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A new species of *Aleurodamaeus* from Ethiopia, with remarks on the taxonomic status of *Aleurodamaeus (Trichodamaeus)* Mahunka, 1984 (Acari: Oribatida: Aleurodamaeidae)

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Abstract. A new oribatid mite species, *Aleurodamaeus recenfesevpi* sp. nov., is described from moss and litter of the Ethiopian Cholomu forest. This species is similar to *A. australis* Woas, 1992 from South Africa in having long notogastral setae and the absence of scalps. However, it can be clearly distinguished from the latter by body size, specific cerotegumental ornamentation on the notogaster and epimeral setal formula. The subgenus *Aleurodamaeus (Trichodamaeus)* Mahunka, 1984 is recognized as a junior synonym of the genus *Aleurodamaeus*.

Keywords. Oribatid mites, new species, *Aleurodamaeus*, taxonomic status, *Aleurodamaeus (Trichodamaeus)*, synonym.

INTRODUCTION

The small oribatid mite genus *Aleurodamaeus* Grandjean, 1954 (Oribatida, Aleurodamaeidae) comprises five species: *A. africanus* Mahunka, 1984 from Tanzania, *A. australis* Woas, 1992 from South Africa, *A. cephalotes* (Berlese, 1916) from eastern Africa, *A. hungaricus* Paschoal & Johnston, 1985 from Hungary and *A. setosus* (Berlese, 1883) from the southern Palearctic region.

At present, the oribatid mite fauna of Ethiopia is poorly known, and only one species of *Aleurodamaeus* namely *A. africanus*, has been recorded in this country (Ermilov *et al.,* 2012).

In the course of taxonomic studies of the Ethiopian oribatid mites, collected in 2011 by the second author, we found a new representative of the genus *Aleurodamaeus* which is described below as *Aleurodamaeus recenfesevpi* sp. nov.

MATERIAL AND METHODS

The collection locality and habitat of the new species are given in the "*Material examined*" section. Specimens were studied in lactic acid, mounted on temporary cavity slides for the duration of the study, then stored in vials in 70% alcohol. All body measurements are presented in micrometers (μm). 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 distension. Notogastral width refers to the maximum width in dorsal aspect.

General terminology used in this paper follows that of Norton & Behan-Pelletier (2009). 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.

TAXONOMY

Aleurodamaeus recenfesevpi sp. nov.

(Figsures 1–14)

Diagnosis. Body size 547–664 × 348–381. Scalps absent. Notogastral cerotegument represented by five longitudinal ridge-like structures.

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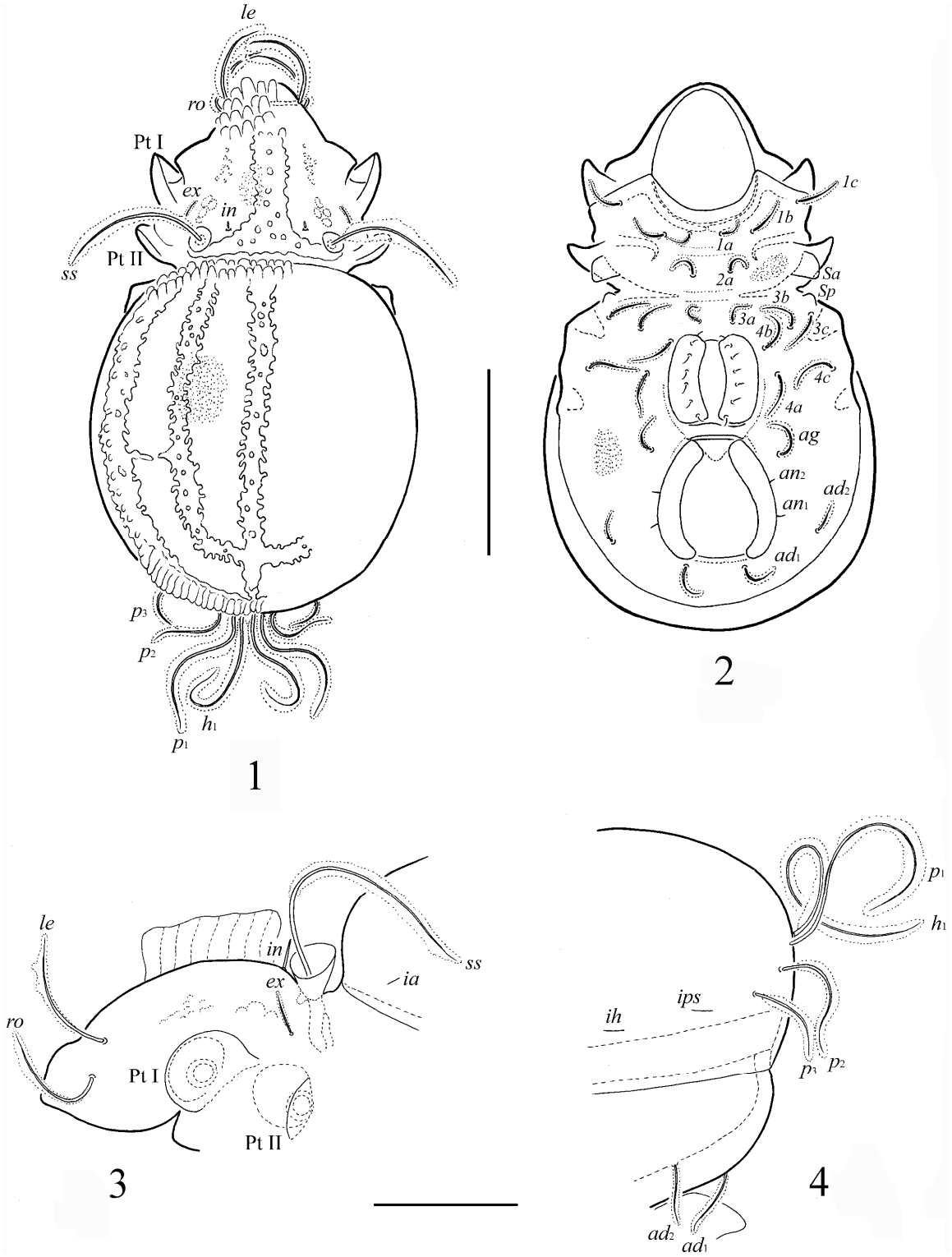


Figures 1–4. *Aleurodamaeus recenfesevpi* sp. nov. 1 = Dorsal view of body, 2 = ventral view of body, legs not shown, 3 = lateral view of prodorsum, legs not shown, 4 = lateral view of posterior part of notogaster. Scale bars (1, 2) 200 μm, (3, 4) 100 μm

Rostral and lamellar setae setiform, smooth; interlamellar setae minute, thick. Four pairs of setiform notogastral setae present; h_1 and p_1 longest, p_3 shortest. Seven or nine pairs of genital setae present.

Material examined. The holotype and 14 paratypes: holotype and 11 paratypes have the following collection data: Ethiopia, 9º06'N, 38º09'E, 2810 m a.s.l., Cholomu forest, mountain, *Hagenia abissinica* forming the canopy, moss, 6.11.2011, coll. L.B. Rybalov and A.I. Bastrakov; the three paratypes are found in the same locality and data, but in litter.

Type deposition. The holotype is deposited in the collection of the Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia; three paratypes are deposited in the collection of Siberian Zoological Museum, Novosibirsk, Russia; 11 paratypes are in the collection of the first author.

Measurements. Body length: 597 (holotype), 547–664 (14 paratypes). Body width: 365 (holotype), 348–381 (14 paratypes).

Integument (Figs. 1, 3, 5, 6, 14). Body colour: brown to dark brown. Medial part of prodorsum and notogaster covered with thick cerotegument. Notogastral cerotegument with specific ornamentation: five longitudinal ridge-like structures. Entire body, setae and legs covered with small, round granules (diameter up to 4 μm).

Prodorsum (Figs. 1, 3). Rostrum rounded in dorsal view. Rostral and lamellar setae setiform, smooth, distally curved anteromediad. Rostral setae inserted laterally on prodorsum, lamellar setae inserted dorsolaterally on prodorsum. Poorly visible sclerotized line present between the insertions of lamellar setae. Interlamellar setae minute, conical, thickened. Sensilli longest setae on prodorsum, setiform, smooth. Dorso-lateral parts of prodorsum with muscle sigilla.

Notogaster (Figs. 1, 3–5). Clearly convex in lateral view. Oval in dorsal view. Scalps always absent. Four pairs of setiform, thin, smooth notogastral setae present. Setae h_1 and p_1 longest, set on small tubercles; setae p_3 shortest. Opisthonotal gland openings and thin lyrifissures *ia*, *im*, *ip* present in typical arrangement for genus, but invisible under the layer of cerotegument.

Lateral part of body (Figs. 1, 3). Exobothridial setae setiform, thin, smooth. Pedotecta I (Pt I) and pedotecta II (Pt II) typical for genus. Discidia absent. Lyrifissures *ih* and *ips* long, thin.

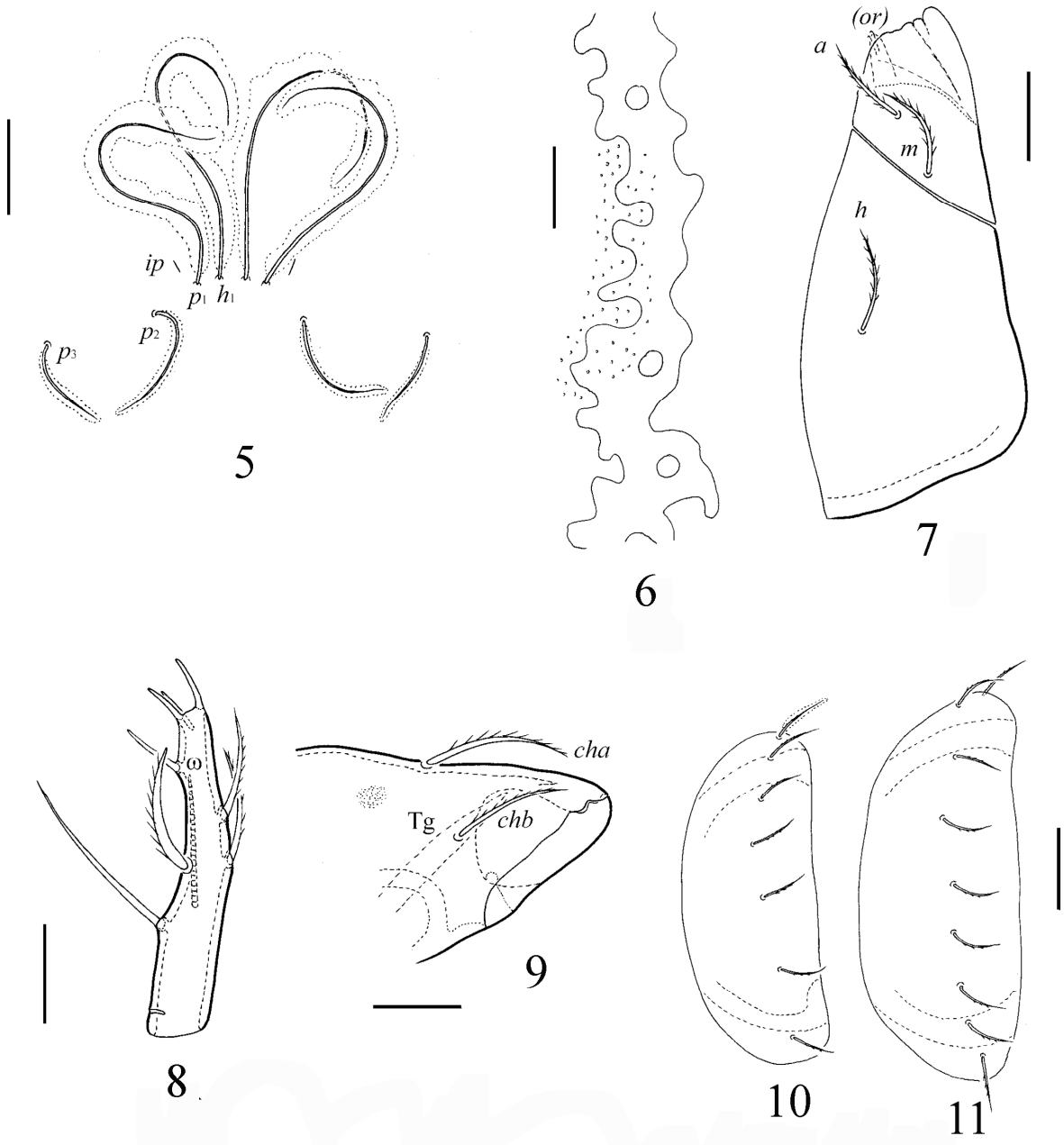
Gnathosoma (Figs. 7–9). Subcapitulum longer than wide. Hypostomal setae *a*, *m*, *h* similar in length, setiform, barbed. Two pairs of adoral setae (or_1, or_2) short, setiform, without distinct barbs. Palps with setation 0–2–1–3–8(+1ω). Solenidion long, pressed to surface of palptarsus, not attached to eupathidium. Cheliceral setae setiform, barbed; *cha* longer and slightly thicker than *chb*. Trägårdh's organ (Tg) visible.

Epimeral region (Fig. 2). Apodemes 1, 2 and sejugal apodema developed. Two pairs of tubercles *Sa* and *Sp* present, but *Sp* often poorly developed. Epimeral setal formula 3–1–3–3. Setae setiform, thin, smooth, similar in length.

Anogenital region (Figs. 2, 10, 11). Transverse ridge present between genital and anal plates, strongly pigmented. Genital plates with seven or nine pairs (1 : 1 in specimens) of barbed genital setae. One pair of aggenital (*ag*) and two pairs of adanal (ad_1, ad_2) setae setiform, smooth. Two pairs of anal setae (an_1, an_2) short, smooth. Lyrifissures *iad* not evident.

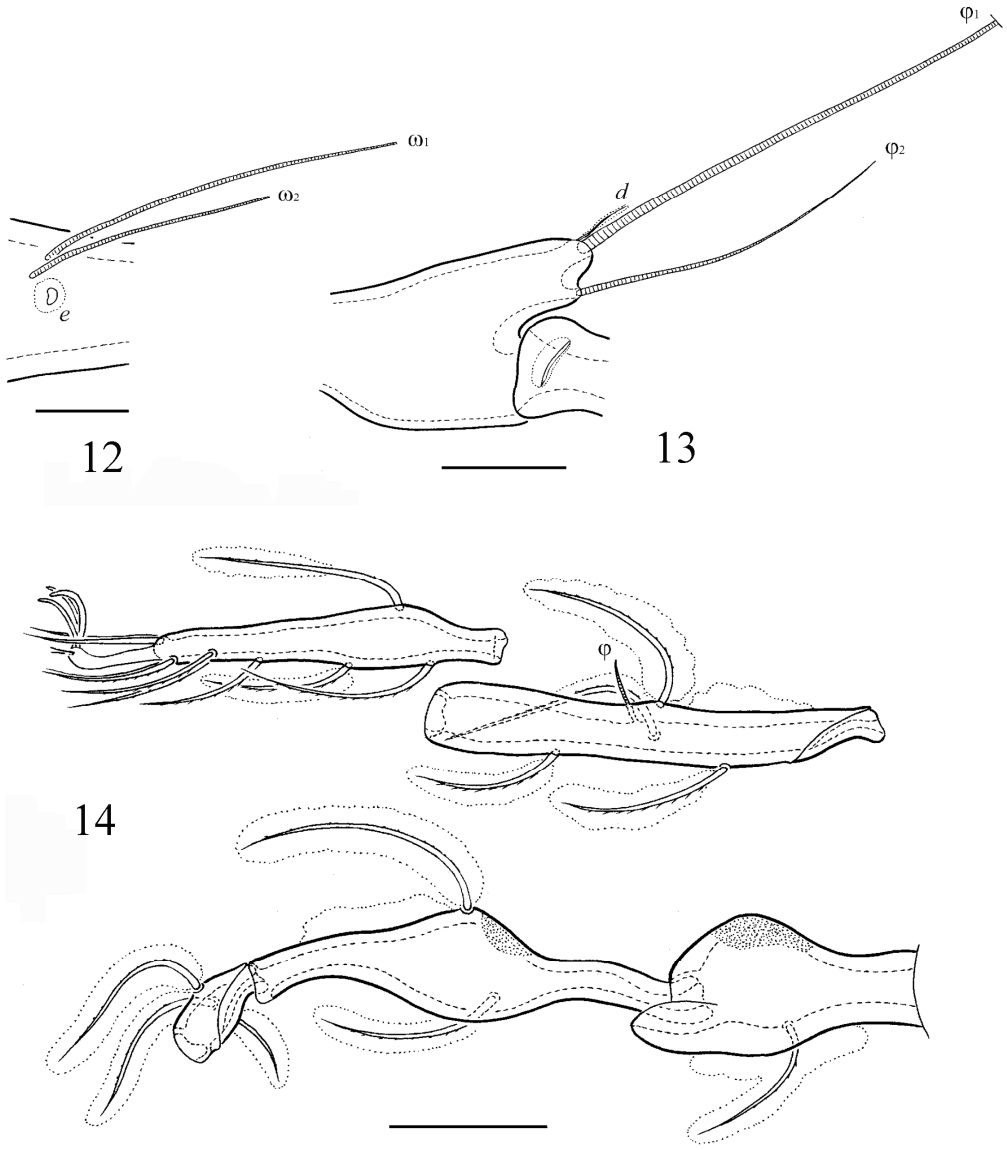
Legs (Figs. 12–14). Articulations without sockets, however it is often only clearly visible in dissected specimens. Formulae of leg setation and solenidia: I (1–5–4–5–20) [1–2–2], II (1–4–4–5–16) [1–1–2], III (2–3–3–4–15) [1–1–0], IV (1–2–3–4–12) [0–1–0]; homology of setae and solenidia indicated in Table. Famulus sunken, but we found it in one dissected specimen.

Comparative analysis. *Aleurodamaeus recenfesevpi* sp. nov. is similar to *A. australis* Woas,



Figures 5–11. *Aleurodamaeus recenfesevpi* sp. nov. 5 = Notogastral setae, posterior view of notogaster, 6 = fragment of cerotegument on notogaster, dorsal view, 7 = subcapitulum, ventral view of left half, 8 = palptarsus, 9 = chelicera, anterior part, 10 and 11 = genital plate, right of different individuals showing 7 or 9 genital setae. Scale bars (5) 50 µm, (6, 7, 9–11) 20 µm, (8) 10 µm

1992 from South Africa in having long, flagellate notogastral setae (h_1, p_1) and the absence of scalps. However, it can be clearly distinguished from the latter by the larger body size (547–664 × 348–381 in *A. recenfesevpi* sp. nov. versus 430 × 230 in *A. australis*), cerotegumental ornamentation on the notogaster five longitudinal ridge-like structures (with craterlike alveoli and concentric cerotegument lines in *A. australis*) and epimeral setal formula 3–1–3–3 (3–1–4–4 in *A. australis*).



Figures 12–14. *Aleurodamaeus recenfesevpi* sp. nov. 12 = Solenidia and famulus on tarsus I, 13 = solenidia on tibia I, 14 = leg IV, left, paraxial view. Scale bars (12) 10 μm, (13) 20 μm, (14) 50 μm

Table 1. Leg setation and solenidia of *Aleurodamaeus recenfesevpi* sp. nov.

Leg	Trochanter	Femur	Genu	Tibia	Tarsus
I	*v′*	*d*, *(l)*, *bv″*, *v″*	*d*, *(l)*, *v′*, σ	*d*, *(l)*, *(v)*, φ_1, φ_2	*(ft)*, *(tc)*, *(it)*, *(p)*, *(u)*, *(a)*, *s*, *(pv)*, *v′*, *(pl)*, *l″*, *e* (sunken), ω_1, ω_2
II	*v′*	*d*, *(l)*, *bv″*	*d*, *(l)*, *v′*, σ	*d*, *(l)*, *(v)*, φ	*(ft)*, *(tc)*, *(it)*, *(p)*, *(u)*, *(a)*, *s*, *(pv)*, *l″*, ω_1, ω_2
III	*l′*, *v′*	*d*, *l′*, *ev′*	*d*, *l′*, *v′*, σ	*d*, *l′*, *(v)*, φ	*(ft)*, *(tc)*, *(it)*, *(p)*, *(u)*, *(a)*, *s*, *(pv)*
IV	*v′*	*d*, *ev′*	*d*, *l′*, *v′*	*d*, *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. Parentheses refer to a pair of setae.

Etymology. The new species is named after the Referral Center of the Federal service for Veterinary and Phytosanitary Inspection, Nizhniy Novgorod, Russia, where the first author had the opportunity to investigate oribatid mites for several years. The specific name "*recenfesevpi*" includes the reduced initial parts of the name of this organization.

Remarks on the taxonomic status of *Aleurodamaeus (Trichodamaeus)*

Mahunka (1984) proposed the subgenus *Aleurodamaeus (Trichodamaeus)* with *Aleurodamaeus (Trichodamaeus) africanus* Mahunka, 1984 as type species. This subgenus differs from *Aleurodamaeus (Aleurodamaeus)* Grandjean, 1954 only by the nine pairs of genital setae (versus seven pairs). The specimens of *A. recenfesevpi* sp. nov. have seven and nine (1 : 1) pairs of genital setae. Hence, it is unjustified to recognize subgenera in this genus based only on number of genital setae, and we consider the subgenus-level name *Trichodamaeus* to be a junior subjective synonym of *Aleurodamaeus*.

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