



A new species of the genus *Osornolobus* Forster & Platnick from the maulino forests of Chile (Araneae, Orsolobidae)

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Abstract

A faunistic survey in the Maule region in central-southern Chile resulted in the discovery and description of a new species of the spider genus *Osornolobus*: *O. violetaparra* n. sp., based on males collected using pitfall traps in the province of Talca. This is the northernmost record of the genus in Chile, previously known from Ñuble to Magallanes.

Key words: Spiders, Dysderoidea, Taxonomy, Maule, new species

Introduction

The Orsolobidae, together with Segestriidae, Dysderidae, and Oonopidae, conform the superfamily Dysderoidea and are distinguished from Dysderidae and Segestriidae by the presence of bipectinate claws and a prominent onychium associated with a pair of proprioceptors on the tarsus, and from the Oonopidae mainly by the presence of a tarsal claw on the pedipalp of females (except in the Neotropical genus *Losdolobus* Platnick & Brescovit), and sometimes teeth along the cheliceral furrow. They are also characterized by the elevated tarsal organ, with numerous cuticular lobes surrounding the receptive region (Forster & Platnick 1985).

The family has a Gondwanan distribution (South America, South Africa, Australia, and New Zealand). Seven out of 30 described genera are known in South America, comprising of 40 species (WSC 2023). Chile has the highest diversity, with five genera (3 endemics) and 34 species. The taxonomy of the family was comprehensively addressed for the first time by Forster & Platnick (1985), after which there have been relatively few contributions to the fauna of Chile (Izquierdo & Labarque 2010; Ott *et al.* 2013). Outside of taxonomy, studies have been recently published on the biogeography of the group (Chousou-Polydouri *et al.* 2019) and the ultrastructure of the reproductive organs (Lipke *et al.* 2014).

The most speciose genus in Chile is *Osornolobus* Forster & Platnick, which comprises species with a chevroned pattern on the dorsum of the abdomen (as does the monotypic *Chileolobus* Forster & Platnick) and possessing significantly elevated tarsal organs (Fig. 2D). However, *Osornolobus* differs from *Chileolobus* by the usually smaller body size (lesser than 3.6 mm vs. 5–6 mm), and are also distinguished by the male palp, with a pyriform bulb, with different elements restricted to the distal part of the embolic division (although absent in some species, see Forster & Platnick 1985: Figs. 99, 100, 105, 106).

In the last few years, our work team has been collecting data about the arthropod fauna of Chile as part of the systematic survey of Chilean arthropod biota that is being conducted under the Integrated Forest Monitoring and Assessment System (SIMEF, by its Spanish acronym; www.simef.cl) (SIMEF 2017; Vergara-Asenjo *et al.* 2023). As part of this project, we recently conducted the first faunistic arthropod study in the pre-Andean area of Maule, more

specifically, in the Achibueno Natural Reserve. As a result, we have first records of numerous taxa, some of them undescribed, including two males of a new species of *Osornolobus*, that is described in the present contribution. These specimens were collected using pitfall traps and represent the northernmost record for the genus, previously known from Ñuble to Magallanes (Forster & Platnick 1985).

Material and methods

The material examined is deposited in the collections of Museo Nacional de Historia Natural, Santiago (MHNS, Mario Elgueta), and Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, Buenos Aires (MACN-Ar, Martín J. Ramírez). Drawings were made using a camera lucida mounted on an Olympus BH-2 compound microscope. The palp was cleared in clove oil. Photographs of the preserved specimens were taken with a Leica DFC 290 digital camera mounted on a Leica M165 C stereoscopic microscope, and the focal planes were composed with Helicon Focus 4.62.2. The descriptions and nomenclature mostly follow Forster & Platnick (1985), except for the leg spination, which follows Grismado (2008). All measurements are in millimeters.

Taxonomy

Family Orsolobidae Cooke, 1965

Genus *Osornolobus* Forster & Platnick, 1985

Osornolobus violetaparra n. sp.

(Figures 1–4)

Type Material. Male holotype from CHILE: Maule: Talca Province: Linares, Achibueno Natural Reserve, Andes Sur, Congl. 781575, -36,140994, -71,369108; elev. 606 m. 01-03/XII-2021, pitfall (J. Pizarro-Araya, F. M. Alfaro, A. A. Ojanguren-Affilastro, H. Iuri & J. E. Calderón). Proyecto SIMEF VI-Maule (MHNS, N°8386). Male paratype from the same locality, date and collectors, Congl. 781405, -36,076539, -71,398583; elev. 439 m (MACN-Ar N°43777, vch CJG-2068).

Other material examined. None.

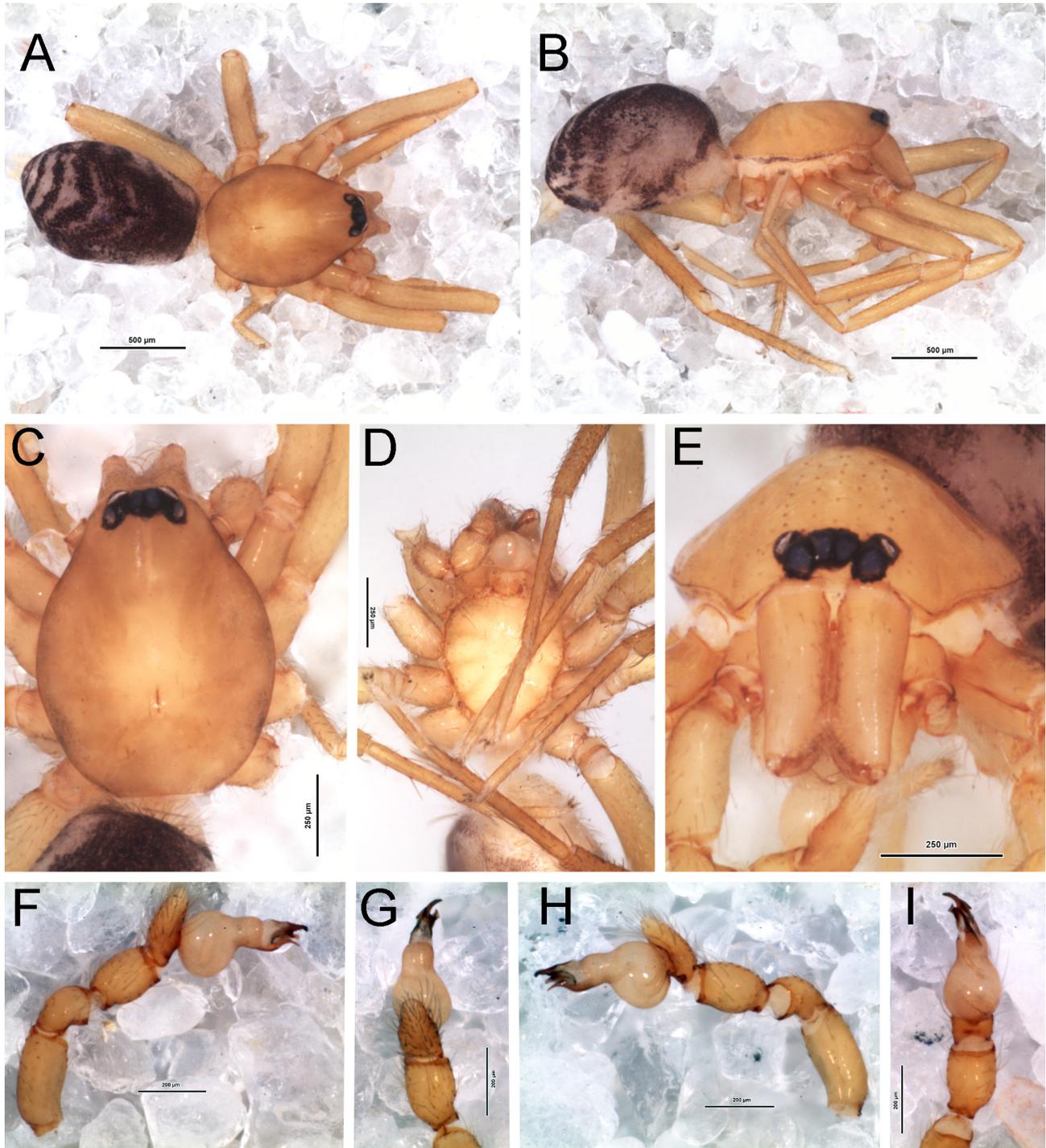
Diagnosis. *Osornolobus violetaparra* n. sp. resembles *O. trancas* Forster & Platnick in the general morphology of the palpal organ (see Forster & Platnick, 1985, figs 141–142), but differs by having forwardly directed terminal paraembolic elements, by lacking the dorsal embolar sheath, and by the less conspicuous constriction of the base of the embolic division (Figs. 2 A–C). *O. violetaparra* n. sp. also resembles superficially to *O. nahuelbuta* in the shape of the terminal elements (Forster & Platnick, 1985, figs 137, 138), but they are more closely arranged, converging to the embolus; it is also distinguished by their larger body size (2.1 vs. 1.8 mm) and their slender copulatory bulb (Figs. 1 F–I).

Female unknown.

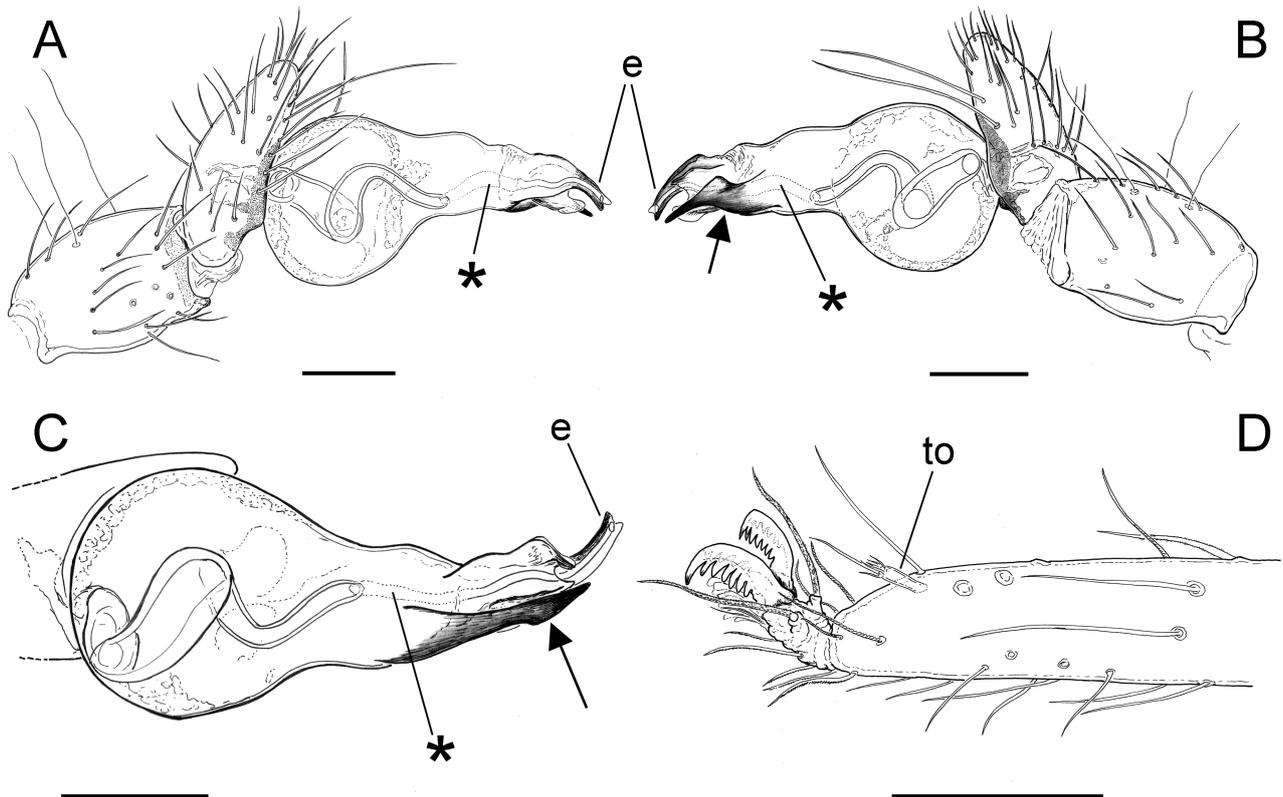
Etymology. The specific epithet is a noun in apposition in honor of the memory of Violeta Parra (1917–1967), a world-renowned leading figure in Chilean folk music. Her artistic vein was expressed in many forms: radio performer, composer and folk compiler, visual artist, and poetess. Parra was fundamental to the Chilean New Song, a musical movement that emerged in Chile in the 1950s. As part of this movement, she reflected on the evolution of folk music in the different spaces in which she took part, becoming the leading figure in Chilean and South American folk music.

Description (Holotype male). Total length 2.1. Carapace 0.96 long, 0.72 wide. Abdomen 1.1 long, 0.72 wide. Coloration: carapace light orangish brown, sternum slightly lighter, uniform; eye group on black pigment; dorsum of abdomen with purple chevron markings, well delimited on the postero-dorsal part, but almost entirely fused anteriorly in a purple area; abdominal venter light grey, with two purple patches immediately behind epigastric furrow; spinnerets flanked from behind and sides by purple pigment. Eye ratio, ALE:PME:PLE, 6:5:5. Chelicerae 0.38 long. Sternum 0.58 long, 0.46 wide. Leg spination: tibiae: III p1-1, v0-0-1; IV p1-1, r0-1-1, v0-1-2; metatarsi:

III p1-1-1, r1-1, v0-1-2; IV p1-1-1, r0-1-1, v0-1-0-2. Tarsal organ elongate, with receptor spine longer than base (Fig. 2D). Leg measurements (femora, patellae, tibiae, metatarsi, tarsi = total): I: 0.84, 0.38, 0.78, 0.72, 0.4 = 3.12; II: 0.78, 0.34, 0.62, 0.6, 0.34 = 2.68; III: 0.68, 0.26, 0.52, 0.58, 0.32 = 2.36; IV: 0.9, 0.36, 0.76, 0.82, 0.4 = 3.24. Leg formula: 4123. Genitalia: palpal bulb relatively slender, with relatively elongated embolic division; spermophore describing two open coils before the less sclerotized section (asterisks in Figs. 2 A–C); when runs slightly sinuously until ingressing in the embolus, which is nearly tubuliform, prolaterally located, and with a very small terminal lamella next to the ejaculatory opening. Two terminal prongs, one ventral-prolateral, widened and flattened, with a distal indentation, and other retrolateral, more sclerotized, with a darkened, acute tip and a dorsal triangular extension (arrow, in Figs. 2 B–C).



FIGURES 1 A–I. *Osornolobus violetaparra* n. sp. male. **A.** habitus dorsal, **B.** same, lateral, **C.** carapace, dorsal view, **D.** same, ventral, **E.** same, anterior, **F.** left palp, prolateral, **G.** same, dorsal, **H.** same, retrolateral, **I.** same, ventral. All images correspond to the holotype, except **D**, paratype.



FIGURES 2 A–D. *Osornolobus violetaparra* n. sp., male holotype. **A.** left palp, cleared, prolateral, **B.** same, retrolateral, **C.** same, ventral retrolateral, **D.** left tarsus I, retrolateral. Abbreviations: e = embolus, to = tarsal organ, asterisks = less sclerotized section of spermophore, arrow = retrolateral sclerotized paraembolic prong. Scale bars = 100 μ m.

Distribution. Only known from the type locality, in Talca (Maule, Chile, Fig. 3).

Habitat. *Osornolobus violetaparra* n. sp. has only been collected in a small section within the Achibueno Natural Reserve (Región del Maule, Chile), an area of high biological value due to its unique landscapes and its role as a transition area between the Chilean Sclerophyllous Matorral and the Valdivian Temperate Forest biomes (Myers *et al.* 2000; San Martín 2022). They are characterized by species such as *Schinus molle* L., *Nothofagus glauca* (Phil.) Krasser, *Nothofagus obliqua* (Mirb.) Oerst., *Nothofagus dombeyi* (Mirb.) Oerst., *Persea lingue* (Miers ex Bertero) Nees, *Lomatia dentata* (Ruiz & Pav.) R. Br., and *Podocarpus saligna* D. Don. (Fig. 4).

Implications for the conservation of the habitat of *Osornolobus violetaparra* n. sp. The Maule forest is a unique, highly diverse ecosystem where central Chile's sclerophyllous vegetation meets southern Chile's temperate vegetation (San Martín 2022; Smith-Ramírez *et al.* 2023). Even though it has been recognized as a high conservation value area globally due to its high endemism and species richness, this forest has been intensively deforested and fragmented (Miranda *et al.* 2017; Smith-Ramírez *et al.* 2023) to the extent that its surface area has decreased by 67% since the mid-1970s (Echeverría *et al.* 2006; Becerra & Simonetti 2020), resulting in isolated native vegetation fragments that are surrounded by plantations of *Pinus radiata* D. Don., and *Eucalyptus globulus* Labill. (White *et al.* 2020). This suggests that the biota associated with these ecosystems, particularly the edaphic epigeal fauna, such as spiders – a group that is sensitive to substrate perturbations – and the endemic fauna present in these unique environments face a critical conservation challenge (De La Vega *et al.* 2012). The highly endemic species of Orsolobidae in general, and *Osornolobus violetaparra* n. sp. in particular, might be a useful tool for implementing arthropod conservation strategies as part of the conservation of threatened environments. Niche specificity and bioindicator levels might be interesting questions for future research.

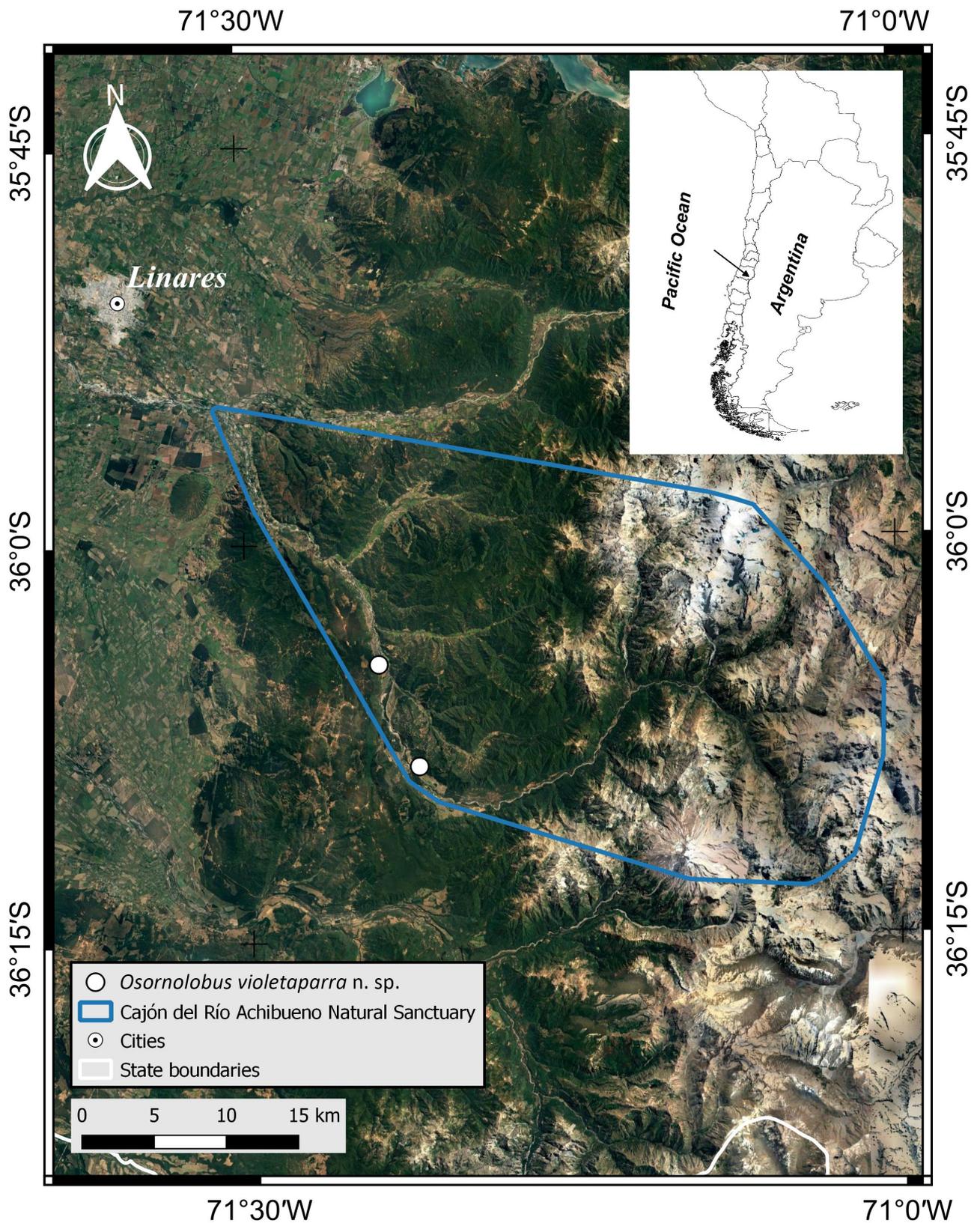


FIGURE 3. Distribution map of *Osornolobus violetaparra* n. sp., (white circles), and limits of the Achibueno Natural Reserve, Maule Region, Chile.



FIGURES 4 A–B. Type locality of *Osornolobus violetaparra* n. sp., Achibueno Natural Reserve, Maule Region, Chile.

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