

FIRST RECORD OF MITE FAMILY DASYTHYREIDAE (ACARI: RAPHIGNATHOIDEA) FROM EUROPE WITH DESCRIPTION OF A NEW SPECIES OF THE GENUS *DASYTHYREUS* FROM EUROPEAN PART OF RUSSIA

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ABSTRACT: The mite family Dasythyreidae (Acari: Raphignathoidea) is recorded from Europe for the first time. A new species *Dasythyreus polytrichus* sp. n. collected on bark of spruce is described from the European part of Russia.

KEY WORDS: Dasythyreidae, *Dasythyreus*, new species, Acari, Russia

INTRODUCTION

The mite family Dasythyreidae was created by Walter and Gerson (1998) for two monotypic genera: *Dasythyreus* Atyeo, 1961 and *Xanthodasythyreus* Walter et Gerson, 1998. *Dasythyreus hirsutus* Atyeo, 1961 was described from USA (Arkansas) from the bark of a dead tree (Atyeo 1961). *Xanthodasythyreus toohey* Walter et Gerson, 1998 was described from forest litter from Australia (Walter and Gerson 1998). During the study of mite fauna of the Tula district of Russia by the junior author, a new species of the genus *Dasythyreus* was found under the bark of spruce. The purpose of this paper is to describe this new species, *Dasythyreus polytrichus* sp. n.

MATERIALS AND METHODS

Mites were collected from spruce bark, preserved in 70% alcohol, and mounted on slides (Berlese's medium). In the description below, the palpal chaetotaxy follows Grandjean (1946), the idiosomal chaetotaxy follows Grandjean (1939) as adapted for Prostigmata by Kethley (1990), the leg chaetotaxy follows Grandjean (1944) as applied to Raphignathidae by Atyeo (1963). All measurements are given in micrometers (µm) for holotype.

SYSTEMATICS

Family Dasythyreidae Walter et Gerson, 1998
Genus *Dasythyreus* Atyeo, 1961

Type species: *Dasythyreus hirsutus* Atyeo, 1961 by monotypy.

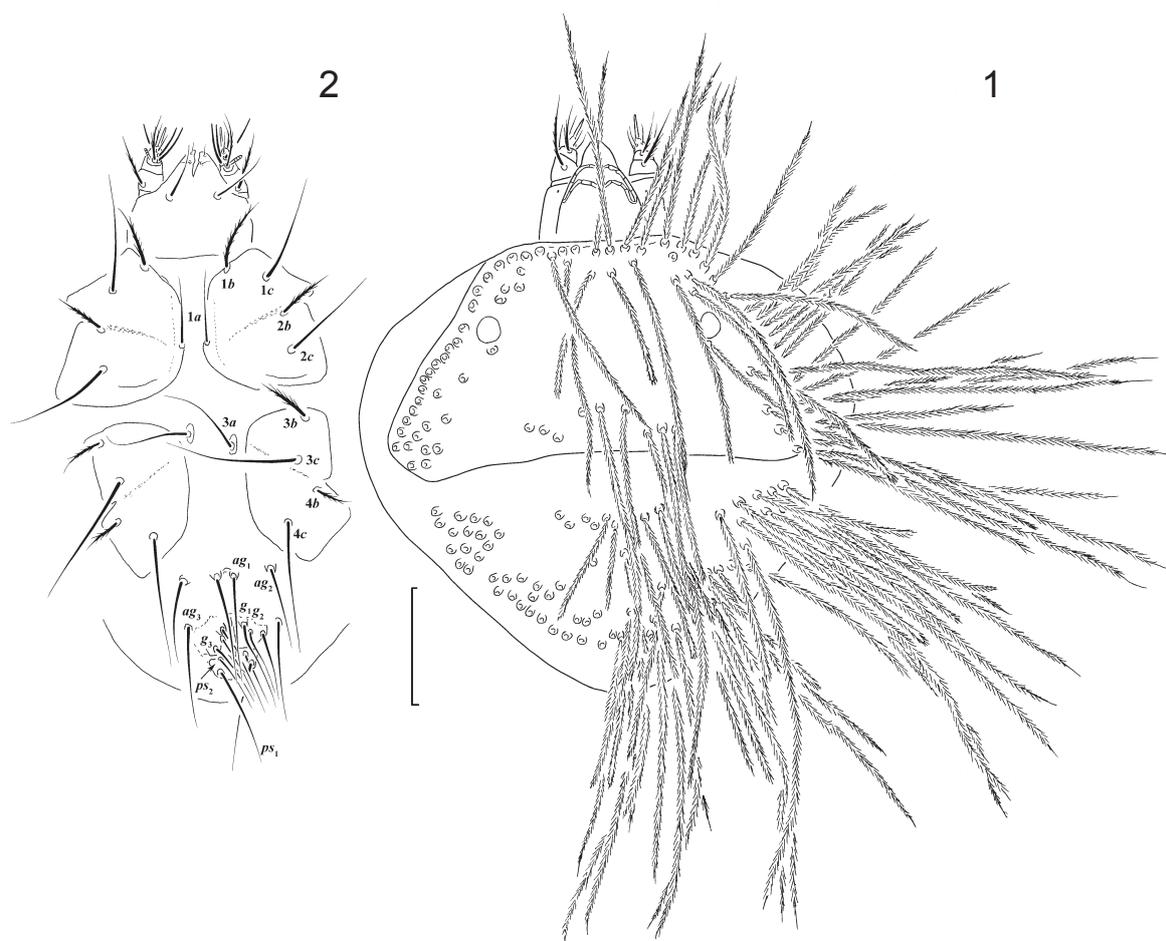
Diagnosis. Female. Gnathosoma. Chelicerae fused into elongate stylophore. Dorsally with 12–15 chambered peritremes. Movable cheliceral digits large, straight. Gnathosomal base with dorsal button-like setae *el* and 3 pairs of ventral setae *ao*₁, *ao*₂, and *m*. Palps 5-segmented. Palpal tro-

chanter without setae. Palpal femur with 2 setae: *d*, *v*". Palpal genu with 2 setae: *d*, *l*". Palptibia with 3 setae: *d*, *l*', *l*", and long and straight tibial claw. Palpal tarsus short, oval, with 6 setae: *acm*, *ba*, *ul*', *ul*", *sul*, *va*, and well developed solenidion ω. Idiosoma almost round. Idiosomal dorsum almost completely covered by two weakly sclerotised dorsal plates. Dorsal plates with numerous (84–86 paired and 3 unpaired), long, coarsely dentate setae inserted on tubercles. Prodorsal plate with pair of large eyes. Idiosomal venter. Coxae forming two groups on each side of body. Coxae I with 2–3 setae: *1a*, *1b*, *1c*, sometimes setae *1c* absent. Coxae II with 2 setae: *2b*, *2c*. Coxae III with 3 setae: *3a*, *3b*, *3c*, but setae *3a* inserted on small platelets medially to coxal plate formed by coxae III and IV. Coxae IV with 2 setae: *4b*, *4c*. Opisthosomal venter with 3 pairs of aggenital setae *ag*₁–*ag*₃, 3 pairs of genital setae *g*₁–*g*₃, and 2 pairs of pseudanal setae *ps*₁–*ps*₂. Anal valves long.

Legs. All legs with long and narrow pretarsus, bearing pair of sickle-like claws and pad-like empodium with about 20 tenent hairs on tarsi I–II and about 10 on tarsi III and IV. Leg I longer than other legs. Leg chaetotaxy: leg I — tr1(*v*')–fe3(*d*, *v*', *bv*)–ge2(*k*, *l*')–ti6(*d*, *l*', *l*", *v*', *v*", φ)–ta14(*vs*, *u*', *u*", *p*', *p*", *a*', *a*", *tc*', *tc*", *pl*', *pl*", *bl*', *bl*", ω); leg II — tr1(*v*')–fe3(*d*, *v*', *bv*)–ge1(*k*)–ti5(*d*, *l*', *l*", *v*', *v*")–ta13(*u*', *u*", *p*', *p*", *a*', *a*", *tc*', *tc*", *pl*', *pl*", *bl*', *bl*", ω); leg III — tr1(*v*')–fe2(*d*, *v*')–ge0–ti4(*d*, *l*", *v*', *v*")–ta10(*u*', *u*", *a*', *a*", *tc*', *tc*", *pl*', *pl*", *bl*', *bl*"); leg IV — tr1(*v*')–fe2(*d*, *v*')–ge0–ti4(*d*, *l*", *v*', *v*")–ta10(*u*', *u*", *a*', *a*", *tc*', *tc*", *pl*', *pl*", *bl*', *bl*").

Male and immatures unknown.

Species included. *D. hirsutus* Atyeo, 1961 (USA), *D. polytrichus* sp. n. (Russia).



Figs. 1–2. *Dasythyreus polytrichus* sp. n., female, 1 — dorsum, 2 — venter. Scale bar 100 μ m.

***Dasythyreus polytrichus*
Khaustov et Abramov sp. n.**

Figs. 1–8.

Description. Female. Idiosomal length 355, width 410. Length of gnathosoma 90, width 105.

Gnathosoma. Stylophore dorsally with 12-chambered peritremes (Fig. 3). Palpal tarsus with setae *ul'*, *ul''*, and *sul* blunt, other palpal setae pointed. Hypostomal setae *m* smooth, long, reaching beyond apex of hypostome (Fig. 4)

Idiosomal dorsum (Fig. 1). Prodorsal plate bearing 45 paired and 1 unpaired seta and a pair of large eyes. Hysterosomal plate with 41 paired and 1 unpaired seta. Longest dorsal setae with pointed tip, shorter setae blunt.

Idiosomal venter (Fig. 2). Coxal setae *1b*, *2b*, *3b*, *4b* relatively short, distinctly barbed. Other ventral setae smooth, long, whip-like. Setae *ag*₁, *ag*₂, and *g*₁ inserted on tubercles. Soft cuticle between coxal plates with thin striations.

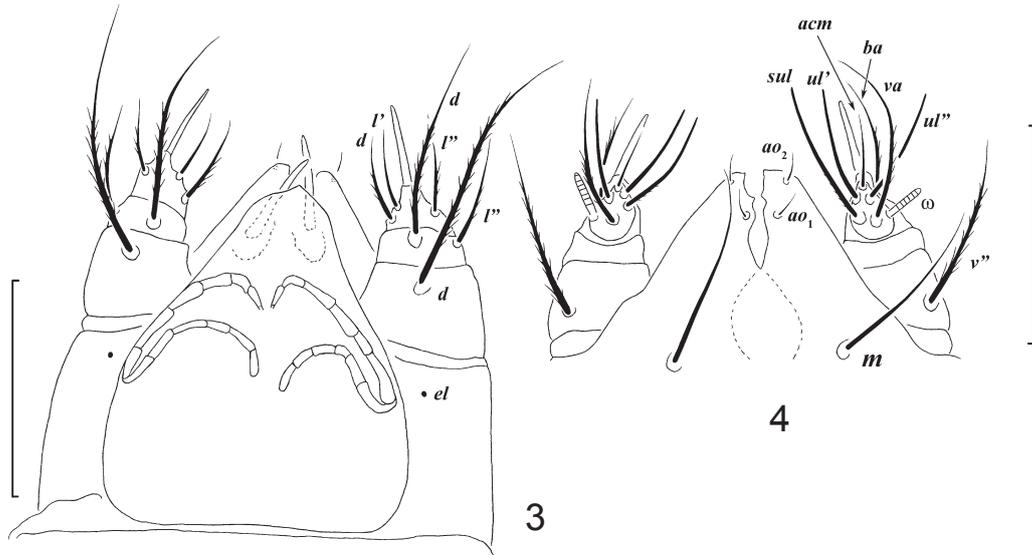
Legs (Figs. 5–8). Leg chaetotaxy as described in generic diagnosis. Leg I (Fig. 5). Solenidion ω 1 finger-shaped (29). Eupathidia *p'*, *p''* smooth, thin,

blunt. Setae *a'*, *a''* thick, barbed, blunt, characteristically curved. Setae *tc'*, *tc''*, *pl''* very long, blunt, barbed at their basal half. Solenidion ϕ 1 very long (130), thin. Seta *k* on genu I short, peg-like. Other setae of leg I coarsely dentate, pointed. Leg II (Fig. 6). Solenidion ω relatively long (34), slender. Setae *p'*, *p''*, *a'*, *a''* similar to that on tarsus I. Setae *tc'*, *tc''* the longest on tarsus II, pointed. Seta *k* as on leg I. Other setae of leg II coarsely dentate, pointed. Legs III and IV (Figs. 7–8) similar to each other. Setae *a'* and *a''* similar to those on tarsi I–II, other setae coarsely dentate, pointed.

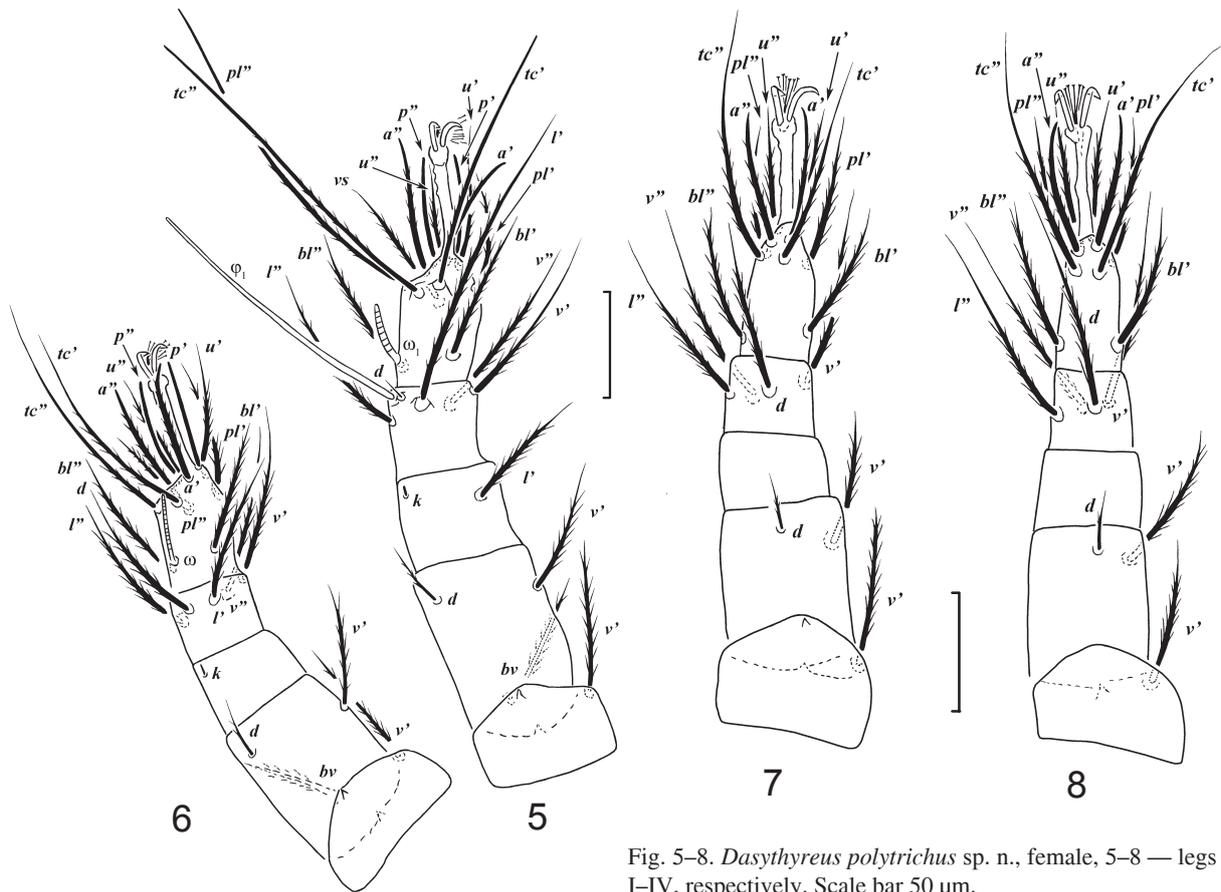
Male and immatures unknown.

Type material. Female holotype, slide # VA030709, Russia, Tula distr., vicinity of Suvorov, under the bark of spruce *Picea abies* (L.) Karst., larval galleries of longhorn beetles (Cerambycidae), 3 July 2009, coll. V.V. Abramov; paratype: 1 female, same data.

Type depositories. Holotype deposited in the collection of the Department of Parasitology, Zoological Institute of Russian Academy of Sciences, St.-Petersburg, Russia; paratype in the collection of Nikita Botanical Gardens, Yalta, Ukraine.



Figs. 3–4. *Dasythyreus polytrichus* sp. n., female, 3–4 — dorsum and venter of gnathosoma, respectively. Scale bar 50 µm.



Figs. 5–8. *Dasythyreus polytrichus* sp. n., female, 5–8 — legs I–IV, respectively. Scale bar 50 µm.

Etymology. The name *polytrichus* refers to the neutrichy of dorsal setae of this new species.

Differential diagnosis. The new species is similar to *D. hirsutus* Atyeo, 1961, but differs by the presence of setae 1c on coxae I (absent in *D. hirsutus*), having fewer peritremal chambers (12 vs 14 in *D. hirsutus*), the presence of 2 pairs of

pseudanal setae (1 in *D. hirsutus*), and the absence of setae *l'* on genu II (present in *D. hirsutus*).

Remarks Mites of the genus *Dasythyreus* are associated with subcortical insects. Walter (in Krantz and Walter 2009) reported phoresy of an undescribed *Dasythyreus* mite on click beetles (Coleoptera: Elateridae) in boreal forests of Cana-

da. The junior author observed phoresy of females of *D. polytrichus* on undetermined braconids (Hymenoptera: Braconidae) — parasitoids of long-horn beetles (Coleoptera: Cerambycidae) on spruce in the European part of Russia.

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