



First record of the genus *Afrotrachytes* Kotschán (Acari: Uropodina) in Peru with the description of a new species

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Received: 2 April 2020

Accepted: 12 June 2020

Available online: 29 July 2020

ABSTRACT: *Afrotrachytes peruensis* **sp. nov.** is described based on four females collected from soil in ACP Panguana, Peru. This is the second data of this genus in the Neotropical region. The new species differs from the congener in the ornamentation of female genital shield, the shape of sternal setae and caudal setae on dorsal idiosoma.

Keywords: Mite, Mesostigmata, taxonomy, Neotropical region.

Zoobank: <http://zoobank.org/1D3CE48B-B19F-4AC3-924B-F5E3AFA58538>

INTRODUCTION

The genus *Afrotrachytes* was established by Kotschán (2006a) for the *Afrotrachytes seticaudatus* Kotschán collected in Angola. In the same year, another new species was discovered and described (*Afrotrachytes longicaudatus* Kotschán) from Tanzania (Kotschán, 2006b). Three years later, the third African species was also described (*A. mirabilis* Kotschán) from Cameroon, together with the first Neotropical species (*A. bercziki* Kotschán) from Ecuador (Kotschán, 2009). Based on our current knowledge, this genus occurs in South-America and Africa, and its occurrence shows a typical amphiatlantic distribution type (Kotschán, 2009).

During the investigation of the Peruvian Uropodina, we found the second South-American species of the genus which is described herein.

MATERIALS AND METHODS

Specimens of the new *Afrotrachytes* were collected in Peru, Dept. Huánuco, Rio Yuyapichis, ACP Panguana. Mite specimens were cleared in lactic acid for two weeks and then investigated on half covered excavated slides. The illustrations were made with the aid of a drawing tube on a Leica 1000 scientific microscope. The specimens are stored in 70% ethanol and deposited in the Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, Lima, Peru (MUSM) and the SNSB-Bavarian State Collection of Zoology, Munich, Germany (ZSM).

Abbreviations: *h* = hypostomal setae, *st* = sternal setae. All the measurements and the scales in the figures are given in micrometres (µm).

RESULTS

Taxonomy

Afrotrachytes Kotschán, 2006

Afrotrachytes Kotschán, 2006a: 2; Kotschán, 2006b: 53; Kotschán, 2009: 41.

Diagnosis. Color yellowish-brown. Idiosoma oval with long vertex. Legs as long as idiosoma. First legs without ambulacral claws. All legs bearing wide dorsal and ventral processes and wide phylliform setae. Inner margins of femur, genu, tibia and tarsus of leg I with long and rod-like setae. Dorsal and marginal shields fused anteriorly, pygidial shield present. Several long and phylliform caudal setae (three pairs or more) situated on ventral and dorsal idiosoma. One pair of horn-like anterior humps located on dorsal idiosoma at the level of coxae II. Genital shield of female oval, reticulate without anterior process.

Type species. *Afrotrachytes seticaudatus* Kotschán, 2006 by original designation.

Biology. We have very few information about the biology of the *Afrotrachytes* mites. Only N'Dri et al. (2018) presented that an unidentified species of the genus had been found in higher abundance in the native habitats (primary forests and savanna) in Cameroon in the rainy season. But the abundance had been elevated in the disturbed habitat (in a teak plantation) during the dry season contrary the natural habitats, where the number of specimens had been reduced (N'Dri et al., 2018).

Afrotrachytes peruensis **sp. nov.**

(Figures 1-11).

Diagnosis. Dorsal shield covered by oval pits, caudal setae long with narrow flag-like hyaline margin. Pygidial shield quadrangular. Sternal setae *st3*, *st4* and *st5* rod-like and apically forked. Genital shield of female with reticulate sculptural pattern.

Material examined. *Holotype.* Female. Peru, Dept. Huánuco, Rio Yuyapichis, ACP Panguana, 9°37'S, 74°56'W, 230-260m a.s.l., 23.IV.2016-09.V.2016., leg. S. Friedrich, F. Wachtel & D. Hauth (in MUSM). *Paratypes.* Three females,

collection data as in holotype (one paratype deposited in the MUSM, two paratypes deposited in the ZSM).

Description

Female (n=4).

Description. Length of idiosoma 775–820, width 575–605. Shape pentagonal, posterior margin rounded.

Dorsal idiosoma (Fig. 1). Dorsal and marginal shields fused close to anterior margin. Dorsal shield covered by oval pits (ca 8–10×7–11), except on smooth central area. Eight pairs of setae on dorsal shield bulbiform and ca 24–36 long. Marginal shield reduced posteriorly, bearing flag-like (ca 40–68) setae. Some oval pits situated on posterior part of marginal shield. Two pairs of long (ca 155–160) and narrow flag-like setae situated on small platelets (ca 30–34×18–20) and one pair of short (ca 65–70) and wider setae situated on membranous cuticle on caudal part of dorsal idiosoma. Pygidial shield quadrangular (80–85 long and 260–270 wide), covered by oval pits and bearing one pair of long and narrow setae (ca 120–135).

Ventral idiosoma (Fig. 2). Sternal and ventral shields with oval pits. Sternal setae *st1* and *st2* short (ca 21–23) leaf-like, situated at level of coxae II. Setae *st3*, *st4* and *st5* short (ca 20–28), rod-like, apically forked into 3–5 short branches. Setae *st3* situated close to anterior margin of genital shield, *st4* at level of central area of coxae III, *st5* close to posterior margin of genital shield. Three pairs of short (ca 26–40) and leaf-like ventral setae situated between coxae IV and level of anal opening. Two pairs of long (ca 100–120) and leaf-like setae placed at level of anal opening on marginal area of ventral idiosoma. Anal opening small, with one pair of shorter (ca 23–25) and one pair of longer (ca 38–41) adanal setae, postanal setae ca 37–42 long. All setae around anal opening leaf-like (Fig. 3). Ventral shield covered by oval pits (ca 7–11×8–13). Stigmata situated between coxae II and III. Poststigmatid part of peritremes short and straight, prestigmatid part with three bends (Fig. 4). Genital shield suboval (180–192 long and 154–160 wide) and its surface covered by reticulate sculptural pattern. Tritosternum with wide, quadrangular basis; laciniae subdivided into five smooth branches (Fig. 5).

Gnathosoma. Corniculi horn-like, internal malae smooth and longer than corniculi. Hypostomal setae *h1* smooth and ca 30–33 long, *h2*, *h3* and *h4* trifurcated and ca 14–17 long. Palp trochanter with two marginally serrate setae. Epistome basally serrate, apically smooth (Fig. 7). Chelicera with one tooth on fixed digit, one big tooth and some (6–7) small teeth on movable digit, internal sclerotized node absent, fixed digit longer than movable digit (Fig. 6).

Legs (Figs 8–11). Claws and ambulacrum absent in leg I. Leg I with wide flap-like prolongation and inner margin of femur, genu, tibia and tarsus with long and rod-like setae. Smaller flap-like prolongation situated on trochanters, femora, genua and tibiae on other legs. Setae on legs bulbiform or flag-like, needle-like setae situated only on tarsi I–IV. Length of legs: leg I 710–725, leg II 645–660, leg III 590–600, leg IV 695–710.

Etymology. The name of the new species refers to the country where it was collected.

Remarks. The new species differs from the other Neotropical species (*Afrotrachytes bercziki*) in several character states. The surface of female genital shield is smooth in *A. bercziki* and it is ornamented by reticulate sculptural pattern in the new one. The dorsal shield of known species is covered by irregular pits on central area, contrary with the new one, where the dorsal shield is smooth or bears oval pits on central area. *A. bercziki* has spatuliform postanal seta, apically serrate first ventral setae and needle like *st3* and *st4* setae, but the new species has leaf-like postanal seta, first ventral setae leaf-like, and apically forked *st3* and *st4* setae.

Key to the females of known *Afrotrachytes*

1. Dorsal shield with irregular and rectangular pits, anal area with two postanal setae 2
- Dorsal shield without irregular and rectangular pits, anal area with one postanal seta 3
2. Postanal seta leaf-like, setae on pygidial shield more than two times longer than the length of pygidial shield
..... *A. seticaudatus*
- Postanal seta spatulate, setae on pygidial shield almost as long as the length of pygidial shield *A. bercziki*
3. Surface of female genital shield smooth *A. mirabilis*
- Surface of female genital shield with reticulate sculptural pattern 4
4. Sternal setae *st3*, *st4* and *st5* smooth and needle-like, setae on marginal shield serrate *A. longicaudatus*
- Sternal setae *st3*, *st4* and *st5* rod-like and apically forked, setae on marginal shield smooth and leaf-like
..... *A. peruensis* **sp. nov.**

Funding

This work was supported by Prof. Dr. Roland Melzer (Bavarian State Collection of Zoology, Munich, Germany).

Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

Acknowledgements

We cordially thank Dr. Juliane Diller and Erich Diller for kindly inviting one of us (Stefan Friedrich) to Panguana, Franz Wachtel (Grünwald, Germany) and David Hauth (Fürstenfeldbruck, Germany) for expertise and assistance in the field, Dr. Gerardo Lamas Müller and Dra. Diana Silva Dávila (both Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, Lima, Peru) for cooperation, and the Servicio Nacional Forestal y de Fauna Silvestre (SERFOR) for issuing a collecting permit (# 007-2014-

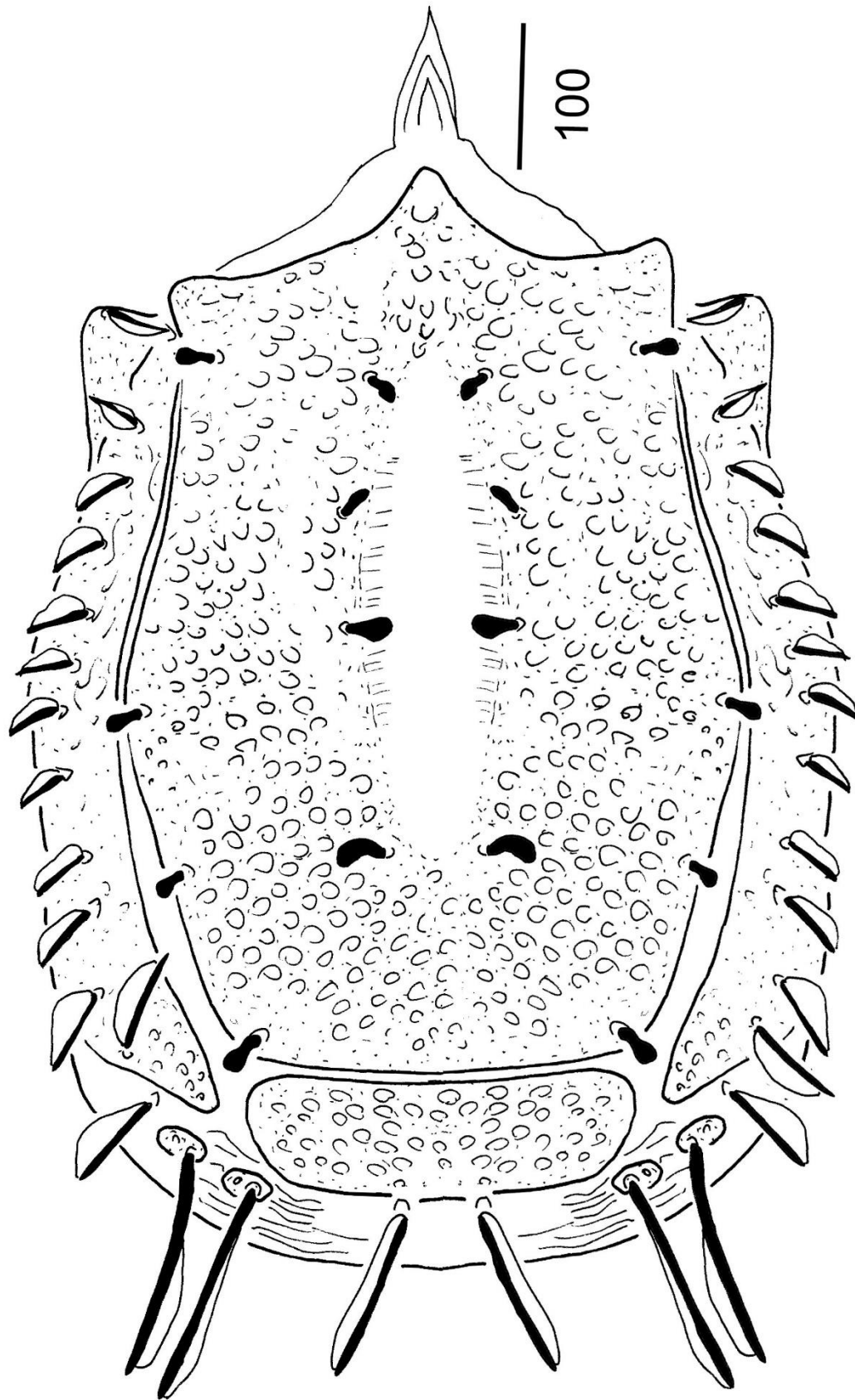


Figure 1. Dorsal view of *Afrotrachytes peruensis* sp. nov. (female), holotype.

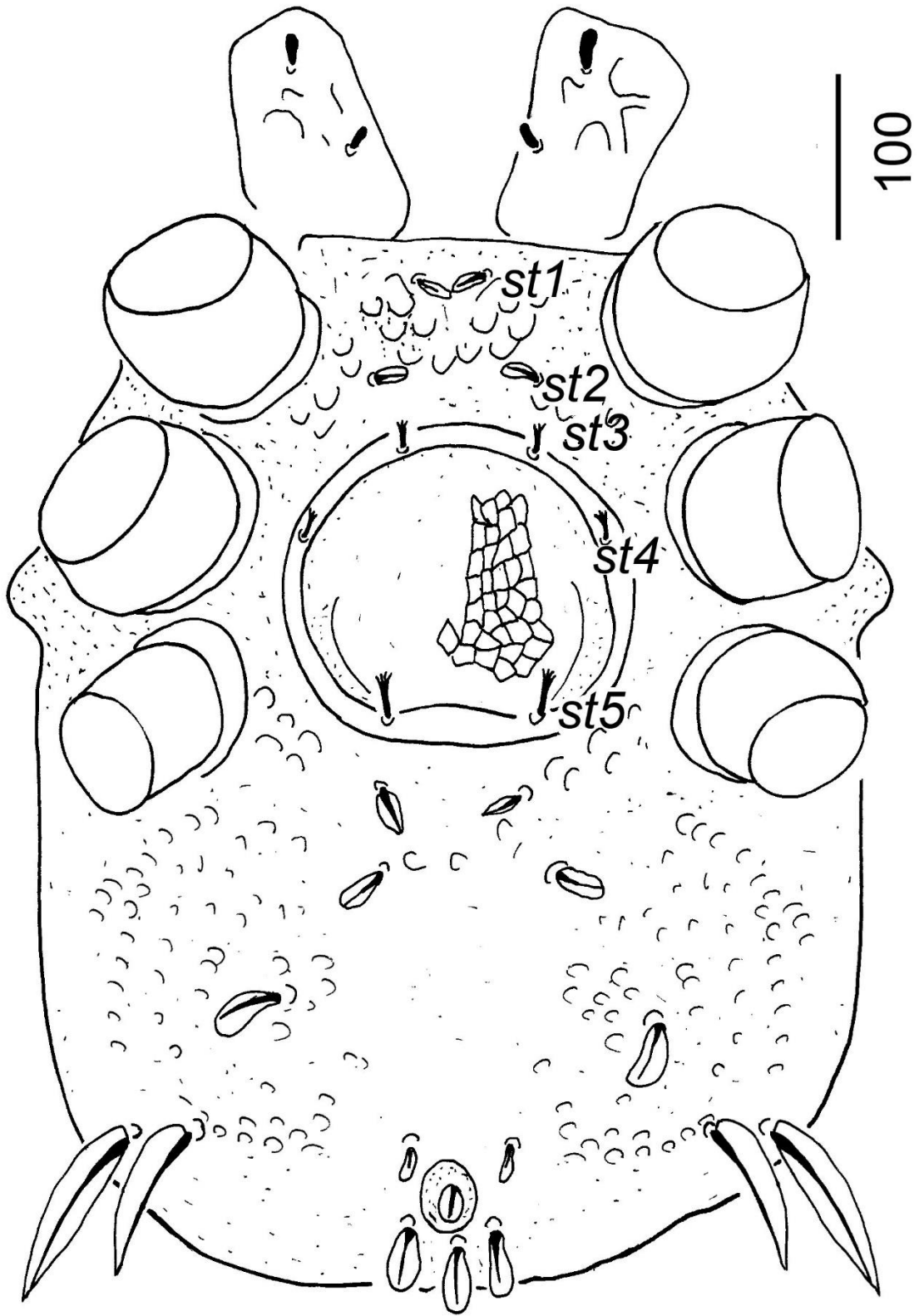
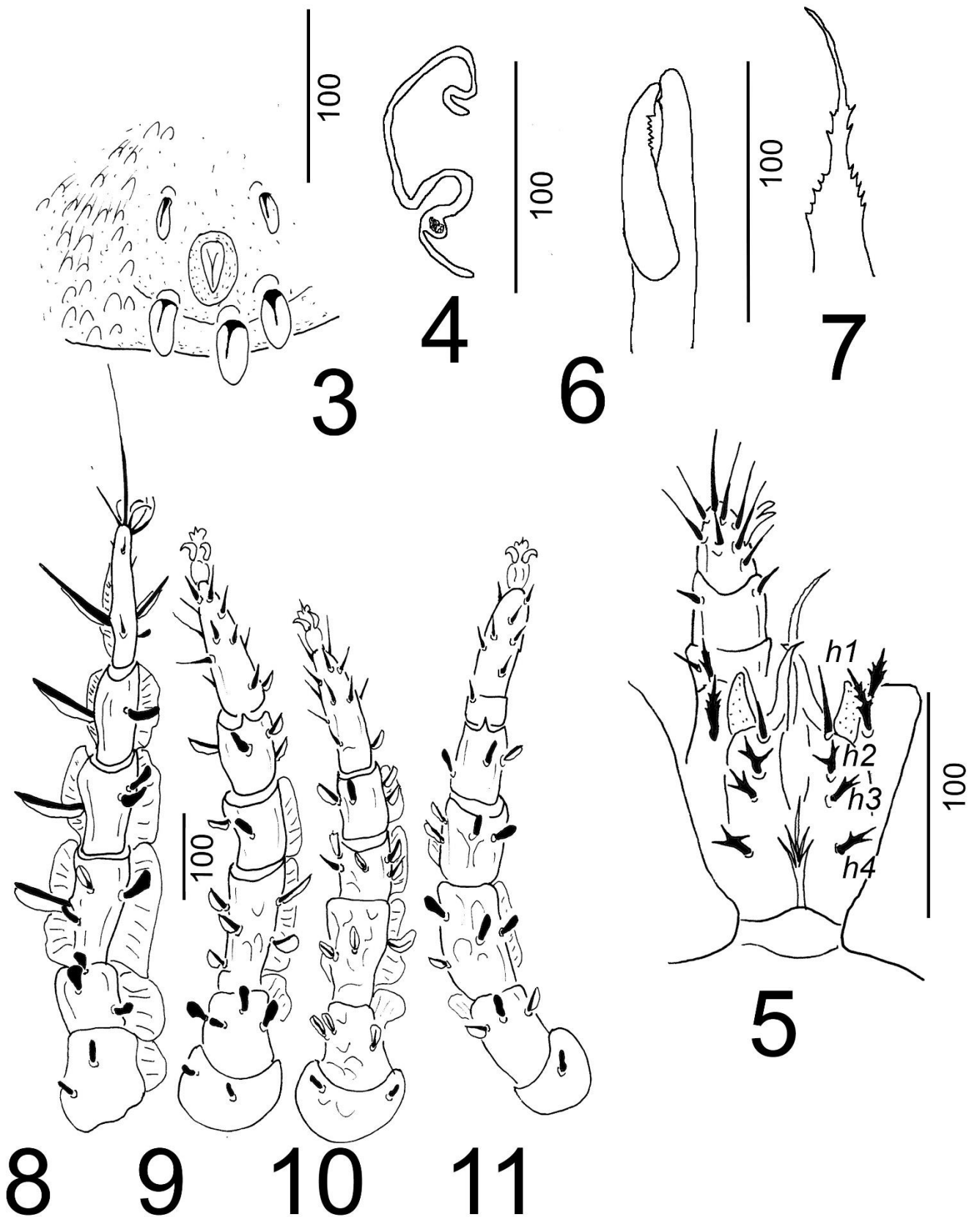


Figure 2. Ventral view of *Afrotrachytes peruensis* sp. nov. (female), holotype.



Figures 3–11. *Afrotrachytes peruensis* sp. nov. (female), holotype. 3. Anal region, 4. Peritreme, 5. Ventral view of tritosternum, gnathosoma and palp, 6. Lateral view of chelicera, 7. Epistome, 8. Leg I in ventral view, 9. Leg II in ventral view, 10. Leg III in ventral view, 11. Leg IV in ventral view.

SERFOR-DGGSPFFS) and export permit (# 003052-SERFOR).

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Edited by: Raşit Urhan

Reviewed by: Three anonymous referees

Citation: Kontschán, J. and Friedrich, S. 2020. First record of the genus *Afrotrachytes* Kontschán (Acari: Uropodina) in Peru with the description of a new species. *Acarological Studies*, 2 (2): 77-82.
