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Faunistic and taxonomic additions to the oribatid mites (Acari, Oribatida) of Cuba

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Original research

ABSTRACT

The present study is based on oribatid mite materials collected from leaf litter in two forest locations in Cuba. A list of 64 species, belonging to 47 genera and 31 families, is presented. Of these, one genus and two species are recorded for the first time from the Neotropical region; 17 species, one subgenus, six genera, and two families are recorded for the first time from Cuba. Two new species of the superfamily Oripodoidea—*Lagenobates fossatus* Ermilov and Kontschán **n. sp.** (Haplozetidae) and *Muliercula curvilineata* Ermilov and Kontschán **n. sp.** (Scheloribatidae)—are described.

Keywords *Lagenobates*; morphology; *Muliercula*; Neotropical fauna; new record; taxonomy
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Introduction

The fauna of oribatid mites (Acari, Oribatida) of Cuba remains insufficiently studied; at present, about 300 species (except Astigmata) are registered (Torre Santana & Cuervo Pineda 2019; Subías & Shtanchaeva 2021; Ermilov *et al.* 2021).

The primary goal of our paper is to present a list of all identified taxa including new records from two forest locations in Cuba; the secondary goal is to describe two new species belonging to the genera *Lagenobates* Weigmann and Miko, 2002 (family Haplozetidae) and *Muliercula* Coetzer, 1968 (family Scheloribatidae), based on adults.

The oribatid mite genus *Lagenobates* was proposed by Weigmann and Miko (2002), with *Oribata lagenula* Berlese, 1905 as type species. At present, the genus comprises only one species, which is distributed in the Holarctic region (Weigmann and Miko 2002). Subías (2022) considered *Lagenobates* as a subgenus of *Liebstadia* Oudemans, 1906. However, based on a set of generic traits (Weigmann and Miko 2002), we support the generic status of *Lagenobates*. Subías (2022) included *Areozetes ryabinini* Ermilov, 2018 and *Pseudoprotoribates luxtoni* Weigmann and Monson, 2004 in *Lagenobates*. However, since their morphology partially does not correspond to *Lagenobates*, we support the initial placement of these species.

The oribatid mite genus *Muliercula* was proposed by Coetzer (1968), with *Muliercula muliercula* Coetzer, 1968 as type species. At present, the genus comprises 12 species, which are collectively distributed in the Afrotropical, Neotropical and Oriental regions (Subías 2022). The main generic traits and an identification key to the known species of *Muliercula* were recently provided by Ermilov and Rybalov (2023).

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Lagenobates has not yet been registered in Cuba, and only one *Muliercula* species—*M. spora* Coetzer, 1968—is known from Cuba (Ermilov 2016).

Material and methods

Material

Samples (unknown data and collector; collection of the Tyumen State University Museum of Zoology, Tyumen, Russia; Gashev *et al.* 2005) were collected from two locations in Cuba:

1 – 22°1′N, 80°7′W, Cienfuegos Province, Sierra del Escambray, El Nicho, leaf litter in a mixed forest;

2 – 22°6′N, 81°6′W, Matanzas Province, leaf litter in a riparian (200 m from the Ocean) mixed forest.

Observation and documentation

For measurement and illustration, specimens were mounted in lactic acid on temporary cavity slides. All measurements are in micrometers. Body length was measured in lateral view, from the tip of the rostrum to the posterior edge of the notogaster; other structures were oriented to avoid parallax errors. Notogastral width refers to the maximum width in dorsal aspect. Setal lengths were measured perpendicular to their long axes, accounting for curvature. Formulas for leg solenidia are given in square brackets according to the sequence genu–tibia–tarsus. Drawings were made with a camera lucida using a Leica DM 2500 light microscope.

Terminology

Morphological terminology used in this paper mostly follows that of Grandjean (e.g. 1950, 1953, 1958); see Norton (1977) for leg setal nomenclature and Norton and Behan-Pelletier (2009) for overview.

Abbreviations

Prodorsum: *lam* = lamella; *tlam* = translamella; *slam* = sublamella; *Al* = sublamellar porose area; *tu* = tutorium; *ro*, *le*, *in*, *bs*, *ex* = rostral, lamellar, interlamellar, bothridial, and exobothridial seta, respectively; *Ad* = dorsosejugal porose area; *D* = dorsophragma; *P* = pleurophragma. Notogaster: *c*, *la*, *lm*, *lp*, *h*, *p* = notogastral setae; *Aa*, *A1*, *A2*, *A3* = porose areas; *Sa*, *S1*, *S2*, *S3* = sacculi; *ia*, *im*, *ip*, *ih*, *ips* = lyrifissures; *gla* = opisthonotal gland opening. Gnathosoma: *a*, *m*, *h* = subcapitular setae; *or* = adoral seta; *d*, *l*, *cm*, *acm*, *ul*, *su*, *lt*, *vt*, *inf*, *sup* = palp setae; ω = palp solenidion; *cha*, *chb* = cheliceral setae; *Tg* = Trägårdh's organ. Epimeral and lateral podosomal regions: *f* = furrow; *1a*, *1b*, *1c*, *2a*, *3a*, *3b*, *3c*, *4a*, *4b*, *4c* = epimeral setae; *PdI*, *PdII* = pedotectum I and II, respectively; *cus* = custodium; *dis* = discidium; *cir* = circumpedal carina. Anogenital region: *g*, *ag*, *an*, *ad* = genital, aggenital, anal, and adanal seta, respectively; *iad* = adanal lyrifissure; *Amar* = marginal porose area; *po* = preanal organ. Legs: *Tr*, *Fe*, *Ge*, *Ti*, *Ta* = trochanter, femur, genu, tibia, and tarsus, respectively; *p.a.* = porose area; ω, σ, φ = solenidia; ε = famulus; *d*, *l*, *v*, *ev*, *bv*, *ft*, *tc*, *it*, *p*, *u*, *a*, *s*, *pv*, *pl* = setae.

List of identified taxa

Ctenacaridae

Ctenacarus araneola (Grandjean, 1932): 2 (7 ex.). Distribution: Tropical, Subtropical.

Hypochthoniidae

Eohypochthonius crassisetiger Aoki, 1959: 1 (3 ex.), 2 (8 ex.). Distribution: southern Palaearctic, Australasian, Cuba.

Brachychthoniidae

Sellnickochthonius heterotrichus (Balogh, 1963): 1 (8 ex.). Distribution: Afrotropical, Panama. New record of the species in Cuba.

Cosmochthoniidae

Cosmochthonius lanatus (Michael, 1885): 2 (3 ex.). Distribution: Cosmopolitan. New record of the species in Cuba.

Haplochthoniidae

Haplochthonius chamela Mahunka and Mejía-Recamier, 1998: 2 (2 ex.). Distribution: Mexico, Iran. New record of the family, genus and species in Cuba.

Sphaerochthoniidae

Sphaerochthonius splendidus (Berlese, 1904): 2 (6 ex.). Distribution: Tropical, Subtropical. *Sphaerochthonius windsori* Schatz, 2003: 2 (5 ex.). Distribution: northern Neotropical.

Epilohmanniidae

Epilohmannia minuta Berlese, 1920: 1 (5 ex.). Distribution: Afrotropical, Oriental, Neotropical, central and eastern U.S.A. New record of the species in Cuba.

Malaconothridae

Tyrphonothrus hauseri (Mahunka, 1984): 2 (6 ex.). Distribution: Neotropical and Afrotropical.

Nothridae

Nothrus gracilis Hammer, 1961: 1 (4 ex.). Distribution: Neotropical and Oriental.

Hermanniellidae

Sacculobates horologiorum Grandjean, 1962: 2 (1 ex.). Distribution: Neotropical.

Licnobelbidae

Unknown genus and species: 2 (10 ex.). New record of the family in Cuba.

Gymnodamaeidae

Jacotella alexandrovskiyi Ermilov and Yurtaev, 2023: 1 (1 ex.). Distribution: Mexico. New record of the species in Cuba.

Pheroliodidae

Pheroliodes wehnckei (Willmann, 1930): 1 (1 ex.). Distribution: Neotropical. New record of the species in Cuba.

Cepheidae

Reticulocepheus decoui Vasiliu and Călugăr, 1977: 1 (1 ex.). Distribution: northern Neotropical.

Damaeolidae

Fosseremus laciniatus (Berlese, 1905): 1 (4 ex.). Distribution: Cosmopolitan.

Eremulidae

Eremulus cf. *rigidisetus* Balogh and Mahunka, 1969: 1 (1 ex.), 2 (3 ex.). Distribution: Neotropical.
Eremulus translamellatus Balogh and Mahunka, 1969: 2 (1 ex.). Distribution: Neotropical.
Eremulus cf. *truncatus* Hammer, 1971: 1 (2 ex.). Distribution: Oriental, Australasian, Neotropical. New record of the species in Cuba.

Arceremaeidae

Arceremaeus cubanus Balogh and Mahunka, 1980: 1 (1 ex.). Distribution: Neotropical.

Oppiidae

Aeroppia maldivesensis Ermilov and Joharchi, 2022: 1 (4 ex.). Distribution: Maldives. New record of the species in the Neotropical region.
Graptoppia sp.: 2 (4 ex.). New record of the genus in Cuba.
Multioppia (*Hammeroppia*) *wilsoni* Aoki, 1964: 2 (4 ex.). Distribution: Cosmopolitan.
Oppiella nova (Oudemans, 1902): 1 (2 ex.). Distribution: Cosmopolitan.
Pseudoamerioppia barrancensis (Hammer, 1961): 1 (18 ex.). Distribution: Neotropical, Philippines, western Africa, Canary Islands.
Striatoppia opuntiseta Balogh and Mahunka, 1968: 2 (7 ex.). Distribution: Tropical, Japan.

Suctobelbidae

Coartobelba sp.: 2 (1 ex.). New record of the genus in Cuba.
Suctobelbella (*Flagrosuctobelba*) *peracuta* (Balogh and Mahunka, 1980): 1 (2 ex.). Distribution: Afrotropical, Neotropical.
Suctobelbella (*Ussuribata*) *variosetosa* (Hammer, 1961): 1 (6 ex.). Distribution: Tropical, Subtropical, Japan.

Dampfiellidae

Beckiella reticulofemorata Balogh and Mahunka, 1979: 2 (1 ex.). Distribution: Cuba.

Carabodidae

Austrocarabodes sp.: 1 (1 ex.). New record of the genus in Cuba.
Gymnobodes sp.: 2 (1 ex.).
Yoshiobodes irmayi (Balogh and Mahunka, 1969): 1 (1 ex.). Distribution: Neotropical, southern U.S.A., Oriental. New record of the genus and species in Cuba.

Tectocepheidae

Tectocepheus velatus (Michael, 1880): 1 (1 ex.). Distribution: Cosmopolitan.

Licneremaeidae

Licneremaeus discoidalis Willmann, 1930: 1 (3 ex.). Distribution: Neotropical. New record of the species in Cuba.
Licneremaeus licnophorus (Michael, 1882): 2 (12 ex.). Distribution: Holarctic, Neotropical, Oriental.

Phenopelopidae

Eupelops fusiformis Ermilov, 2016: 1 (2 ex.). Distribution: Neotropical.

Microzetidae

Berlesezetes ornatissimus (Berlese, 1913): 1 (1 ex.), 2 (12 ex.). Distribution: Tropical, Subtropical.
Cosmozetes cubanus Balogh and Mahunka, 1974: 1 (2 ex.). Distribution: Cuba.
Schalleria sp.: 1 (3 ex.), 2 (1 ex.).

Ceratozetidae

Ceratozetella platyrhinoides (Hammer, 1961): 1 (1 ex.). Distribution: Neotropical. New record of the genus and species in Cuba.

Punctoribatidae

Lamellobates botari Balogh and Mahunka, 1977: 2 (4 ex.). Distribution: Neotropical. New record of the species in Cuba.
Lamellobates molecula (Berlese, 1916): 2 (9 ex.). Distribution: Tropical, Subtropical.

Mochlozetidae

Mochlozetes penetrabilis Grandjean, 1930: 1 (1 ex.). Distribution: Tropical, Japan. New record of the species in Cuba.
Unguizetes incertus (Balogh and Mahunka, 1969): 1 (2 ex.). Distribution: Neotropical.

Scheloribatidae

Muliercula curvilineata **n. sp.**: 1 (4 ex.).
Scheloribates acutirostris Călugăr and Vasiliu, 1983: 2 (8 ex.). Distribution: Cuba.
Scheloribates feideri Călugăr and Vasiliu, 1983: 2 (9 ex.). Distribution: Cuba.
Scheloribates praeincisus (Berlese, 1910): 2 (1 ex.). Distribution: Tropical, Subtropical.
Scheloribates cf. *rectus* Hammer, 1958: 1 (6 ex.). Distribution: Tropical. New record of the species in Cuba.
Scheloribates (*Perscheloribates*) *curiosus* (Ermilov, 2016): 2 (9 ex.). Distribution: Cuba.
Scheloribates (*Hemileius*) *suramericanus* (Hammer, 1958): 1 (1 ex.). Distribution: Neotropical, U.S.A. (Kentucky). New record of the subgenus and species in Cuba.

Haplozetidae

Lagenobates fossatus **n. sp.**: 1 (4 ex.). New record of the genus in the Neotropical region.
Protoribates capucinus Berlese, 1908: 1 (8 ex.), 2 (14 ex.) [population with specimens having sacculi or porose areas on the notogaster]. Distribution: Cosmopolitan. New record of the species in Cuba.
Protoribates paracapucinus (Mahunka, 1988): 1 (7 ex.) [population with specimens having sacculi instead porose areas on the notogaster]. Distribution: Tropical, Subtropical.
Protoribates paramadagascarensis Ermilov, 2016: 2 (12 ex.). Distribution: northern Neotropical**.**
Protoribates praeoccupatus Subías, 2004: 2 (17 ex.). Distribution: Neotropical and eastern Palaearctic. New record of the species in Cuba.
Rostrozetes ovulum (Berlese, 1908): 1 (45 ex.), 2 (8 ex.). Distribution: Tropical, Subtropical.

Galumnidae

Allogalumna brevisetosa (Bayartogtokh and Weigmann, 2005): 1 (3 ex.). Distribution: Mongolia, southeastern China. New record of the species in the Neotropical region.
Allogalumna cubana Balogh and Mahunka, 1979: 1 (9 ex.). Distribution: Neotropical.
Galumna sp.: 1 (5 ex.).

Pergalumna obvia (Berlese, 1914): 1 (21 ex.). Distribution: Semicosmopolitan. New record of the species in Cuba.
Pergalumna sp. A: 1 (35 ex.), 2 (14 ex.).
Pergalumna sp. B: 1 (3 ex.).

Discussion

Our list includes 64 species belonging to 47 genera and 31 families. One genus (*Lagenobates*) and two species (*Aeroppia maldivesensis*, *Allogalumna brevisetosa*) are recorded for the first time from the Neotropical region. Seventeen species (*Sellnickochthonius heterotrichus*, *Cosmochthonius lanatus*, *Haplochthonius chamela*, *Epilohmannia minuta*, *Jacotella alexandrovskiyi*, *Pheroliodes wehnckei*, *Eremulus* cf. *truncatus*, *Yoshiobodes irmayi*, *Licneremaeus discoidalis*, *Ceratozetella platyrhinoides*, *Lamellobates botari*, *Mochlozetes penetrabilis*, *Scheloribates* cf. *rectus*, *Scheloribates* (*Hemileius*) *suramericanus*, *Protoribates capucinus*, *Protoribates praeoccupatus*, *Pergalumna obvia*), one subgenus (*Scheloribates* (*Hemileius*)), six genera (*Haplochthonius*, *Graptoppia*, *Coartobelba*, *Austrocarabodes*, *Yoshiobodes*, *Ceratozetella*), and two families (Haplochthoniidae, Licnobelbidae) are recorded for the first time from Cuba. From the 55 identified species, seven species (including two new species) are known only from Cuba, 15 species are known only from the Neotropical region, 26 species have a broader distribution (more than one geographical region), and seven species are cosmopolitan or semicosmopolitan.

Taxonomy

Lagenobates fossatus Ermilov and Kontschán n. sp.

Zoobank: 4E7C8F98-6F94-4702-AB9E-F9DE2C77357B

(Figures 1, 2)

Material — Holotype (female) and three paratypes (three females): Cuba, 22°1′N, 80°7′W, Cienfuegos Province, Sierra del Escambray, El Nicho, leaf litter in mixed forest. The holotype is deposited in the collection of the Senckenberg Museum of Natural History, Görlitz, Germany; three paratypes are deposited in the collection of the Tyumen State University Museum of Zoology, Tyumen, Russia; all specimens are preserved in 70% solution of ethanol with a drop of glycerol.

Diagnosis — Body length: 270. Rostrum slightly protruding, narrowly rounded. Rostral, lamellar and interlamellar setae long, setiform, barbed; *ro* inserted on distinct tubercle; bothridial seta clavate, barbed. Notogastral setae short, setiform, smooth. Four pairs of rounded notogastral porose areas. Epimeral and anogenital setae short, setiform, smooth. Ventral plate with two thin, longitudinal furrows extend from the sternal epimeral region to the anal aperture. Leg tarsus I with 18 setae (*pl′* and *l″* absent); genu IV with one seta (*d*).

Description of adult — *Measurements* – Body length: 270 (holotype: female), 270 (three paratypes: all females); body width: 150 (holotype), 135–150 (paratypes).

Integument – Body color light brown, partially covered by thin layer of gel-like cerotegument. Body surface smooth.

Prodorsum – Rostrum slightly protruding, narrowly rounded. Lamella about 1/2 length of prodorsum; translamella, prolamella and tutorium absent; sublamella linear, well visible. Sublamellar porose area (4–6) rounded. Rostral (26–30), lamellar (43–47) and interlamellar (37–41) setae setiform, barbed; *ro* inserted dorsally on distinct tubercle; *le* inserted on the lamellar end; exobothridial seta (9) setiform, thin, smooth; bothridial seta (37–45) clavate, barbed; length of bothridial stalk approximately equal to head. Dorsosejugal porose area not observed.

Notogaster – Anterior notogastral margin convex medially. Pteromorph broadly rounded laterally. All setae (*c*: 13–17; others: 9) setiform, thin, smooth. All porose areas (*Aa*: 6–8; *A1*, *A2*, *A3*: 2–4) rounded. Lyrifissures *im* and *ip* distinct, *ia* poorly visible, *ih* and *ips* not observed.

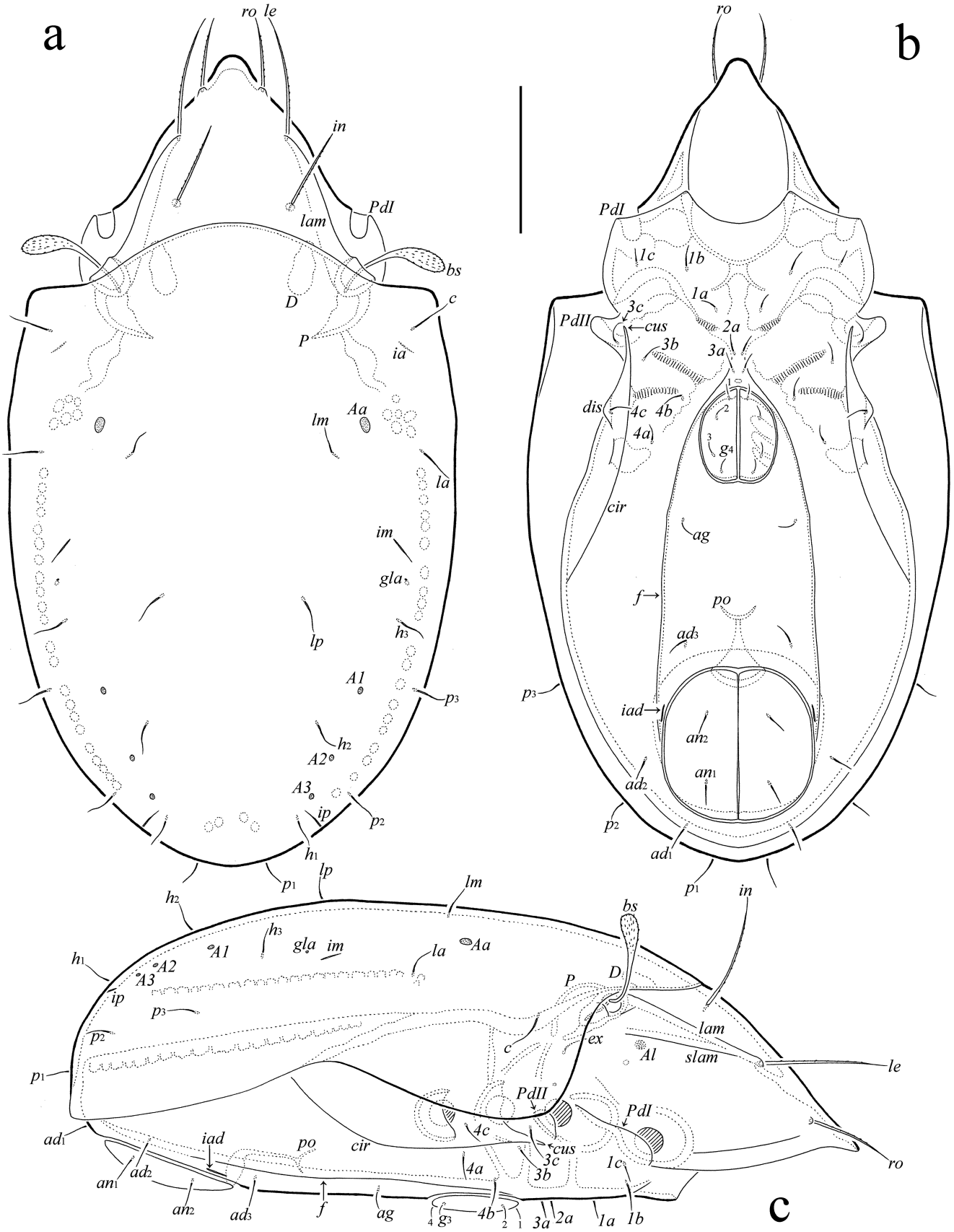

Figure 1 *Lagenobates fossatus* Ermilov and Kontschán **n. sp.**, adult: a – dorsal view (legs omitted); b – ventral view (gnathosoma and legs omitted); c – right lateral view (gnathosoma and legs omitted). Scale bar 50 µm.

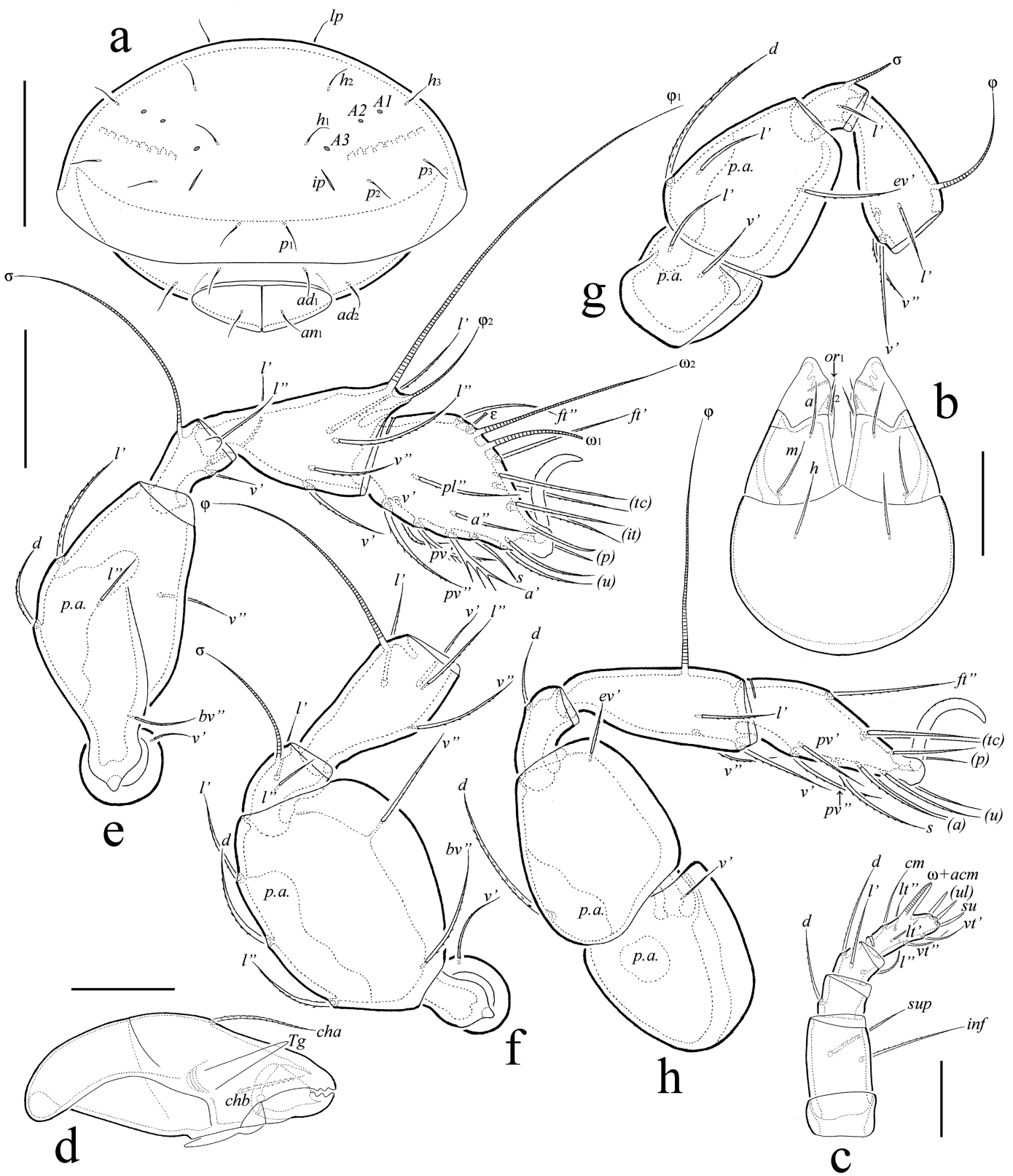

Figure 2 *Lagenobates fossatus* Ermilov and Kontschán **n. sp.**, adult: a – posterior view; b – subcapitulum, ventral view; c – palp, left, paraxial view; d – chelicera, left, paraxial view; e – leg I, right, antiaxial view; f – leg II (tarsus omitted), right, antiaxial view; g – leg III (tarsus omitted), left, antiaxial view; h – leg IV, left, antiaxial view. Scale bars 50 μm (a), 20 μm (b, d–h), 10 μm (c).

Gnathosoma – Subcapitulum size: 60–62 × 41–45; subcapitular (*a*, *m*: 11–13; *h*: 13–15) and adoral (6) setae setiform, roughened. Palp length: 37–41; postpalpal seta (4) spiniform, smooth. Chelicera length: 60–62; setae (*cha*: 19–22; *chb*: 11–13) setiform, barbed.

Epimeral and lateral podosomal regions – Epimeral formula: 3–1–3–3; setae (*1b*, *3c*: 11; *1c*: 6–7; others: 7–9) setiform, smooth. Custodium, discidium and circumpedal carina well developed.

Anogenital region – Two thin, longitudinal furrows extend from the sternal epimeral region to the anal aperture. Genital (4–6), aggenital (6–7), anal (9–11), and adanal (9–11) setae setiform, thin, smooth. Adanal lyrifissure distinct. Marginal porose area not observed.

Legs – Claw of all tarsi strong, slightly barbed on dorsal side. Dorsoparaxial porose area on femora I–IV and on trochanters III, IV present; ventrodistal porose area on tibia I–IV and proximoventral porose area on tarsi I–IV not observed. Formulas of leg setation and solenidia: I (1–5–3–4–18) [1–2–2], II (1–5–2–4–15) [1–1–2], III (2–3–1–3–15) [1–1–0], IV (1–2–1–3–12) [0–1–0]; homology of setae and solenidia indicated in Table 1; famulus of tarsus I short, erect, slightly swollen distally, inserted posterior to solenidion ω_2; solenidia ω_1 on tarsus I, ω_1 and ω_2 on tarsus II and σ on genu III bacilliform, other solenidia setiform.

Remarks — *Lagenobates fossatus* Ermilov and Kontschán **n. sp.** differs from the single representative of the genus—*Lagenobates lagenula* (Berlese, 1905) — in the morphology of the bothridial seta (clavate, barbed versus fusiform, smooth) and in the presence (versus absence) of two longitudinal furrows in the anogenital region.

Etymology — The specific epithet *fossatus* is from Latin *fossa* ("furrow" or "groove") and refers to two furrows on the ventral plate.

Muliercula curvilineata Ermilov and Kontschán n. sp.

Zoobank: A11A77C2-A76B-4756-A230-D986A5E476CB

(Figures 3, 4)

Material — Holotype (female) and three paratypes (two males and one female): Cuba, 22°1′N, 80°7′W, Cienfuegos Province, Sierra del Escambray, El Nicho, leaf litter in mixed forest. The holotype is deposited in the collection of the Senckenberg Museum of Natural History, Görlitz, Germany; three paratypes are deposited in the collection of the Tyumen State University Museum of Zoology, Tyumen, Russia; all specimens are preserved in 70% solution of ethanol with a drop of glycerol.

Diagnosis — Body length: 525–555. Notogaster and ventral plate striate. Rostrum slightly protruding, narrowly rounded. Translamella concave, shortly interrupted medially; lateral keel-shaped ridge and prolamella absent; tutorium medium-sized. Rostral, lamellar and interlamellar setae long, setiform, barbed; *ro* inserted dorsally on distinct tubercle; *le* inserted behind lamellar end; bothridial seta clavate, barbed. All notogastral setae short, setiform, smooth. Epimeral formula: 3–1–3–2; setae short, setiform, slightly barbed. Discidium and circumpedal carina well developed. Anogenital setae short, setiform, smooth. Heterotridactylous.

Description of adult — Measurements – Body length: 555 (holotype: female), 525–540 (three paratypes: two males and one female); body width: 330 (holotype), 330–345 (paratypes). No difference between males and female in body size.

Table 1 Leg setation and solenidia of adult *Lagenobates fossatus* Ermilov and Kontschán **n. sp.**

Leg	*Tr*	*Fe*	*Ge*	*Ti*	*Ta*
I	*v'*	*d*, *(l)*, *bv"*, *v"*	*(l)*, *v'*, σ	*(l)*, *(v)*, φ_1, φ_2	*(ft)*, *(tc)*, *(it)*, *(p)*, *(u)*, *(a)*, *s*, *(pv)*, *v'*, *pl"*, ε, ω_1, ω_2
II	*v'*	*d*, *(l)*, *bv"*, *v"*	*(l)*, σ	*(l)*, *(v)*, φ	*(ft)*, *(tc)*, *(it)*, *(p)*, *(u)*, *(a)*, *s*, *(pv)*, ω_1, ω_2
III	*l'*, *v'*	*d*, *l'*, *ev'*	*l'*, σ	*l'*, *(v)*, φ	*(ft)*, *(tc)*, *(it)*, *(p)*, *(u)*, *(a)*, *s*, *(pv)*
IV	*v'*	*d*, *ev'*	*d*	*l'*, *(v)*, φ	*ft"*, *(tc)*, *(p)*, *(u)*, *(a)*, *s*, *(pv)*

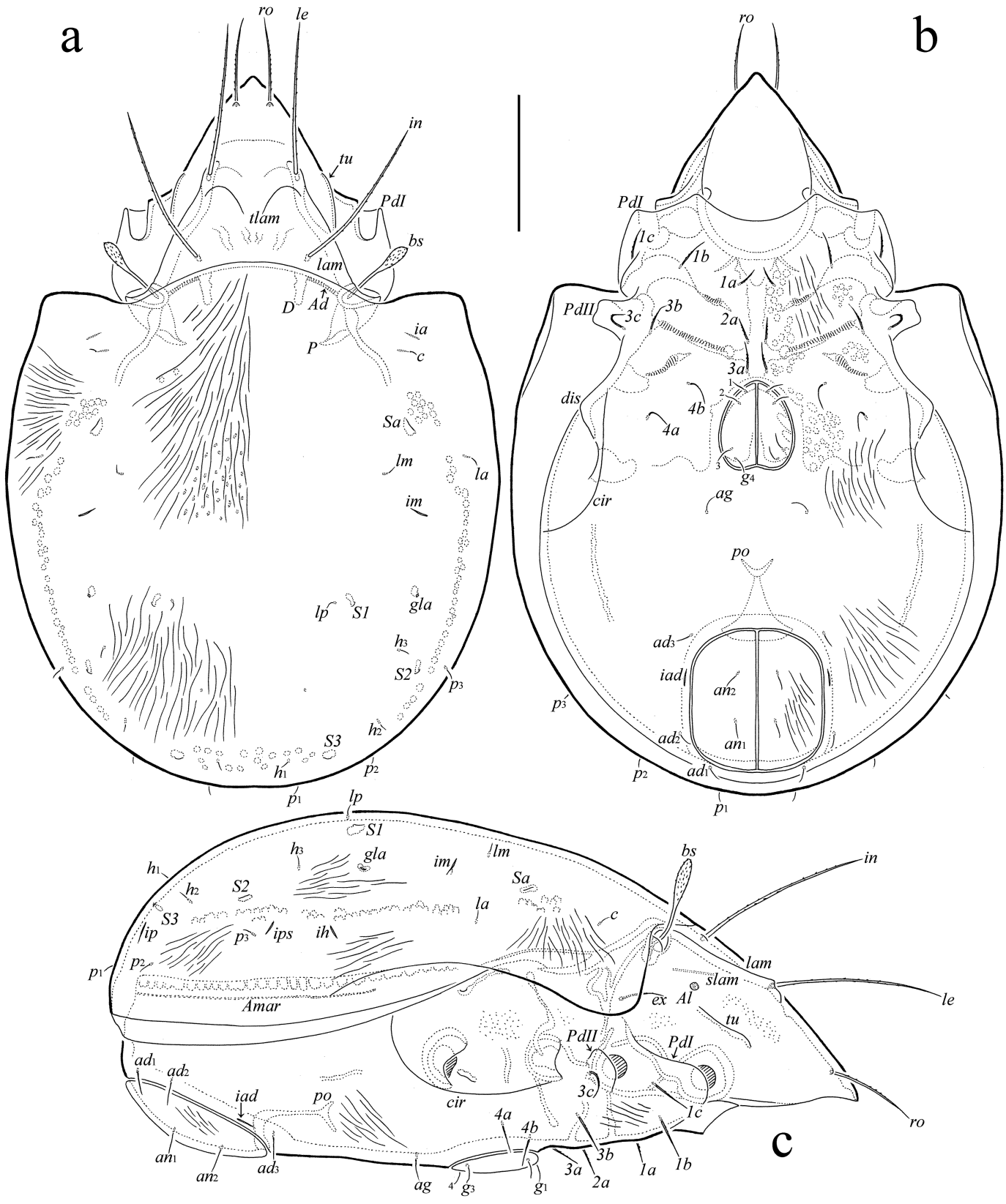

Figure 3 *Muliercula curvilineata* Ermilov and Kontschán **n. sp.**, adult: a – dorsal view (legs omitted); b – ventral view (gnathosoma and legs omitted); c – right lateral view (gnathosoma and legs omitted). Scale bar 100 μm.

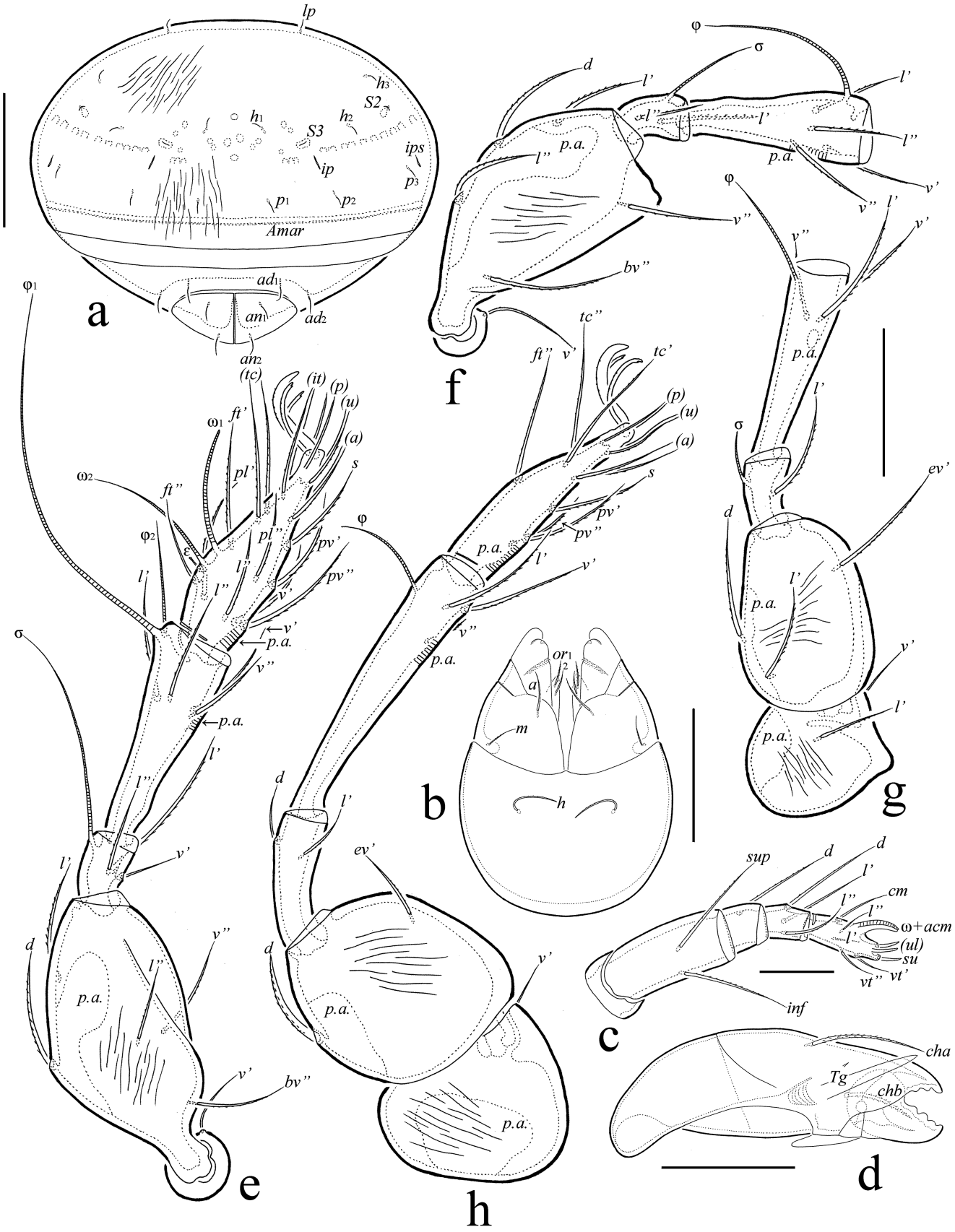

Figure 4 *Muliercula curvilineata* Ermilov and Kontschán **n. sp.**, adult: a – posterior view; b – subcapitulum, ventral view; c – palp, right, antiaxial view; d – chelicera, left, paraxial view; e – leg I, right, antiaxial view; f – leg II (tarsus omitted), right, antiaxial view; g – leg III (tarsus omitted), left, antiaxial view; h – leg IV, left, antiaxial view. Scale bars 100 μm (a), 50 μm (b, d–h), 20 μm (c).

Integument – Body color brown, partially covered by thin layer of gel-like cerotegument; lateral side of body with densely microgranulate cerotegument. Notogaster, subcapitular mentum, anogenital region (including anal plates), partially epimeral region, antiaxial side of leg femora I–IV and trochanters III, IV striate (striae medium-sized or long); central part of notogaster in one paratype with small indistinct foveolae (diameter up to 2); interlamellar region with indistinct thickenings.

Prodorsum – Rostrum slightly protruding, narrowly rounded (nearly pointed in one paratype). Lamella about 1/2 length of prodorsum; translamella linear, concave, shortly interrupted medially; lateral keel-shaped ridge absent; prolamella absent; tutorium well developed, medium-sized; sublamella poorly visible. Sublamellar porose area (7–11) rounded. Rostral (60–67), lamellar (116–124) and interlamellar (120–127) setae setiform, barbed; *ro* inserted dorsally on distinct tubercle; *le* inserted behind lamellar end; exobothridial seta (34–45) setiform, thin, slightly barbed; bothridial seta (64–71) clavate, barbed; length of bothridial stalk approximately equal to head. Dorsosejugal porose area present, diffuse.

Notogaster – Anterior notogastral margin convex medially. Pteromorph broadly rounded laterally. All setae (*c*: 6–7) setiform, thin, smooth. All sacculi with small opening and short, slightly elongate channel. Lyrifissures *im*, *ip*, *ih*, and *ips* distinct, *ia* poorly visible.

Gnathosoma – Subcapitulum size: 112–116 × 79–82; subcapitular (*a*: 19–22; *m*: 13–15; *h*: 22–30) and adoral (19–22) setae setiform, slightly barbed; *m* thinner than *a* and *h*. Palp length: 79–82; postpalpal seta (7) spiniform, smooth. Chelicera length: 124–129; setae (*cha*: 43–45; *chb*: 26–30) setiform, barbed.

Epimeral and lateral podosomal regions – Epimeral formula: 3–1–3–2; setae (*1b*, *3b*: 34–37; others: 19–26) setiform, slightly barbed. Discidium and circumpedal carina well developed.

Anogenital region – Genital (13), aggenital (13), anal (17–19), and adanal (17–19) setae setiform, thin, smooth. Adanal lyrifissure distinct. Marginal porose area present, complete.

Legs – Heterotridactylous; all claws barbed on dorsal side; both lateral claws with small tooth distoventrally. Dorsoparaxial porose area on femora I–IV and on trochanters III, IV, ventrodistal porose area on tibia I–IV and proximoventral porose area on tarsi I–IV present. Formulas of leg setation and solenidia: I (1–5–3–4–20) [1–2–2], II (1–5–2–4–15) [1–1–2], III (2–3–1–3–15) [1–1–0], IV (1–2–2–3–12) [0–1–0]; homology of setae and solenidia indicated in Table 2; famulus of tarsus I short, erect, slightly swollen distally, inserted posterior to solenidion ω_2; solenidia ω_1 on tarsus I, ω_1 and ω_2 on tarsus II and σ on genu III bacilliform, other solenidia setiform.

Remarks — *Muliercula curvilineata* Ermilov and Kontschán **n. sp.** differs from all other representatives of the genus in the presence (versus absence) of striae on the notogaster and in the anogenital region.

Etymology — The specific epithet *curvilineata* is from Latin *curva* ("curve") and *linea* ("line") and refers to the curved translamellar line.

Table 2 Leg setation and solenidia of adult *Muliercula curvilineata* Ermilov and Kontschán **n. sp.**

Leg	*Tr*	*Fe*	*Ge*	*Ti*	*Ta*
I	*v'*	*d*, *(l)*, *bv", v"*	*(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", v"*	*(l)*, σ	*(l)*, *(v)*, φ	*(ft)*, *(tc)*, *(it)*, *(p)*, *(u)*, *(a)*, *s*, *(pv)*, ω_1, ω_2
III	*l'*, *v'*	*d*, *l'*, *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)*

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