

A NEW SPECIES OF THE GENUS *UNGUIZETES* (ACARI: ORIBATIDA: MOCHLOZETIDAE) FROM ECUADOR

S. G. Ermilov¹, S. Kalúz²

¹Nizhniy Novgorod Referral Center of the Federal Service for Veterinary and Phytosanitary Inspection, Nizhniy Novgorod 603107, Russia; e-mail: ermilovacari@yandex.ru

²Institute of Zoology, Slovak Academy of Sciences, Bratislava 84506, Slovakia; e-mail: stanislav.kaluz@savba.sk

ABSTRACT. A new species of the oribatid mite family Mochlozetidae from Ecuador, *Unguizetes acutirostris* sp. n., is described. It is similar to *Unguizetes incertus* (Balogh and Mahunka, 1969) and *Unguizetes similis* Mahunka, 1998 in having a pointed rostrum, but differs from both by the absence of a translamella, different morphology of the lamellar cusps, and spindle-form sensilli. An identification key to the Neotropical species of *Unguizetes* is presented.

KEY WORDS: Oribatida, *Unguizetes*, new species, Ecuador, Neotropical region, key

INTRODUCTION

Unguizetes is an oribatid mite genus of the family Mochlozetidae that was proposed by Sellnick (1925) with *Oribata sphaerula* Berlese, 1905 as type species. Currently, the genus comprises 18 species that collectively have a pantropical and subtropical distribution. Only three of these species have been recorded from the Neotropical region (see Balogh and Mahunka 1969, 1978; Mahunka 1998; Illig et al. 2007): *Unguizetes incertus* (Balogh and Mahunka, 1969) from the Neotropical region, *U. setiger* (Balogh and Mahunka, 1978) from Brazil and *U. similis* Mahunka, 1998 from the Antilles Islands.

The main purpose of this paper is to describe and illustrate a fourth Neotropical species, collected from Ecuador, under the name *Unguizetes acutirostris* sp. n. Also an identification key to the Neotropical species of *Unguizetes* is presented.

MATERIALS AND METHODS

Material examined. Five adult specimens were studied, having the following collection data: Ecuador, 0°25'8.04" S, 79°0'14.04" W, Reserva de Bosque Integral Otonga, near San Francisco de las Pampas, 2000–2200 m a.s.l., sifted litter from forest, 7 November 1996, collected by Giovanni Onore.

Specimens were mounted in lactic acid on temporary cavity slides for measurement and illustration. All body measurements are presented in micrometers. Body length was measured in lateral view, from the tip of the rostrum to the posterior edge of the ventral plate, to avoid discrepancies caused by different degrees of notogastral distortion. Notogastral width refers to the maximum width in dorsal aspect. Lengths of body setae were measured in lateral aspect.

Formulae for leg setation are given in parentheses according to the sequence trochanter–femur–genu–tibia–tarsus (famulus included). Formulae for leg solenidia are given in square brackets according to the sequence genu–tibia–tarsus.

Terminology used in this paper follows that of Grandjean (1960), summarized by Norton and Behan-Pelletier (2009).

Description of *Unguizetes acutirostris* sp. n.

Figs. 1–12

With diagnostic characters of the genus *Unguizetes* as summarized by J. Balogh and P. Balogh (1992).

Diagnosis. The new species is characterized by the following combination of character states: body size 863–946 × 564–747; rostrum pointed, acute; lamella without cusp; translamella absent; sensillus spindle-form, sensillar head weakly lanceolate; notogaster with four pairs of oval/round porose areas; epimeral seta 3c located on cylindrical tubercle; one pair of anal setae present.

Description. Measurements. Body length 946 (holotype, female), 863–946 (mean 909; four males); notogaster width 730 (holotype), 564–747 (mean 663).

Integument. Body color brown. Surface of body smooth.

Prodorsum (Figs. 1, 3–5). Rostrum with long, acutely pointed medial process. Lamella longer than half of prodorsum, without cusp (lamellar seta inserts on latero-distal corner). Translamella absent. Rostral (*ro*, 172–180), lamellar (*le*, 188–205) and interlamellar (*in*, 282–303) setae setiform, slightly barbed. Sensillus (*ss*, 147–159) spindle-form: head weakly dilated, lanceolate, oblong, slightly barbed, with smooth tip shorter than head.

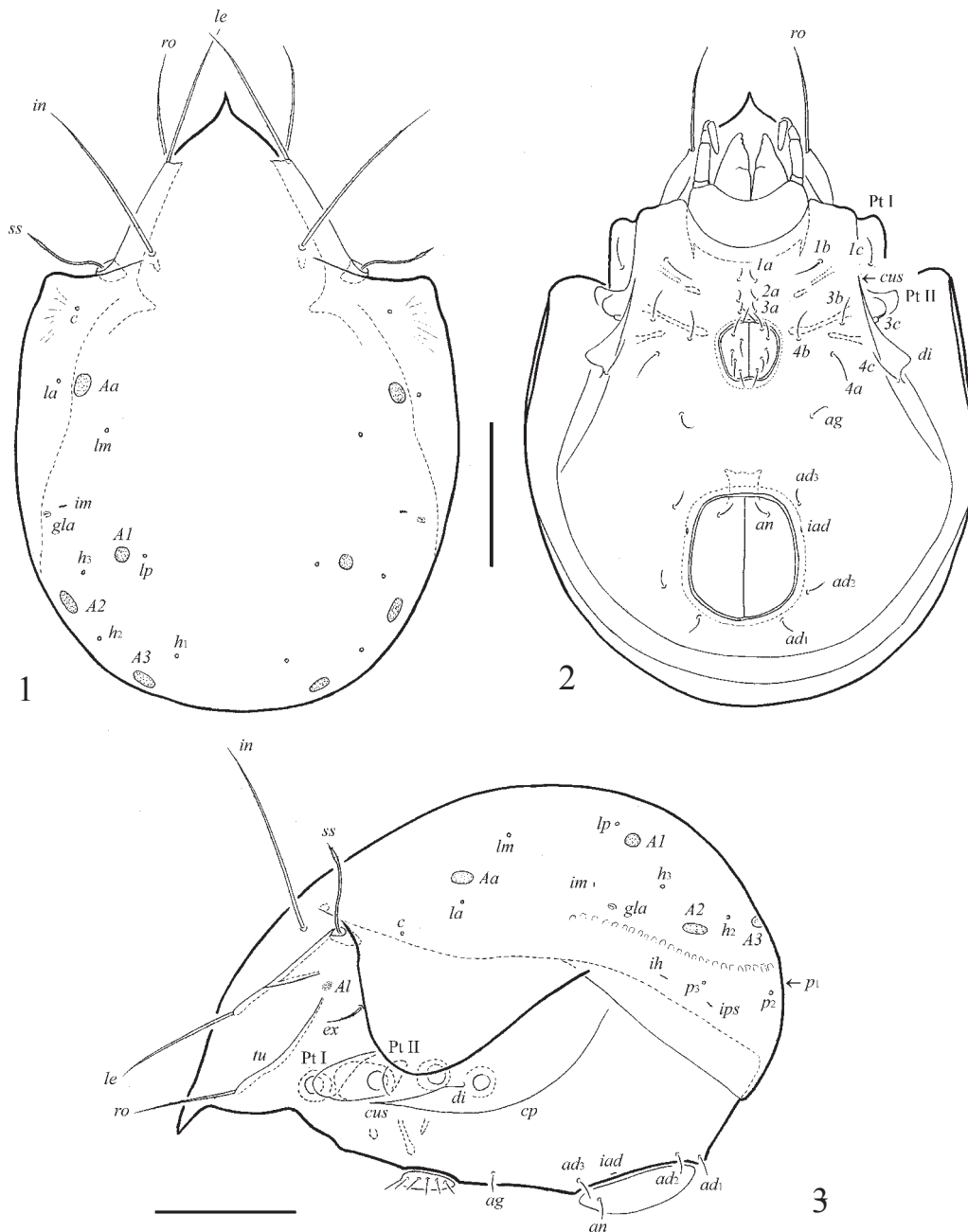


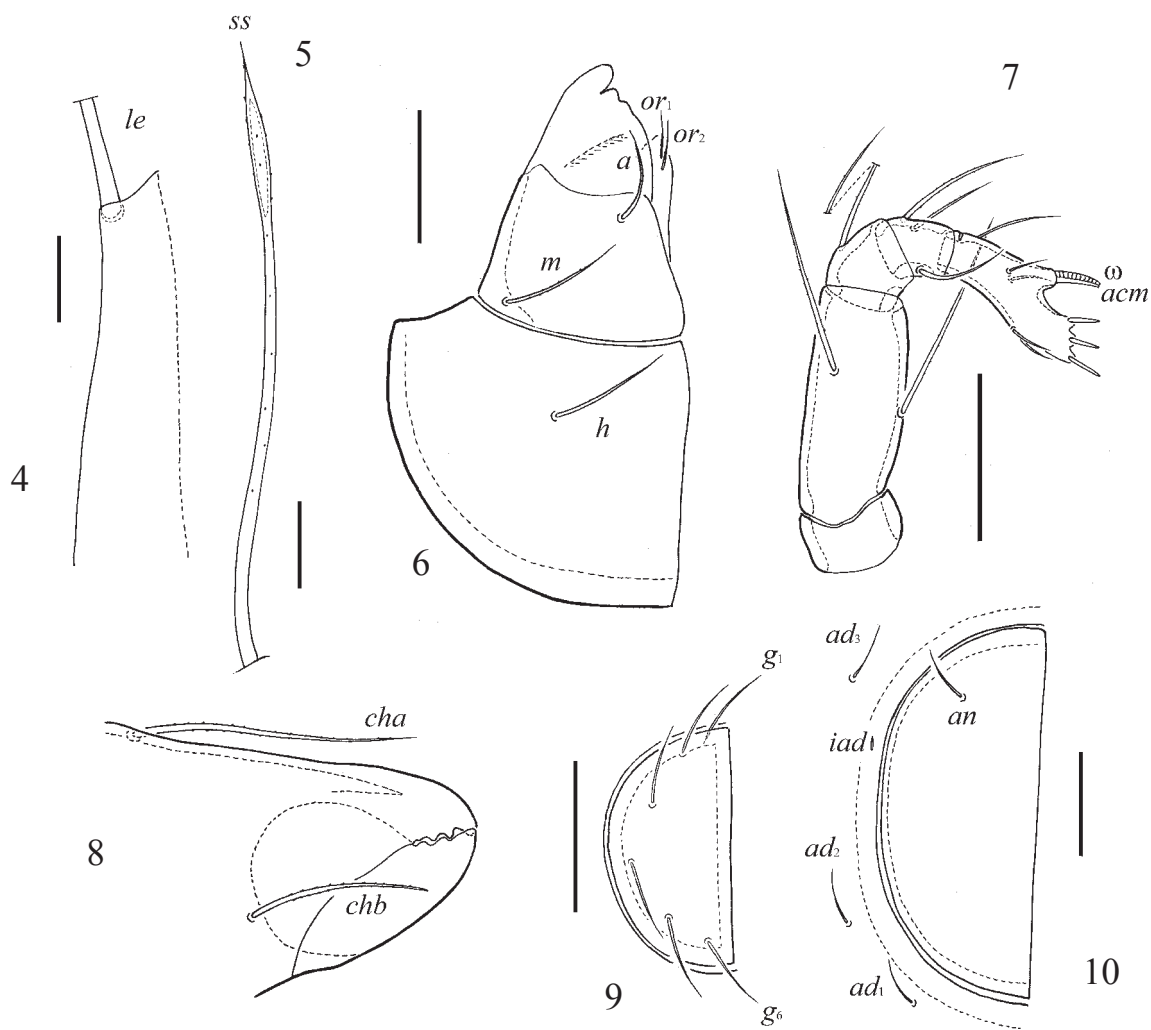
Fig. 1–3. *Unguizetes acutirostris* sp. n., adult: 1 — dorsal view; 2 — ventral view, gnathosomal setae and legs not shown; 3 — lateral view, gnathosoma, epimeral setae and legs not shown. Scale bar 200 μ m.

Notogaster (Figs. 1, 3). Dorsosejugal suture interrupted medially: prodorsum and notogaster fused without trace of borders. Notogastral setae represented by 10 pairs of alveoli. Four pairs of porose areas developed: *A1* rounded, 18–20; others oval, *Aa* 32–36 \times 28–30, *A2* and *A3* 32–36 \times 14–18. Lyrifissure *im* and opisthotal gland opening (*gla*) anterolateral to *A1*.

Lateral part of body (Fig. 3). Sublamellar line distinct. Sublamellar porose area (*Al*) oval, small (16 \times 10). Exobothridial seta (*ex*, 61–65) setiform, slightly barbed. Tutorium (*tu*) long, not shorter than lamella. Pteromorph well developed. Porose

area *Am* not evident. Lyrifissures *ih* and *ips* short, distinct. Pedotecta I and II (Pt I, Pt II), discidium (*di*), circumpedal carina (*cp*) and long, point custodium (*cus*) well-developed.

Gnathosoma (Figs. 6–8). Subcapitulum longer than wide: 213–221 \times 176–184. Hypostomal setae setiform, slightly barbed; *h* and *m* (both 53–61) longer than *a* (41–45). Adoral setae (*or*₁, *or*₂, 16) setiform, slightly barbed. Palp (147–159) with setation 0–2–1–3–9(+ ω). Solenidion (ω) fused with *acm*. Length of chelicera 221–225. Cheliceral setae long, setiform, barbed; *cha* (82) longer, than *chb* (49). Trägårdh's organ present.



Figs. 4–10. *Unguizetes acutirostris* sp. n., adult: 4 — medio-distal part of lamella, only basal part of lamellar seta shown; 5 — sensillus; 6 — subcapitulum, right half; 7 — palp; 8 — chelicera, anterior part; 9 — genital plate, right; 10 — anal plate, right. Scale bar 20 μm (4, 5); 50 μm (6–10).

Epimeral region (Fig. 2). Apodemes 1, 2, 3 and sejugal apodeme well developed. Apodeme 2 appears fenestrate, leaving gap in attachment to epimeral border. Epimeral setal formula: 3–1–3–3. Centroventral setae *1a*, *1b*, *1c* shorter (36–45) than others (73–82); all slightly barbed. Seta *3c* located on cylindrical tubercle.

Anogenital region (Figs. 2, 9, 10). Six pairs of genital (g_1 – g_6 , 32–41), one pair of aggenital (ag , 32–41), three pairs of adanal (ad_1 – ad_3 , 32–45) and one pair of anal (an , 32–41) setae setiform, slightly barbed. Lyrifissure *iad* paranal, short. Seta ad_3 inserted anteriorly to *iad*.

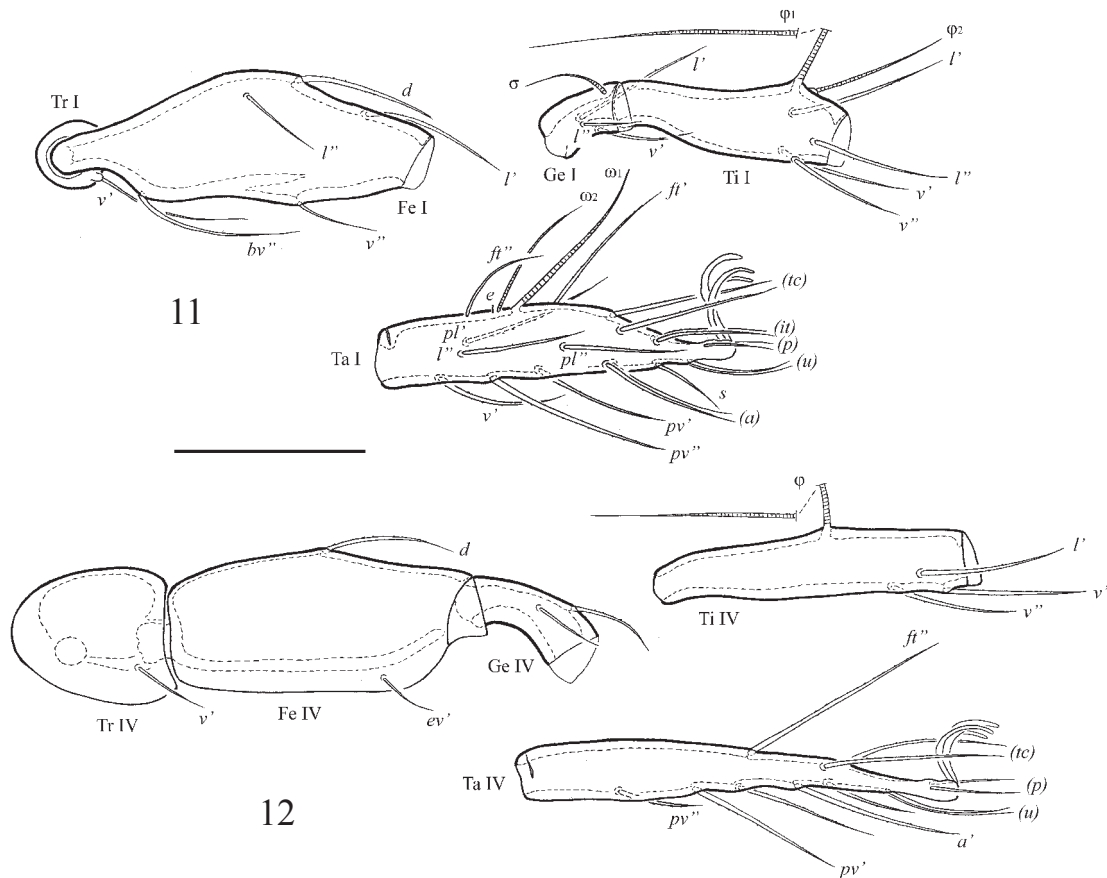
Legs (Figs. 11, 12) Lateral claws little thinner than median claw. Formulae of leg setation and solenidia: I (1–5–3–4–20) [1–2–2], II (1–5–3–4–15) [1–1–2], III (2–3–1–3–15) [1–1–0], IV (1–2–2–3–12) [0–1–0]; homology of setae and solenidia indicated in Table 1. Setae slightly barbed. Famu-

lus (*e*) short, blunt-ended. Solenidia ω_1 and ω_2 on tarsi II, σ on genua III rod-like, other solenidia setiform.

Type deposition. The holotype is deposited in the collection of the Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia; two paratypes are deposited in the collection of the Siberian Zoological Museum, Novosibirsk, Russia; two paratypes are in the personal collection of the first author.

Etymology. From Latin *acutus* (point) and rostrum, referring to the pointed rostrum.

Remarks. In having the acutely pointed rostrum, *Unguizetes acutirostris* sp. n. is similar to *Unguizetes incertus* (Balogh and Mahunka, 1969) from the Neotropical region (see Balogh and Mahunka 1969) and *Unguizetes similis* Mahunka, 1998 from Antilles Islands (see Mahunka 1998). It differs from both by the absence of a translamella



Figs. 11–12. *Unguizetes acutirostris* sp. n., adult: 11 — leg I, right, antiaxial view; 12 — leg IV, left, antiaxial view. Scale bar 100 μ m.

Table 1.
Leg setation and solenidia of *Unguizetes acutirostris* sp. n.

Leg	Trochanter	Femur	Genu	Tibia	Tarsus
I	v'	d, (l), v'', bv''	(l), v', σ	(l), (v), ϕ_1, ϕ_2	(ft), (tc), (it), (p), (u), (a), s, (pv), v', (pl), l'', e, ω_1, ω_2
II	v'	d, (l), v'', bv''	(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'	l', (v), ϕ	ft'', (tc), (p), (u), (a), s, (pv)

Roman letters refer to normal setae (e — famulus), Greek letters refer to solenidia. One apostrophe (') marks setae on anterior and double apostrophe (') setae on posterior side of the given leg segment.

(present in *U. incertus* and *U. similis*), the absence of a distinct lamellar cusp (with long cusp, having lateral tooth in *U. incertus* and *U. similis*) and spindle-form sensilli (fusiform in *U. incertus* and *U. similis*).

Key to Neotropical species of the genus *Unguizetes*

- 1. Translamella absent; sensilli spindle-form *Unguizetes acutirostris* sp. n.
- Translamella present; sensilli setiform or fusiform 2
- 2. Sensilli setiform; rostrum rounded

- *Unguizetes setiger* (Balogh and Mahunka)
- Sensilli fusiform; rostrum pointed 3
- 3. Surface of notogaster weakly polygonate
- *Unguizetes incertus* (Balogh and Mahunka)
- Surface of notogaster weakly punctate
- *Unguizetes similis* Mahunka

ACKNOWLEDGEMENTS

We cordially thank Prof. Dr. Roy A. Norton (State University of New York, College of Environmental Science and Forestry, Syracuse, USA), for thorough review of this manuscript and many valuable suggestions.

REFERENCES

- Balogh, J. and Balogh, P. 1992. The oribatid mites genera of the world. Budapest, Hungarian National Museum press, Vol. 1, 263 pp; Vol. 2, 375 pp;
- Balogh, J. and Mahunka, S. 1969. The scientific results of the Hungarian soil zoological expeditions to South America. 10. Acari: Oribatids, collected by the second expeditions. I. *Acta Zoologica Academiae Scientiarum Hungaricae*, 15 (1–2): 1–21.
- Balogh, J. and Mahunka, S. 1978. New data to the knowledge of the oribatid fauna of the Neogaea (Acari). III. *Acta Zoologica Academiae Scientiarum Hungaricae*, 24 (3–4): 269–299.
- Grandjean, F. 1960. Les Mochlozetidae n. fam. (Oribates). *Acarologia*, 2 (1): 101–148.
- Illig, J., Sandmann, D., Schatz, H., Scheu, S., and Maraun, M. 2007. Checklist reserva biológica San Francisco (Prov. Zamora-Chinchipe, S. Ecuador). *Ecotropical monographs*, 4: 221–230.
- Mahunka, S. 1998. New data on oribatids (Acari: Oribatida) from St. Lucia (Antilles). *Acarologica Genevensia LXXXIX. Revue suisse de Zoologie*, 105 (4): 839–877.
- Norton, R.A. and Behan-Pelletier, V.M. 2009. Oribatida. In: G.W. Krantz and D.E. Walter (Eds.). *A Manual of Acarology* (TX): Lubbock, Texas Tech University Press. Chapter 15: 430–564.
- Sellnick, S. 1925. Javanische Oribatiden. *Treubia*, 6: 459–475.