

A LIST OF IDENTIFIED TAXA*

The list includes number of specimens of each oribatid mite species and notes new records and overall known geographical distribution**:

Malaconothridae

Malaconothrus peruensis Hammer, 1961, 1 ex.
Distribution: Neotropical region, India.

Trhypochthoniidae

Archegozetes longisetosus Aoki, 1965, 7 ex.
Distribution: Tropics.

Hermanniellidae

Hermannobates dillerorum Ermilov, 2016, 1 ex.
Distribution: Peru.

Carabodidae

Carabodes (Klapperiches) excellens Balogh et Mahunka, 1969, 1 ex. Distribution: Neotropical region.

Liacaridae

Xenillus amicorum Ermilov, 2016, 3 ex. Distribution: Peru.

Xenillus davisorum Balogh, 1986, 2 ex. Distribution: Neotropical region.

Xenillus deformatus Balogh et Mahunka, 1969, 1 ex. Distribution: Peru.

Heterobelbidae

Heterobelba oxapampensis Beck, 1962, 2 ex. Distribution: Neotropical region.

Oppiidae

Aeroppia friedrichi Ermilov, 2016, 8 ex. Distribution: Peru.

Brachioppia cuscensis Hammer, 1961, 10 ex. Distribution: Neotropical region, India, Japan.

Gittella variabilis Ermilov, Sandmann, Marian et Maraun, 2013, 2 ex. Distribution: Neotropical region.

Lasiobelba (Antennoppia) parachistyakovi Ermilov, 2016, 43 ex. Distribution: Peru.

Neoamerioppia phoretica (Franklin et Woas, 1992), 3 ex. Distribution: Brazil.

Granuloppiidae

Hammerella (Varioppia) huanucoensis Ermilov, 2016, 1 ex. Distribution: Peru.

Teratoppiidae

Teratoppia reducta Balogh et Mahunka, 1969, 3 ex. Distribution: Neotropical region.

Suctobelbidae

Rhynchoppia puertoincaensis Ermilov, 2017, 1 ex. Distribution: Peru.

Rhynchoribatidae

Rhynchoribates (Rhynchoribates) spathulatus Balogh et Mahunka, 1969, 2 ex. Distribution: Neotropical region.

Peloppiidae

Ceratorchestes (Ceratorchestes) processus Ermilov, 2016, 5 ex. Distribution: Peru.

Ceratorchestes (Paraceratorchestes) globosus Balogh et Mahunka, 1969, 3 ex. Distribution: Bolivia.

Ceratorchestes (Paraceratorchestes) melzeri Ermilov, 2016, 11 ex. Distribution: Peru.

Microzetidae

Kalyptozetes bifurcatus Ermilov, 2017, 21 ex. Distribution: Peru.

Schalleria ramosa Balogh et Mahunka, 1969, 1 ex. Distribution: Neotropical region.

Epactozetidae

Truncozetes ecuadoriensis Ermilov, Sandmann, Marian et Maraun, 2013, 4 ex. Distribution: Ecuador.

Oribatellidae

Oribatella serrata Balogh et Mahunka, 1969, 10 ex. Distribution: Neotropical region.

Punctoribatidae

Lamellobates molecula (Berlese, 1916), 6 ex. Distribution: Tropics.

Drymobatidae

Drymobates silvicola Grandjean, 1930, 4 ex. Distribution: Antilles.

Mochlozetidae

Dynatozetes amplius Grandjean, 1960, 8 ex. Distribution: Neotropical region.

Dynatozetes sp., 5 ex. It is a new species, which is described in other paper.

Unguizetes incertus (Balogh et Mahunka, 1969), 3 ex. Distribution: Neotropical region.

Haplozetidae

Paraxylobates sp., 7 ex. It is a new species, which is described in another paper.

Protoribates curvicarinatus Ermilov y Friedrich, 2016, 1 ex. Distribution: Peru.

Protoribates paracapucinus (Mahunka, 1988), 2 ex. Distribution: Cosmopolitan.

Rostrozetes ovulum (Berlese, 1908), 29 ex. Distribution: Tropics, Subtropics.

Scheloribatidae

Perscheloribates (Perscheloribates) minusculus Hammer, 1961, 1 ex. Distribution: Neotropical region.

Perscheloribates (Perscheloribates) rostratus Hammer, 1958, 14 ex. Distribution: Neotropical region.

* Except ptyctimous mites.

** See mostly Subías (2004, updated 2017).

Perscheloribates (Ecuadoribates) olszanowskii Ermilov y Friedrich, 2016, 1 ex. Distribution: Peru.

Scheloribates (Scheloribates) elegans Hammer, 1958, 3 ex. Distribution: Tropics.

Scheloribates (Scheloribates) praeincisus praeincisus (Berlese, 1910), 1 ex. Distribution: Tropics, Holarctic region.

Scheloribates (Scheloribates) praeincisus acuticlava Pérez-Íñigo y Baggio, 1986, 113 ex. Distribution: Neotropical region.

Scheloribates (Bischeloribates) wachteli Ermilov et Friedrich, 2016, 36 ex. Distribution: Peru.

Scheloribates (Hemileius) sp., 15 ex. It is a new species, which is described in another paper.

Urubambates punctatus Hammer, 1961, 1 ex. Distribution: Peru.

Parakalummidae

Neoribates (Neoribates) peruensis Ermilov, 2016, 14 ex. Distribution: Neotropical region.

Galumnidae

Allogalumna (Allogalumna) antillensis (Mahunka, 1998), 1 ex. Distribution: Antilles.

Galumna (Galumna) flabellifera Hammer, 1958, 8 ex. Distribution: Tropics, Subtropics.

Galumna (Galumna) laselvae Balogh, 1997, 10 ex. Distribution: Neotropical region.

Galumna (Galumna) parazeucta Ermilov et Friedrich, 2016, 30 ex. Distribution: Peru.

Galumna (Cosmogalumna) ekaterinae Ermilov et Friedrich, 2016, 35 ex. Distribution: Peru.

Pergalumna (Pergalumna) bifissurata Hammer, 1972, 25 ex. Distribution: Polynesia, Neotropical region.

Pergalumna (Pergalumna) decoratissima Pérez-Íñigo et Baggio, 1986, 4 ex. Distribution: Neotropical region.

Pergalumna (Pergalumna) krisperi Ermilov et Friedrich, 2016, 22 ex. Distribution: Peru.

Pergalumna (Pergalumna) lenticulata Ermilov et Friedrich, 2016, 11 ex. Distribution: Peru.

Pergalumna (Pergalumna) paraboliviana Ermilov et Gwiazdowicz, 2015, 37 ex. Distribution: Peru.

Pergalumna (Pergalumna) parapassimpunctata Ermilov et Friedrich, 2016, 72 ex. Distribution: Peru.

Sacculogalumna hexasacculata Ermilov sp. n., 9 ex. Distribution: Peru.

Galumnellidae

Galumnopsis secunda (Sellnick, 1923), 11 ex. Distribution: Neotropical region.

Remarks. The list of identified Peruan oribatid mite taxa included 685 specimens, belonging to 56

species from 36 genera and 23 families. Of these, 24 species are known so far only from Peru, 22 species from the Neotropical region and other 10 species have more wide geographic distribution. The largest number of species belongs to the families Galumnidae (12 species), Scheloribatidae (9) and Oppiidae (5) and the genera *Pergalumna* (6), *Scheloribates* (5) and *Galumna* (4). The largest number of specimens belongs to the species *Scheloribates (Scheloribates) praeincisus acuticlava* (113 ex.) and *Pergalumna (Pergalumna) parapassimpunctata* (72 ex.). Eight species (*Neoamerioppia phoretica*, *Ceratorchestes globosus*, *Truncozetes ecuadoriensis*, *Drymobates silvicola*, *Dynatozetes amplius*, *Scheloribates elegans*, *Allogalumna antillensis*, *Galumnopsis secunda*), five genera (*Drymobates*, *Dynatozetes*, *Allogalumna*, *Sacculogalumna*, *Galumnopsis*) and two families (*Drymobatidae*, *Galumnellidae*) are recorded in Peru for the first time. One genus (*Sacculogalumna*) is recorded in the Neotropical region for the first time.

SYSTEMATICS

Sacculogalumna hexasacculata

Ermilov sp. n.

Figs. 1–20

Diagnosis. Body size: 1012–1178 × 879–996. Body surface microgranulate, prodorsum, notogaster, pteromorphs, anogenital region, genital and anal plates striate, epimere I and anterior part of pteromorphs reticulate. Rostrum rounded. Prodorsal setae setiform, well-developed, rostral and lamellar setae barbed, interlamellar setae, sparsely barbed, bothridial setae smooth, *in* longest, *ro* shortest. Sejugal suture complete. Notogastral lenticulus present. Three pairs of notogastral sacculi, *Sa* located between *la* and *lm*. Median pore absent. Subcapitular setae of medium size, *h* and *m* barbed, *a* slightly barbed. Lateral parts of anterior tectum of epimere I with one or two small teeth. Circumpedal carinae long. Epimeral setal formula 2–0–2–3; *1c* represented by alveoli, other setae thin, slightly barbed, *3c* and *4c* longest. Anogenital setae setiform, genital setae of medium size slightly barbed, aggenital, anal and adanal setae smooth. Adanal lyrifissures located parallel to anal plates. Postanal porose area elongate oval. Leg claws barbed on dorsal sides.

Description. Measurements. Very large species. Body length: 1079 (holotype: male), 1012–1178 (eight paratypes: four females and four males);

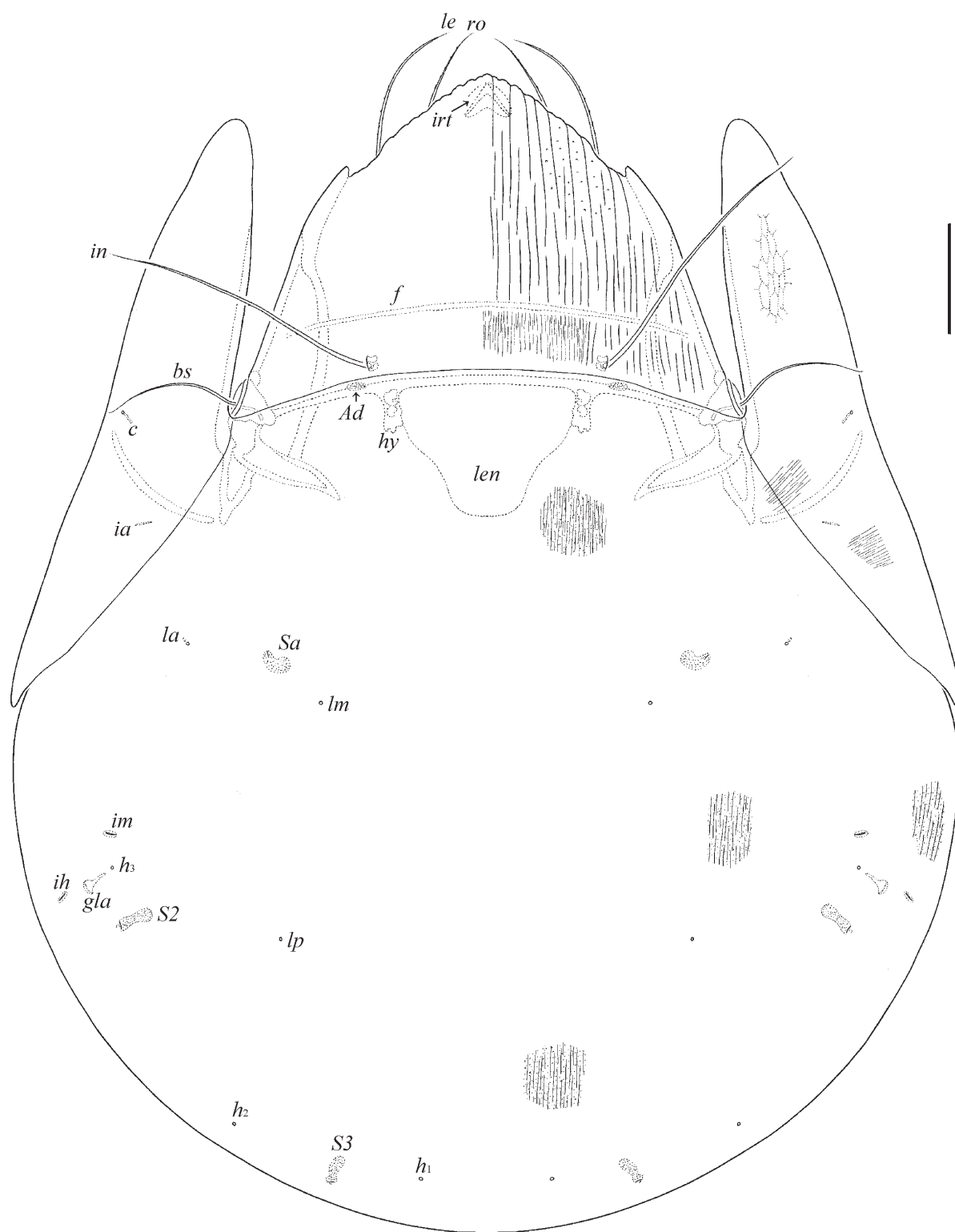


Fig. 1. *Sacculogalumna hexasacculata* Ermilov sp. n., adult: dorsal view. Scale bar 100 μ m.

notogaster width: 913 (holotype), 879–996 (eight paratypes). Females larger than males: 1095–1178 $\times$ 929–996 vs. 1012–1095 $\times$ 879–962.

Integument (Figs. 1–3, 6, 12–17). Body color dark brown to black. Body surface (including pteromorphs, subcapitular mentum, genital and anal

plates) densely microgranulate (diameter of granules up to 1), anterior part of prodorsum and central part of epimere I with larger granules (up to 4). Prodorsum (except basal part between interlamellar setae) heavily striate, notogaster, pteromorphs, anogenital region, genital and anal plates, subca-

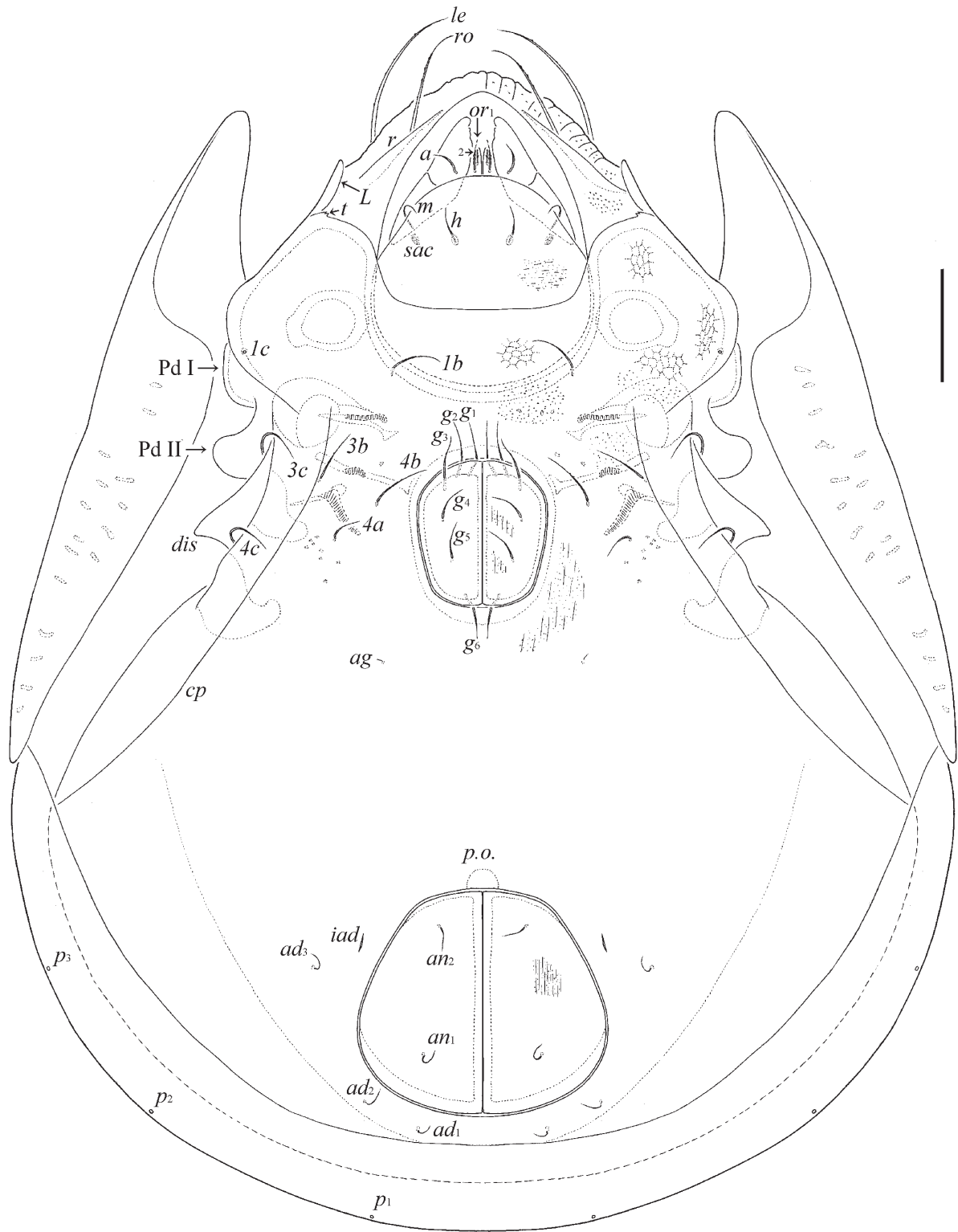
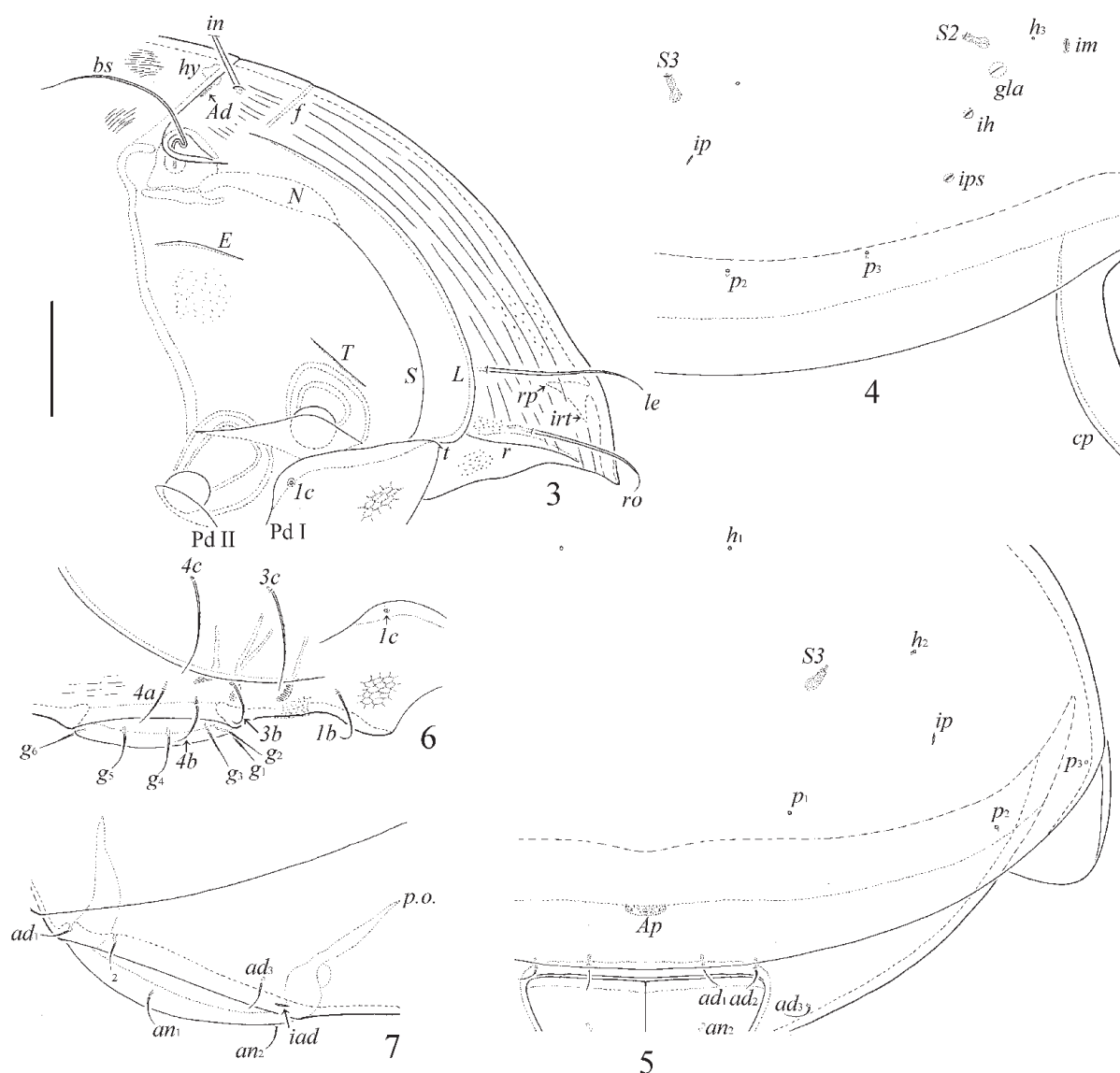


Fig. 2. *Sacculogalumna hexasacculata* Ermilov sp. n., adult: ventral view (legs not illustrated). Scale bar 100 μ m.

pitular mentum and part of prodorsum between interlamellar setae finely striate. Epimere I and anterior part of pteromorphs with reticulate pattern.

Prodorsum (Figs. 1–3, 12, 13). Rostrum narrowly rounded. Lobe with projects, creating M-shaped inner excavation and inner rostral tooth (*irt*).

Rostrophragma (*rp*) relatively thick. Basal part with slightly developed transverse furrow (*f*). Lamellar lines (*L*) slightly thickened, sublamellar lines (*S*) thin, both parallel, curving backwards. Lateral structures *N* and ridges *E* and *T* well-developed. Rostral (*ro*, 114–123) and lamellar (*le*, 155–164) setae seti-



Figs. 3–7. *Sacculogalumna hexasacculata* Ermilov sp. n., adult: 3—anterior part of body, lateral view (pteromorph, gnathosoma and legs I, II not illustrated); 4—lateral part of body, lateral view; 5—posterior part of body, posterior view; 6—epimeral region, lateral view; 7—ano-adanal region, lateral view. Scale bar 100 μ m.

form, barbed, *le* inserted between lamellar lines. Interlamellar setae (*in*, 287–307) setiform, with attenuate tips, sparsely barbed. Bothridial setae (*bs*, 168–184) setae setiform, smooth. Exobothridial setae and porose areas *Al* absent. Sejugal porose areas (*Ad*, 20 $\times$ 8) narrowly elongate oval, transversely oriented, posterolateral to *in*. Dorsophragmatic apophyses (*hy*) represented by group of low, roughened thickenings collectively elongated longitudinally, with variable number of components.

Notogaster (Figs. 1–5, 14, 15, 18–20). Sejugal suture complete. Triangular lenticulus (*len*) developed, but without distinct borders. With 10 pairs of setal alveoli and three pairs (*S1* absent) of elongate sacculi (*Sa*, *S2*, *S3*, length 28–36), *h*₃ inserted

anterior to *S2*, *Sa* located between *la* and *lm*. Median pore absent in females and males. All lyrifissures (*ia*, *im*, *ip*, *ih*, *ips*) distinct, *im* located anterior to *h*₃ and *S2*, *ip* posterolateral to *S3*, *ih* and *ips* posterolateral to *S2*. Opisthonotal gland opening (*gla*) anterolateral to *S2*.

Gnathosoma (Fig. 2). Morphology of subcapitulum, palps and chelicerae typical for many species of Galumnidae (e.g. Ermilov and Anichkin 2010; Ermilov and Corpuz-Raros 2017; Ermilov and Starý 2017). Subcapitulum size: 246–254 $\times$ 205–213. Three pairs of subcapitular setae setiform, *h* (49–57) and *m* (45–53) barbed, little thinner than *a* (45–53) slightly barbed. Two pairs of adoral setae (*or*₁, *or*₂, 24) setiform, densely barbed. Length of

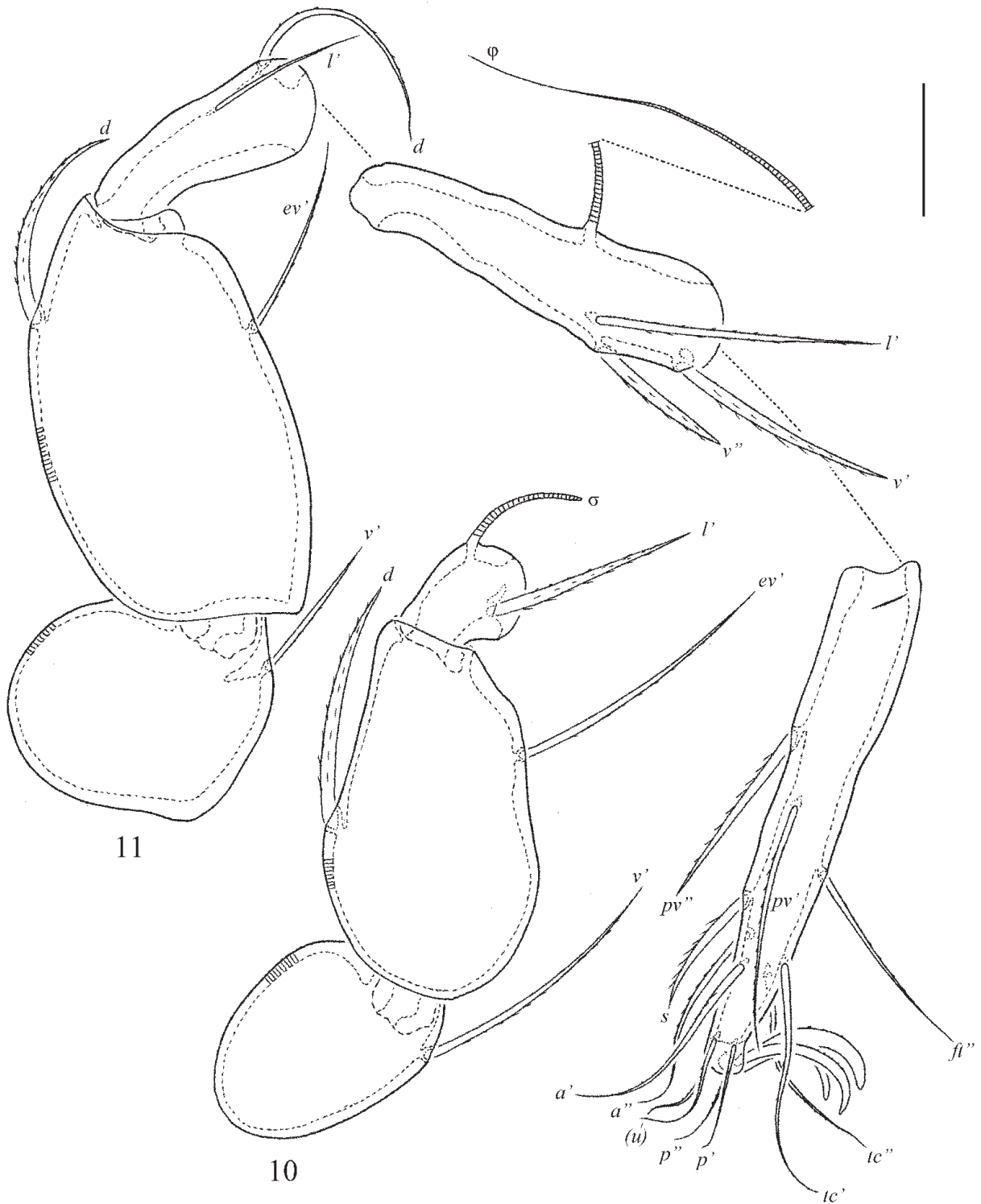


Figs. 8–9. *Sacculogalumna hexasacculata* Ermilov sp. n., adult: 8—leg I, without trochanter, right, antiaxial view; 9—femur and genu of leg II, right, antiaxial view. Scale bar 50 μ m.

palps: 180–188. Axillary sacculi (*sac*) distinct, slightly elongated (length 12). Postpalpal setae (10) spiniform. Length of chelicerae: 316–328. Dorso-paraxial sides with several conical teeth. Two cheliceral setae setiform, barbed, *cha* (82–90)

longer than *chb* (49–53). Trägårdh's organ (Tg) long, elongate triangular (length 102–106).

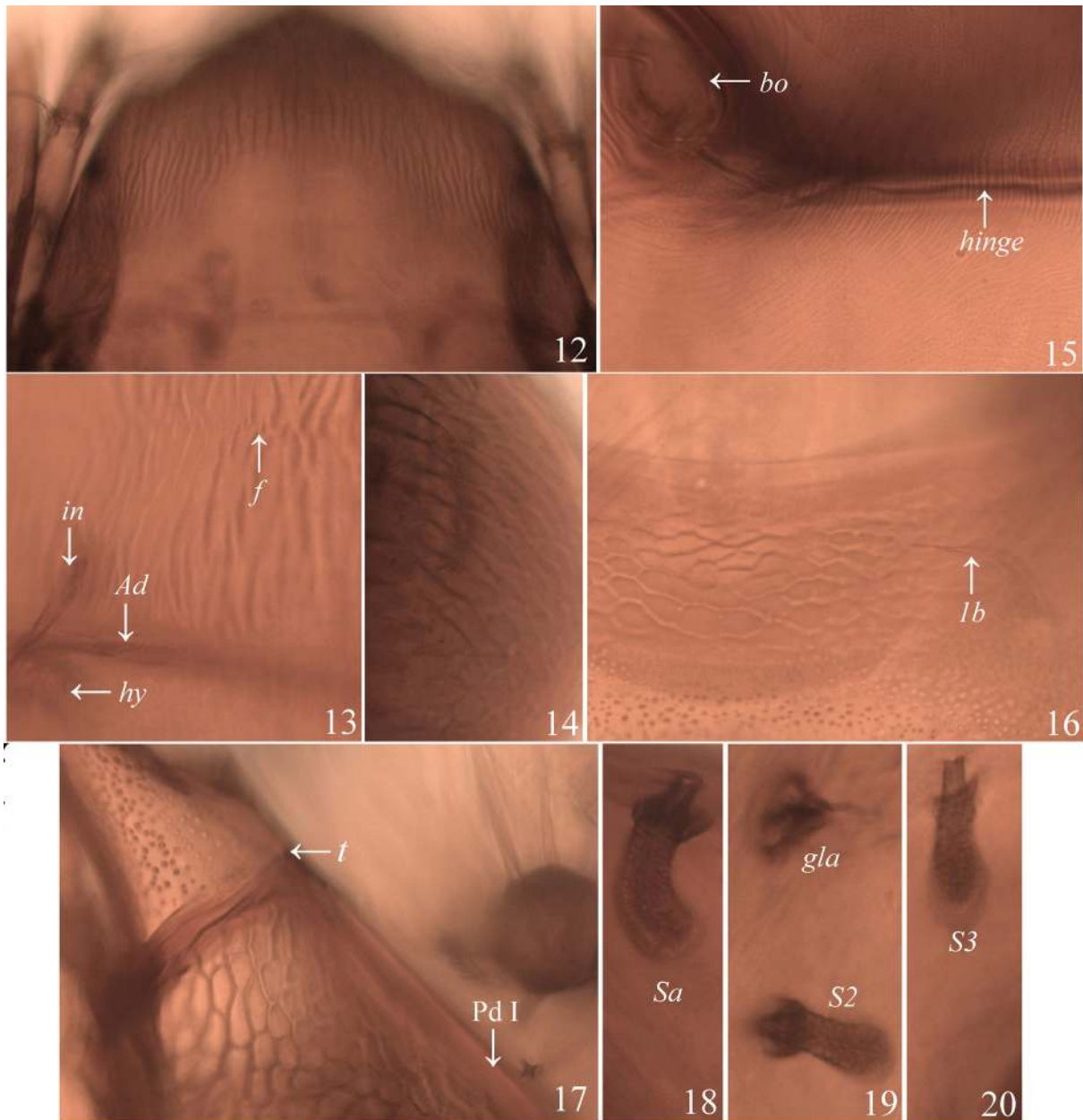
Epimeral and lateral podosomal regions (Figs. 2, 3, 6, 16). Lateral parts of anterior tectum of epimere I with one or two small teeth (*t*). Pedotecta I



Figs. 10–11. *Sacculogalumna hexasacculata* Ermilov sp. n., adult: 10—trochanter, femur and genu of leg III, left, antiaxial view; 11—leg IV, left, antiaxial view. Scale bar 50 μ m.

(Pd I) and II (Pd II) rounded distally in ventral view. Discidia (*dis*) triangular. Circumpedial carinae (*cp*) well-developed, reaching level of apodemes II. Epimeral setal formula 2–0–2–3. Epimeral setae *lc* represented by alveoli, other setae setiform, slightly barbed, *3c* and *4c* longest (77–90), *4a* (41–45) shorter than *1b*, *3b*, and *4b* (53–61).

Anogenital region (Figs. 2, 5, 7). Six pairs of genital setae (g_1 – g_6) of medium size (41–45), setiform, slightly barbed. Anterior edges of genital plates with two setae. One pair of aggenital (*ag*, 8–10), two pairs of anal (an_1 , an_2 , 24–28) and three pairs of adanal (ad_1 – ad_3 , 24–28) setae setiform, thin, smooth. Aggenital setae inserted located postero-



Figs. 12–20. *Sacculogalumna hexasacculata* Ermilov sp. n., adult, microscope images: 12—striate ornamentation on prodorsum; 13—striate ornamentation and transverse furrow in basal part of prodorsum; 14—reticulate ornamentation on pteromorph; 15—striate ornamentation on pteromorph and notogaster near to hinge; 16—reticulate ornamentation in central part of epimere I; 17—reticulate ornamentation in lateral part of epimere I; 18—saccule *Sa*; 19—saccule *S2* and opisthonotal gland; 20—saccule *S3*.

lateral to genital plates, distinctly closer to genital aperture than anal aperture. Adanal lyrifissures (*iad*) located parallel to anal plates and slightly distanced from them. Adanal setae ad_1 and ad_2 postanal, ad_3 paraanal and posterolateral to *iad*. Preanal organ (*p.o.*) elongate narrowly conical (Fig. 7). Distance ad_1 – ad_2 distinctly shorter than ad_2 – ad_3 . Unpaired postanal porose area (*Ap*) hardly visible, elongate oval (32 – 36×12 – 16). Ovipositor is typical for Galumnidae (Ermilov 2010), elongated (405×86), three blades (172) shorter than length of distal sec-

tion (beyond middle fold; 233). Setae of blades smooth, $\psi_1 \approx \tau_1$ (94) setiform, longer than thorn-like $\psi_2 \approx \tau_a \approx \tau_b \approx \tau_c$ (45–49) and coronal setae (*k*, 16).

Legs (Figs. 8–11). Median claw distinctly thicker than laterals, all barbed on dorsal sides. Porose areas on all femora and on trochanters III, IV slightly visible. Formulas of leg setation and solenidia: I (1–4–3–4–20) [1–2–2], II (1–4–3–4–15) [1–1–2], III (1–2–1–3–15) [1–1–0], IV (1–2–2–3–12) [0–1–0]; homologies of setae and solenidia indicated in Table 1. Solenidia of tibiae IV in-

serted in anterior part of the segments. Famuli on tarsi I inserted posterior to solenidia ω_1 .

Material examined. Holotype (male) and eight paratypes (four females and four males): see “Material and Methods” section.

Type deposition. The holotype is deposited in the collection of the Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, Lima, Peru; one paratype is deposited in the collection of the Bavarian State Collection of Zoology, Munich, Germany; one paratype is deposited in the collection of the Senckenberg Institute, Görlitz, Germany; six paratypes are deposited in the collection of the Tyumen State University Museum of Zoology, Tyumen, Russia.

Etymology. The specific name *hexasacculata* refers to the presence of six notogastral sacculi.

Differential diagnosis. *Sacculogalumna hexasacculata* Ermilov sp. n. is morphologically most similar to *S. samarensis* Ermilov et Corpuz-Raros, 2017 (see Ermilov and Corpuz-Raros 2017) in some general traits (rostral, lamellar and interlamellar setae well-developed; lamellar setae inserted between lamellar lines; bothridial setae setiform; three pairs of notogastral sacculi; pteromorphs with reticulate pattern). However, the new species differs from the latter by the presence of striate pattern on dorsal and ventral sides of body (vs. absent), rounded rostrum (vs. pointed), smooth bothridial setae (vs. barbed), complete sejugal suture (vs. interrupted medially), short and thin anal and adanal setae (vs. medium size, thickened), setiform genital and central epimeral setae (vs. thickened) and two setae on anterior edges of genital plates (vs. one), and the paraanal position of adanal lyrifissures in females and males (vs. inverse apoanal in females, preanal in males).

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Table 1.
Leg setation and solenidia of adult *Sacculogalumna hexasacculata* Ermilov sp. n.

Leg	Tr	Fe	Ge	Ti	Ta
I	v'	d, (l), bv''	(l), v', σ	(l), (v), φ ₁ , φ ₂	(ft), (tc), (it), (p), (u), (a), s, (pv), v', (pl), l'', ε, ω ₁ , ω ₂
II	v'	d, (l), bv''	(l), v', σ	(l), (v), φ	(ft), (tc), (it), (p), (u), (a), s, (pv), ω ₁ , ω ₂
III	v'	d, ev'	l', σ	l', (v), φ	(ft), (tc), (it), (p), (u), (a), s, (pv)
IV	v'	d, ev'	d, l'	l', (v), φ	ft'', (tc), (p), (u), (a), s, (pv)

Note: Roman letters refer to normal setae, Greek letters refer to solenidia (except ε = famulus). Single prime (') marks setae on the anterior and double prime (') setae on the posterior side of a given leg segment. Parentheses refer to a pair of setae. Tr—trochanter, Fe—femur, Ge—genu, Ti—Tibia, Ta—tarsus.