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Torotrogl *lullulae*, a new species of the family *Syringophilidae*
LAVOPIERRE, 1953
(Acari: Prostigmata: Cheyletoidea)

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ABSTRACT. *Torotrogl* *lullulae*, a new species of the quill mite of the family *Syringophilidae* LAVOPIERRE, 1953 found on the Woodlark *Lullula arborea* (Aves: *Alaudidae*: *Passeriformes*) is described and figured.

Key words: acarology, new species, *Torotrogl*, ectoparasites, morphology, systematics, *Lullula arborea*, quill mites

INTRODUCTION

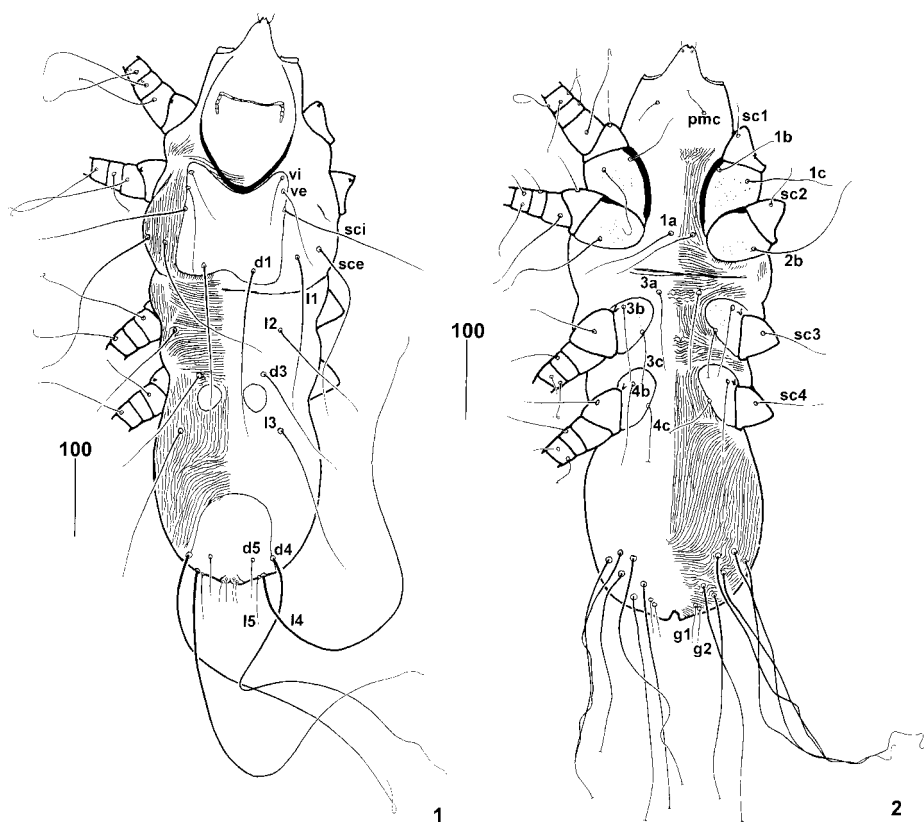
Syringophilid mites live and reproduce within the quills of the remiges, restrices, coverts and body feathers of birds. They feed on soft tissue fluids of birds by piercing the quill wall with their styletiform chelicerae (KETHLEY 1971, CASTO 1974).

We found a new, interesting species in the quills of secondary feathers of the Woodlark *Lullula arborea* (*Alaudidae*: *Passeriformes*). All known species of the genus *Torotrogl* are parasites of the feather quills of passerine birds of the families: *Bombycillidae*, *Mimidae*, *Sturnidae* and *Fringillidae* (HANCOCK 1895, KETHLEY 1970, BOCHKOV & MIRONOV 1998, 1999). The host *Lullula arborea* represents a new host family (*Alaudidae*) for the genus *Torotrogl* and the family *Syringophilidae*.

MATERIAL AND METHODS

Syringophilid specimens were acquired from the bird collection kept at the Department of Natural History, Šarišské Museum, Bardejov, Slovakia (SMB). Flight and body feathers from the Woodlark were removed and examined. Mites were mounted on microslides in a polyvinylolactophenol medium and examined with the Nomarsky interference-contrast-phase in microscope Olympus BH 2. The morphological terminology and setal designations used in the descriptions follow Kethley (1970, 1973). All measurements are given in micrometers.

DESCRIPTION

Torotroglia lullulae sp. n.

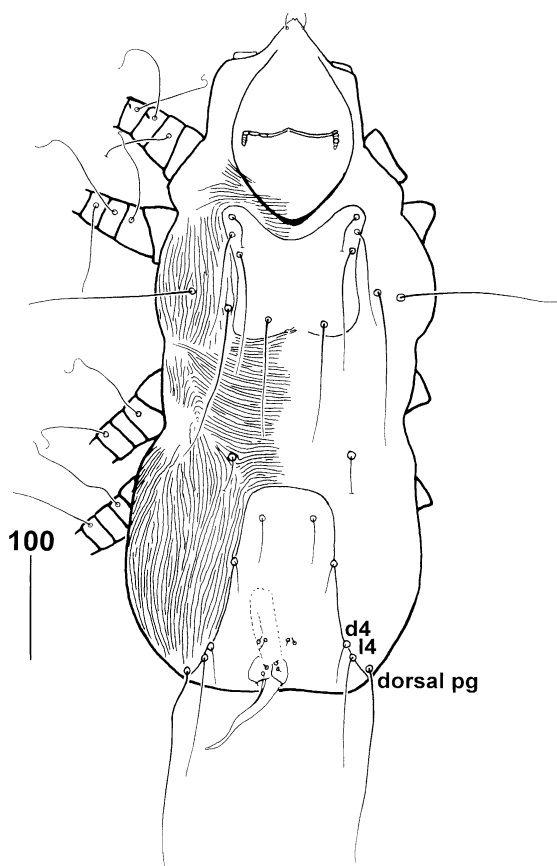
1, 2. *Torotroglia lullulae*, female: 1 - dorsal view, 2 - ventral view

Female (Figs 1, 2). Total length of holotype (790) paratypes 715-810.

Gnathosoma: Hypostomal apex ornamented, with a pair blunt protuberances (Fig. 4). Lateral hypostomal teeth absent. Chelicerae dentate, with three teeth each. Peritreme M-shaped, each lateral branch with 4-6 chambers, each longitudinal branch with 4-6 chambers (Fig. 6). Stylophore (230) 220-250 long, not extending posteriorly beyond propodosomal plate.

Idiosoma: Propodosomal plate entire and punctate, concave on anterior margin. Propodosomal region with six pairs of setae. Setae *vi*, *ve*, *sci* and *dl* on the plate. Pygidial plate and a pair of small sclerotized plates near bases of setae *d3* present. Setae *d3* equidistant between *l2* and *l3*. Paragenital series variable with 6-7 pairs of setae. Anal and genital series with two pairs of setae. Cuticular striations as in Figs 1 and 2. All setae smooth except *a'* and *a''* (Fig. 8).

Legs: Mesal coxal apodemes of legs I (MCA1) divergent, fused to MCA2. MCA1 and MCA2 punctate. Solenidia as in Figs 10 a, b, c. Fan setae *a'* and *a''* III-IV with 8-11 tines.

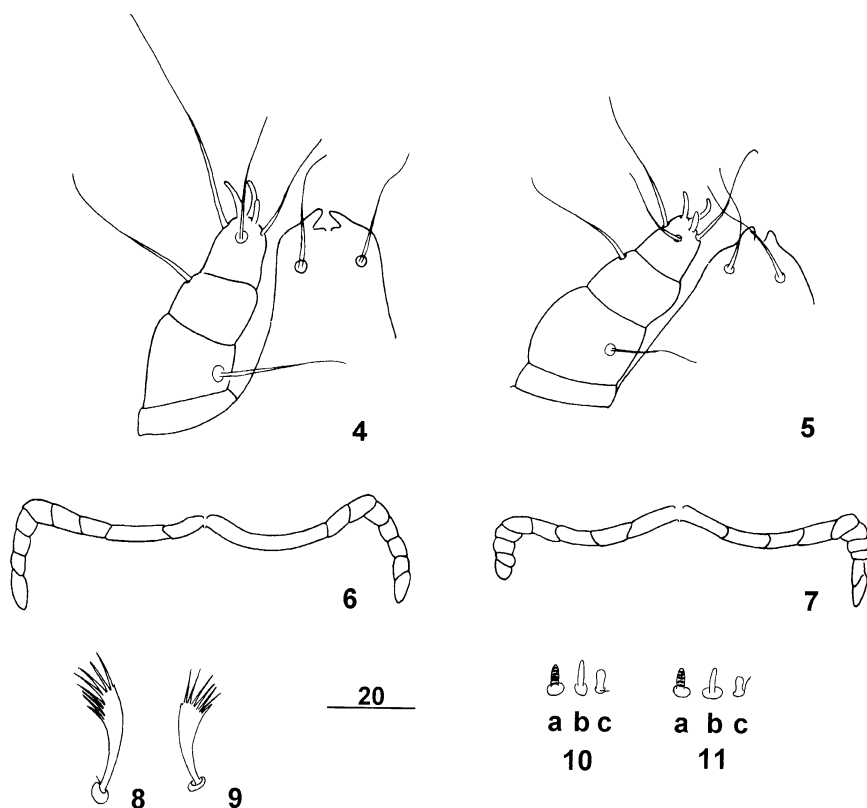


3. *Torotroglalullulae*, male: dorsal view

Measurements:

Length of setae: *vi*: 60-85; *ve*: 100-130; *sci*: (202) 185-220; *see*: 225-260; *l1*: 185-225; *l2*: 145-160; *l3*: (160) 185-200; *l4*: (578) 482-607; *l5*: (65) 60-70; *d1*: 235-255; *d3*: (175) 160-195; *d4*: 418-553; *d5*: (65) 50-60; *ao1* and *ao2*: 25-30; *pmc*: 45-50; *1a*: 130; *3a*: 100-115; *1b*: 70-75; *2b*: 135-175; *3b*: 85-105; *4b*: 75-135; *1c*: 100-130; *sc1*: (35) 30-40; *sc2*: 55-70; *sc3*: (67) 85; *sc4*: 70-80; *a1* and *a2*: 27-30; *g1* and *g2*: 40-55.

Distances between setal bases: *vi-ve*: (21) 18-21; *ve-sci*: (25) 21-29; *sci-l1*: (57) 54-68; *vi-d1*: (125) 121-125; *vi-vi*: (118) 111-121; *ve-ve*: (125) 114-129; *sci-sci*: (129) 114-132; *l1-l1*: (171) 150-189; *d1-d1*: (61) 54-71; *d1-l2*: (96) 107-121; *l2-d3*: (68) 61-86; *d3-l3*: (71) 61-71; *l2-l2*: (132) 118-139; *d3-d3*: (96) 82-93; *l3-l3*: (125) 129-139; *l3-d4*: (154) 157-175; *d4-d4*: (107) 96-114; *d5-d5*: (54) 54-68; *pmc-pmc*: (61) 64-71; *pmc-1a*: (161) 157-161; *1b-1b*: 125-129; *1c-1c*: (175) 179-189; *2b-2b*: (189) 193-196; *2b-1a*: (89) 75-89; *1a-3a*: 96-104; *3a-3b*: (43) 43-50; *3b-3c*: (36) 36-39; *4b-4c*: (36) 36; *3b-4b*: (93) 121; *3c-4c*: (93) 118; *3b-3b*: (136) 143; *3c-3c*: (93) 107-111; *4b-4b*: (118) 146-168; *4c-4c*: (79) 114-129.



4, 5. *Torotrogla lullulae*, gnathosoma, ventral view; 6, 7. Peritremes; 8, 9. Fan seta a'III; 10, 11.

Solenidia: a - ω on tarsus I, b - ϕ on tibia I, c - σ on genu I: 4, 8, 10 - female, 5, 9, 11 - male

Male (Fig. 3). Total length 643.

Gnathosoma: Hypostomal apex ornamented, with one pair of small protuberances (Fig. 5). Lateral hypostomal teeth absent. Chelicerae edentate. Peritreme M-shaped, each lateral branch with 5 chambers, each longitudinal branch with 4-5 chambers (Fig. 7). Stylophore 200 long.

Idiosoma: Propodosomal plate entire and punctate, concave on anterior margin. Margins weakly defined. Propodosomal region with six pairs of setae. Setae *vi*, *ve*, *sci* and *d1* on the plate. Hysterosomal plate present. Setae *d3*, *d4* and *l4* on the plate; setae *l3* variable on or near plate. Setae *d3* equidistant between *l2* and *l3*. Paragenital series variable with 5-6 pairs of setae, one pair of paragenital setae - dorsal. Anal and genital series with two pairs of setae. Cuticular striation as in Fig. 3. All setae smooth except *a'* and *a''* (Fig. 9). Legs: MCA1 divergent, fused to MCA2. Solenidia as in Figs 1 la, b, c. Fan setae *a'* and *a''* I-IV with 6-9 tines.

Measurements: Length of setae: *vi*: >36 ; *ve*: 90; *sci*: 135; *sce*: 150; *l1*: 145; *l2*: > 35; *l3*: 25; *l4*: 120; *d1*: 120; *d3*: 40; *d4*: 35; dorsal *pg*: 175; *ao1* and *ao2*: 25; *pmc*: 45; *1a*: >90; *3a*: >54; *1b*: 55; *2b*: 105; *3b*: 63; *4b*: >50; *1c*: 80; *3c*: >63; *4c*: >59; *sc1*: 25; *sc2*: 30; *sc3*: 80; *sc4*: 45; *a1* and *a2*: 10; *g1* and *g2*: 10.

TYPE MATERIAL

Female (holotype), 12 females (paratypes), 1 male (paratype) from secondary feathers of the Woodlark *Lullula arborea* (Aves: Passeriformes: Alaudidae) (No. 91.60); Slovakia, Zlate; 09 April 1960; leg. T. WEISZ. Holotype and paratypes are deposited at the Department of Animal Morphology of A. Mickiewicz University (Poznań, Poland).

DIAGNOSIS

The new species resembles *Torotroglia mima* Kethley 1970 from the Northern Mockingbird *Mimus polyglottos* (L.) (Passeriformes: Mimidae) in the presence of the following characters: hypostomal apex with one pair of protuberances; length of setae *d5* and *l5* subequal; setae *vi*, *ve*, *sci* and *d1* on the propodosomal plate.

Torotroglia arborea differs from *T. mima* in the following characters:

Female: Setae *ve* longer than distance between setal bases *ve-ve*, fan setae *a'* and *a''* I-IV with 8-11 tines, setae *l2* shorter than *d1*; in *T. mima* setae *ve* shorter than distance between setal bases *ve-ve*, fan setae *a'* and *a''* I-IV with 16-17 tines, setae *l2* subequal in length to *d1*.

Male: Hypostomal apex with one pair of protuberances, ratios of *ve:sci:sce* 1:1.5:1.5, ratios of *d4:l4* 1:3.5, ratios of *g:d4* 1:3.5; in *T. mima* hypostomal apex unornamented, ratios of *ve:sci:sce* 1:3:4, ratios of *d4:l4* 1:5, ratios of *g:d4* 1:2.

ETYMOLOGY

The name *lullulae* refers to the specific name of the host - *Lullula arborea*.

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