

Curanahuel aconcagua, a new genus and species of sun-spider (Solifugae: Mummuciidae) from the Cuyan High Andean biogeographic province of Argentina

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Abstract. A new genus and species in the South American sun-spider family Mummuciidae, *Curanahuel aconcagua* gen. nov., sp. nov., is herein described from Argentina. The new genus is known from two localities in the provinces of Mendoza and San Juan, both located within the Cuyan High Andean biogeographic province. Among other features, this genus can be readily distinguished from other mummuciid genera by the very distinctive ctenidia on the third post-genital sternite, which are exceptionally thick in the male and also notably thick in the female.

Keywords: Solifuges, Quebrada de Horcones, Andean region, taxonomy.

Solifuges have received notable attention from systematists in recent years. Many of these studies have increased the existing knowledge on three of the families represented in the New World fauna, particularly by means of new species descriptions (e.g., Cushing et al. 2015, 2018; Botero-Trujillo 2016; Cushing & Brookhart 2016; Villareal-Blanco et al. 2017). Some studies have investigated the morphology, taxonomy and classification of the South American sun-spider family Mummuciidae. For instance, seven new species have been described in two genera, and a new genus, *Vempironiella* Botero-Trujillo, 2016, was proposed (Botero-Trujillo 2016; Botero-Trujillo et al. 2017, 2019). Not all of the recent taxonomic decisions have resulted in an increase of the known diversity of the family, however, as some have had the opposite effect: two species historically placed in Mummuciidae were transferred to Ammotrechidae (Botero-Trujillo & Iuri 2015), whereas the genera *Gauchella* Mello-Leitão, 1937 and *Metacleobis* Roewer, 1934 have been removed from the list of valid mummuciid taxa (Botero-Trujillo et al. 2017).

The most well-known and, for the moment, most speciose genus of Mummuciidae is *Gauchella* Mello-Leitão, 1924. This genus recently underwent an integrated taxonomic and phylogenetic analysis wherein its monophyly was demonstrated (Botero-Trujillo et al. 2017). Meanwhile, the type genus of the family, *Mummucia* Simon, 1879, to which many species have been originally assigned, was demonstrated to be non-monophyletic, a finding that will have an effect on the composition of other genera.

Studies on Mummuciidae conducted by the first author have been developed in the context of his PhD thesis on the taxonomy and phylogeny of this family (Botero-Trujillo 2018). This unpublished revisionary work resulted in the discovery of more than 30 new species, many of which fit into presently available genera. Many other species, however, require that new genera be erected, so that a sound intra-familial classification can be proposed based on phylogenetic data. The core of that work will be published by the author and co-

advisors elsewhere. For this forthcoming contribution to be all-inclusive of the different clades that were delineated in the familial revision, it is necessary that a new genus and species be made available here in advance.

METHODS

The material examined for this study is lodged in the collections: Arachnological Collection of the Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, Buenos Aires, Argentina (MACN-Ar); and Arachnological Collection of the Instituto Argentino de Investigaciones de las Zonas Áridas – IADIZA, Mendoza, Argentina (CAI).

Specimens of all of the 25 previously known mummuciid species were examined. This includes the list of material studied by Botero-Trujillo (2016: 219–220) and represents the type species of all known genera. A sample of *Uspallata pulchra* Mello-Leitão, 1938, containing the first known males of this species, was also studied: ARGENTINA: San Juan: Sierra del Tontal, way to the antenna, 21.72 km NE of Barreal (by air), Prepuna, ruins, 31°35'32.496"S, 69°13'43.14"W, 2974 m elev., manual capture, 4–6 November 2013, C.J. Grismado, H.A. Iuri, A.A. Ojanguren Affilastro, R. Botero Trujillo, C.I. Mattoni, 10 males, 1 female, 2 juveniles (MACN-Ar).

The identification of individual teeth used the criteria for primary homology assessment of dentition suggested by Bird et al. (2015: 83). The style and terminology used for the taxonomic description, as well as any methodological aspects, follow (for the most part) recent works on Mummuciidae (Botero-Trujillo 2016; Botero-Trujillo et al. 2017, 2019). Measurements were obtained following the methodology of Botero-Trujillo et al. (2017). Photographs of the chelicerae were obtained under the same positioning parameters specified by Botero-Trujillo et al. (2017: 10). Herein, we formally implement a new interpretation of the spiniform setae located on the basitarsi of legs II and III, which follows the assessment of Botero-Trujillo (2018) of individual setal identities. The three spiniform setae previously mentioned elsewhere to form

a 'retroventral' row (e.g., Botero-Trujillo et al. 2017: 15), are here re-interpreted as two (basal and subdistal) *retrolateral* and one (distal) *retrodorsal* setae. Likewise, the so-called 'distal subventral' seta is now considered to form a *retroventral* series. The designation of the *proventral* setal series remains unmodified.

Authorship for the name of the new species is to be attributed to the three authors, unlike that for the new generic name which is as specified below.

TAXONOMY

Family Mummuciidae Roewer, 1934

Genus *Curanahuel* Botero-Trujillo, gen. nov.

Type species.—*Curanahuel aconcagua* sp. nov.

Diagnosis.—A member of Mummuciidae due to possession of a three-dark-band pattern on the meso-, metapeltidium, and dorsal surface of opisthosoma (Fig. 2), a row of rigid hairs along the posterior margin of 4th post-genital sternite (post-spiracular sternite II) (Fig. 3C, D), lacking spiniform setae on the pedipalps, and the male flagellum of the composite type, retrolaterally compressed with ipsilateral opening, and immovably attached to the cheliceral fixed finger (Figs. 4F, 5F).

The new genus is primarily established on account of two putatively derived aspects of the male and female morphology, neither of which is shared by any other genus thus far recognized in the family. One relates to the cheliceral movable finger MSM tooth, which in the new genus is either absent or otherwise greatly reduced compared to the secondary teeth of the fixed finger (Figs. 4 & 5). The other is the 3rd post-genital sternite (post-spiracular sternite I) having very distinct ctenidia that are exceptionally thick in the male (Figs. 3C, 6E) and, although to lesser extent, also notably thickened in the female (Fig. 3D). Furthermore, males have the apex of these ctenidia semi-rigid, instead of flexible as in other members of the family (Fig. 6E). The remaining seven genera (indeed, all other known mummuciid species) have the MSM secondary tooth/teeth series invariably present and well-developed. Likewise, none of them, most importantly not their type species (some of the other species are known only from a single sex), have ctenidia of the 3rd post-genital sternite of the male or female thickened as much as those in this new genus, and the apex is flexible in all cases (e.g., Botero-Trujillo et al. 2017: fig. 28E). These ctenidia are moderately thick basally in males of *Mummucina* Roewer, 1934 (see Botero-Trujillo 2014: fig. 22), markedly thick in males of *Mummucia* and *Uspallata* Mello-Leitão, 1938, and filiform in males of other genera and in females of all.

In addition, *Curanahuel* exhibits a unique combination of various other features that make it substantially different from all other genera and their type species. (i) Chelicera without the fixed finger retrofendal diastema (FRFD) that is present in *Vemperiella*. (ii) Cheliceral fixed finger of the female with the dorsal surface curved in lateral aspect and without angular dorsal crest (Fig. 5A), unlike females of *Mummucia variegata* (Gervais, 1849) and *Uspallata*. (iii) Cheliceral movable finger mucron of males with gnathal edge carina moderately prominent and convex in lateral aspect (Fig. 4E, F), only comparable to that of some *Gaucha* species. (iv) Spiracular sternites without ctenidia, as observed in *M. variegata*,

Uspallata and *Vemperiella*, but unlike other genera. (v) Opisthosomal pleural membranes with white marks visible on the sub-dorsal black band (Fig. 2), as in *Vemperiella* and *Mummucina titschacki* Roewer, 1934, instead of black marks on the sub-ventral white band as in most *Gaucha* species and the remaining genera. (vi) Basitarsus of legs II and III with two (subdistal and distal) spiniform setae on the proventral series (Fig. 6C), whereas three (sub-basal, subdistal and distal) are present in most other genera; this feature is shared only with *Vemperiella*, which upon re-examination was discovered to have only these two spiniform setae, and not three as it was originally reported (with some uncertainty) by Botero-Trujillo (2016:223).

Description.—See species description below.

Distribution.—*Curanahuel* is only known from the provinces of Mendoza and San Juan, Argentina (Fig. 1).

Included species.—*Curanahuel aconcagua* sp. nov.

Etymology.—The generic name is the combination of 'cura' (= stone) and 'nahuel' (= tiger), in mapuche language, and means 'tiger of the stones'. Masculine in gender.

Curanahuel aconcagua Botero-Trujillo, Lagos-Silnik and Fernández-Campón, sp. nov.

Figures 1–6

Material examined.—*Holotype male*: ARGENTINA: Mendoza: Las Heras, Parque Provincial Aconcagua, Quebrada de Horcones, 2950 m elev., 32°48'38.04"S, 69°56'28.98"W, 4–14 December 2004, S. Claver & A. Scollo (CAI).

Paratypes: ARGENTINA: Mendoza: 3 ♂, 1 ♀, same data as holotype (MACN-Ar); 1 juvenile, Las Heras, Parque Prov. Aconcagua, Quebrada de Horcones, 2896 m elev., 32°49'10.08"S, 69°56'30.54"W, 13–23 February 2006, G. Flores & A. Scollo (CAI); 1 juvenile, same data except 2914 m elev., 32°49'1.2"S, 69°56'42.24"W, 8–17 February 2005, S. Claver & A. Scollo (CAI); 3 ♀, same data except 2923 m elev., 32°48'59.88"S, 69°56'34.14"W, 26 December 2005, S. Claver & A. Scollo (CAI).

Other material.—ARGENTINA: Mendoza: 1 ♀, Las Heras, entrance to Quebrada de Horcones, 2800 m elev., 10 January 1985 (MACN-Ar); San Juan: 1 ♀, Reserva San Guillermo, "Rincón del Río", October 1981, Cajal Pujalte Reca (MACN-Ar).

Diagnosis.—As for the genus.

Description of male.—*Color*: (Figs. 2–4). Propeltidium predominantly white, with broad, yellowish-brown median area, diffuse and without well-defined borders, and posterior margin similarly shaded in brownish; ocular tubercle predominantly dark brown, darker around the eyes, with posterior median area light as the propeltidium principal shield. Chelicerae with manus yellowish, with white areas; fixed finger with darkened area on the limit between the setose and asetose areas; movable finger with basal half of the asetose (but not the setose) area often darkened too; mucra and teeth reddish-yellow. Meso-, metapeltidium, and dorsal surface of opisthosoma with a three-dark-band design typical of the family: tergites with median, longitudinal brown band, and a pair of very white lateral bands; pleural membranes with sub-dorsal black and sub-ventral white bands; black band of opisthosomal pleural membrane with white marks surround-



Figure 1.—Distribution and habitat of *Curanahuel aconcagua* sp. nov.: A. Map plotting known locality records of *C. aconcagua*; B–F. Different landscapes at Quebrada de Horcones, in the Aconcagua Provincial Park, Las Heras, Argentina; B., C. Two general views of the type locality at the entrance to Quebrada de Horcones; D. Quebrada de Horcones, aspect to the north (in the back and centered is the snowy summit of the Aconcagua hill); E. Ibid., aspect to the south; F. One view of ground and soil vegetation in Quebrada de Horcones, habitat of the new species.

ing the socket of most setae, present along the entire length of the opisthosoma, and inter-segmental transversal vertices without interspersed dark pigment; sternites immaculately whitish, with lateral areas of three-to-five posteriormost sternites shaded in greyish-brown. Ventral surface of prosoma uniformly whitish-yellow; sternum white, much lighter than coxae. Legs yellowish-grey to brownish; pedipalps progressively becoming darker towards the apex. Malleoli yellowish, often with distal margin darkened.

Prosoma: (Fig. 3). Propeltidium wider than long; with short, medium and long bifurcated setae, of which at least the latter exhibit a bilaterally symmetrical distribution on propeltidium; anterior margin convex (on dorsal view); ocular tubercle only

slightly elevated, with abundant macrosetae; complete and shallow median longitudinal furrow present; anterolateral propeltidial lobes separated from the propeltidium principal shield by incomplete lateral groove. Meso- and metapeltidium wider than long, with bifurcated setae of variable size. Coxae densely covered with bifurcated setae; one or two pairs of other long, single-tipped setae present at least on coxae of pedipalps and leg I. Sternum glabrous.

Chelicera-dentition and processes: (Figs. 4 & 5). Fixed finger with median teeth series comprising all primary teeth, i.e., FP, FM, FD; with two (FSM and FSD) secondary teeth series; one FSM tooth is normally present, whereas the FSD series consists of one or two teeth; retrofondal teeth series

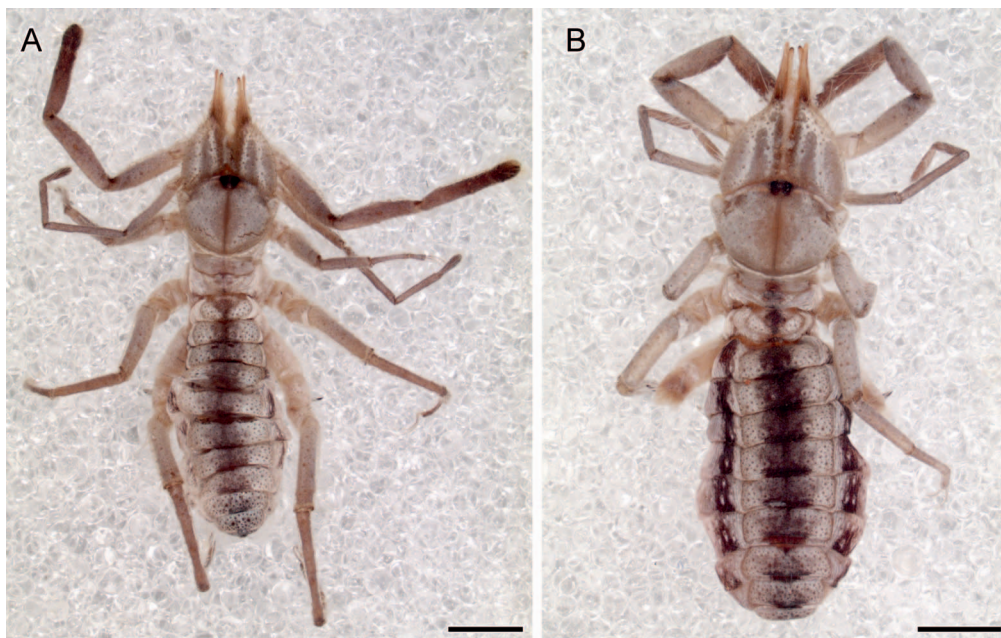


Figure 2.—*Curanahuel aconcagua* sp. nov., habitus: A. Male holotype (CAI); B. Female paratype (CAI). Scale bars: 1 mm.

uninterrupted (i.e., without FRFD), normally with four/five teeth among which RFA is largest; RFP tooth distinguishable although very similar in size to RFSP; basal retrofondal margin without crenulations; profundal teeth series generally with three teeth (PFSP, PFP, PFM); fixed finger mucron without subterminal teeth (FST). Movable finger with median

teeth series comprising weakly-developed MM and MP primary teeth, where MP is slightly but distinctly taller than MM (i.e., $MP > MM$); MSM secondary tooth absent, otherwise greatly reduced (i.e., much smaller than the secondary teeth of fixed finger); movable finger teeth close together in median region of the finger. Movable finger without subprox-

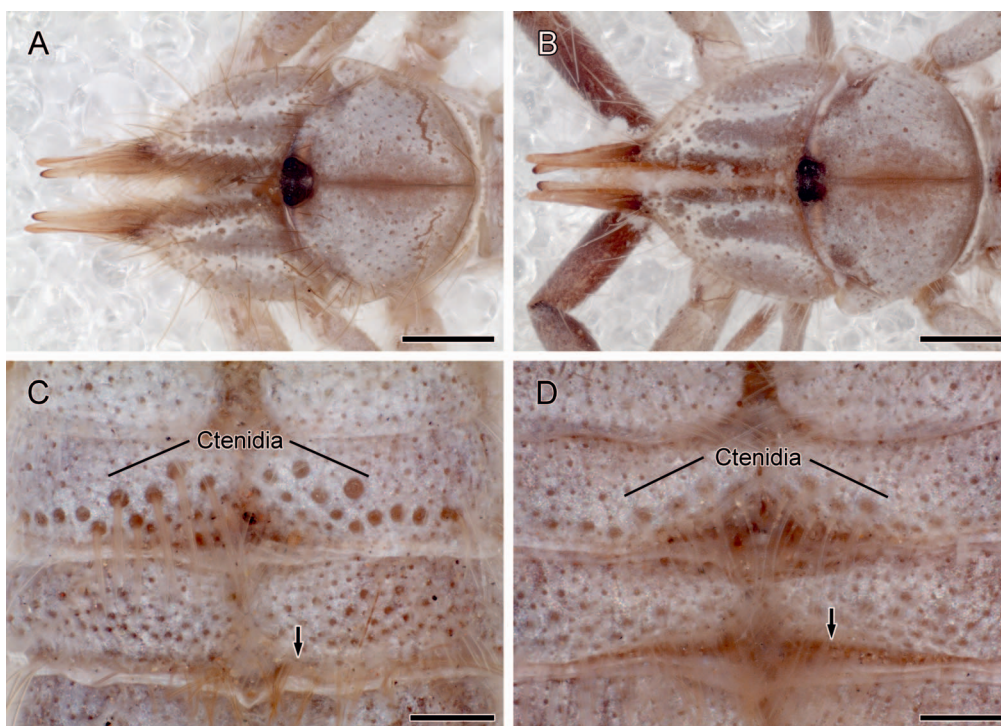


Figure 3.—*Curanahuel aconcagua* sp. nov.: A, B. Propeltidium and chelicerae, dorsal aspect: A. Male holotype (CAI); B. Female paratype (CAI); C, D. Opisthosoma, 3rd and 4th post-genital sternites, arrow indicates row of rigid hairs on posterior margin of 4th; note the exceptionally thick ctenidia on post-spiracular sternite I; C. Male paratype (MACN-Ar); D. Female paratype (CAI). Scale bars: 0.5 mm (A, B); 0.2 mm (C, D).

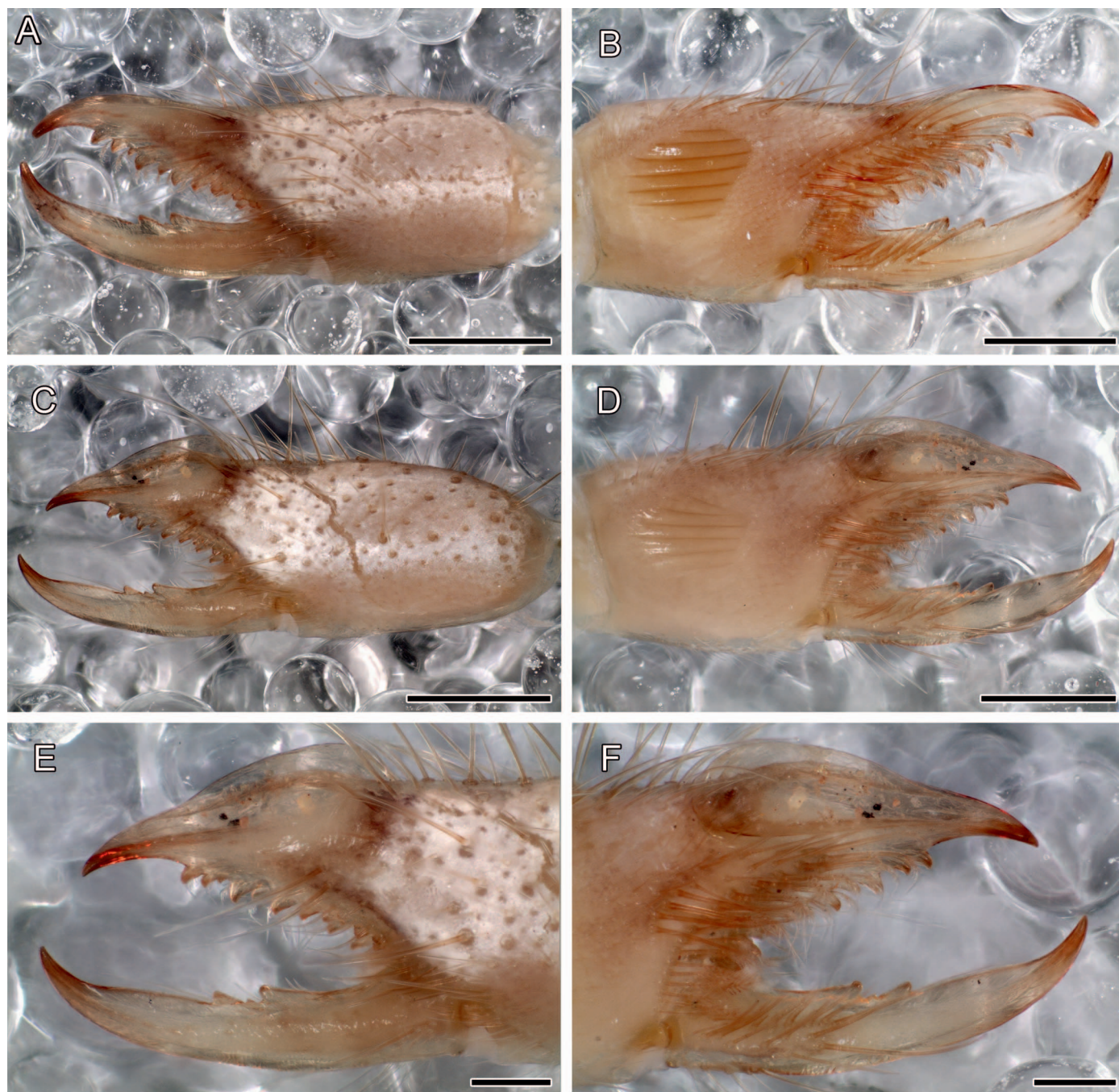


Figure 4.—*Curanahuel aconcagua* sp. nov., chelicerae under visible light: A, B. Left chelicera, female paratype (MACN-Ar): A. Retrolateral aspect; B. Prolateral aspect; C–F. Left chelicera, male paratype (MACN-Ar): C. Retrolateral aspect; D. Prolateral aspect; E. Retrolateral aspect, detail of fingers; F. Prolateral aspect, detail of fingers. Scale bars: 0.5 mm (A–D); 0.3 mm (E, F).

imal (MSP) or subterminal (MST) teeth; retrolateral longitudinal carina (MRLC) consisting of one, often staggered row of granules. Closure of FP and FM teeth distal to MP and MM, respectively, when fingers are closed. Fixed finger with prodorsal carina complete (along the entire length of the asetose area), starting near the level of the attachment point of the flagellum, and approximately at level between the RFP and RFA teeth; prodorsal carina without angular dorsal crest; proventral carina pronounced on the mucron area; FP, FM

and FD teeth similar in size, or FM very slightly larger; FD contiguous to FSD (i.e., without the fixed finger median apical diastema, or FMAD); fixed finger mucron not remarkably narrow and moderately long, ventral margin curved, subterminal flange (STF) absent, apex (FT tooth) gently curved. Movable finger mucron with gnathal edge carina pronounced and moderately convex.

Chelicera-setose areas and stridulatory plate: (Figs. 4 & 5). Retrolateral and dorsal surfaces with abundant bifurcated

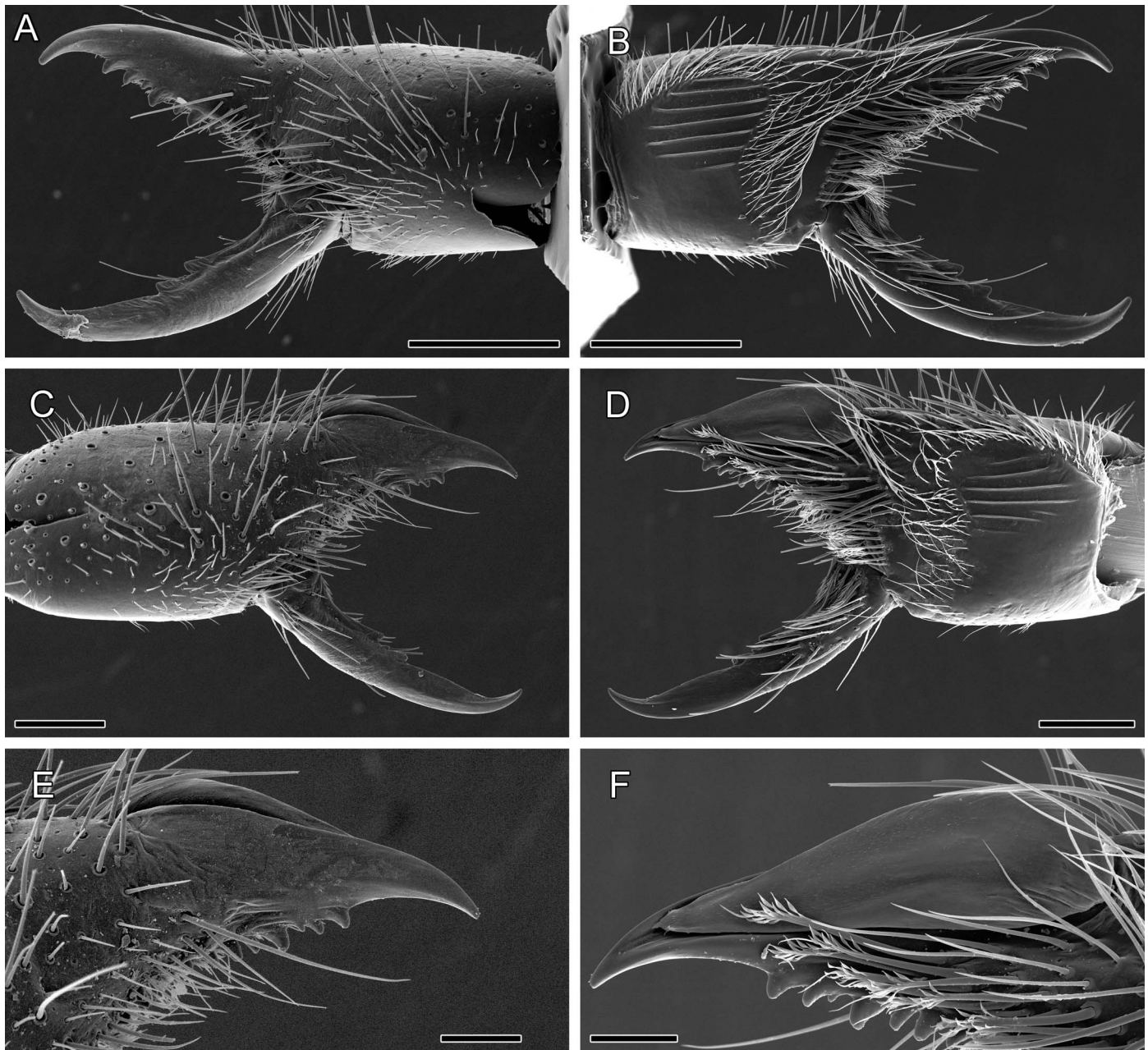


Figure 5.—*Curanahuel aconcagua* sp. nov., chelicerae under SEM: A, B. Left chelicera of female paratype (MACN-Ar): A. Retrolateral aspect; B. Prolateral aspect; C–F. Right chelicera of male paratype (MACN-Ar): C. Retrolateral aspect; D. Prolateral aspect; E., Retrolateral aspect, detail of fixed finger and flagellum; F. Prolateral aspect, detail of fixed finger and flagellum. Scale bars: 0.5 mm (A, B); 0.25 mm (C–E); 0.1 mm (F).

retrolateral manus (*rlm*) and retrolateral finger (*rlf*) setae, of different sizes; some of these setae are arranged in a bilaterally symmetrical pattern, as are four evident principal retrolateral finger (*principal rlf*) setae (which are non-bifid); movable finger retrolateral proximal setal cluster (*rlpc*) dorsally with a single, weakly plumose seta. Prolateral surface with array of setal types, as follows: proventral distal (*pvd*) setae consisting of two rows of plumose setae, of which the ventral reaches the level of the fondal interdigital articular membrane (*fiam*) whereas the dorsal reaches the prolateral interdigital condyle (*pic*); proventral subdistal setae made up of few thick and acuminate

setae (*pvsd* comb) at level with the stridulatory apparatus, and others thinner in more distal position (*pvsd*); carpet-like field of barbed and bristle-like promedial (*pm*) setae, covering the distalmost third of manus. Stridulatory plate approximately as long as high, occupying most of the prolateral surface of manus, with a 5- or 6-ridged stridulatory apparatus; dorsal ridges inclined, such that the stridulatory apparatus narrows anteriorly; dorsalmost ridge incomplete anteriorly (i.e., it does not reach the field of promedial (*pm*) setae). Distal limit of the prolateral setose area of movable finger not reaching the level of the anterior slope of MP tooth; movable finger prodorsal

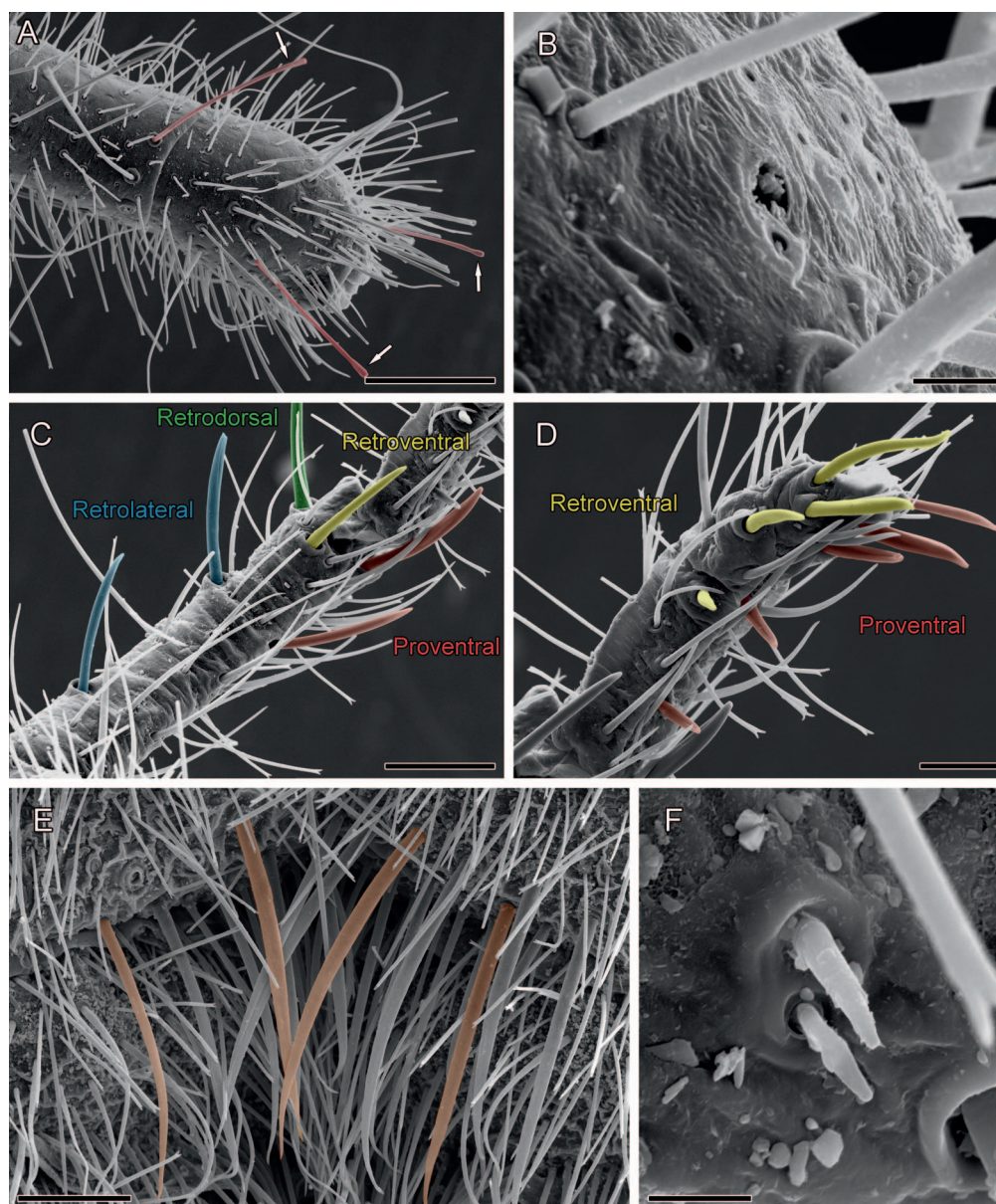


Figure 6.—*Curanahuel aconagua* sp. nov., SEM images, male paratype (MACN-Ar): A. Right pedipalp apex, retrolateral aspect (some clubbed setae are colored and indicated by arrows); B. Right pedipalp apex, detail of pore area on dorsum of telotarsus; C, D. Right leg II apical segments, with spiniiform setae colored according to the setal series where they belong: C. Basitarsus, ventral aspect; note the presence of only two proventral spiniiform setae; D. Telotarsus, retroventral aspect; E. Post-spiracular sternites I (on top) and II (in the middle), showing the exceptionally thick ctenidia on I (3rd post-genital sternite); note that these have the apex semi-rigid, not distinctly flexible (only some ctenidia are colored); F. Pair of microsetae on posterior area of genital plate. Scale bars: 0.2 mm (A, C); 0.1 mm (E); 50 μ m (D); 10 μ m (B, F).

(*mpd*) setal series consisting of plumose setae arranged in one, predominantly straight row, followed by other setae of different length and thickness corresponding to the movable finger promedial (*mpm*) and proventral (*mpv*) setal series, the distalmost seta of each of which is longer.

Flagellum: (Figs. 4F, 5F). A thin, translucent, membranous structure immovably attached prodorsally to the fixed finger; ipsilateral opening present, extending from near the attachment point to the apex of the flagellum. General aspect inflated, narrowing anteriorly; ventral margin predominantly straight. Visible (prolateral) surface predominantly smooth, with minute spicules that become evident with SEM; flagellum

extending beyond FD tooth to about two thirds the length of the mucron.

Pedipalp: (Figs. 2, 6A, B). All segments coated with bifurcated setae of different sizes; femur, basitarsus, and especially tibia with ventral set of very long setae, some of them as long as, or longer than, the tibia; clubbed setae on basi- (at apex) and telotarsus; spiniiform setae absent. Telotarsus with a dorsal pore area on distal third; each pore is defined by an elevated border and bears a seta inside (i.e., sensilla ampullacea *sensu* Bauchhenss 1983); telotarsus without the dorsal, longitudinal reticular areas that were reported

by Botero-Trujillo (2014) to be in spatial association with the pore areas in *Mummucina titschacki*.

Leg I: (Fig. 2). Similar to pedipalp with respect to the types, density and distribution of setae; with apical retrodorsal pore area similar to that of pedipalp; with neither claws nor spiniform setae.

Walking legs: (Figs. 2, 6C, D). Covered with abundant small- to medium-sized bifurcated setae, and a few longer setae. Legs II and III: basitarsus (Fig. 6C) with six spiniform setae in a 1.2.3 rather staggered pattern: two proventral (in distal and subdistal positions), one retroventral (distal), two retrolateral (basal and subdistal), and one retrodorsal (distal); telotarsus (Fig. 6D) bi-segmented with pro- and retroventral rows of five and four spiniform setae respectively, in a 1.2.2/2.2 pattern. Leg IV: basitarsus with row of four proventral and one distal retroventral spiniform setae, in a 1.1.1.2 pattern; telotarsus bi-segmented with incomplete (ventral) segmentation on first (basal) tarsomere, with pro- and retroventral rows of six spiniform setae each, in a 2.2.2-2/2.2 pattern.

Opisthosoma: (Figs. 2, 3C, D, 6E, F). Tergites and sternites with abundant bifurcated setae. Two pairs of microsetae, of the same type found in other mummuciid species (Botero-Trujillo 2014, 2016), present at least on the genital plate. Ctenidia present on 3rd and 4th post-genital sternites (post-spiracular sternites I and II); other sternites without ctenidia. Ctenidia filiform and setiform on 4th post-genital sternite, distinguishable from other integumental setae because the ctenidia are longer, single-tipped (non-bifid), and flexible. Ctenidia of 3rd post-genital sternite exceptionally thickened and very distinct, with apex semi-rigid (instead of flexible as in other mummuciid species). Post-spiracular sternite II with row of rigid hairs along posterior margin.

Measurements (in mm): male holotype (CAI): Total body length, excluding chelicerae 5.05. Propeltidium 1.13 long, 1.37 wide (where widest). Chelicera 1.60 long, 0.63 wide, 0.60 high. Pedipalp total length 4.24; femur 1.50 long; tibia 1.27 long, 0.28 wide; basitarsus + telotarsus 1.47 long. Leg I total length 3.49; patella 1.03 long; tibia 1.09 long; basitarsus 0.77 long; telotarsus 0.60 long. Leg IV total length, excluding claws 5.21; patella 1.70 long, 0.38 high; tibia 1.63 long; basitarsus 1.17 long; telotarsus 0.71 long.

Female.—Figs. 2B, 3B, D, 4A, B, 5A, B. Overall morphology similar to male, but larger in size. Chelicera without the secondary sexual characteristics of males. Stridulatory apparatus normally consisting of 6 complete, parallel ridges (i.e., stridulatory apparatus does not narrow anteriorly and the ridges reach the field of *pm* setae). Fixed finger median teeth series with all primary teeth moderately large; teeth of median series pronounced and sharpened; FP and FM teeth subequal in size, slightly larger than FD tooth. Fixed finger dorsal margin curved on lateral aspect, without angular dorsal crest. Fixed finger mucron hook-like, both dorsal and ventral margins curved, with neither subterminal flange (STF) nor subterminal teeth (FST). Movable finger teeth similar to those of male; retrolateral longitudinal carina (MRLC) consisting of granules in a row; movable finger mucron with gnathal edge carina low but evident, identified by pronounced angle formed by adjacent pro- and retrolateral surfaces; finger without subproximal (MSP) or subterminal (MST) teeth. Cheliceral teeth MM and FD similar in height, or MM slightly lower.

Ctenidia present in the same sternites as in male; the ctenidia on 4th post-genital sternite are filiform and setiform, barely recognizable and similar in thickness to the bifid setae, whereas those on 3rd are markedly thicker and easily recognizable.

Measurements (in mm): female paratype (CAI): Total body length, excluding chelicerae 5.99. Propeltidium 1.33 long, 1.80 wide (where widest). Chelicera 2.17 long, 0.83 wide 0.80 high. Pedipalp total length 4.17; femur 1.47 long; tibia 1.23 long, 0.30 wide; basitarsus + telotarsus 1.47 long. Leg I total length 3.52; patella 1.00 long; tibia 1.11 long; basitarsus 0.80 long; telotarsus 0.61 long. Leg IV total length, excluding claws 5.07; patella 1.67 long, 0.47 high; tibia 1.53 long; basitarsus 1.17 long; telotarsus 0.70 long.

Distribution and habitat.—*Curanahuel aconcagua* sp. nov. is known from Quebrada de Horcones, a locality in the southern limit of the Aconcagua Provincial Park, Mendoza province in west central Argentina (Fig. 1). The place is found on the margin of the Horcones River, at an elevation of some 2950 m in the main cordillera of the central Andes. A congeneric female specimen from the San Guillermo reserve, a locality some 400 km northward, in San Juan province, Argentina (Fig. 1A), was also available for study. Even though this female is here presumed conspecific with specimens from the type locality, clarity on its identity may only be achieved once male specimens become available. The two localities from where the new genus is known are embedded in the Cuyan High Andean biogeographic province of Argentina (Arana et al. 2017).

The climate in Quebrada de Horcones is temperate, semiarid, and high-mountain (Köppen & Geiger 1928). It is characterized by an irregular pluvial regime due to a dual climatic influence of the Atlantic domain, with summer rains on one side, and of the Pacific domain, with winter precipitations on the other. Several climatic factors differ in the area even between short distances, due to the orographic effect and the influence of winds from the west that discharge precipitation, mainly in the form of snow in the winter. Temperature is also highly variable, with records of temperatures under 0° C occurring nearly daily throughout most of the year (soils freeze from April to September) and temperatures of up to 25°C in the summer.

The physiognomy of the area consists of large extensions of bare soil with typical high Andean vegetation. Quebrada de Horcones is located on the 2nd high Andean floor (Roig et al. 2000), where shrubs with deep roots dominate. Two vegetation layers are recognized: a middle layer, with *Adesmia aegiceras* reaching up to 1 m, and a lower layer, with *Poa holciformis* of no more than 40 cm. In addition to scrublands of *Adesmia aegiceras*, the grasslands of *Stipa chrysophylla* and meadows of *Tropaeolum polyphyllum* also stand out in this floor (Méndez et al. 2006).

Etymology.—The specific epithet is a noun in apposition taken from the Aconcagua Provincial Park, a protected area in whose southern limit the type locality, Quebrada de Horcones, is located.

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