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Additions to the Cuban oribatid mite fauna (Acari, Oribatida), including new records and descriptions of two new species from the genera *Eupelops* (Phenopelopidae) and *Malaconothrus* (Malaconothridae)

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ABSTRACT — An annotated checklist of the Cuban oribatid mites (Acari, Oribatida) collected in leaf litter from Alejandro de Humboldt National Park, Valle de Viñales National Park and Cayo Santa Maria is provided; it includes 60 species from 48 genera and 33 families; of these, 30 species, 12 genera and 4 families are recorded for the first time in Cuba, and 4 species, 2 genera and 1 family are recorded for the first time in the Neotropical region. Two new species, belonging to the genera *Eupelops* (Phenopelopidae) and *Malaconothrus* (Malaconothridae), are described. *Eupelops fusiformis* Ermilov **n. sp.** differs from *E. geminus* (Berlese, 1916), *E. occultus* (Koch, 1835) and *E. torulosus* (Koch, 1839) by the presence of well-developed notogastral setae p_2 and p_3 and medially concave anterior notogastral tectum. *Malaconothrus humboldtensis* Ermilov **n. sp.** differs from *M. robustus* Hammer, 1958 by the presence of long notogastral setae e_1, e_2, h_2 and p_2 and simple rostral setae.

KEYWORDS — oribatid mites; Cuba; fauna; checklist; record; new species; *Eupelops*; *Malaconothrus*; morphology; systematics

INTRODUCTION

This work is a final part of our research of the Cuban oribatid mite fauna (Acari, Oribatida) (Ermilov and Tolstikov 2015; Niedbała and Ermilov 2015; Ermilov 2016). The main goal of the paper is to present the list of identified taxa with new records for Cuba as well as for the Neotropical region, and to describe and illustrate two new species, one belonging to the genus *Eupelops* Ewing, 1917 (Phenopelopidae), and another to *Malaconothrus* Berlese, 1904 (Malaconothridae).

MATERIALS AND METHODS

Material examined — Our results are based on collections that took place in the XXth century from three localities in Cuba (the material was kept in the insufficiently labelled collections of the late Dr. Lidia Golosova at Tyumen State University Museum of Zoology, Russia.):

- Cuba 1: Alejandro de Humboldt National Park, 20°30′N, 74°40′W, leaf litter in forest.
- Cuba 2: Valle de Viñales National Park, 22°40′56"N, 83°42′57"W, Ancon, leaf litter in forest.
- Cuba 3: Cayo Santa Maria, 22°66′21"N, 78°96′88"W, leaf litter in forest.

Methods — Specimens were mounted in lactic acid on temporary cavity slides for measurement and illustration. The body length was measured in lateral view, from the tip of the rostrum to the posterior edge of the ventral plate. Notogastral width refers to the maximum width in dorsal aspect. Lengths of body setae were measured in lateral aspect. All body measurements are presented in micrometers (μm). Formulas for leg setation are given in parentheses according to the sequence trochanter-femur-genu-tibia-tarsus (famulus included). Formulas for leg solenidia are given in square brackets according to the sequence genu-tibia-tarsus. General terminology used in this paper follows that of F. Grandjean (summarized by Norton and Behan-Pelletier 2009). Drawings were prepared with the aid of a drawing tube using a Carl Zeiss compound microscope "Axioskop-2 Plus". Images were obtained with an AxioCam ICc3 camera using a Carl Zeiss transmission light microscope "Axio Lab.A1".

CHECKLIST[1]

This annotated checklist indicates the specific localities where the Cuban oribatid mites were collected, and notes on new records and overall known distribution[2].

Cosmochthoniidae

– *Cosmochthonius plumatus* Berlese, 1910. Locality Cuba-2. Distribution: Tropics. New record of the species in Cuba.

– *Cosmochthonius reticulatus* Grandjean, 1947. Locality Cuba-2. Distribution: Mediterranean and Neotropical region.

Spherochthoniidae

– *Sphaerochthonius splendidus* (Berlese, 1904). Localities Cuba-1, Cuba-3. Distribution: Tropics. New record of the species in Cuba.

– *Sphaerochthonius windsori* Schatz, 2003. Locality Cuba-3. Distribution: Panama. New record of the species in Cuba.

Hypochthoniidae

– *Eohypochthonius crassisetiger* Aoki, 1959. Localities Cuba-2, Cuba-3. Distribution: Australian, Oriental and Palearctic regions. New record of the species in the Neotropical region.

– *Eohypochthonius gracilis* (Jacot, 1936). Localities Cuba-2, Cuba-3. Distribution: Tropics and Subtropics.

Epilohmanniidae

– *Epilohmannia minuta* Berlese, 1920. Locality Cuba-1. Distribution: Tropics and Subtropics. New record of the species in Cuba.

Trhypochthoniidae

– *Afronothrus incisivus* Wallwork, 1961. Localities Cuba-1, Cuba-3. Distribution: Tropics.

– *Allonothrus tuxtlasensis* Palacios-Vargas and Iglesias, 1997. Localities Cuba-1, Cuba-2, Cuba-3. Distribution: Neotropical region.

– *Archegozetes longisetosus* Aoki, 1965. Locality Cuba-1. Distribution: Tropics.

Malaconothridae

– *Malaconothrus humboldtensis* Ermilov **n. sp.** Localities Cuba-1, Cuba-2. Distribution: Cuba.

– *Tyrphonothrus hauseri* (Mahunka, 1983). Locality Cuba-2. Distribution: Neotropical and Ethiopian regions. New record of the genus and species in Cuba.

Nothridae

– *Nothrus monticola* Hammer, 1961. Localities Cuba-1, Cuba-2. Distribution: Neotropical region and Himalayas. New record of the species in Cuba.

Nanhermanniidae

– *Cyrthermannia guadeloupensis* Mahunka, 1985. Locality Cuba-2. Distribution: Neotropical region. New record of the species in Cuba.

– *Masthermannia mammillaris* (Berlese, 1904). Localities Cuba-1, Cuba-2, Cuba-3. Distribution: Tropics and Subtropics.

Hermanniellidae

– *Sacculobates horologiorum* Grandjean, 1962. Locality Cuba-2. Distribution: Neotropical region.

Neoliodidae

– *Neoliodes theleproctus* (Hermann, 1804). Locality

[1]Data on ptyctimous mites, Lohmanniidae, Carabodidae, Caloppiidae, Oripodoidea and Galumnoidea were presented earlier (Ermilov and Tolstikov 2015; Niedbała and Ermilov 2015; Ermilov 2016), therefore it (also well as not identified taxa) is not included in the checklist.

[2]See mostly Subías (2004, updated 2015).

Cuba-1. Distribution: Semicosmopolitan. New record of the genus and species in Cuba.
– *Teleioliodes zikani* (Sellnick, 1930). Localities Cuba-2, Cuba-3. Distribution: Neotropical region. New record of the species in Cuba.

Pheroliodidae. New record of the family in Cuba.
– *Pheroliodes intermedius* (Hammer, 1961). Localities Cuba-1, Cuba-3. Distribution: Neotropical region. New record of the genus and species in Cuba.

Cepheidae
– *Reticulocepheus decoui* Călugăr and Vasiliu, 1977. Locality Cuba-2. Distribution: Neotropical region.

Nodocepheidae. New record of the family in Cuba.
– *Nodocepheus cerebralis* Mahunka, 1980. Locality Cuba-3. Distribution: Neotropical region. New record of the genus and species in Cuba.

Liacaridae
– *Xenillus venezuelanus* J. and P. Balogh, 1985. Locality Cuba-1. Distribution: Neotropical region. New record of the species in Cuba.

Eremulidae
– *Eremulus flagellifer* Berlese, 1908. Locality Cuba-2. Distribution: Cosmopolitan. New record of the species in Cuba.
– *Eremulus rigidisetus* Balogh and Mahunka, 1969. Localities Cuba-2, Cuba-3. Distribution: Neotropical region.
– *Eremulus translamellatus* Hammer, 1952. Locality Cuba-2. Distribution: Holarctic region and Brazil. New record of the species in Cuba.

Damaeolidae
– *Fosseremus laciniatus* (Berlese, 1905). Locality Cuba-3. Distribution: Cosmopolitan. New record of the genus and species in Cuba.

Eremobelbidae
– *Eremobelba piffli* Mahunka, 1985. Locality Cuba-2. Distribution: Neotropical region.

Basilobelbidae
– *Basilobelba retiaria* (Warburton, 1912). Locality Cuba-3. Distribution: Tropics and Japan.

Arceremaeidae
– *Arceremaeus cubanus* Balogh and Mahunka, 1980. Locality Cuba-1. Distribution: Neotropical region.

Oppiidae
– *Gittella insularis* Mahunka, 1998. Locality Cuba-1. Distribution: Neotropical region. New record of the genus and species in Cuba.
– *Moritzoppia keilbachi* (Moritz, 1969). Locality Cuba-1. Distribution: Palaearctic region, Brazil and Ethiopia. New record of the genus and species in Cuba.
– *Multioppia* (*Hammeroppia*) *wilsoni laniseta* Moritz, 1966. Locality Cuba-3. Distribution: Palaearctic region, U.S.A. and Venezuela. New record of the species in Cuba.
– *Oppiella nova* (Oudemans, 1902). Localities Cuba-1, Cuba-3. Distribution: Cosmopolitan.
– *Oxyoppia* (*Oxyoppiella*) *cubana* Balogh and Mahunka, 1980. Locality Cuba-3. Distribution: Neotropical region.
– *Pseudoamerioppia barrancensis* (Hammer, 1961). Localities Cuba-1, Cuba-2, Cuba-3. Distribution: Neotropical region and Philippines. New record of the genus and species in Cuba.
– *Ramusella curtipilus* Hammer, 1971. Locality Cuba-2. Distribution: Palaearctic region and Tropics. New record of the species in Cuba.
– *Striatoppia opuntiseta* Balogh and Mahunka, 1968. Localities Cuba-1, Cuba-2. Distribution: Tropics and Japan. New record of the genus and species in Cuba.
– *Striatoppia papillata* Balogh and Mahunka, 1966. Locality Cuba-1. Distribution: Congo, Egypt and Vietnam. New record of the species in the Neotropical region.

Machuellidae. New record of the family in Cuba.
– *Machuella ventrisetosa* Hammer, 1961. Locality Cuba-3. Distribution: Palaearctic region and Tropics. New record of the genus and species in Cuba.

Suctobelbidae
– *Suctobelbella* (*Flagrosuctobelba*) *peracuta* Balogh and Mahunka, 1980. Localities Cuba-2, Cuba-3. Distribution: Neotropical region.
– *Suctobelbella* (*Suctobelbella*) *longisetosa* Hammer, 1961. Locality Cuba-1. Distribution: Neotropical region. New record of the species in Cuba.
– *Suctobelbella* (*Suctobelbella*) *ornatissima* Hammer, 1958. Locality Cuba-2. Distribution: Neotropical re-

gion. New record of the species in Cuba.
– *Suctobelbella* (*Ussuribata*) *variosetosa* (Hammer, 1961). Locality Cuba-2. Distribution: Tropics and Japan.
– *Suctobelbila longitudinalis* Balogh and Mahunka, 1974. Localities Cuba-2, Cuba-3. Distribution: Antilles.

Dampfiellidae
– *Beckiella borhidii* Balogh and Mahunka, 1978. Localities Cuba-1, Cuba-2. Distribution: Neotropical region.
– *Beckiella garciai* Balogh and Mahunka, 1979. Locality Cuba-2. Distribution: Cuba.

Otocepheidae
– *Pseudotocepheus sexidimorphis* (Călugăr and Vasiliu, 1977). Locality Cuba-1. Distribution: Cuba.

Tectocepheidae. New record of the family in Cuba.
– *Tectocepheus americanus* Pérez-Íñigo and Baggio, 1989. Locality Cuba-3. Distribution: Neotropical region. New record of the genus and species in Cuba.
– *Tectocepheus velatus* (Michael, 1880). Locality Cuba-2. Distribution: Cosmopolitan. New record of the species in Cuba.
– *Tegeozetes tunicatus* Berlese, 1913. Locality Cuba-1. Distribution: Palearctic region and Tropics. New record of the genus and species in Cuba.

Microtegeidae
– *Microtegeus similis* Balogh and Mahunka, 1980. Locality Cuba-2. Distribution: Neotropical region.

Licneremaeidae
– *Licneremaeus cubanus* Balogh and Mahunka, 1980. Locality Cuba-2. Distribution: Neotropical region.
– *Licneremaeus licnophorus* (Michael, 1882). Localities Cuba-1, Cuba-3. Distribution: Holarctic region and Mexico. New record of the species in Cuba.

Phenopelopidae
– *Eupelops fusiformis* Ermilov **n. sp.** Locality Cuba-1. Distribution: Cuba.

Eremaeozetidae
– *Eremaeozetes lineatus* Mahunka, 1985. Locality Cuba-2. Distribution: Neotropical region and India. New record of the species in Cuba.

Microzetidae
– *Berlesezetes brazilozetoides* Balogh and Mahunka, 1981. Localities Cuba-1, Cuba-2, Cuba-3. Distribution: Neotropical region. New record of the species in Cuba.
– *Schalleria feideri* (Călugăr and Vasiliu, 1977). Locality Cuba-3. Distribution: Cuba.

Zetomotrichidae. New record of the family in the Neotropical region.
– *Zetomotrichus lacrimans* Grandjean, 1934. Locality Cuba-1. Distribution: Ethiopian and Oriental regions, Mediterranean. New record of the genus and species in the Neotropical region.

Ceratozetidae
– *Ceratozetoides maximus* (Berlese, 1908). Locality Cuba-1. Distribution: Palaearctic region. New record of the genus and species in the Neotropical region.

Punctoribatidae
– *Lamellobates reticulatus* Behan-Pelletier, 1998. Locality Cuba-1. Distribution: Neotropical region. New record of the species in Cuba.

Thus, checklist includes 60 species from 48 genera and 33 families; of these, 30 species, 12 genera and 4 families are recorded for the first time in Cuba, and 4 species, 2 genera and 1 family are recorded for the first time in the Neotropical region.

DESCRIPTIONS

Eupelops fusiformis Ermilov n. sp. (Figures 1-4)

Diagnosis — Body size: 365 – 448 × 298 – 332. Notogaster and ventral side covered by thick foveolate cerotegument. Rostral and lamellar setae similar in length, setiform, barbed. Bothridial setae fusiform, barbed. Anterior notogastral tectum slightly concave medially. Notogastral setae of medium size, barbed; *c*, *la*, *lm*, *lp* and h_3 thick, stiff, rounded distally, h_1, h_2, p_1-p_3 well dilated apically. Porose areas *A1* adjacent to insertions of *lp* and h_3. Epimeral setal formula: 2-1-3-3. Two pairs of adanal setae present, all in postanal position. Tridactylous.

Description — Measurements — Body length: 365 (holotype: male), 365 – 448 (6 paratypes: 2 females and 4 males); notogastral width: 298 (holo-

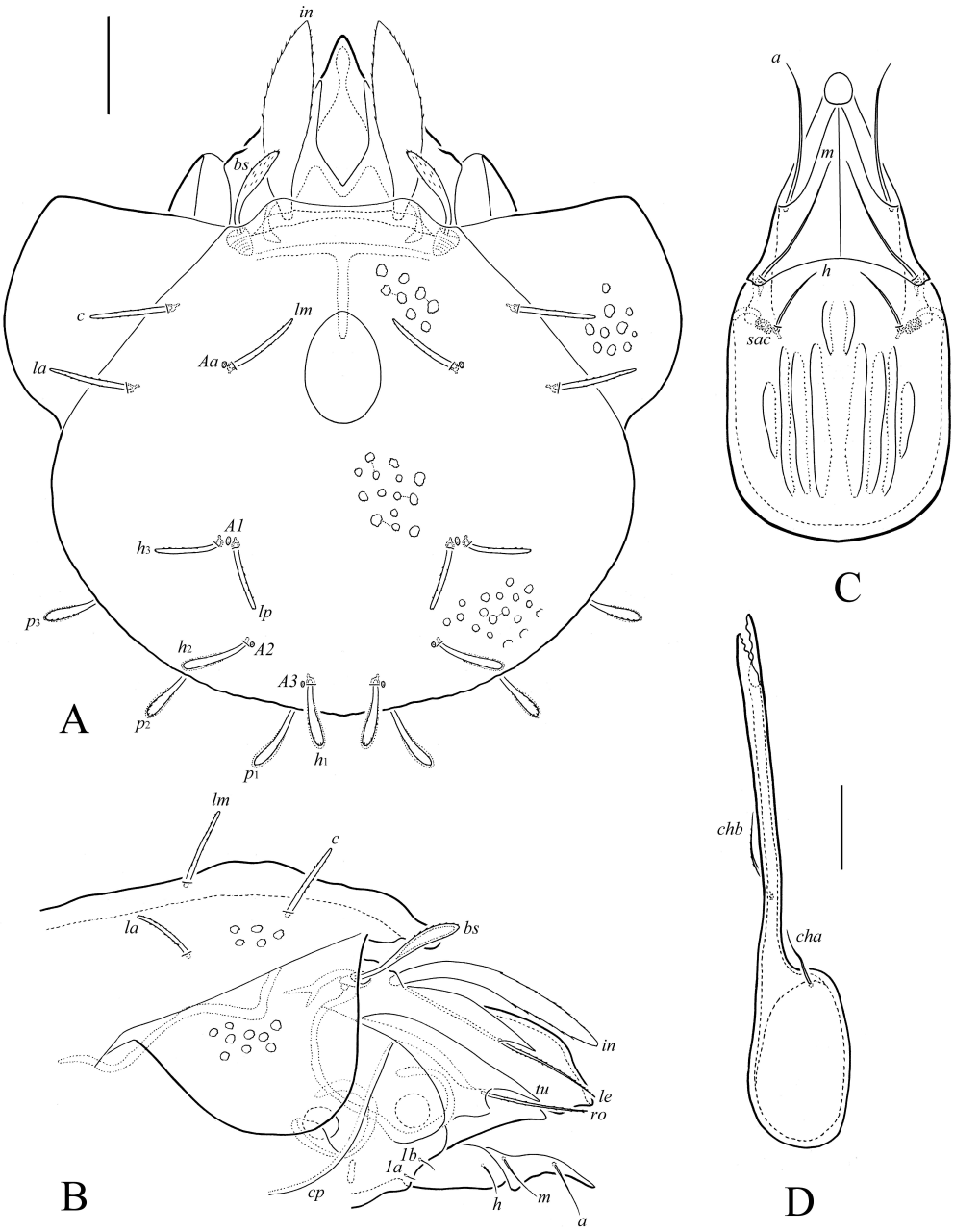


FIGURE 1: *Eupelops fusiformis* Ermilov **n. sp.**: A – dorsal view; B – anterior part of body, lateral view (gnathosoma and legs I, II not illustrated); B – ventral view (gnathosoma and legs except basal parts not illustrated); C – subcapitulum, ventral view; D – chelicera, right, antiaxial view. Scale bar (A, B) 50 μm, scale bar (C, D) 20 μm.

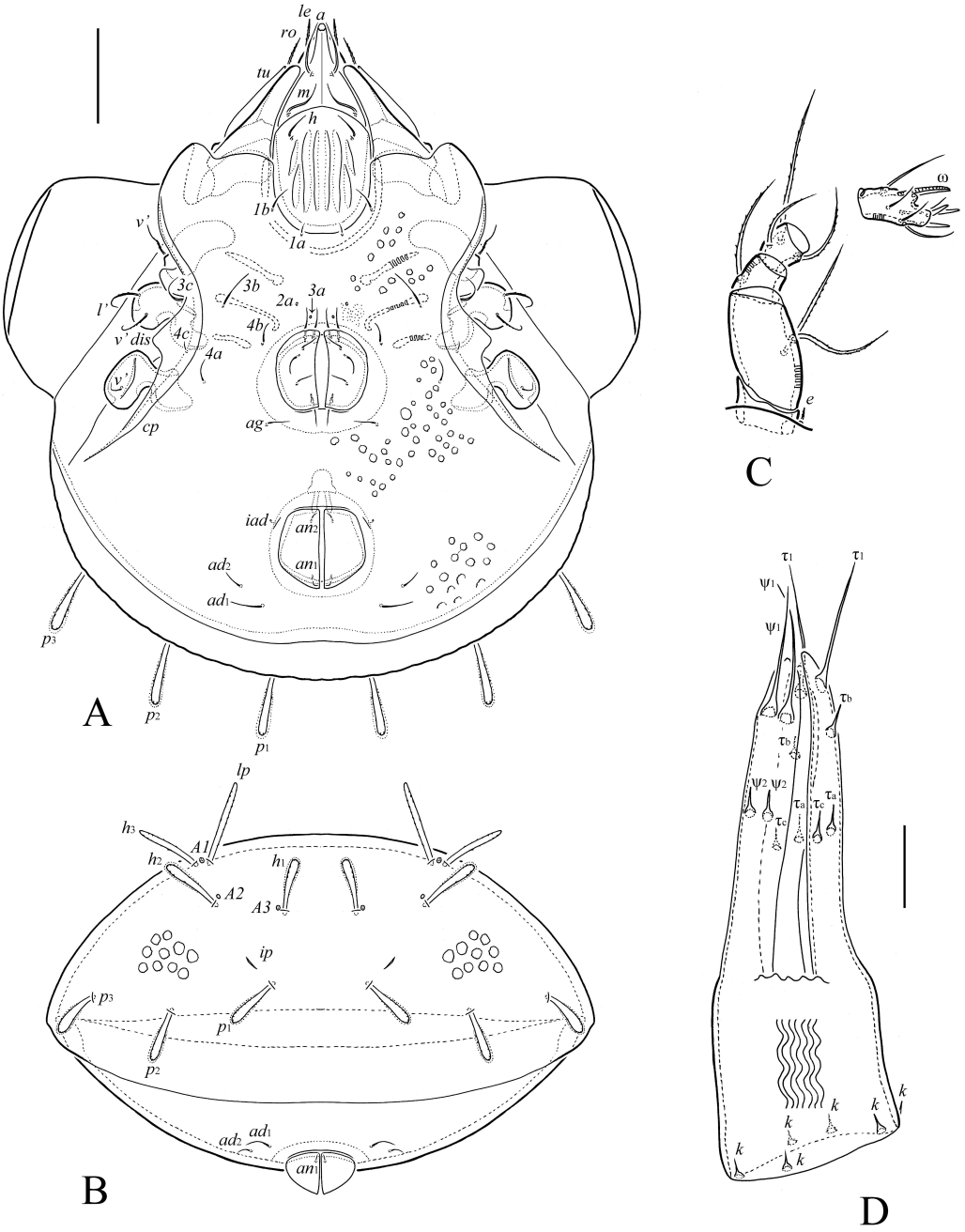


FIGURE 2: *Eupelops fusiformis* Ermilov **n. sp.**: A – ventral view (legs except basal parts of legs II-IV not illustrated); B – posterior view; C – palp, left, paraxial view; D – ovipositor. Scale bar (A, B) 50 μm, scale bar (C, D) 20 μm.

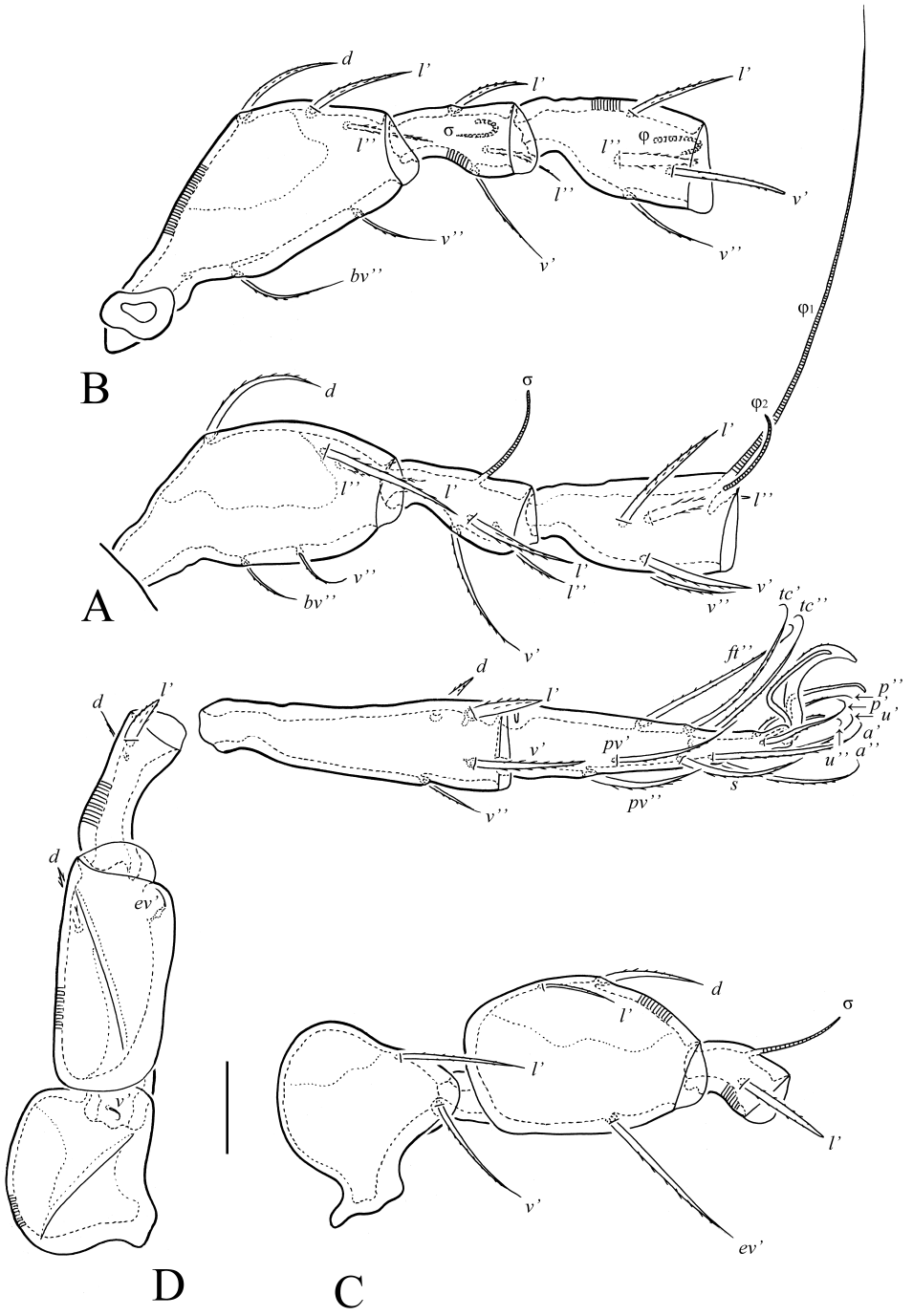


FIGURE 3: *Eupelops fusiformis* Ermilov **n. sp.**: A – leg I, without tarsus, trochanter and basal part of femur, left, paraxial view; B – leg II, without tarsus and trochanter, left, paraxial view; C – leg III, without tarsus and tibia, left, antiaxial view; D – leg IV, left, antiaxial view. Scale bar 20 μm.

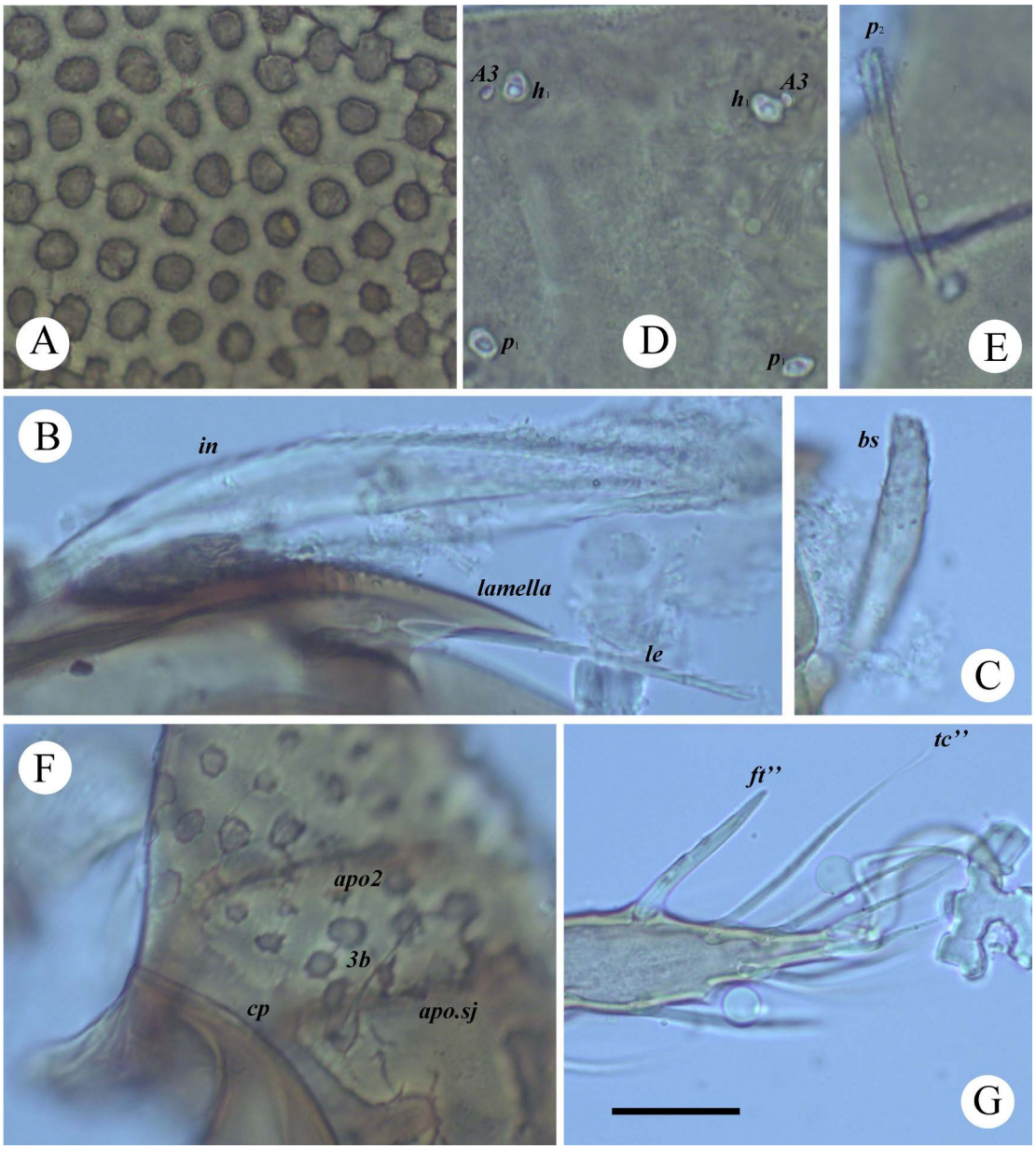


FIGURE 4: *Eupelops fusiformis* Ermilov **n. sp.**, microscope images of dissected specimen: A – cerotegument in centro-dorsal part of notogaster; B – lamella, lamellar and interlamellar setae, lateral view; C – medio-distal part of bothridial seta; D – porose areas A3 and notogastral setal alveoli h_1 and p_1; E – notogastral seta p_2; F – part of epimeral region on right side, including cerotegument, epimeral seta *3b*, apodeme 2, sejugal apodeme, pedotectum II and part of circumpedal carina; G – medio-distal part of tarsus III, right, paraxial view. Scale bar 20 μm.

TABLE 1: Leg setation and solenidia of adult *Eupelops fusiformis* Ermilov **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), (pl),* ε, ω_1, ω_2
II	*v′*	*d, (l), bv′′, v′′*	*(l), v′,* 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′*	*d, l′, (v)*	*ft′′, (tc), (p), (u), (a), s, (pv)*

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

type), 298 – 332 (6 paratypes). Without sexual dimorphism.

Integument (Figs 1A-C; 2A, B; 4A, F) — Body color brown to dark brown. Body surface smooth, covered by thick cerotegument layer on notogaster, ventral side and basal parts of pteromorphs. Cerotegument represented by large foveolae (their diameter up to 6) and parts with dense microfoveolae (their diameter less than 1) and rounded or slightly elongated microgranules (their diameter and length less than 1). Subcapitular mentum heavily longitudinally striate.

Prodorsum (Figs 1A, B; 2A; 4B, C) — Rostrum triangular, narrowly rounded. Anterior part of prodorsum with median, longitudinal hump. Lamellae located dorso-laterally, half as long as prodorsum (measured in lateral view), with distinct triangular cusps. Rostral (*ro*) and lamellar (*le*) setae similar in length (57 – 65), setiform, barbed. Interlamellar setae (*in*, 118 – 131) broadly phylliform, barbed. Exobothridial setae and their alveoli absent. Bothridial setae (*bs*, 61 – 65) fusiform, barbed, stalks and heads similar in length. Tutoria (*tu*) with knife-like cusps about one-third length.

Notogaster (Figs 1A, B; 2A, B; 4D, E) — Anterior notogastral tectum well-developed, slightly concave medially. Lenticulus oval, with amorphous borders. Pteromorphs with distinct hinges. Ten pairs of notogastral setae of medium size (28 – 36), barbed; *c*, *la*, *lm*, *lp* and h_3 thick, stiff, rounded distally, h_1, h_2, p_1-p_3 distinctly dilated apically. Four pairs of porose areas (*Aa*, *A1*, *A2*, *A3*) rounded, small, similar in diameter (4); *A1* adjacent to insertions of *lp* and h_3. Lyrifissures and opisthonotal gland openings usually not visible under cerotegument.

Gnathosoma (Figs 1B-D; 2A, C) — Subcapitulum longer than wide (118 – 123 × 57 – 65). Subcapitular setae setiform, smooth, *a* and *m* (both pairs 32 – 36) longer than *h* (20 – 24). Axillary saccules (*sac*) slightly elongated, distinct. Palps (length 69) with setation 0-2-1-3-9(+ω). Postpalpal setae *e* (4) thickened, barbed. Chelicerae (length 135 – 139) with two setiform, indistinctly barbed setae, *cha* (16) shorter than *chb* (24).

Epimeral and lateral podosomal regions (Figs 1B; 2A; 4F) — Apodemes 2 longer than apodemes 3. Sejugal apodemes (*apo.sj*) longest, by little not reaching the genital aperture. Epimeral setal formula: 2-1-3-3. Setae *1c* and their alveoli absent, *2a* and *3a* represented by alveoli, other setae setiform, smooth; *3b* and *3c* (24 – 28) longer than *1b*, *4a* and *4b* (12) and *1a* and *4c* (8). Pedotecta I large, concave (in dorsal view) and scale-like (in lateral view). Pedotecta II smaller, rounded anteriorly (in ventral view) and scale-like (in lateral view). Discidia (*dis*) triangular. Circumpedal carinae (*cp*) strong, very long, reaching pedotecta I.

Anogenital region (Figs 2A, B, D) — Six pairs of genital (g_1-g_6, 12), one pair of aggenital (*ag*, 12), two pairs of anal (an_1, an_2, 6 – 8) and two pairs of adanal (ad_1, 20 – 24; ad_2, 12) setae setiform, smooth. Adanal setae in postanal position. Adanal lyrifissures (*iad*) located close and slightly diagonal to anal plates. Ovipositor elongated (139 – 147 × 45 – 53), blades (90 – 94) longer than length of distal section (beyond middle fold; 49 – 53). Each of three blades with four smooth setae; $\psi_1 \approx \tau_1$ (32) setiform, $\psi_2 \approx \tau_a \approx \tau_b \approx \tau_c$. Six coronal setae (*k*, 8) thorn-like.

Legs (Figs 3A-D; 4G) — Morphology of leg segments, setae and solenidia generally typical for *Eupelops* (see Grobler 1989; Bayartogtokh and Aoki 1999). Tridactylous, median claw thicker than laterals, all serrate dorsally. Porose areas on femora and trochanters III, IV well visible. Formulas of leg setation and solenidia: I (1-5-3-4-18) [1-2-2], II (1-5-3-4-15) [1-1-2], III (2-3-1-3-15) [1-1-0], IV (1-2-2-4-12) [0-0-0]; homology of setae and solenidia indicated in Table 1.

Material examined — Holotype (male) and 6 paratypes (2 females and 4 males): locality Cuba-1 (see "Material and methods" section).

Type deposition — The holotype (alcohol) is deposited in the in the collection of the Senckenberg Institution, Frankfurt, Germany; six paratypes (alcohol) are deposited in the collection of the Tyumen State University Museum of Zoology, Tyumen, Russia.

Etymology — The specific name "*fusiformis*" refers to the fusiform bothridial setae.

Remarks — *Eupelops* is a genus comprising 64 species, which collectively have a cosmopolitan distribution (see Subías 2004, online version 2015). The main generic characters were summarized by Sitnikova (1975), Bayartogtokh and Aoki (1999) and Weigmann (2006).

Eupelops fusiformis Ermilov **n. sp.** is morphologically most similar to *E. geminus* (Berlese, 1916) from the Palaearctic region (see Berlese 1916; Mahunka 1992), *E. occultus* (Koch, 1835) from the Palaearctic region (see Pérez-Iñigo 1972; Weigmann 2006) and *E. torulosus* (Koch, 1839) from the Palaearctic and Ethiopian regions (see Weigmann 2006) in having strong notogastral setae in anterior part of notogaster and somewhat dilated apically setae in posterior part of notogaster, and localization of porose areas *A1* adjacent to insertions of *lp* and h_3. However, the new species differs from the listed species by the presence of well-developed notogastral setae p_2 and p_3 (versus minute in *E. geminus*, *E. occultus* and *E. torulosus*) and medially concave anterior notogastral tectum (versus distinctly wavy in *E. geminus*, *E. occultus* and *E. torulosus*).

Malaconothrus humboldtensis Ermilov n. sp. (Figures 5-8)

Diagnosis — Body size: 398 – 431 × 166 – 190. Body surface porose, covered by microtuberculate cerotegument. Prodorsal setae smooth, interlamellar setae considerably longer than ex_1. Notogastral ridges present. Notogastral setae smooth; e_1, e_2, p_2 and h_2 longer than other setae. Epimeral setal formula: 3-1-3-3; *3b* and *3c* longest. Five pairs of genital setae, g_1 heavily barbed, other setae indistinctly barbed. Adanal setae dilated medio-basally, smooth. Legs monodactylous.

Description — Measurements — Body length: 431 (holotype: female), 398 – 431 (6 paratypes: all females); notogaster width: 182 (holotype), 166 – 190 (6 paratypes).

Integument (Figs 5A; 6A; 8A-D) — Body color light grey to yellowish. Body surface finely porose (clearly visible under high magnification) and covered by tuberculate cerotegument (tubercles rounded or slightly elongated, conical, their diameter and length up to 4).

Prodorsum (Figs 5A, B) — Rostrum broadly rounded. Lateral carinae strong, reaching insertions of rostral setae, connected by translamellar ridge. Rostral (32 – 36), lamellar (41 – 45), interlamellar (53 – 57) and exobothridial setae ex_1 (18 – 20) setiform, smooth. Exobothridial setae ex_2 represented by alveoli.

Notogaster (Figs 5A, B; 6A, B; 8A) — Anterior margin straight. Posterior margin rounded. Notogaster with ridges and slight concavities between them. All notogastral setae setiform, smooth; e_1, e_2, h_2 and p_2 (53 – 61) longer than other eleven pairs (28 – 36). Insertions of h_2 and p_2 located nearly to each other in one transverse row. Lyrifissures *ia*, *im*, *ip*, *ih* and *ips* distinct.

Gnathosoma (Figs 5C; 6C) — Subcapitulum longer than wide (69 – 73 × 57 – 61). Subcapitular setae setiform, smooth, *h* and *m* (both pairs 24) longer than *a* (16). Palps (length 49) with setation 0-2-1-3-9(+ω). Postpalpal setae *e* (6) spiniform, smooth. Chelicerae (length 73 – 77) with two dorsal teeth (4) and two smooth setae, *cha* (10) thin, straight, shorter than thickened, curved *chb* (12).

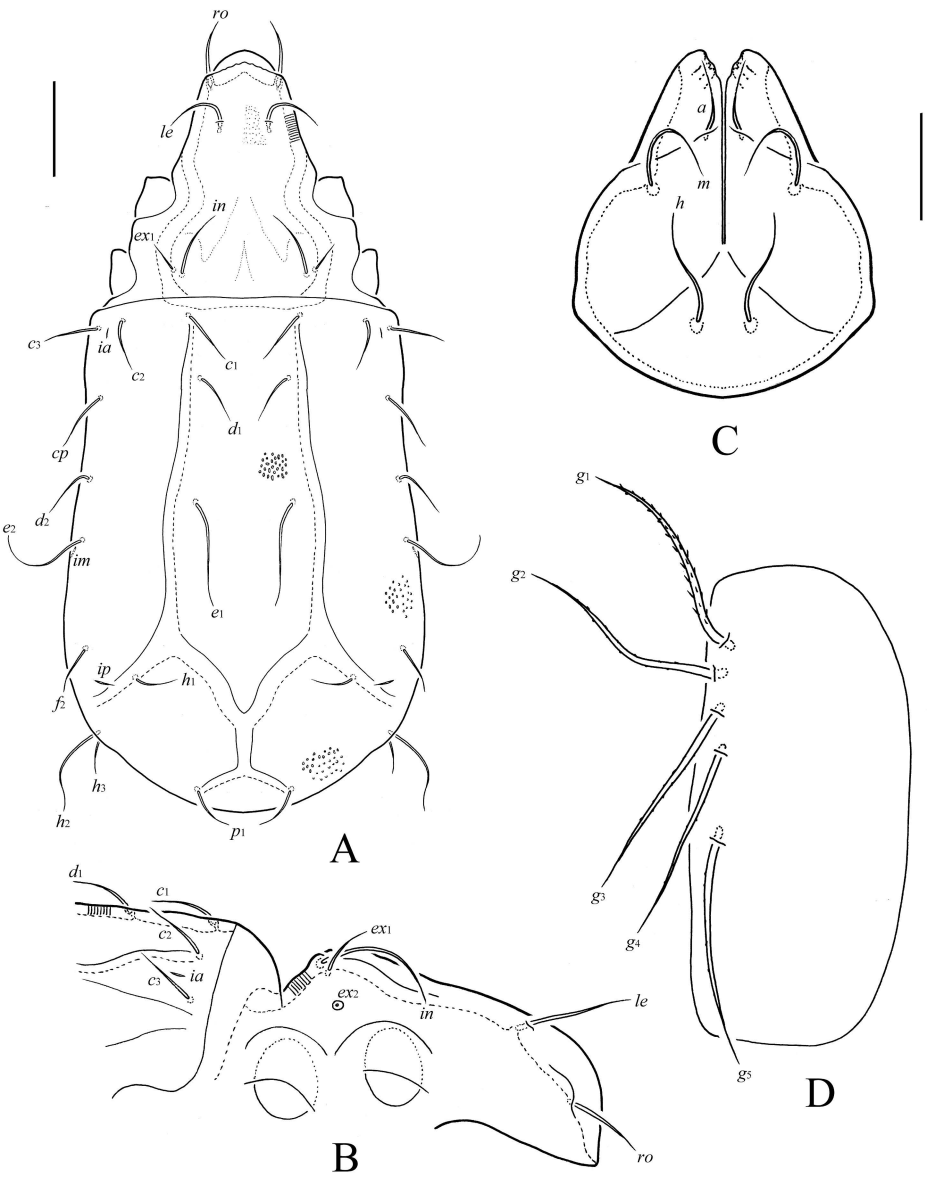


FIGURE 5: *Malaconothrus humboldtensis* Ermilov **n. sp.**: A – dorsal view; B – anterior part of body, lateral view (gnathosoma and legs I, II not illustrated); B – ventral view (gnathosoma and legs except basal parts not illustrated); C – subcapitulum, ventral view; D – genital plate, left. Scale bar (A, B) 50 μm, scale bar (C, D) 20 μm.

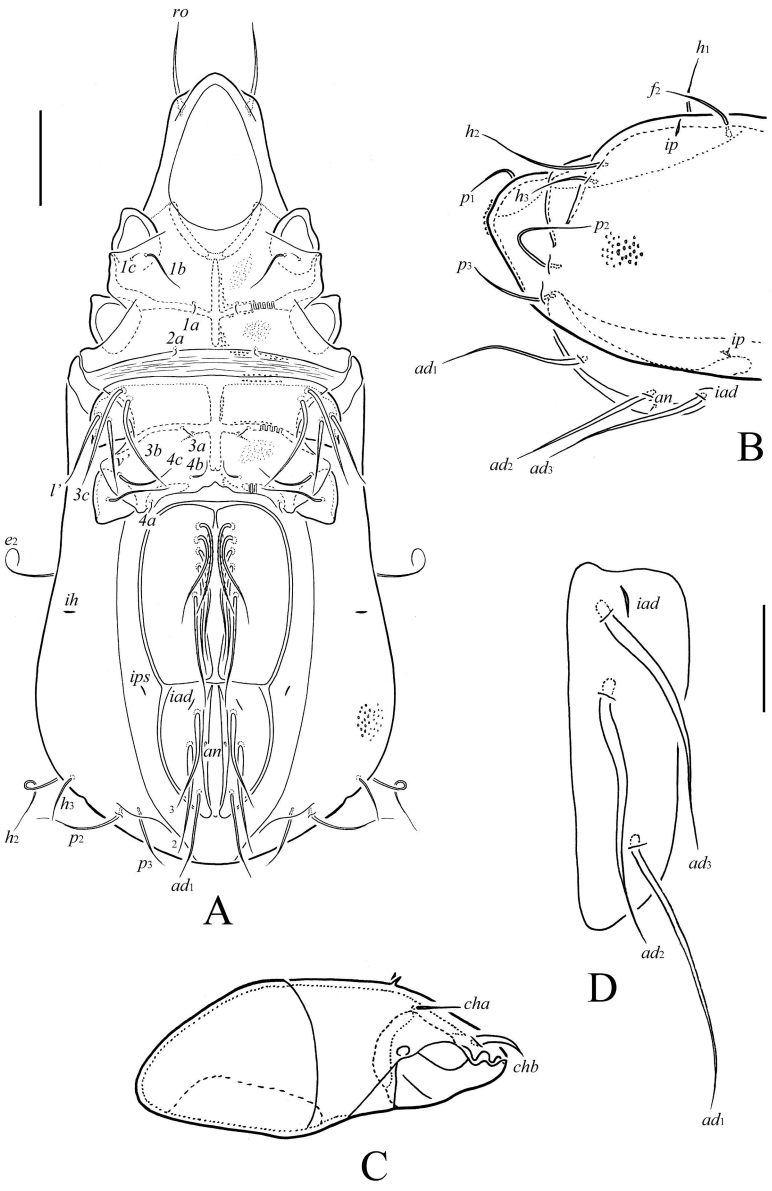


FIGURE 6: *Malaconothrus humboldtensis* Ermilov **n. sp.**: A – ventral view (gnathosoma and trochanters of legs not illustrated); B – posterior part of body, lateral view; C – chelicera, right, antiaxial view; D – adanal plate, left. Scale bar (A, B) 50 μm, scale bar (C, D) 20 μm.

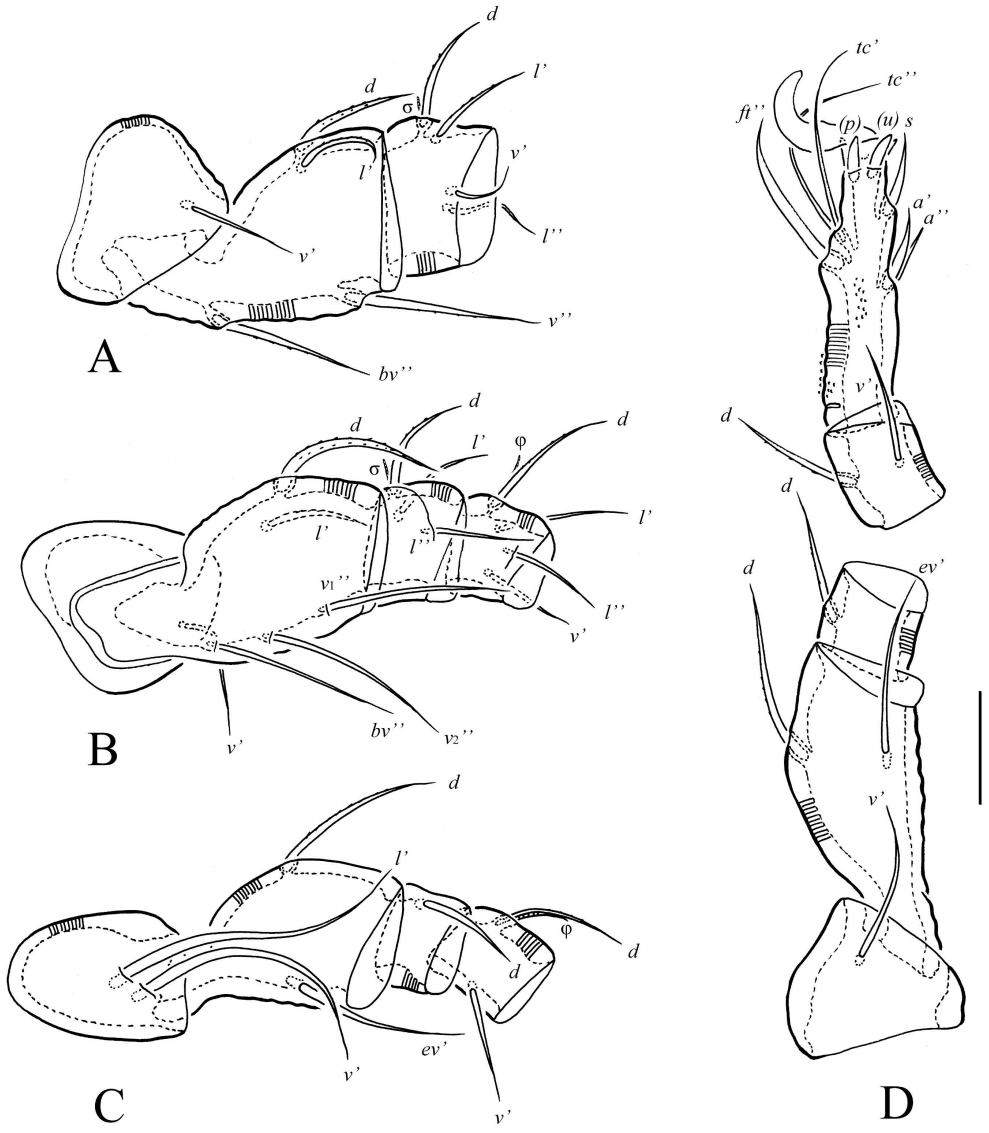


FIGURE 7: *Malaconothrus humboldtensis* Ermilov **n. sp.**: A – leg I, without tarsus and tibia, left, paraxial view; B – leg II, without tarsus, right, antiaxial view; C – leg III, without tarsus, left, antiaxial view; D – leg IV, left, antiaxial view. Scale bar 20 μm.

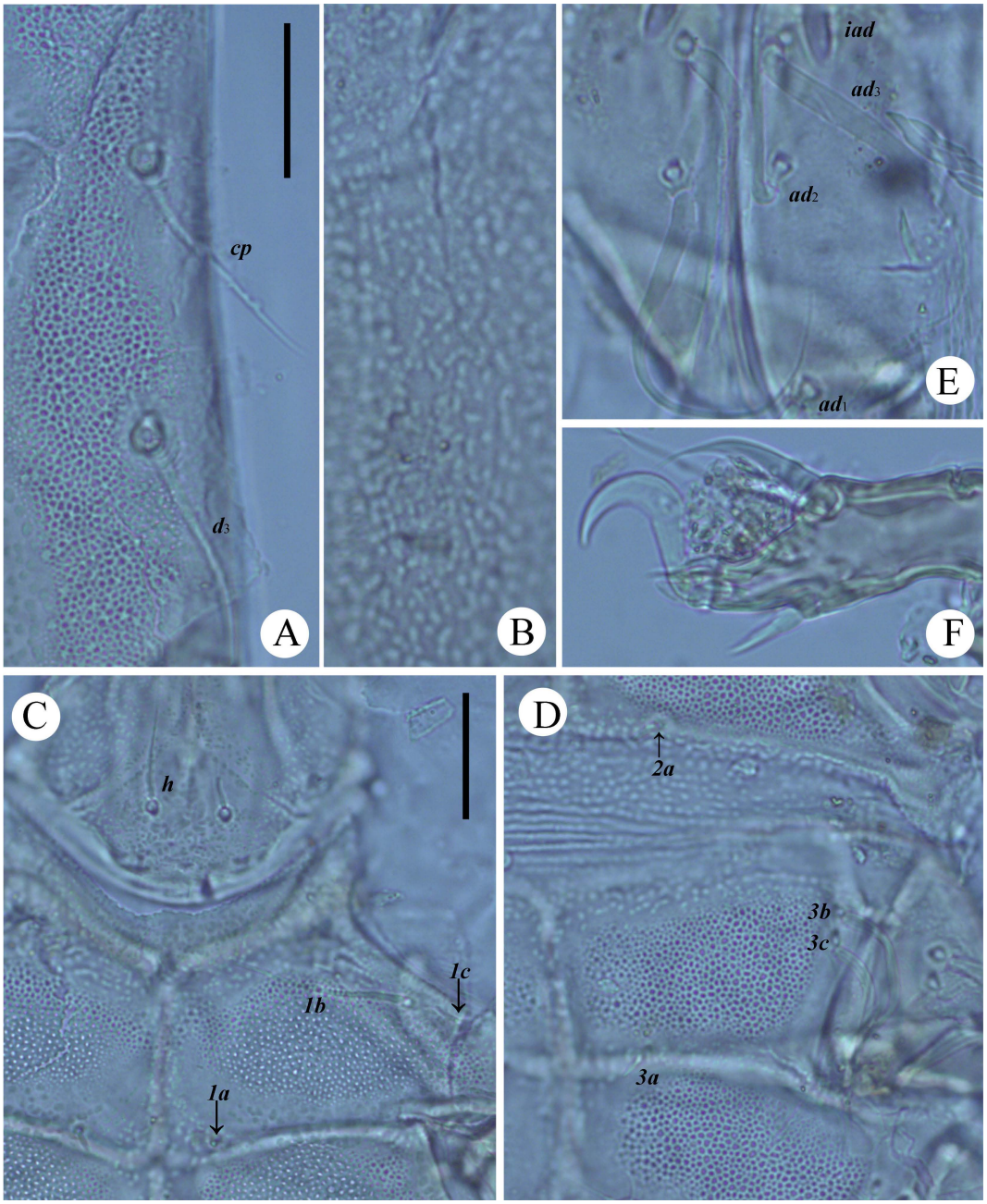


FIGURE 8: *Malaconothrus humboldtensis* Ermilov **n. sp.**, microscope images of dissected specimen: A – microfoveolate body near to notogastral setae *cp* and d_3, B – cerotegument in centro-dorsal part of notogaster; C – subcapitular mentum and parts of epimeres I and II; D – parts of epimeres II, III and IV; E – ano-adanal region; F – medio-distal part of tarsus I, right, paraxial view. Scale bar 20 μm.

TABLE 2: Leg setation and solenidia of adult *Malaconothrus humboldtensis* Ermilov **n. sp.**

Leg	Tr	Fe	Ge	Ti	Ta
I	*v'*	*d, l', bv'', v''*	*d* σ, *(l), v'*	*d* φ, *(l), v'*	*(ft), (tc), (p), (u), (a),* ε, ω_1, ω_2, ω_3
II	*v'*	*d, l', bv'', v* $_1$'', *v* $_2$''	*d* σ, *(l)*	*d* φ, *(l), v'*	*(ft), (tc), (p), (u), (a),* ω
III	*l', v'*	*d, ev'*	*d*	*d* φ, *v'*	*(ft), (tc), (p), (u), (a)*
IV	*v'*	*d, ev'*	*d*	*d, v'*	*ft'', (tc), (p), (u), (a), s*

See Table 1 for explanations; *d* φ and *d* σ – seta and solenidion coupled.

Epimeral region (Figs 6A; 8C, D) — All epimeral plates medially. Epimeral setal formula: 3-1-3-3. Setae setiform, smooth; *1a*, *1c*, *2a*, *3a* and *4a* (12 – 16) shortest, *4b* (16 – 20) shorter than *1b* and *4c* (32 – 36), *3b* and *3c* (53 – 61) longest. Insertions of *1b* and *1c* as well as *3b* and *3c* located near each other.

Anogenital region (Figs 5D; 6A, B, D; 8E) — Five pairs of genital setae (57 – 69) slightly thickened, g_1 distanced from the anterior edge of genital plates, heavily barbed, other setae indistinctly barbed. One pair of anal setae minute (4), thin, smooth. Three pairs of adanal setae (57 – 69) clearly dilated mediobasally, smooth; ad_1 thinnest. Lyrifissures *ian* indistinct, *iad* well visible. Ovipositor slightly elongated (52 × 36), blades (16) shorter than length of distal section (beyond middle fold; 36). Each of three blades with four smooth setae: $\psi_1 \approx \tau_1$ (20) longer than $\psi_2 \approx \tau_1 \approx \tau_2 \approx \tau_3$ (12). Six coronal setae (6) spiniform.

Legs (Figs 7A-D; 8F) — Morphology of leg segments, setae and solenidia generally typical for *Malaconothrus* (see Knülle 1957; Colloff and Cameron 2013). Monodactylous, claw of each leg thick, smooth. Formulas of leg setation and solenidia: I (1-4-4-4-11) [1-1-3], II (1-5-3-4-10) [1-1-1], III (2-2-1-2-10) [0-1-0], IV (1-2-1-2-10) [0-0-0]; homology of setae and solenidia indicated in Table 2.

Material examined — Holotype (female) and 3 paratypes (all females): locality Cuba-1; 3 paratypes (all females): locality Cuba-2 (see "Material and methods" section).

Type deposition — The holotype (alcohol) is deposited in the in the collection of the Senckenberg Institution, Frankfurt, Germany; six paratypes (alcohol) are deposited in the collection of the Tyumen State University Museum of Zoology, Tyumen, Russia.

Etymology — The specific name "*humboldtensis*" refers to the place of origin, Alejandro de Humboldt National Park, Cuba.

Remarks — *Malaconothrus* is a genus comprising around 70 species (see Subías 2004, online version 2015; Colloff and Cameron, 2013 for different classifications), which collectively have a cosmopolitan distribution. The main generic characters were summarized by Colloff and Cameron (2013).

Malaconothrus humboldtensis Ermilov **n. sp.** is morphologically most similar to *M. robustus* Hammer, 1958 from the Neotropical region (see Hammer 1958) in having the medium-sized body, monodactylous legs, tuberculate body cerotegument, long lateral carinae connected by translamellar ridge on prodorsum, notogastral ridges, smooth notogastral setae, five pairs of genital setae, interlamellar setae longer than exobothridial setae ex_1 and localization of notogastral setae p_2 and p_3 in one transverse row. However, the new species differs from the latter by notogastral setae e_1, e_2, h_2 and p_2 being clearly longer than other notogastral setae (vs. all notogastral setae similar in length except shortest p_2 in *M. robustus*) and rostral setae not thicker than lamellar and interlamellar setae (versus rostral setae thickest on prodorsum in *M. robustus*).

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