A NEW WATER MITE SPECIES OF THE GENUS *SZALAYELLA* LUNDBLAD FROM CHILE (ACARI, HYDRACHNIDIA: HYGROBATIDAE)

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ABSTRACT: *Szalayella chilensis*, n. sp. is described from the Magellan Province of Chile.

KEY WORDS: Water mites, *Szalayella chilensis*, new species, male, female, deutonymph, running water.

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INTRODUCTION

The genus *Szalayella* (Lundblad, 1953) includes only two species: *S. incisa* (Lundblad, 1953) and *S. lundbladi* (Cook, 1980). The present paper describes male, female, and deutonymph characteristics of the Southern American water mite, *Szalayella chilensis* n. sp. (Hygrobatidae).

MATERIAL AND METHODS

The material was collected by V. Stolbov in 2014 in the running waters of Chile. The material was sampled with a mesh common hand net with a 250 μm mesh size. The mites were fixed with 75% ethanol.

Idiosomal setae and slit organs are named according to Tuzovskij (1987): *Fch*—frontales chelicerarum, *Fp*—frontales pedipalporum, *Vi*—verticales internae, *Ve*—verticales externae, *Oi*—occipitales internae, *Oe*—occipitales externae, *Hi*—humerales internae, *He*—humerales externae, *Hv*—humerales ventralia, *Sci*—scapulares internae, *Sce*—scapulares externae, *Li*—lumbales internae, *Le*—lumbales externae, *Si*—sacrales internae, *Se*—sacrales externae, *Ci*—caudales internae, *Pi*—praeanales internae, *Pe*—praeanales externae; i_1–i_5—slit organs.

Furthermore, the following abbreviations are used: P-1–5, pedipalp segments (trochanter, femur, genu, tibia and tarsus) i. e. P-3=genu; ac-1–ac-3, genital acetabula 1–3; I-Leg-1–6, first leg, segments 1–6 (trochanter, basifemur, telofemur, genu, tibia and tarsus) i. e. III-Leg-1=trochanter of third leg; L—length; W—width; D—diameter; n—the number of specimens measured. All measurements are given in micrometers (μm) and the length of appendage segments is dorsal length.

SYSTEMATIC PART

Family Hygrobatidae Koch, 1842
Genus Szalayella Lundblad, 1953

***Szalayella chilensis* Tuzovskij et Stolbov, sp.n.**

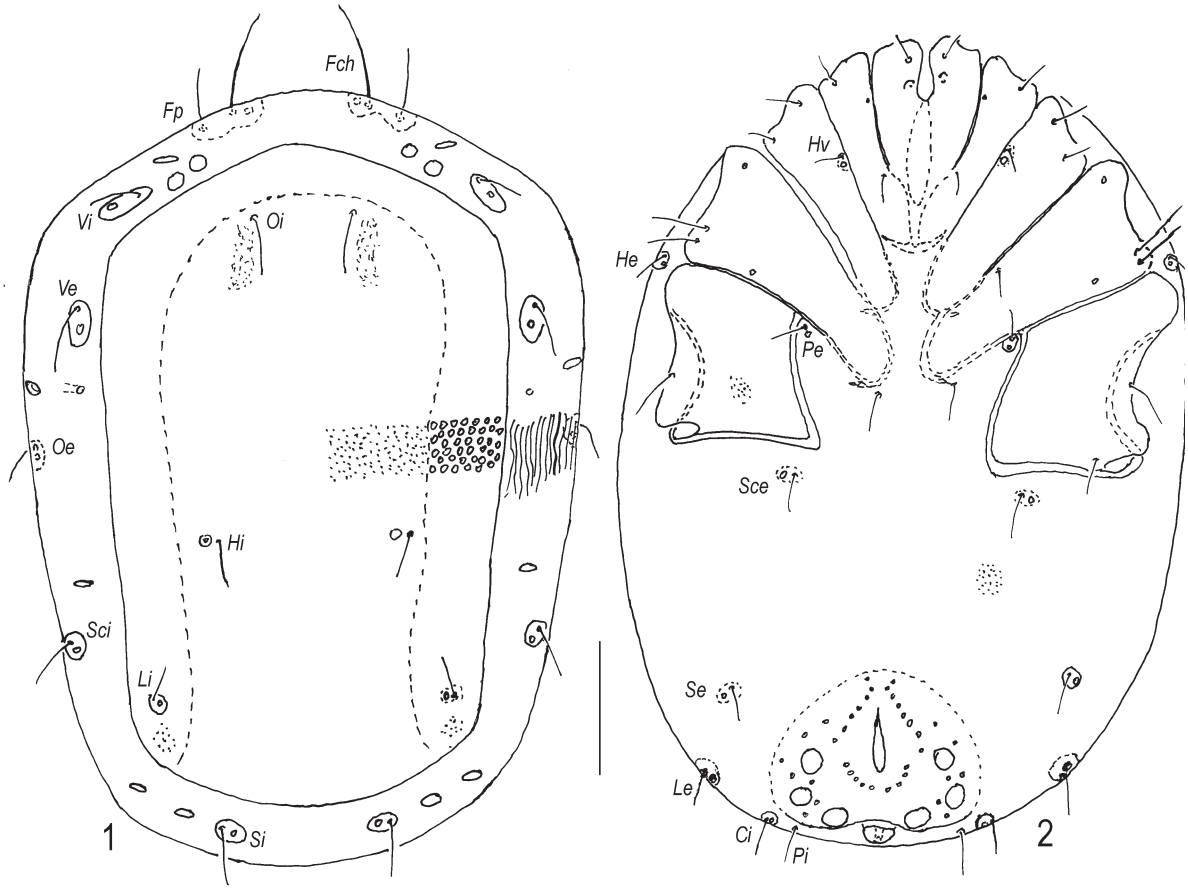
Figs. 1–16

Type material: Holotype: male, slide 9901, South America, Chile, Region de Magallanes y de la Antartica Chilena, Provincia de Magallanes, NW of Villa Tehuelche, forest stream (52°05′537″S 71°48′061″W), depth 0.4 m, substrates: stones and mosses, 14 November 2014, leg. V. Stolbov. Paratypes (5 males, 6 females and 1 deutonymph) were collected in some data and locality as holotype. All specimens were mounted in Hoyer's medium. The holotype is deposited in the collection of the Institute for Biology of Inland Waters (Borok, Russia).

DESCRIPTIONS

Male. Dorsal and ventral shields present. Dorsal shield large, elongated (L/W ratio 1.35–1.42) bearing trichobothria *Oi* anteriorly and two pairs setae in posterior half (Fig. 1). Dorsal shield with honeycomb-like structure anteriorly and laterally (the border of honeycomb-like structure is shown by a dashed line) and central part porous. Lateral eyes not in capsules, eye pigment present. Setae *Fch* and *Fp* located on common small platelet on each side anteriorly, still five pairs of setae and all slit organs (i_1–i_5) situated on a soft integument laterally and caudally.

The capitulum fused with the anterior coxal plates posteriorly (Fig. 2). Coxal plate I completely fused medially; medial margins of coxal plates II and III not solid, present only their traces. Glandularia *Hv* situated on coxal plate II closely to suture lines between coxal plates I and II. Suture lines between coxal plates III and IV somewhat



Figs 1–2. *Szalayella chilensis* sp. n., male: 1—dorsal view; 2—ventral view. Bar: 1–2=100 μm.

Y-shaped and surrounding glandularia *Pe*. Excretory pore sclerotized and located caudally. The genital field sub-terminal with three pairs of acetabula and 12–18 pairs of thin setae; acetabula oval or nearly circular; gonopore elongate pointed anteriorly, distance between ac-1 and gonopore larger than diameter or length ac-1 (Fig. 3). The ejaculatory complex (Fig. 4) with subequal proximal and distal arms, proximal chamber large, wider than long. The chelicera with large basal segment and short chela (Fig. 5).

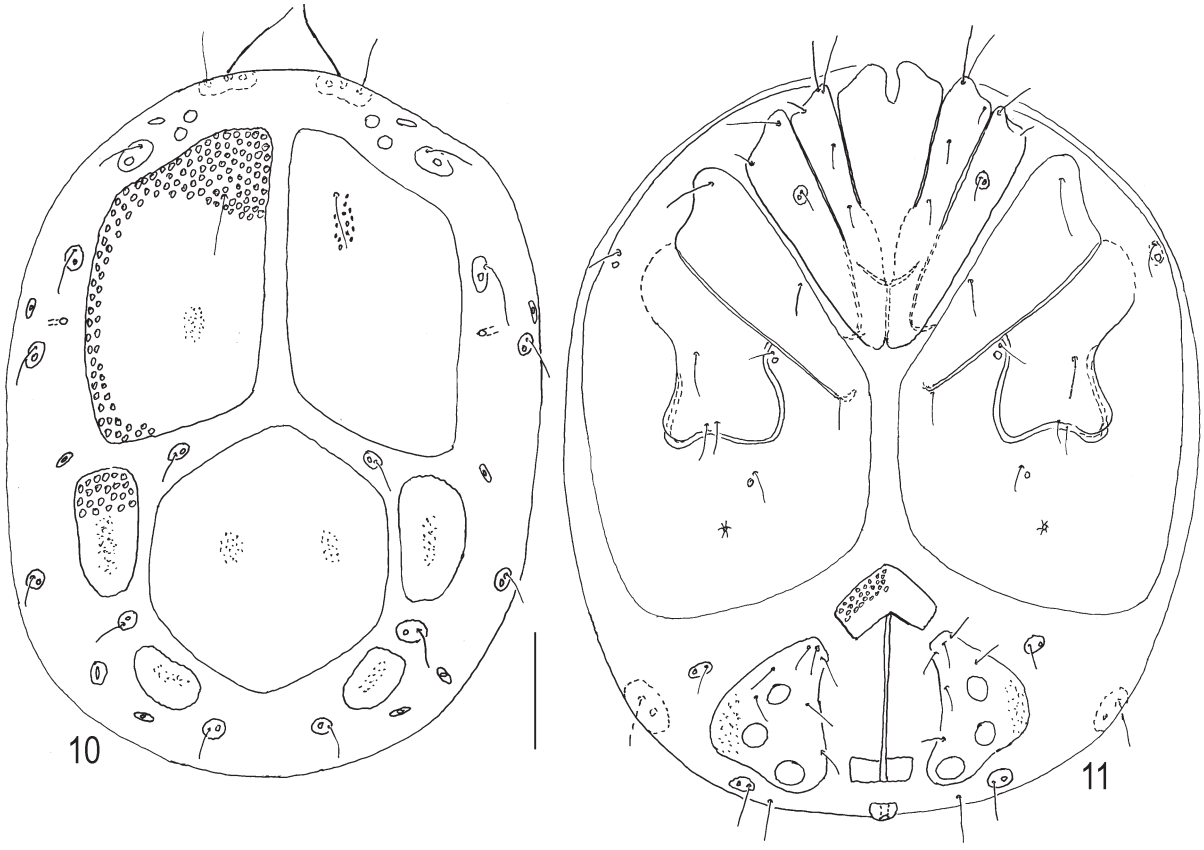
The pedipalp (Fig. 6) compact: P-1 short, with single short dorsodistal seta; P-2 with ventrodistal pointed projection, one to two proximal and two distal short subequal dorsal setae; P-3 with two dorsoproximal and two short, thick dorsodistal setae; P-4 relatively short, with two ventral setae distally to middle of segment, short distomedial peg-like seta and two thin distal setae.

Legs without swimming setae. Shape and arrangement of setae on legs I and IV as shown in Figs. 7 and 8, respectively. I–III-Leg-1–4 bearing only thick setae, I-Leg-5 with some thin dorsal and some thick ventrodistal setae. I–IV-Leg-6 with relatively small claw socket each, its length smaller than one-half of segment. Leg claws with two clawlets, external clawlet pointed, internal clawlet with rounded tip, lamella with convex ventral margin (Fig. 9).

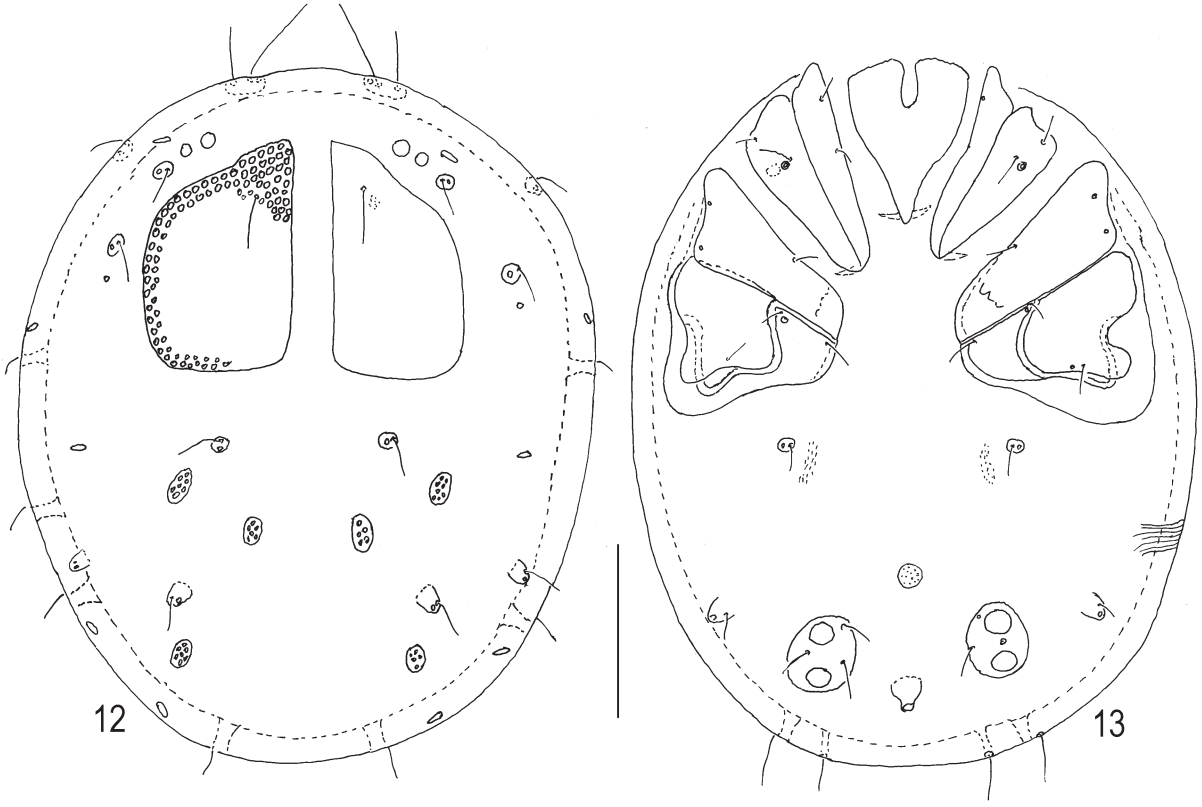
Measurements (n=6). Idiosoma L 510–530; dorsal shield L 150, W 125; genital acetabula (ac-1–3) L or D: 18–22, 18–24, 22–27; cheliceral segments: base L 120–126, chela L 57–60; pedipalp segments (P-1–5) L: 24–30, 60–66, 54–60, 60–66, 30–36; leg segments L: I-Leg-1–6: 54–60, 60–72, 60–66, 70–85, 82–87, 90–96; II-Leg-1–6: 54–60, 60–66, 60–70, 78–85, 84–102, 100–108; III-Leg-1–6: 55–72, 60–66, 78–90, 90–108, 108–115; IV-Leg-1–6: 95–102, 75–84, 95–102, 120–125, 130–145, 120–132.

Female. The dorsum (Fig. 10) with three pairs of plates or platelets and a single posteromedial plate. Anterior pair plates large and bearing trichobothria *Oi*. Second pair of platelets much smaller than anterior pair plates but larger than posterior pair platelets. In addition, setae *Fch* and *Fp* located on common small transverse platelet on each side. Excretory pore sclerotized and situated caudally. Surface of anterior plates porous, but with

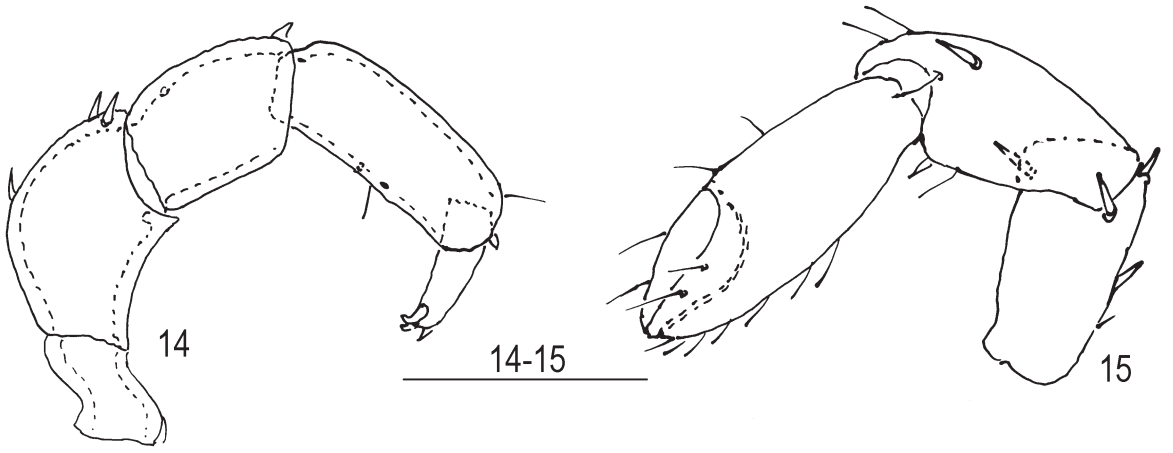
Figs 3–9. *Szalayella chilensis* sp. n., male: 3—genital field, 4—ejaculatory complex, 5—chelicera; 6—pedipalp, 7—I-Leg-1–6, 8—IV-Leg-1–6, 9—claw. Bars: 3–8=50 μm, 9=100 μm.



Figs 10–11. *Szalayella chilensis* sp. n., female: 10—dorsal view; 11—ventral view. Bar: 10–11=100 μm.



Figs 12–13. *Szalayella chilensis* sp. n., deutonymph: 12—dorsal view; 13—ventral view. Bar: 12–13=100 μm.



Figs 14–15. *Szalayella chilensis* sp. n., deutonymph: 14—pedipalp, lateral view; 15—I-Leg-4–6. Bar: 14–15=50 μm.

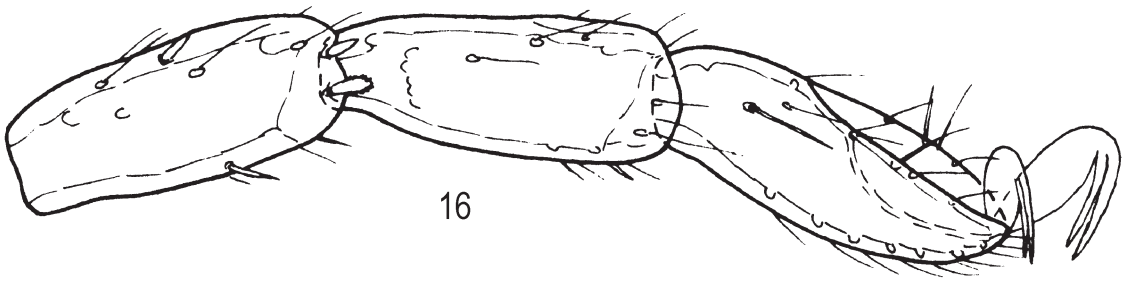


Fig. 16. *Szalayella lundbladi* Cook, 1980, male: I-Leg-4–6 (after Cook 1988).

honeycomb-like structure anteriorly and laterally. Posteromedial plate oval to hexagonal in shape.

Coxal plates in three groups (Fig. 11). Capitulum fused with anterior coxal group posteriorly, the last with short posterior apodemes directed laterally and usually with a small posteromedian indentation (occasionally indentation absent). Glandularia *Hv* shifted well forward on the coxal plates II. Suture lines between coxal plates III and IV somewhat Y-shaped and surrounding glandularia *Pe*. Posterior coxal groups with extensive secondary sclerotization and bearing setae *He* anteriolaterally and *Sce* posterior to margin of coxal plate IV. Seta and glandularia *Le* located small platelets on each side. Genital field terminal, gonopore and acetabular plates approximately equal in length. Acetabular plates more or less triangular, with three pairs subequal small acetabula and six to eight pairs thin, short setae. Setae *Pi* and *Ci* separated and located caudally.

The shape of chelicera, pedipalp and legs as in male.

Measurements (n=6). Idiosoma L 540–600; anterior dorsal plates L 190–215, W 130–140; posteromedial plate L 210–225, W 180–200; acetabular plates L 120–126, W 84–90; genital acetabula (ac-1–3) L or D: 20–30, 20–30, 27–33; cheliceral segments: base L 120–130, chela L 58–60; pedipalp segments (P-1–5) L: 28–31, 72–84, 60–66, 65–73, 36–42; leg segments L: I-Leg-1–6: 60–63, 65–73, 70–74, 84–90, 80–90, 95–102; II-Leg-1–6: 60–65, 65–70, 65–68, 75–85, 83–87, 95–102; III-Leg-1–6: 65–72, 60–66, 65–72, 84–90, 88–93, 100–105; IV-Leg-1–6: 100–108, 78–85, 90–102, 130–135, 144–150, 130–145.

Deutonymph. Dorsum (Fig. 12) with a pair of large anterior plates and three pairs of small platelets, i. e. one pair posteromedial and two pairs posterolateral. Setae *Fch* and *Fp* located on common small platelet anteriorly on each side, other dorsal setae and all slit-organs situated on a soft integument.

Coxal plates in four group (Fig. 13). Capitulum free. Glandularia *Hv* located on half way between anterior and posterior margins of coxal plates II.

Posterior coxal plates with slightly developed secondary sclerotization. Genital field sub-terminal, acetabular plates oval well separated, with two subequal acetabula and three thin genital setae each. Excretory pore sclerotized and situated slightly posterior to genital field.

Pedipalp (Fig. 14) compact, P-1 short, without seta; P-2 with single proximal and two dorsodistal short, thick setae; P-4 with short distomedial peg-like.

Legs are similar to those of adult but with smaller number of setae (Fig. 15).

Measurements (n=1). Idiosoma L 390; anterior dorsal plates L 138, W 78; acetabular plates L 43, W 36; genital acetabula (ac-1– ac-2) L or D: 15–17, 15–16; cheliceral segments: base L 72, chela L 42; pedipalp segments (P-1–5) L: 19, 45, 38, 51, 22; leg segments L: I-Leg-1–6: 30, 35, 39, 42, 48, 65; II-Leg-1–6: 30, 39, 36, 48, 48, 67; III-Leg-1–6: 30, 35, 36, 48, 50, 72; IV-Leg-1–6: 48, 42, 51, 65, 80, 66.

DISCUSSION

The described species is similar to *Szalayella lundbladi* (Cook, 1980) but differs from the latter by the following characteristics (the character states of *S. lundbladi* are given in parentheses, data from Cook in 1988): **male**—the gonopore elongate, pointed anteriorly, Fig. 2 (oval); the distance between ac-1 and the gonopore larger than ac-1 L or D (smaller); I-Leg-5 with some long, thick distal setae, Fig. 7 (without thick distal setae, Fig. 16), I-Leg-6 claw socket smaller than one half of segment, Fig. 7 (larger than one half of segment, Fig. 16); **female**—setae *Pi* and *Ci* free (located on common platelets on each side).

Etymology. The species is named after the country (Chile) where it was collected.

Habitat. Running waters.

Distribution. South America (Chile: Magellan Province).

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