raffray, 1904). According to Raffray (1904: 136) *A. picea* differs from *A. blanchardi* by having a longer head, thinner antennae, longer elytrae with denser punctures, and a darker body color. According to Jeannel (1962: 427) *A. picea* strongly resembles the females of *A. elfridae*, from which it differs only by the darker coloration, the more transverse pronotum, and the narrower lateral bulges of the frontal lobe. We examined the holotype and only known specimen of *A. picea*; it is a female which indeed has a darker body color, but is otherwise similar in all other aspects to the females of *A. elfridae*, and therefore we here place *A. picea* Raffray, 1904 as a junior synonym of *A. elfridae* Raffray, 1904 (**syn. nov.**).

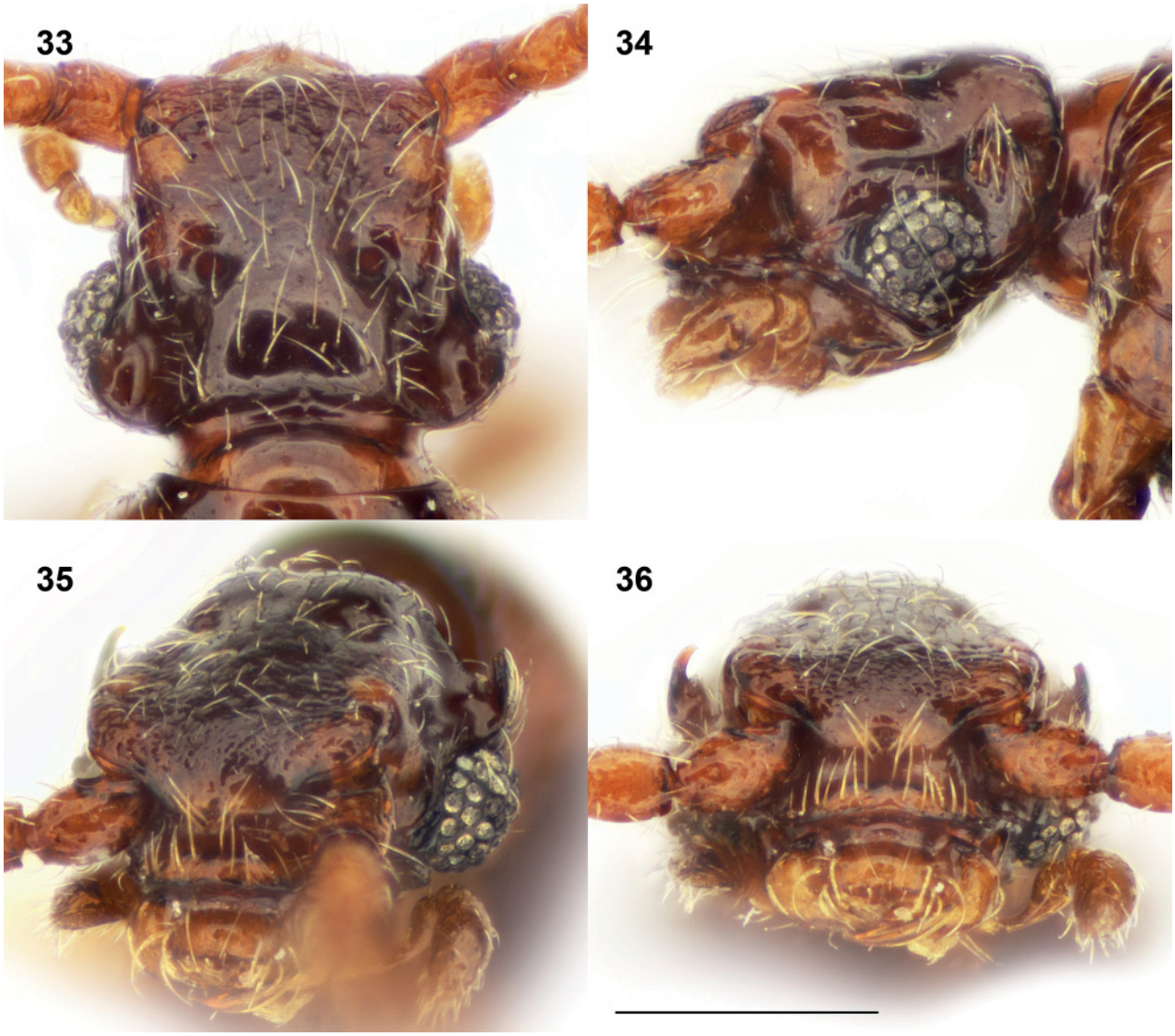
The males of *A. elfridae* are easily distinguished from other species of the *A. cosmoptera* group by the shape of the head (Figs 51, 53, 55), and aedeagus (Fig. 4). For characters to distinguish the females of *A. elfridae* from those of *A. cosmoptera* and *A. blanchardi* see the "Comments" section for the two latter species.

Achilia melanocephala Jeannel, 1963

Fig. 64

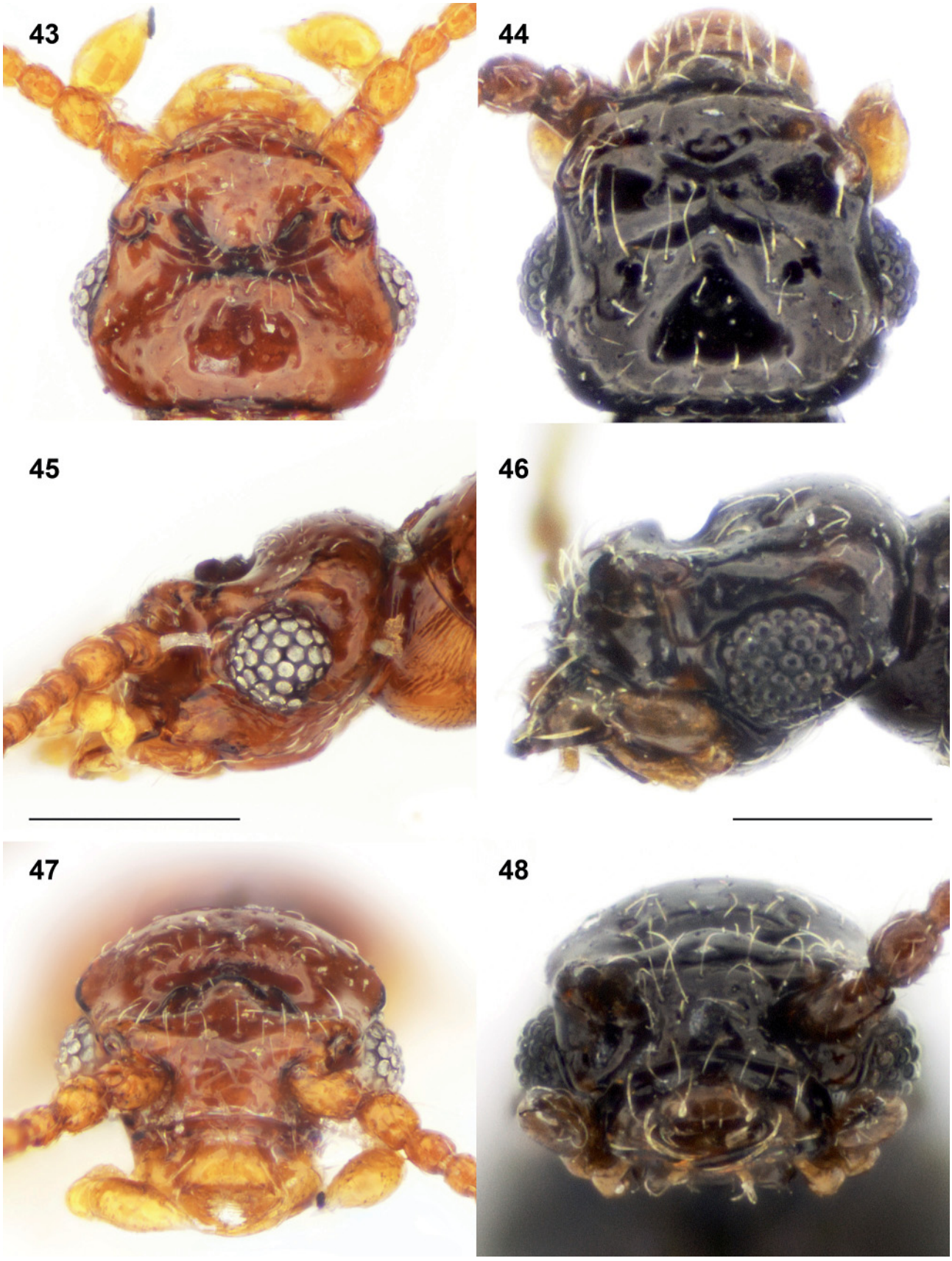
Achilia melanocephala Jeannel, 1963: 353, 367.

Type material (1 ex.): CENTRAL CHILE: Región O'Higgins: Cachapoal Prov.: MNHN; 1 ♀ (holotype); labels verbatim "Holotype / Palmas de Cocálan / *Achillia melanocephala* nov. (handwritten by Jeannel)".



Figs 33-36. *Achilia angularis*. Male head in (33) dorsal, (34) lateral, (35) semifrontal, and (36) frontal views. Scale bar = 200 µm.

Figs 37-42. (37, 39, 41) *Achilia bifrons*. (38, 40, 42) *A. blanchardi*. Male head in (37-38) dorsal, (39-40) lateral and (41-42) frontal views. Scale bars (200 µm) left for (37, 39, 41) and right for (38, 40, 42).



Figs 43-48. (43, 45, 47) *Achilia cosmoptera*. (44, 46, 48) *A. covidia* n. sp. Male head in (43-44) dorsal, (45-46) lateral and (47-48) frontal views. Scale bars (200 μm) left for (43, 45, 47) and right for (44, 46, 48).

Description: *Male*: Unknown.
Female: Body 1.40 mm long, reddish brown with darkened head and abdomen; antennae and legs reddish; palpi yellowish. Head with frons and occipital region slightly convex; frontal lobe short, separated from frons by shallow transverse sulcus. Antennae with scape and pedicel slightly longer than wide; antennomeres III-VIII wider than long; antennomere IX wider than VIII, distinctly wider than long; antennomere X wider than IX, distinctly wider than long; antennomere XI moderately elongate, shorter than VII-X combined.

Collecting data: No data available.

Distribution: *Achilia melanocephala* is only known from Cachapoal Province (Región O'Higgins) (Fig. 64: triangles edged in blue).

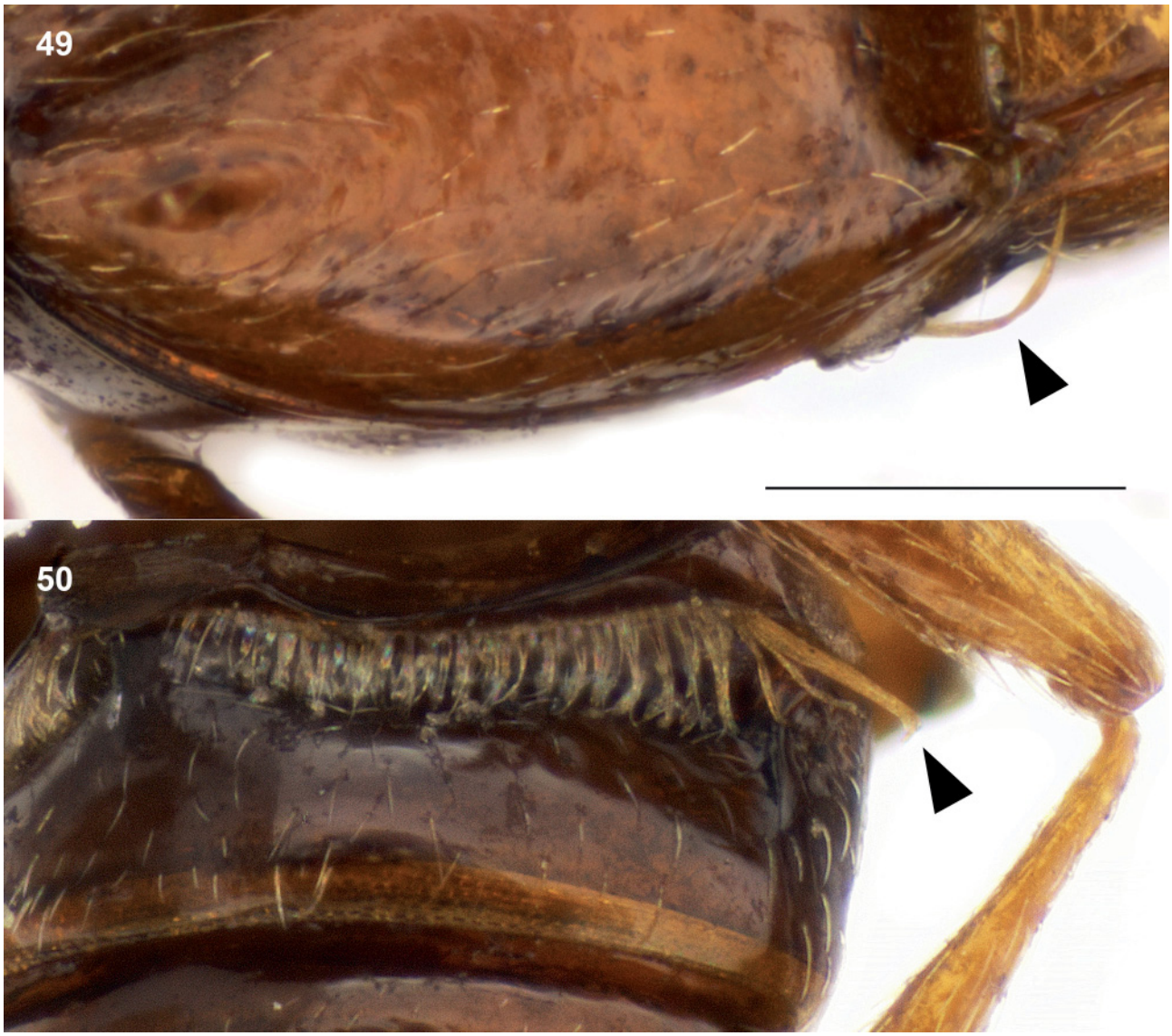
Comments: The holotype of *A. melanocephala* is a female very similar to those of *A. angularis*. However, since it was collected in a region quite distant from where *A. angularis* is known, we prefer at present to maintain *A. melanocephala* as a valid species. Its status should be reassessed once additional specimens, notably males, are available from or near the type locality.

Achilia pandemica n. sp.

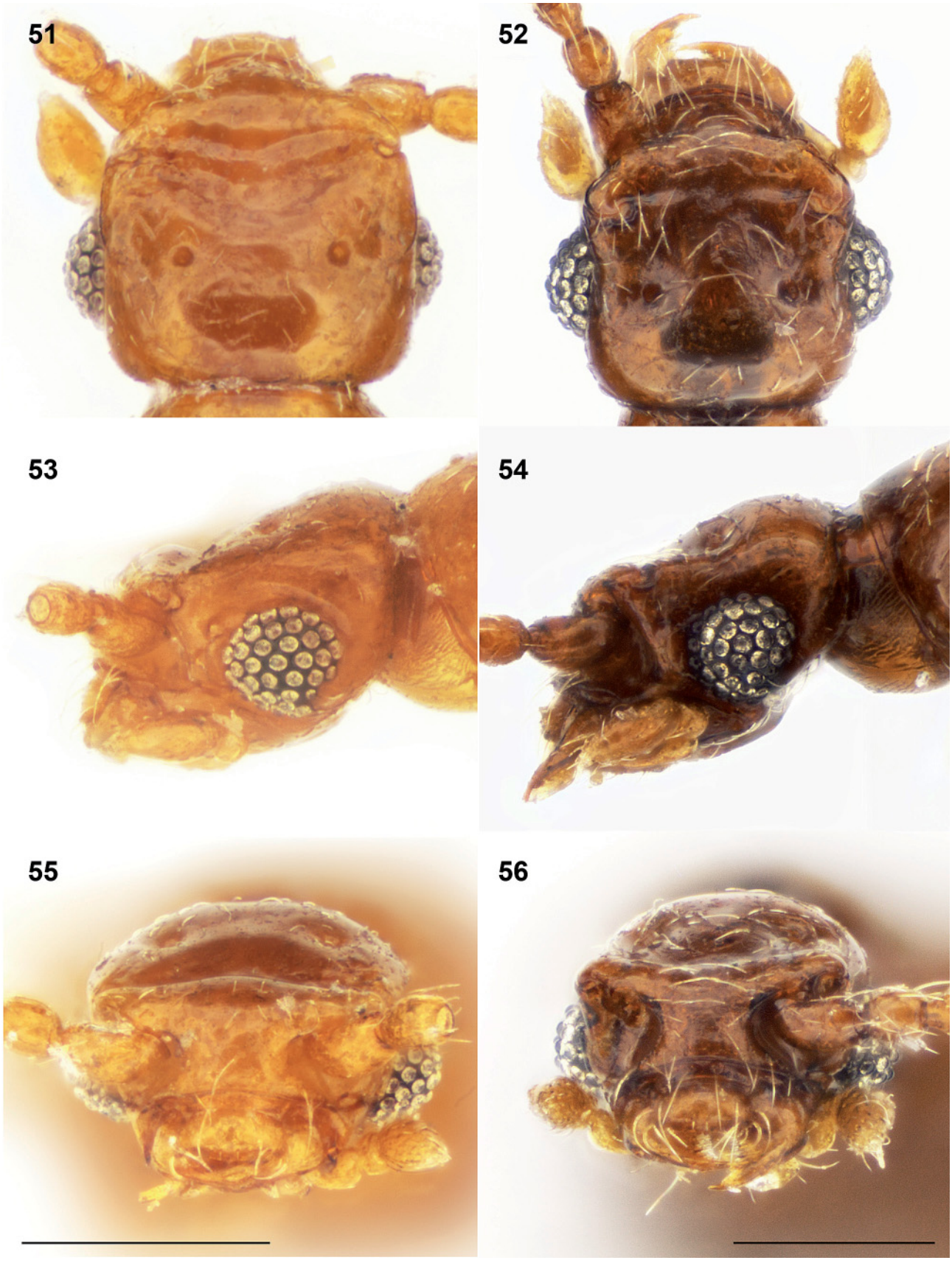
Figs 13, 20, 29, 52, 54, 56, 64

Holotype: MHNG (# MHNG-ENTO-85483); 1 ♂; CENTRAL CHILE: Región Bío Bío: Concepción Prov.: Periquillo; 21.IX.1996; site TC-486; T. Cekalovic.

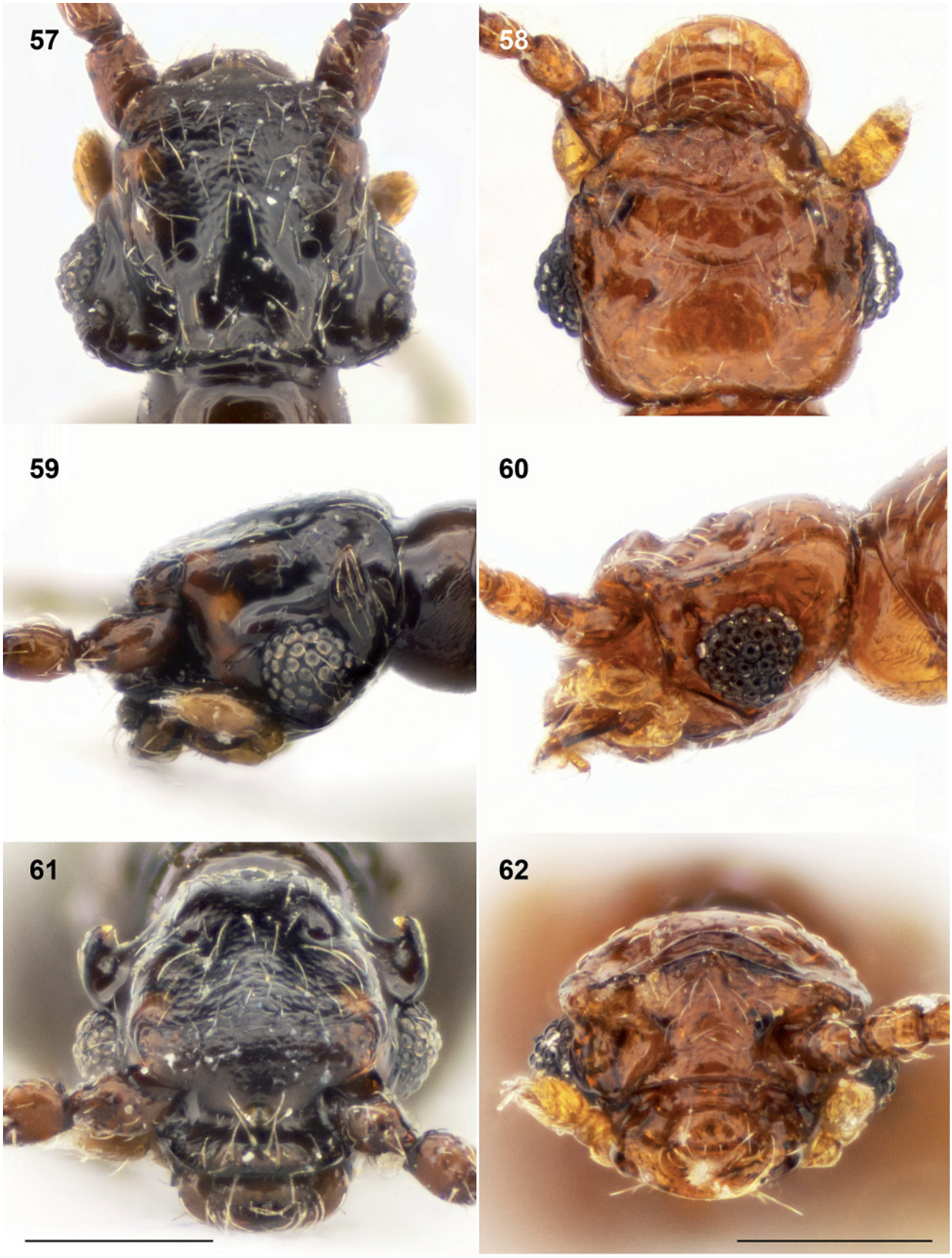
Paratypes (318 ex.): CENTRAL CHILE: Región Bío Bío: Concepción Prov.: NHMW; 4 ♂ and 18 ♀ (identified as



Figs 49-50. *Achilia elfridae*. Left elytra and basal abdominal segment head in semilateral view (49) and left portion of basal abdominal sternites in ventral view (50). Arrows indicate bundle of long setae on lateral side of first visible abdominal sternite. Scale bar = 200 µm.



Figs 51-56. (51, 53, 55) *Achilia elfridae*. (52, 54, 56) *A. pandemica* n. sp. Male head in (51-52) dorsal, (53-54) lateral and (55-56) frontal views. Scale bars (200 μm) left for (51, 53, 55) and right for (52, 54, 56).



Figs 57-62. (57, 59, 61) *Achilia quanrantena* n. sp. (58, 60, 62) *A. temporalis*. Male head in (57-58) dorsal, (59-60) lateral and (61-62) frontal views. Scale bars (200 µm) left for (57, 59, 61) and right for (58, 60, 62).

A. bifrons); Periquillo; 24.X.1992. – NHMW 12 ♀ (identified as *A. tumidifrons*); Periquillo; 24.IX.1993. – FMNH; 1 ♀; Periquillo; 10.V.1997; site TC-549; T. Cekalovic. – MSNG; 2 ♂ and 44 ♀; Periquillo; 15.IX.1992; site TC-311; T. Cekalovic. – MHNG (# MHNG-ENTO-85484 through 85488); 1 ♂ and 4 ♀; same data as previous. – MSNG; 1 ♂ and 24 ♀; Periquillo; 30.I.1997; site TC-516; T. Cekalovic. – MHNG (# MHNG-ENTO-85489 through 85491); 3 ♀; same data. – MSNG; 2 ♀; Periquillo; 01.IV.1997; site TC-541b; T. Cekalovic. – MHNG (# MHNG-ENTO-85492); 1 ♀; same data. – MSNG; 1 ♂ and 55 ♀; Periquillo; 16.IX.1996; site TC-485; T. Cekalovic. – MHNG (# MHNG-ENTO-85493 through 85495); 3 ♀; same data. – PHPC; 2 ♀; same data. – MHNS; 2 ♀; same data. – MSNG; 27 ♂ and 40 ♀; Periquillo; 21.IX.1996; site TC-486; T. Cekalovic. – MHNG (# MHNG-ENTO-85496 through 85508); 7 ♂ and 6 ♀; same data. – MHNS; 2 ♂ and 2 ♀; same data. – MSNG; 35 ♀; Camino a Hualqui; 17.X.1992; T. Cekalovic. – MHNG (# MHNG-ENTO-85509 through 85512); 4 ♀; same data. – UNHC; 1 ♂; Pinares; 21.X.1977; Acc.Z# 16-683; H. S. Steeves. – PHPC; 1 ♂; Chaimavida, Estero Agua de la Gloria; 14.VIII.1978; site TC-83; T. Cekalovic. – Región Maule: Curicó Prov.: JEBC; 11 ♂; Cerro HuecaHuecan, 15 km E Curicó; 35° 3.97'S 71° 7.45'W; 300 m; 20.II-07.III.2008; luz mercurio, J. E. Barriga-Tuñón. – MHNG (# MHNG-ENTO-85513 through 85514); 2 ♂; same data.

Description: Body 1.45-1.65 mm long, entirely reddish, some specimens with slightly darkened abdomen; palpi yellowish.

Male: Head as in Figs 52, 54 & 56, wide, with slightly raised occipital region and frons; frons flattened laterally with sharp and subparallel sides, separated from frontal lobe by deep and flatten narrowed transverse sulcus. Antennae (Fig. 20) with scape distinctly longer than wide; pedicel and antennomere III slightly longer than wide; antennomere IV about as long as wide; antennomeres V-VII longer than wide; antennomere VIII slightly wider than long; antennomere IX wider than VIII and wider than long; antennomere X distinctly wider than long and wider than IX; antennomere XI elongate, about as long as VII-X combined. Metaventrite with apical portion crossed on two thirds by deep and wide medial suboval impression, impression with prominent margins. First abdominal sternite slightly raised and flattened at middle; remaining abdominal sternites flattened at middle. Mesotibiae (Fig. 29) with distal half swollen and densely pubescent, with stout subapical mesal spine. Aedeagus (Fig. 13) 0.25-0.26 mm long, with ovoidal dorsal plate narrowed and frayed at apex; dorsal longitudinal struts slightly divergent. Parameres relatively wide with large and long recurved seta on well-developed outer lobe; apical portion of parameres slightly enlarged and prolonged laterally as short spine;

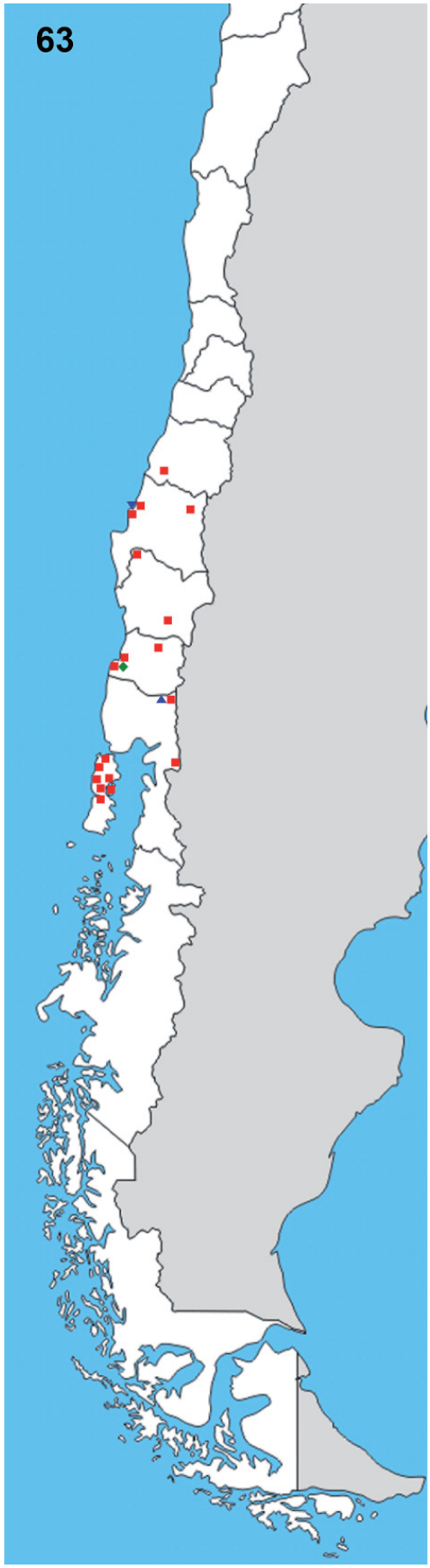


Fig. 63. Distribution map of the *Achilia cosmoptera* species group. (▼ blue inverted triangles) *A. bifrons*. (◆ green diamonds) *A. blanchardi*. (■ red square) *A. cosmoptera*. (▲ blue triangles) *A. covidia* n. sp.

apex bearing one ventral median seta. Copulatory pieces consisting of a pair of short subequal lateral sclerites recurved and more robust basally.
Female: similar to male except head not modified; antennae shorter; eyes smaller; metaventrite with shallow and narrow medial sulcus; abdominal sternites, and legs unmodified.

Collecting data: The label data indicate a very long collecting period from August to April.

Distribution: *Achilia pandemica* n. sp. occurs in Central Chile (Región Bío Bío and Región Maule) from Concepción to Curicó Provinces (Fig. 64: circles edged in green).

Comments: The males of *A. pandemica* n. sp. are easily distinguished from other species of the *A. cosmoptera* group by the shape of the head (Figs 52, 54, 56), and antennae (Fig. 20). The aedeagus is very similar to that of *A. temporalis*, but the shape of the parameres is distinctive. The females of *A. pandemica* n. sp. are similar to those of *A. temporalis*, from which they can be distinguished by their narrower head with the frons slightly convex and flattened anteromedially (distinctly convex and not flattened in *A. temporalis*), and mostly by the lateral margins of the frons being subparallel and acute with very prominent antennal tubercles (sides of frons slightly convergent, blunt and with antennal tubercles not prominent in *A. temporalis*).

Etymology: The epithet of this new species refers to the COVID-19 pandemic and the periods of quarantine during which this study was carried out by the authors.

Achilia quarantena n. sp.

Figs 7, 14, 22, 25, 31, 57, 59, 61, 64

Holotype: MHNG (# MHNG-ENTO-85515); 1 ♂; CENTRAL CHILE: Región Bío Bío: Ñuble Prov.: 72 km SE Chillán, Trancas, near Termas; 1700 m; 06.XII.1984; *Nothofagus* forest litter, Berlese; S. & J. Peck.

Paratypes (45 ex.): CENTRAL CHILE: Región Bío Bío: Ñuble Prov.: MHNG (# MHNG-ENTO-85516 through 85524); 5 ♂ and 4 ♀; 72 km SE Chillán, Trancas, near Termas; 1700 m; 06.XII.1984; *Nothofagus* forest litter, Berlese; S. & J. Peck. – FMNH; 1 ♂ and 1 ♀; Las Trancas, 19.5 km ESE Recinto; 1250 m; site 647; 10.XII.1982/03.I.1983; *Nothofagus* forest,

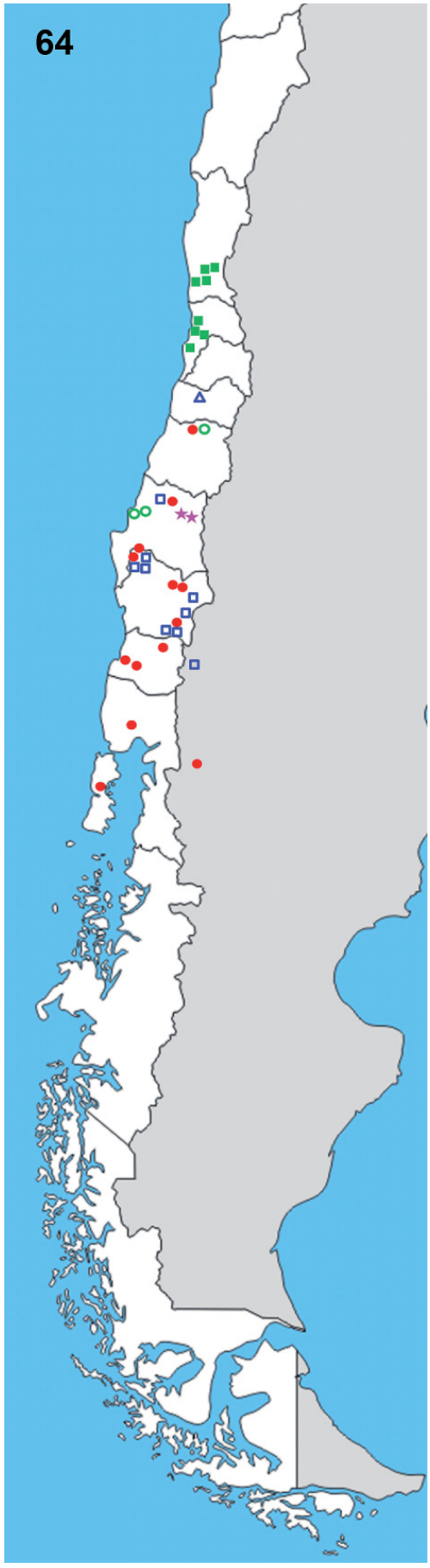


Fig. 64. Distribution map of *Achilia cosmoptera* group. (■ squares edged in blue) *A. angularis*. (● red circles) *A. elfridae*. (▲ triangles edged in blue) *A. melanocephala*. (○ circles edged in green) *A. pandemica*. (★ fuchsia stars) *A. quarantena* n. sp. (■ green squares) *A. temporalis*.

flight intercept (windows) trap; A. Newton & M. Thayer. – FMNH; 1 ♀; same data but Berlese, leaf & log litter, forest floor. – FMNH (FMHD #54-65); 1 ♂; Refugio Andino, Volcán Chillán; Las Trancas; I.1954; *Nothofagu*s forest; L. E. Peña. – FMNH; 2 ♂; Las Cabras, Cordillera de Chillán; 19-29.I.1955; L. E. Peña. – UHNC; 2 ♂ and 3 ♀; 22.7 km ESE Recinto; 1330 m; site 646; 10.XII.1982/03.I.1983; *Nothofagus* forest, window trap; A. Newton & M. Thayer. – FMNH; 1 ♂; same data. – FMNH; 1 ♂ and 2 ♀; same data but Berlese, leaf & log litter, forest floor. – MNHS; 1 ♂ and 1 ♀; same data. – FMNH; 14 ♀; same data but Berlese, leaf & log litter, forest floor, vouchers associated with larvae. – MHNG (# MHNG-ENTO-85525 through 85527); 3 ♀; same data. – MNHS; 2 ♀; same data.

Description: Body 1.45-1.60 mm long, reddish brown with darkened head and abdomen; antennae and legs reddish; palpi yellowish.

Male: Head as in Figs 57, 59 & 61, subrectangular with slightly convex occipital region and frons, lateral portion of the latter slightly flattened; frons and frontal lobe punctate, both separated by shallow transverse sulcus; temporal angles prolonged in long spiniform process directed upwards. Antennae (Fig. 22) with scape and pedicel distinctly longer than wide; antennomeres III-VIII wider than long; antennomere IX wider than VIII, slightly wider than long; antennomere X about as wide as IX, longer than wide; antennomeres IX and X bearing some tubercles, their mediodistal margin with three prominent tubercles each bearing thin recurved seta; antennomere XI moderately elongate, shorter than IX-X combined, its surface bearing some tubercles. Metaventrite with very shallow ovoidal medial impression on basal third. Profemora (Fig. 14) enlarged with some long seta on ventral margin; protibiae (Fig. 25) with distal third swollen and densely pubescent; mesotibiae (Fig. 31) with distal half slightly swollen and ending as very short apical spine, with group of dense short setae on basal third of medial margin; metatibiae sinuate and slightly arcuate on basal half. Aedeagus (Fig. 7) 0.22-0.23 mm long, with subrectangular dorsal plate; dorsal longitudinal struts divergent. Parameres relatively wide with one seta on very short outer lobe; apical portion of parameres recurved backwards, bearing one ventral median seta. Copulatory pieces consisting of two subequal sclerites recurved, more robust at base, and apically pointed; these sclerites associated with two large lateral sclerites apically forming four or five spines.

Female: Similar to male except head not modified; antennae shorter with unmodified club; eyes smaller; metaventrite slightly flattened near posterior margin; legs unmodified.

Collecting data: Collected from December to January in *Nothofagus* forest at elevations ranging from 1200 m to 1700 m. The specimens come from sifted samples of leaf and log litter, but many males have also been collected by flight intercept and window traps.

Distribution: *Achilia quarantena* n. sp. is known from Central Chile from the Bío Bío Región in Ñuble Province (Fig. 64: fuchsia stars).

Comments: The males of *A. quarantena* n. sp. are easily distinguished from other species of the *A. cosmoptera* group by the shape of the head (Figs 57, 59, 61), the peculiar morphology of the antennae (Fig. 22) and aedeagus (Fig. 7). Females of *A. quarantena* n. sp. are similar to those of *A. angularis*, from which they can be distinguished by the convergent anterior sides of the head (subparallel in *A. angularis*), the flattened frons and occipital region (slightly convex for *A. angularis*), and the antennae distinctly longer (0.34-0.35 mm for *A. quarantena* vs. 0.30-0.31 mm for *A. angularis*).

Etymology: The epithet of this new species refers to the COVID-19 pandemic and the periods of quarantine during which this study was carried out by the authors.

Achilia temporalis Jeannel, 1962

Figs 6, 19, 58, 60, 62, 64

Achilia temporalis Jeannel ,1962: 426, 427, fig. 200 (aedeagus). *Achilia caneloi* Franz, 1996: 122 (**syn. nov.**).

Type material (5 ex.): CENTRAL CHILE: Región Valparaíso: Quillota Prov.: MHNS; 1 ♂ (Holotype of *A. temporalis*) labels verbatim "Holotype / Quillota; P. Germain / *Achillia temporalis* / *temporalis* (handwritten by Jeannel) / CHILE, M.N.H.N., Typo, n. 1853". – MNHN, 1 ♂ (Paratype of *A. temporalis*); labels verbatim "Paratype / Quillota, Germain; IV.1898 / *temporalis* (handwritten by Jeannel)". – MNHN, 1 ♂ and 1 ♀ (Paratypes of *A. temporalis*); labels verbatim "Paratype / Quillota, Germain". – Región Coquimbo: Choapa Prov.: NHMW; 1 ♀ (Holotype of *A. caneloi*); labels verbatim "Holotype / Bosque de Canelo; nordl. Los Vilos; Chile; H. Franz /*Achillia caneloi* m. (handwritten by Franz)".

Additional material examined (91 ex.): CENTRAL CHILE: Región Valparaíso: Quillota Prov.: MHNS; 2 ♀ (mislabeled as paratype of *Achilia temporalis* n. 2078 but there are two specimens on the same pin); Quillota; P. Germain. – Petorca Prov.: MHNS; 1 ♂ and 1 ♀ (mislabeled as paratype of *Achilia temporalis* n. 1854 but there are two specimens on the same pin); Zapallar; 20.III.1954; G. Kuschel. – Valparaíso Prov.: MHNG; 1 ♂; Bosque de Quintero; 1963; H. Franz. – NHMW; 1 ♂ (identified as *A. bifrons*); same data. – MHNS; 1 ♀; same locality; II.1968; J. Solervicens. – San Antonio Prov.: MNHS; 1 ♂ (identified as *A. elfridae*); Algarrobo; 21.VII.1951; G. Kuschel & L. E. Peña. – MNHN; 1 ♂ (identified as *A. elfridae*); Algarrobo; 21.VII.1951; G. Kuschel & L. E. Peña. – Región Coquimbo: Prov. Choapa: MHNG; 2 ♂; Hda Illapel; 600 m; 16.XI.1954; L. E. Peña. – FMNH (FMHD #54-66); 2 ♂; El Bato, Illapel, Coquimbo; 600 m; X.1954; L. E. Peña. – FMNH; 2 ♂ and 2 ♀; El Bato, Illapel Coquimbo; V-VI.1960; L. E. Peña. – NHMW; 1 ♂ (identified as *A. bifrons*); Quebrada La Palma, Hacienda La Palma, S of

Ovalle; 1963; H. Franz. – NHMW; 33 ♂ and 38 ♀ (identified as *A. bifrons*); Bosque de Canelo, N- Los Vilos; H. Franz. – MHNG; 1 ♂; Los Vilos, nr. P-B. 269; 05.XII.1965; Hungarian soil-Zool. Exp.; A. Zicsi. – FMNH; 1 ♂; Ñague, Los Vilos; V-VI.1960; L. E. Peña.

Description: Body 1.55-1.85 mm long, generally entirely reddish with slightly darkened abdomen, some specimens darker; palpi yellowish.
Male: Head as in Figs 58, 60 & 62, very wide, with slightly raised occipital region and frons, the latter flattened laterally with enlarged and sharp lateral margins, and crossed by transverse wide U-shaped sulcus originating posterior to antennal tubercles; frontal lobe very large and slightly convex, punctate and with slight medial carina separated from frons by prominent ridge angled posteriorly at middle. Antennae (Fig. 19) with scape and pedicel longer than wide; antennomeres III-VII about as long as wide; antennomere VIII wider than long; antennomere IX slightly wider than VIII and slightly wider than long; antennomere X distinctly wider than long and wider than IX; antennomere XI moderately elongate, about as long as VII-X combined. Metaventrite with deep and wide transverse sulcus on apical two-thirds, sulcus with prominent margins. First abdominal sternite slightly raised and flattened at middle; remaining abdominal sternites flattened at middle. Mesotibiae with distal half swollen and densely pubescent. Aedeagus (Fig. 6) 0.265-0.275 mm long, with ovoidal dorsal plate narrowed apically; dorsal longitudinal struts slightly divergent. Parameres relatively wide with very large and long recurved seta on well-developed outer lobe; apical portion of parameres slightly enlarged, prolonged laterally as short spine; apex bearing two long ventral medial setae. Copulatory pieces consisting of pair of subequal and short lateral sclerites that are slightly enlarged at apex, recurved, and more robust basally.
Female: Similar to male except head not modified; antennae shorter; eyes smaller; metaventrite, abdominal sternites, and legs unmodified.

Collecting data: The label data indicate a very long collecting period from November to July.

Distribution: *Achilia temporalis* occurs in Central Chile (Región Valparaíso and Región Coquimbo) from San Antonio to Choapa Provinces (Fig. 64: green squares).

Comments: We have examined the holotype of *A. caneloi* Franz, 1996. Despite its missing abdomen (lost by Franz) we identifed it as a female (and not a male as stated by Franz) of *A. temporalis*, and consequently place *A. caneloi* Franz, 1996 as a junior synonym of *A. temporalis* Jeannel, 1962 (**syn. nov.**).
The males of *A. temporalis* are easily distinguished from other species of the *A. cosmoptera* group by the shape of the head (Figs 58, 60, 62), antennae (Fig. 19) and aedeagus (Fig. 6). For characters to distinguish the females of *A. temporalis* from those of *A. bifrons* see the "Comments" section of the latter species.

Species removed from the *Achilia cosmoptera* species group

Achilia andina Franz, 1996

Achilia andina Franz, 1996: 119, fig. 70 (aedeagus).

Comments: We have examined the holotype and paratypes of this species, which are housed in the NHMW. In our opinion *Achilia andina* is very similar to members of the genus *Pseudachillia* Jeannel, 1964. However we decided to investigate in more detail the identity and generic assignment of this taxon in a forecoming study dealing with the members of *Pseudachillia*.

Achilia maipoensis Franz, 1996

Achilia maipoensis Franz, 1996: 119, fig. 71 (aedeagus).

Comments: We have examined the holotype and paratypes of this species, which are housed in the NHMW. In our opinion *Achilia maipoensis* is very similar to members of the genus *Pseudachillia* Jeannel, 1964. However we decided to investigate in more detail the identity and generic assignment of this taxon in a forecoming study dealing with the members of *Pseudachillia*.

Achilia pseudangularis Franz, 1996

Achilia pseudangularis Franz, 1996: 118 fig. 68 (aedeagus).

Comments: We have examined the holotype of *A. pseudangularis* housed in the NHMW. It is a female of an *Achilia* sp. that is not dissected but is mounted on the same pin as a polyvinyl acetate slide bearing a microcospic preparation of an aedeagus that is very similar to that of species of the genus *Achillidia* Jeannel, 1962. According to Franz (1996: 188, fig. 68) the holotype of *A. pseudangularis* is a male, and the aedeagus he figured corresponds to that in the microscopic preparation. So we selected the mounted aedeagus as being the holotype and, based on its observation, remove the species from the *cosmoptera* species group. However we decided to investigate in more detail the identity and generic assignment of this taxon in a forthcoming study dealing with the members of *Achillidia*.

Achilia quinteroi Franz, 1996

Achilia quinteroi Franz, 1996: 118, fig. 69 (aedeagus).

Comments: We have examined the holotype and the paratype of this species, which are housed in the NHMW. In our opinion *A. quinteroi* is very similar to the members of the genus *Achillidia* Jeannel, 1962. However we decided to investigate in more detail the identity and generic assignment of this taxon in a forthcoming study dealing with the members of *Achillidia*.

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