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A new species of *Stethelmis* Hinton (Coleoptera: Elmidae) from Argentina and description of its larva

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Abstract: A new species of *Stethelmis, S. shepardi* sp. nov., is described for Patagonia, Argentina from adults of both sexes. A full description and illustrations of both the adult and the larva of the new species are provided with comments on its habitat and distribution. Adults of the new species are compared with those of *S. kaszabi* (Hinton 1970) and *S. chilensis* (Hinton 1945). The larva of *S. shepardi* is compared with that of *S. kaszabi*, the other *Stethelmis* larva described. We also describe and illustrate for the first time the male genitalia of *S. kaszabi*. A key to the known species of *Stethelmis* is also included.

Key words: Elminae, Neotropical, Patagonia, Riffle beetles, *Stethelmis shepardi*.

INTRODUCTION

Stethelmis Hinton is an endemic elmid genus of the Neotropical region, restricted to the southern region of Chile and Argentina (Archangelsky and Manzo 2007, Manzo 2013) and belongs to the subfamily Elminae. There are only two described species: *S. chilensis* (Hinton 1945) from Chile and *S. kaszabi* (Hinton 1970) from Argentina. *S. kaszabi* has been cited for the argentine provinces of Río Negro (Hinton 1970) and Chubut (Archangelsky and Manzo 2007, Manzo and Archangelsky 2014). For *S. chilensis* no locality details were provided in the original description, but recently Solervicens Alessandrini (2014) cites this species in the national reserve Río Clarillo, in the Metropolitan Region of Santiago, Chile. While *S. chilensis* larva remains unknown, the larva of *S. kaszabi* was described by Archangelsky and Manzo (2007).

In several field trips to the locality of Corcovado and near the town of Esquel, some unidentified elmid adults and larvae presenting the diagnostic characters of *Stethelmis*´s were collected. Adults show tomentum on abdominal ventrites; pronotum without sublateral carinae, transverse procoxae with trochantin externally visible and toothed tarsal claws; larvae feature a slightly flattened body, anterior margin of head capsule with a tooth between base of antenna and clypeus, procoxal cavities open and pleural sclerites on abdominal segments I–V. The adults resemble those of *S. kaszabi* but the genitalia is notoriously different

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and differences in body surface punctuation and in the extension of tomentum are also evident. On the other hand, larvae associated with these adults differ mainly from those of *S. kaszabi* in that larvae of the former have very characteristic dorsal gibbosities on the abdomen and the frontal teeth of the head are less prominent. Likewise, both larvae and adults of this morphospecies occupy very different habitats than those of *S. kaszabi* and do not coexist in the same sector of a creek/river. This made us conclude that the individuals collected belong to a new *Stethelmis* species. Here, we describe and illustrate this new species of *Stethelmis* and its larva and compare them with the adult and larva of *S. kaszabi* and adult of *S. chilensis*; in addition, the male genitalia of *S. kaszabi* is described since the original description of this species was based on a female (Hinton 1970).

MATERIALS AND METHODS

Adults and larvae were killed and preserved in 75% ethyl alcohol. For habitus pictures five larvae and five adults were cleaned with an ultrasonic cleaning machine for four minutes set at 30/50 watts power (methodology adapted from (Harrison 2012)). Adults were cleared in potassium hydroxide for 48 hours (5 specimens) and legs were dissected and mounted on glass slides with Polyvinyl–lactoglycerol (PVLG) medium. Larval specimens were cleared in warm lactic acid (10 specimens), dissected and mounted on glass slides with PVLG medium. Observations (up to 400X) were made with a Leica MZ6 and Leica S6D dissecting microscopes and Leica DMLB and Leica DM 500 compound microscopes, the last three with a photographic camera attached. Photographs were assembled using the freeware program CombineZP (Hadley 2010). Habitus pictures were taken from dry specimens; therefore, the color is darker than that of wet specimens. For morphometric information, five to ten of each larvae and adults were measured. We follow adult morphology nomenclature of Kodada et al. (2016); for larval morphology we follow the nomenclature of Lawrence (1991) and Kodada et al. (2016). All available geographical records of the new species of *Stethelmis* were mapped with Q–GIS (QGIS Development Team 2017).

The type material and part of the larval specimens are deposited at the Instituto de Biodiversidad Neotropical (IBN), Tucuman, Argentina; additional larval material is held at the collection of one of the authors (M.A.).

RESULTS

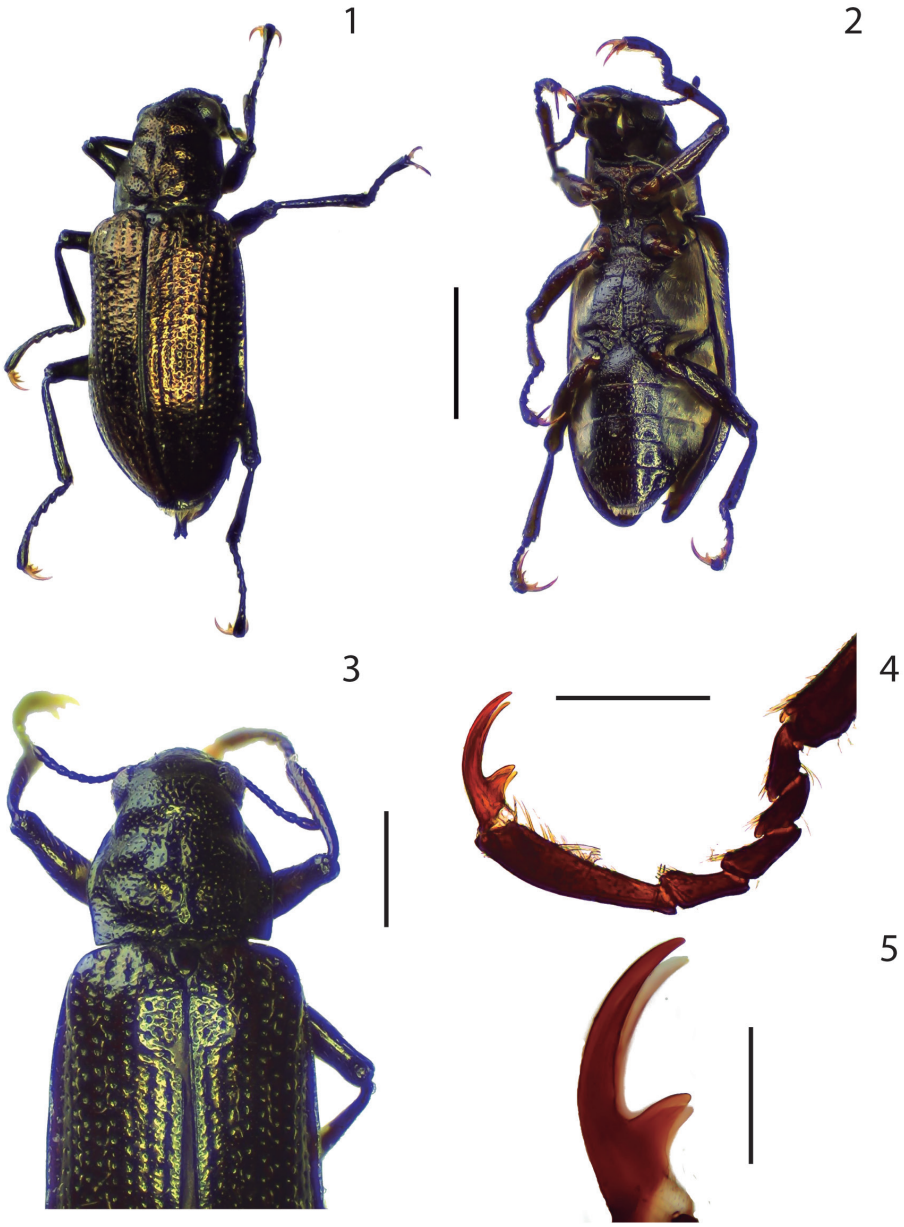
Stethelmis shepardi sp. nov.

DIAGNOSIS

Adults of this new species may be distinguished from all the other known *Stethelmis* species by the following combination of characters: 1) areas between punctures at depressions of pronotum glabrous; 2) tomentum on epipleura reaching the first abdominal ventrite; 3) tomentum on abdomen covering up to the basal fourth of fourth ventrite; 4) aedeagus with median lobe broad, lanceolate and stretching near apical third; basolateral apophyses short; corona absent, fibula present; parameres subtriangular, with subapical "tooth"; phallobase large, as long as wide. The present publication of the new species is registered in the ZooBank Life Science Identifier with the following LSID code: urn:lsid:zoobank.org:pub:711115ED-E055-4CE2-8219-2F0831D6CA77.

Description. Holotype male. Body sub–rectangular, moderately convex. Length: 3.10 mm; greatest width 1,10 mm (at posterior third of elytra).

Color (Figs. 1–3): cuticle shiny, brownish testaceous with a greenish metallic lustre on dorsal surface. Plastron formed by golden setae covering: a narrow strip at each side of mentum and submentum (setae reaching the third palpomere); hypomeron entirely; sides of prosternum, mesoventrite and



Figures 1–5 - *Stethelmis shepardi* sp. nov. adult. (**1**) dorsal habitus; (**2**) ventral habitus; (**3**) detail of pronotum; (**4**) detail of leg; (**5**) detail of leg tarsal claw. Scale bars: Figs. 1–2: 1 mm; Fig. 3: 0.50 mm; Fig. 4: 0.25 mm; Fig. 5: 0.1 mm.

metaventrite; epipleura (tomentum reaches the first ventrite); inner surface of coxae, trochanter and tibiae, anterior regions of femora; sides of ventrites I–III and basal fourth of sides of ventrite IV.

Head: partially retractable, prognathous, surface punctated, punctures with long golden setae, separated by 1 ½– 3 times their diameter, less densely distributed on disc, slightly larger than facets of eyes. Clypeus sculptured as head, frontoclypeal suture straight; labrum subrectangular, with anterolateral angles rounded and anterior margin slightly convex, punctuation similar to that of head, with rows of long golden setae on anterior and lateral margins of ventral region that exceed the limits of the labrum. Antennae 11–segmented,

filiform, shorter than pronotum, last antennomere the longest, with a cluster of short subapical setae.

Pronotum (Fig. 3) (length 0.70 mm; greatest width, at midlength of pronotum: 0.80 mm); wider at base; anterior margin, slightly arcuate, lateral margins smooth, not crenate, curved at midline; anterolateral angles not acute, posterolateral angles short and acute, base trisinuose. Pronotum with two basal oblique oval depressions at each side of mid–line, one T–shaped depression (transversal branch is on apical third and extends all the width of pronotum, longitudinal branch starts at basal third) and two depressions near posterolateral angles; surface between punctures at depressions of pronotum glabrous. Surface densely punctated, punctures larger than facets of eyes, separated by 1–1 ½ times their diameter. Prosternum, short, narrower than 3 times the width of procoxa, prosternal process longer than wide, half the length of procoxal cavities**,** apex rounded, with a depression along its length, surface microreticulated with disperse setae. Mesoventrite with a groove for reception of prosternal process, concave between mesocoxae, surface as that of prosternum. Metaventrite with a median longitudinal line, sculptured as pronotum.

Legs (Figs. 4–5): surface densely punctate and pubescent, punctures smaller than facets. All tibiae with long golden decumbent setae. Pro– and mesocoxae globular, metacoxae transverse. Mesotibiae with a cluster of long golden seta on apical fifth of lateral inner face. Tarsi 5–segmented, with a line of ventral setae, the ones on the fifth tarsomere the longest; fifth tarsomere the longest; tarsal claws with a long acute basal tooth.

Elytra: more than twice as long as pronotum; without sublateral carinae, lateral margin smooth; apices rounded and slightly dehiscent. Surface smooth, with disperse short and golden setae; ten striae formed by large punctures separated by 2 times their diameter, elytral intervals of disc with long golden setae arranged in well–defined lines. Scutellum subpentagonal, longer than wide.

Abdomen: surface of ventrites punctate, punctures as wide as facets of eyes, separated by 2–3 times their diameter; disc of ventrite I depressed near the anterior margin; disc of ventrites II–V convex; apex of fifth ventrite rounded, apical margin with short golden setae.

Male genitalia (Fig. 6): Median lobe broad, lanceolate, stretching near apical third, apex acute, lateral margins not parallel, basolateral apophyses short, 7 times shorter than median lobe; corona absent, fibula present. Parameres subtriangular, slender apically, each one with a subapical tooth. Phallobase large, as long as wide, 1.7 times shorter than median lobe.

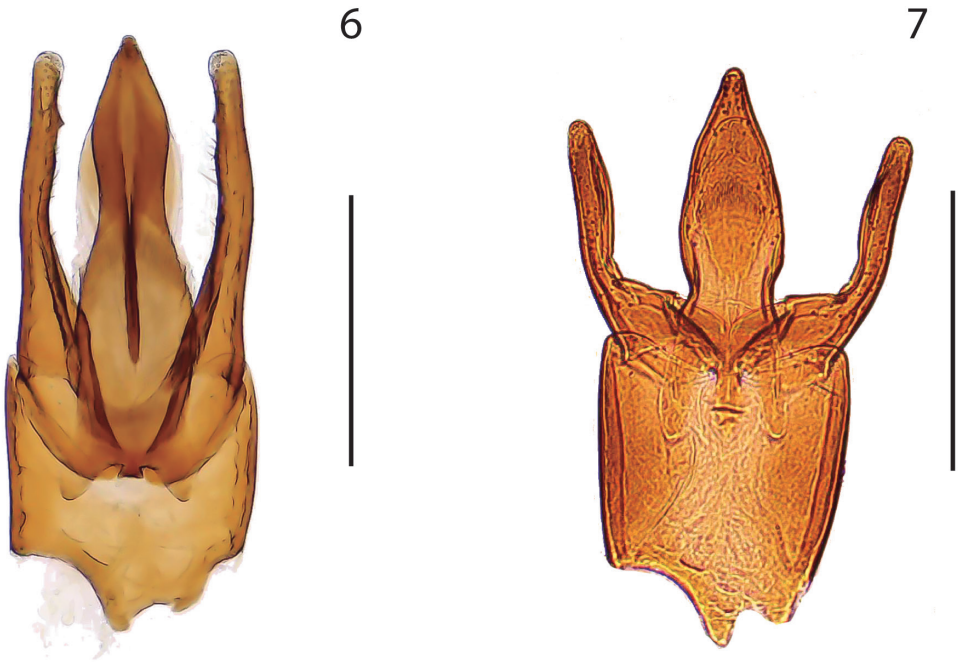
Female: externally similar to male.

Etymology. The new species is named after Ph.D. William D. Shepard who has always been selflessly generous with us sharing material and useful information about *Stethelmis* and other elmid genera.

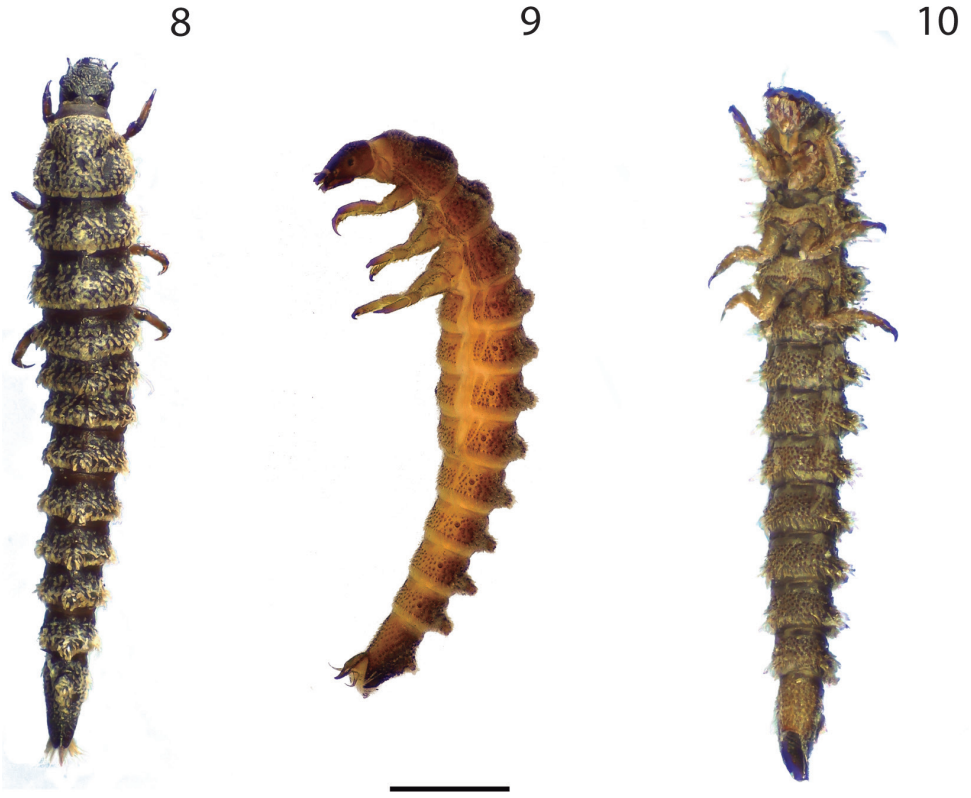
Stethelmis shepardi sp. nov. mature larva

Body (Figs. 8–10) elongate, slightly flattened dorsoventrally, widest at thorax, abdominal segments narrowing towards posterior end; body subtriangular in cross–section. Thorax and abdomen with dorsal setose gibbosities, larger and more evident in abdomen. Color reddish brown. Length: 5.20–6.40 mm; maximum width: 0.90–1.00 mm.

Head capsule (Fig. 11) exposed, anterior margin with tooth between base of antenna and clypeus, tooth reaching the clypeal margin. Surface covered with large, spherical setiferous tubercles, more densely clustered on disc, and several setae distributed as follows: a group of short slender setae on side of parietale; two long setae on basal third on each side of frontal lines; several long slender setae surrounding stemmata; short ramose setae on anterolateral margin, on each side of frontal line, near base of antenna; a row of ramose setae on



Figures 6–7 - Male genitalia of *Stethelmis* spp. (**6**) aedeagus of *Stethelmis shepardi*; (**7**) aedeagus of *Stethelmis kaszabi*. Scale bars: Figs. 6–7: 0.25 mm.



Figures 8–10 - *Stethemis shepardi* mature larva, habitus. (**8**) dorsal view; (**9**) lateral view; (**10**) ventral view. Scale bar: Figs. 8–10: 1 mm.

anterior margin, near frontoclypeal suture and two large ramose setae on clypeal lateral margins, at base of anterior teeth. Coronal line very short and broad, frontal lines long, extending to inner margin of antennal sockets. Frontoclypeal suture feeble; clypeal margin smooth, slightly convex. Gula (Fig. 12) subtrapezoidal, slightly wider than maxillo–labial complex; basal margin wider and concave, distal margin narrower and convex; gular sutures poorly defined. Five stemmata on each side of head behind base of antennae.

Labrum (Figs. 14, 16) subrectangular, somewhat wider in anterior third; anterior margin slightly convex, anterolateral margins rounded, each with a row of three strong dorsal setae, outer two ramose, inner one stout and blunt; dorsal surface with two transversal rows of strong ramose setae arranged on anterior third. Ventral surface with anterior row of ramose setae, rest of ventral surface covered by short pubescence oriented mediad and posteriorly.

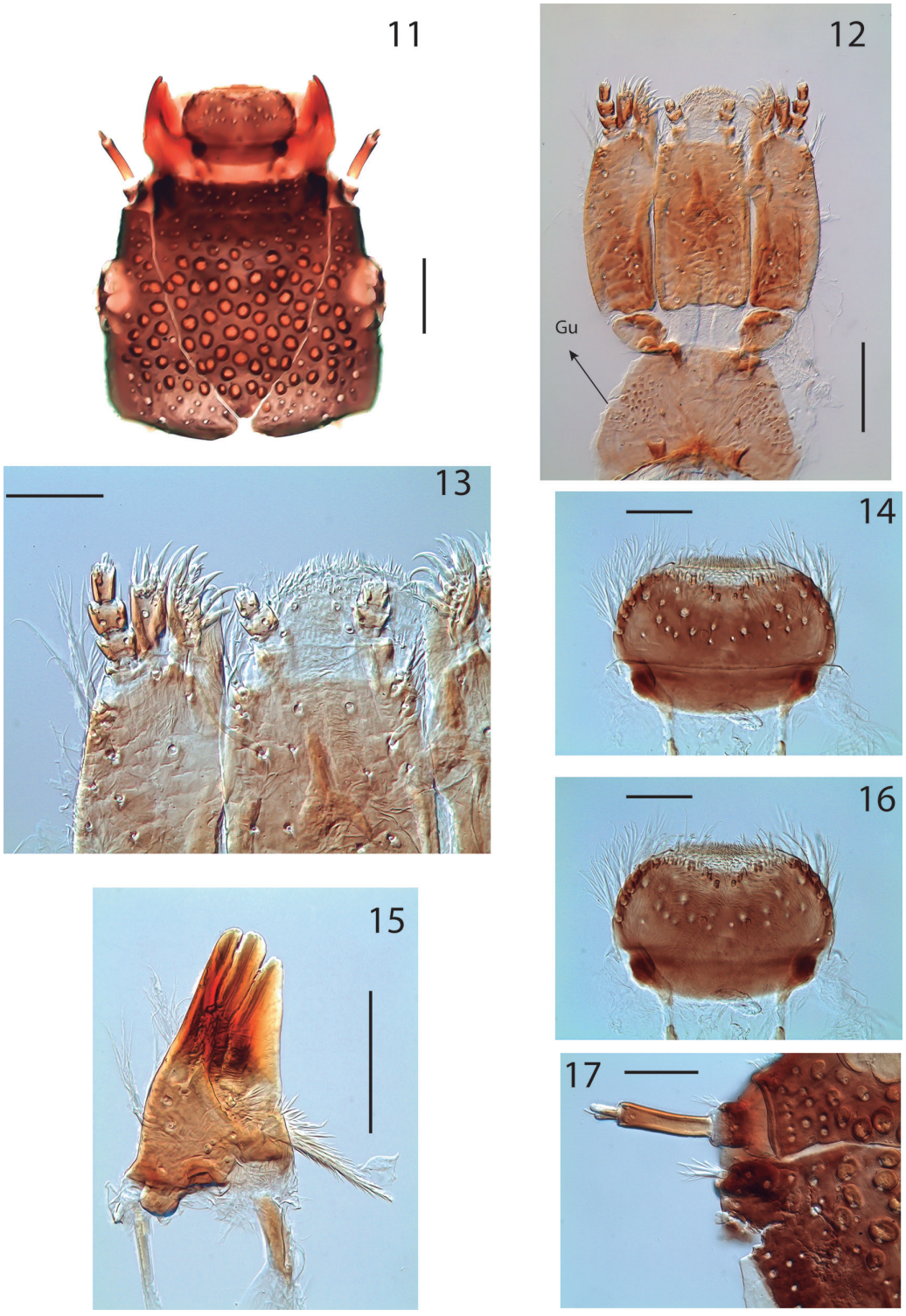
Antennae (Fig. 17) short, three–segmented, located on anterolateral corners of head capsule. Basal antennomere short, conical, wider than long, apically with a crown of ramose setae; second antennomere the longest, cylindrical, with a few short distal setae, bearing a sensorium subequal in length to third antennomere. Third antennomere the shortest, bearing a long apical seta.

Mandibles (Fig. 15) symmetrical, subtriangular, longer than wide. Apex with three blunt teeth. Dorsal surface with inner margin straight and sharp. Ventral surface with inner margin slightly concave, bearing a comb of long stout submarginal setae. Inner margin of mandible with long plumose prostheca; outer margin with two ramose setae close to midlength.

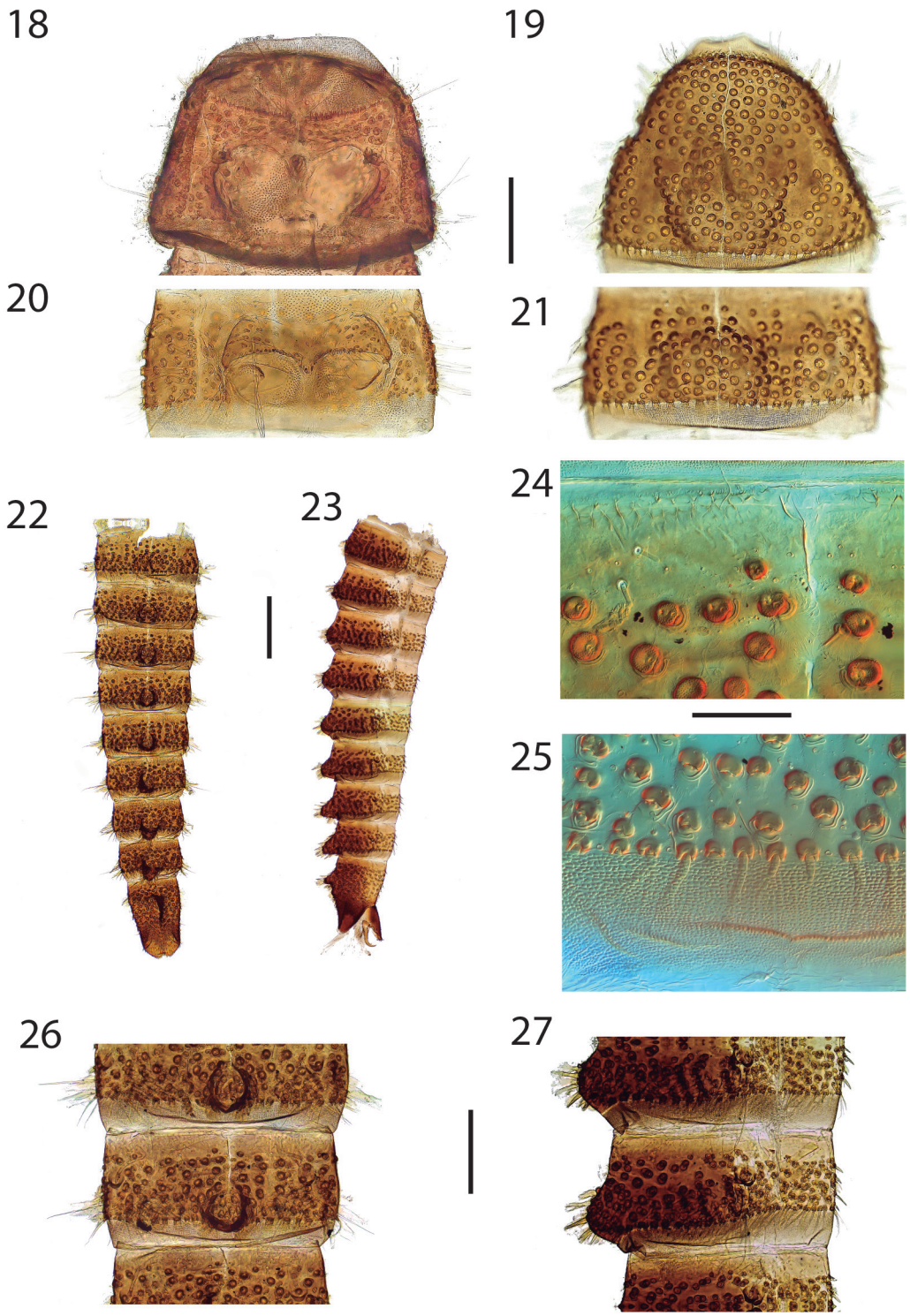
Maxillae (Figs. 12, 13) with short cardo, irregularly suboval, more or less transverse, 1.25–2.5 times wider than long, with small ramose seta close to anterior margin. Stipes the largest part, subrectangular, 2.35–3.04 times as long as wide, surface with several setae distributed as follows: a group of four tufted setae near posterior margin, several ramose setae dispersed on disc of stipes, a group of setae on anterolateral outer corner, near palpus (one posterior long slender seta and two anterior large ramose setae) and one small ramose seta between bases of lacinia and galea. Lacinia and galea well developed; lacinia subtriangular, fused to stipes, with inner margin bearing a group of stout setae; galea shorter than lacinia, elongate, with several apical setae. Palpus with four palpomeres, first palpomere the shortest, wider than long, second and third palpomeres slightly narrower, subequal in length, last palpomere slightly longer, narrower; first palpomere bearing one outer ramose seta, third palpomere with two setae, one on each anterolateral corner, last palpomere bearing several short apical setae and sensoria.

Labium (Figs. 12, 13) large, subdivided into a large postmentum and a short prementum, forming together with maxillae the maxillo–labial complex; postmentum subrectangular, 1.63–1.72 times as long as wide, ventral surface with several short ramose setae at each side of midline, distal corners each with one long stout seta and two shorter blunt conical setae. Prementum short, poorly sclerotized, wider than long, distal margins densely setose; palpus with two palpomeres, basal palpomere slightly shorter, distal palpomere with several distal setae and sensoria.

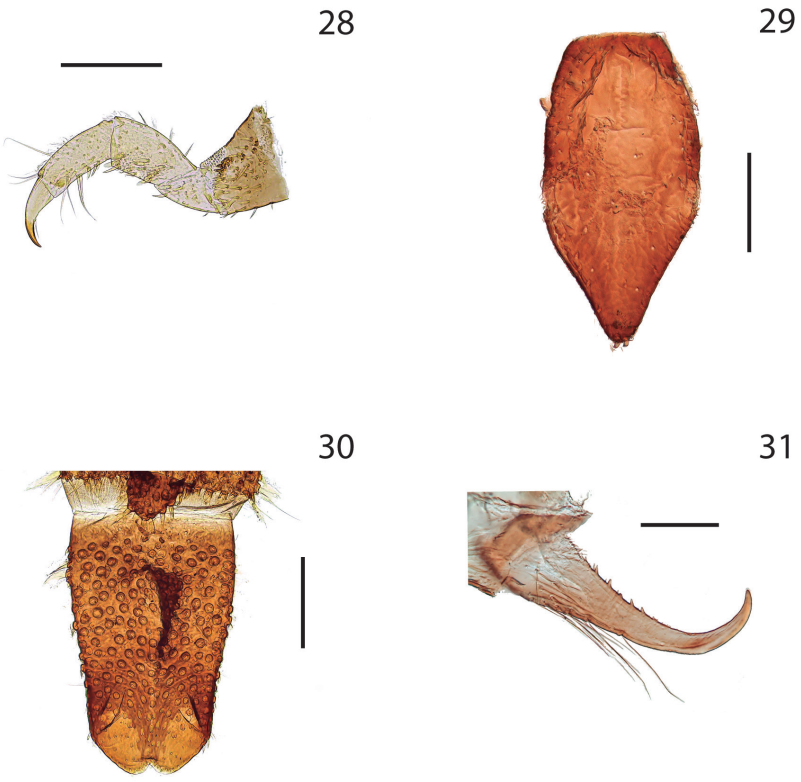
Thorax (Figs. 18–21) strongly sclerotized; notal plates with sagittal lines. Prothorax the largest segment, wider basally; pronotal plate subtrapezoidal, anterior corners rounded; notal plate with two oblique depressions, starting near the sagittal line and ending near the posterolateral margin; ventral region with seven sclerites: one large and irregularly shaped transverse anterolateral pair, one small, triangular lateral pair, one large subtrapezoidal posterolateral pair and one small suboval central sclerite; coxal cavities open. Meso– and metathorax shorter than prothorax; each



Figures 11–17 - *Stethemis shepardi* mature larva. (**11**) head capsule, dorsal view; (**12**) maxillo–labial complex and gula, ventral view; (**13**) detail of maxillo–labial complex showing distal end of right maxilla and labium; (**14**) labrum, dorsal view; (**15**) left mandible, dorsolateral view; (**16**); labrum, ventral view; (**17**) antennae, dorsal view. Scale bars: Figs. 11–12, 15: 0.10 mm; Figs. 13–14, 16–17: 0.05 mm**.** Abbreviation: Gu- gula.



Figures 18–27 - *Stethelmis shepardi* mature larva. (**18**) prothorax, ventral view; (19) prothorax, dorsal view; (**20**) mesothorax, ventral view; (**21**) mesothorax, dorsal view; (**22**) abdomen, dorsal view ; (**23**) abdomen, lateral view; (**24**) detail of basal portion of the fourth abdominal segment, dorsal view; (**25**) detail of distal margin of the fourth abdominal segment, ventral view; (**26**) detail of fifth abdominal segment, dorsal view; (**27**) detail of fifth abdominal segment, lateral view. Scale bars: Figs. 18–21, 26–27: Figs. 24–25: 0.10 mm.



Figures 28–31 - *Stethelmis shepardi* mature larva. (**28**) prothoracic leg; (**29**) operculum of ninth abdominal segment, ventral view; (**30**) ninth abdominal segment, dorsal view; (**31**) anal hook of opercular chamber. Scale bars: Figs. 28, 30: 0.25 mm; Figs. 29, 31: 0.10 mm.

segment ventrally with five sclerites: one large anterior subpentagonal sclerite, and two smaller subrectangular sclerites on each side; coxal cavities open. Legs (Fig. 28): with five sections; coxa the largest segment, subtriangular; trochanter smaller, subtriangular; femur and tibia elongate, femur slightly longer and wider than tibia; claw stout, slightly shorter than tibia; surface with several short spines.

Abdomen (Figs. 22–27, 29–31) well sclerotized, composed of nine segments, tapering towards posterior end; segments I–III with complete sagittal line, segments IV–VII with incomplete sagittal line, interrupted by dorsal gibbosities; segment IX the longest. Tergal plates with dorsal gibbosities on disc. Surface of all segments with randomly arranged spherical tubercles. Basal area, near anterior margin, of tergal plates of all segments glabrous with very few spines. Lateral margin with a group of long plumose setae. Posterior margin of tergal and sternal plates of segments I–IX with setiferous tubercles bearing a long plumose seta. Pleural sclerites present on segments I–V; sterna of segments I–VII subrectangular, wider than long. Segment IX elongate, 1.58–1.66 times as long as previous segment, without dorsal keel, ventrally with several spines on distal half; sternal area with apical gill chamber, operculum subpentagonal, distal end smoothly pointed with several strong and ramose setae externally and marginal sharp spines internally, covering a pair of strong distal hooks with inner margin smooth and bearing several long setae on outer margin. Spiracles present on segments I–VIII.

Types. Holotype, male Chubut Province, Esquel city, La Hoya recreational ski center, La Hoya

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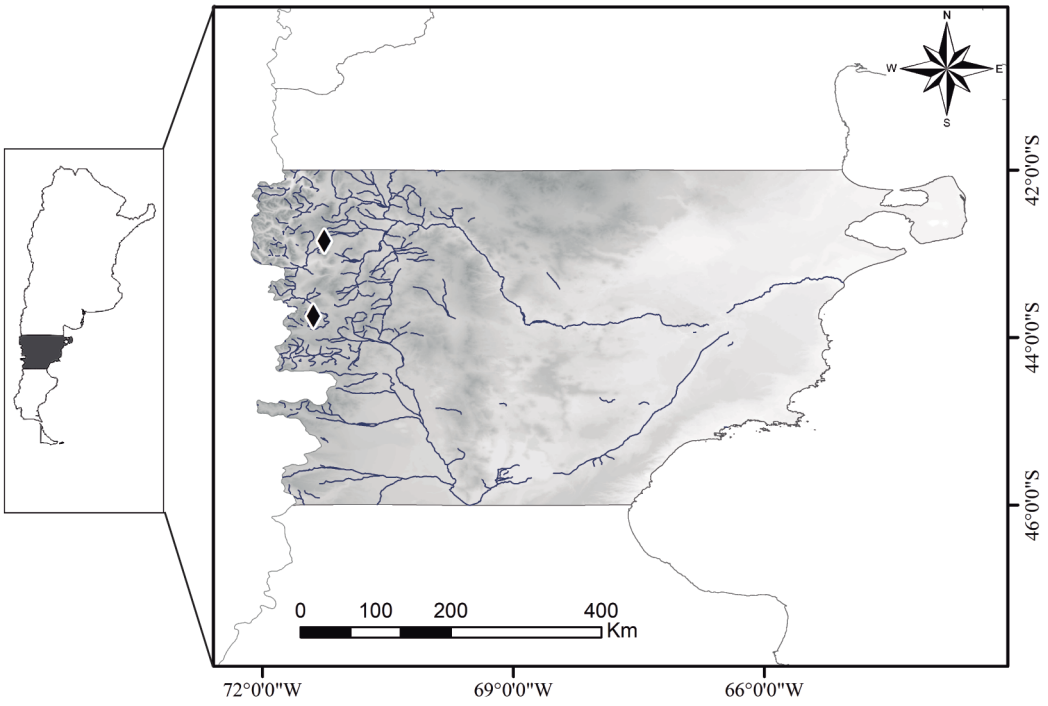

Figure 32 - Distribution map of *Stethelmis shepardi* sp. nov.

creek, 42°50'52.70"S, 71°15'38.72"W, 19–I–2017, 1165 m, N. Martínez Román leg. Paratypes (5):1 female Chubut province, Argentina. 32 km S from Corcovado town, at intersection with provincial road 44, Comisario creek, 43°44'42.36"S, 71°23'32.82"W, 760m, 14–III–2017, N. Martínez Román leg.; 1 specimen, same locality, 12/X/2007, P. Pessacq leg.; 2 females, same locality, 8/IV/2009, P. Pessacq leg., 1 female, same locality, V/2005, M. Archangelsky leg.

Larval Material examined. 11 specimens, Chubut province, Argentina. 32 km S from Corcovado town, at intersection with provincial road 44, Comisario creek, 43°44'42.36"S, 71°23'32.82"W, 760m, 12/X/2007, 8/IV/2009, P. Pessacq leg.; 11 specimens, same locality, V/2005, IX/2005, III/2006, M. Archangelsky leg.; 11 specimens, same locality, 14/III/2017, 24/III/2017, 22/X/2017, N. Martínez Román leg. 13 specimens, Chubut province, Argentina. Road to La Hoya recreational ski center, La Hoya creek, 42°50'52.70"S, 71°15'38.72"W, 1165 m,19–I–2017, 22–X–2017, N. Martínez Román leg.

Habitat (Figs. 32–37). La Hoya and Comisario creeks are located in the ecotone between Subantartic forest and the Patagonian steppe phytogeographical provinces. These areas are characterized by a gramineous steppe that becomes mixed with a *Nothofagus* spp. forest (León et al. 1998).

La Hoya creek is a 2nd order watercourse in the Esquel–Percy river drainage system in the Northwest of the Chubut Province (Patagonia, Argentina). Water velocity varies from 0.55 to 0.83 m s^{-1}. Water temperature ranges between 1 and 12°C. Mean depth is about 22 cm. Substratum is dominated by cobbles and boulders with lower proportions of gravel, sand and pebbles (Epele et al. 2011).

Comisario creek is a 1st order stream in the Carrenleufú–Pico rivers drainage system. Water velocity ranges between 0.10 and 1.66 m s^{-1}. Water

Figures 33–37 - Creek habitats of *Stethelmis shepardi* sp. nov. (**33**) and (**34**) Comisario creek; (**35**) and (**37**) boulder covered by bryophytes in Comisario and La Hoya creeks, respectively; (**36**) La Hoya creek. Photographs by Nicolás Martínez Román.

mean temperature ranges from 1.7 to 7.4°C. Mean depth is around 25 cm. Substratum is dominated by cobbles and boulders (Miserendino et al. 2011).

In both creeks, adults and larvae were collected almost exclusively on bryophytes attached to boulders that are constantly washed by stream flow. We rarely found the new species on the bottom of the creeks. Specimens of *S. shepardi* cohabit with *Luchoelmis cekalovici* Spangler and Staines in the same microhabitats. In the creek bed, specimens of *Hydora annectens* Spangler and Brown and *L. cekalovici* were also found.

Stethelmis kaszabi Hinton, 1970

To complete the original description of *S. kaszabi* Hinton we include a diagnosis of this species. We also add a description and an illustration of the male genitalia for the first time (Fig. 7).

DIAGNOSIS

Adults of this species may be distinguished from all the other known *Stethelmis* species by the following combination of characters:1) areas between punctures at depressions of pronotum glabrous; 2) tomentum on epipleura reaching the

middle of the third abdominal ventrite; 3) ventrite IV without a basal belt of tomentum; 4) aedeagus as is described below.

Male genitalia: (Fig. 7). Median lobe, broad, longer than parameres, subconical with a basal constriction, apex rounded, lateral margins subparallel, basolateral apophyses short, 4 times shorter than median lobe; corona present, fibula absent. Parameres subtriangular, slender apically without subapical tooth. Phallobase large, 1.55 times as long as wide, 1.21 times shorter than median lobe.

KEY TO MALES OF THE GENUS *Stethelmis*

1– Length less than 3 mm, surface between punctures at depressions of pronotum microreticulated, all epipleura with tomentum (except apex) …*Stethelmis chilensis* (Chile)
– Length more than 3 mm, surface between punctures at depressions of pronotum glabrous, tomentum on epipleura reaching the I or II ventrite ... 2

2– Ventrite IV with a basal belt of tomentum, middle tibiae with a short apical fringe of tomentum. Median lobe of aedeagus lanceolate and parameres with subapical "tooth" (Fig. 6) … *Stethelmis shepardi* sp. nov. (Argentina)
– Ventrite IV without tomentum, middle and hind tibiae each with an apical fringe of tomentum. Median lobe of aedeagus subconical and parameres without subapical "tooth" (Fig. 7) ... *Stethelmis kaszabi* (Argentina)

DISCUSSION

Complete comparative notes among *Stethelmis* species are difficult to perform since in the original descriptions, although very detailed, the male genitalia is not described. In the description of *S. chilensis* neither comments on morphology nor illustrations of male genitalia were included and the description of *S. kaszabi* was based on a female. The specimens we identified as *Stethelmis kaszabi* has all the diagnostic characters stated by Hinton: the size of our specimens range between 3.05–3.20, the surface of the pronotal impressions are smooth, the plastron on epipleura reaches the first abdominal ventrite and the abdominal plastron is restricted to the first three ventrites. The male genitalia of *Stethelmis shepardi* sp. nov. is very different from that of *S. kaszabi* (Figs. 6, 7). The median lobe of *S. shepardi* sp. nov. aedeagus has lateral margins not parallel, is wider at basal third, it stretches near apical third and the apex is more acute (almost parallel lateral margins, narrower at basal third, not stretching at apical third and apex little rounded in *S. kaszabi*). The parameres of these two species are quite different too. *Stethelmis shepardi* parameres are slightly longer and each of them bear a subapical tooth while in *S. kaszabi* the parameres lack this tooth. Also, the length relationship between median lobe and basal piece differs between these two species. The median lobe of *S. shepardi* sp. nov. is 1.7 times longer than phallobase, while in *S. kaszabi* this ratio is 1.21.

Regarding the external morphology, *S. shepardi* resembles *S. kaszabi*. Both species are similar in size (3.05–3.20 mm vs 3.00–3.20 mm), the tomentum on epipleura reaches the first abdominal ventrite and the surface between punctures at depressions of the pronotum are glabrous. However both species differ in that the tomentum reaches the base of the fourth abdominal segment in *S. shepardi* while in *S. kaszabi* it only reaches the third abdominal segment.

S. shepardi sp. nov. is different from *S. chilensis* in that is larger (length 3.05–3.20 vs 2.20–2.50 mm), the areas between punctures at pronotal depressions are smooth (microsculptured in *S. chilensis*), the tomentum on epipleura covers until the first abdominal ventrite (epipleura completely tomentose except very near apex in *S. chilensis*) and the abdominal tomentum reaches the basal

fourth of the sides of fourth ventrite (sides of fourth ventrite fully tomentose in *S. chilensis*).

The only *Stethelmis* described larva until this contribution is the one of *S. kaszabi.* Larvae of *S. shepardi* differ from those of *S. kaszabi* in that they are slightly narrower (ratio length/width 4.50–6.74 vs. 4.08–4.17 mm), but the most conspicuous differences are related to the dorsal surface of the body. *Stethelmis shepardi* sp. nov. larva has large dorsal setiferous gibbosities on the thoracic and abdominal tergites while *S. kaszabi* lacks these gibbosities and has small dark glabrous body tergites. There are also differences in the length of the frontal teeth (between base of antennae and clypeus); in *S. shepardi* the teeth reach the clypeal margin while in *S. kaszabi* exceed it.

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AUTHOR CONTRIBUTIONS

NRMR and MA performed the fieldwork; NRMR and VM performed most of the morphological studies on adult specimens; MA and NRMR performed most of the larval studies; NRMR and MA were in charge of the photographic documentation; all authors took part on the preparation of the manuscript.

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