

TWO NEW SPECIES OF THE FEATHER MITE GENUS *TROUESSARTIA* (ACARIFORMES: TROUESSARTIIDAE) FROM ROBINS AND CHATS (PASSERIFORMES: MUSCICAPIDAE) IN THE RUSSIAN FAR EAST

Sergey V. Mironov

Zoological Institute, Russian Academy of Sciences, Saint Petersburg, Russia
e-mail: sergei.mironov@zin.ru

ABSTRACT: Two new species of the feather mite genus *Trouessartia* (Analgoidea: Trouessartiidae) are described from passerine birds in Primorsky Krai (Russian Far East): *Trouessartia calliope* sp.n. from the Siberian Rubythroat *Calliope calliope* (Linnaeus) and *T. larvivora* sp.n. from the Rufous-tailed Robin *Larvivora sibilans* (Swinhoe) (Passeriformes: Muscicapidae: Saxicolinae). Both new species are close to *T. swidwiensis* Jablonska, 1968 associated with nightingales of the genus *Luscinia* (Linnaeus) (Muscicapidae) in having the prohystronotal and lobar parts of the hystronotal shield not separated in males and in having setae *h1* situated on large ovate non-sclerotized areas and in the absence of the external copulatory tube in females.

KEY WORDS: feather mites, Trouessartiidae, systematics, new species, Muscicapidae, Primorsky Krai.

DOI: 10.21684/0132-8077-2021-29-2-155-167

INTRODUCTION

Investigations of feather mites associated with passerines in the Asian part of Russia are quite scanty compared to the European part (for major references see: Mironov 1996). In the 20th century, the only report on these mites in Asian Russia was presented by Dubinin (1952) for the birds from the Wrangel Island (Chukotka, Russia). In the last decade, Rubtsov and Yakimenko (2012a–d) published a series of brief reports on the diversity of feather mites associated with some groupings of passerines in southwestern Siberia (Omsk and Tomsk Oblasts). The present study continues the series of taxonomic works on feather mites associated with passerines in the Russian Far East (Mironov 2011, 2019, 2021; Mironov *et al.* 2012) and provides descriptions of two new species of the genus *Trouessartia* Canestrini, 1899 (Analgoidea: Trouessartiidae) from robins and chats (Muscicapidae: Saxicolinae).

Representatives of the genus *Trouessartia* are predominately distributed on passerine birds; most species of this genus are highly host specific (Santana 1976; Gaud and Atyeo 1996; Mironov and Chandler 2020). The only reliable host associations outside of passerines were shown for two *Trouessartia* species collected from woodpeckers in South America (Hernandes 2014; Mironov and Bermúdez 2017). In the plumage of their avian hosts, adults of these mites inhabit the flight feathers (remiges and rectrices) and usually occupy the dorsal side of the vanes.

The genus *Trouessartia*, with over 140 currently known species, is the most species-rich genus in the family Trouessartiidae, being the second most

among all feather mites (Orwig 1968; Santana 1976; Gaud and Atyeo 1986, 1987; Mironov and González-Acuña 2013; Hernandes 2014, 2017; Hernandes and Valim 2015; Constantinescu *et al.* 2018a; Mironov and Galloway 2019; Mironov and Chandler 2020; Mironov *et al.* 2021). A world revision of the genus *Trouessartia* carried out by Santana (1976), which provided redescriptions and a key to almost all species known at the time, is still the main manual on the systematics of this genus. In addition, several weighty taxonomic publications on this genus contain the reviews of and the keys to *Trouessartia* species groups restricted to particular taxa of passerines: swallows (Hirundinidae) of the Euroafrican (Gaud and Atyeo 1986, 1987) and the Nearctic (Mironov and Galloway 2019) regions, as well as emberizoid Passeroidea of North America (Mironov and Chandler 2020). One can also find exhaustive references to the taxonomic works containing descriptions of *Trouessartia* species, published in the past 45 years, in the following papers: Mironov and González-Acuña (2013), Hernandes (2014), Hernandes and Valim (2015), Constantinescu *et al.* (2016a, b, 2018a, b), Mironov and Galloway (2019) and Mironov and Chandler (2020).

To date, nearly three quarters of known *Trouessartia* species have been arranged into 11 species groups, each characterized by a unique combination of morphological characters (Santana 1976; Gaud and Atyeo 1986, 1987; Mironov and Kopij 2000; Mironov and Bermúdez 2017; Mironov and Galloway 2019; Mironov and Chandler 2020). However, the phylogenetic relationships within the

genus remain almost unexplored. Relationships between very limited numbers of *Trouessartia* species, mainly from European passerines, have recently been studied based on molecular data (Doña *et al.* 2017).

MATERIALS AND METHODS

The material used in the present study was collected in 2007 and 2008 at a bird-banding field station in Primorsky Krai (the southeastern part of the Russian Far East) during the autumn migratory period. Passerine birds, captured with mist-nets, were identified, banded and checked for the presence of feather mites and other ectoparasites under a stereomicroscope. Feather mites were collected with a preparation needle and fixed in vials with 96% ethanol. After processing, the birds were released into the wild. In the laboratory, the feather mites were mounted on microslide glass in Hoyer's medium according to the standard technique (Krantz and Walter 2009). Investigations of the mite specimens and drawings were performed using Leica DM 2500 and Leica DM 5000B microscopes, equipped with a differential interference contrast illumination (DIC) and a camera lucida.

The species description and the measuring techniques follow the taxonomic works on the family Trouessartiidae (Mironov and González-Acuña 2013; Hernandez 2014, 2017; Constantinescu *et al.* 2016a, b; Mironov and Galloway 2019; Mironov and Chandler 2020). General terminology and idiosomal chaetotaxy follow Gaud and Atyeo (1996), with minor corrections by Norton (1998); leg chaetotaxy is that of Grandjean (1939). All measurements are in micrometers (μm). Classification of birds follows Gill *et al.* (2021). All type series of the described species are deposited in the Zoological Institute of the Russian Academy of Sciences (Saint Petersburg, Russia).

SYSTEMATICS

Family **Trouessartiidae Gaud, 1957**

Genus ***Trouessartia* Canestrini, 1899**

***Trouessartia calliope* sp.n.**

(Figs. 1–4, 9A)

Type material. Holotype male (ZISP 21047), 4 male and 7 female paratypes (ZISP 21048–21058) from *Calliope calliope* (Pallas, 1776) (Passeriformes: Muscicapidae), Russia, Primorsky Krai, 9 km NE of Novolitovsk, 42°57'40"N, 132°53'12"E, 24 September 2008, coll. S. V. Mironov.

Description. *Male* (holotype, ranges for 4 paratypes in parentheses) (Figs. 1, 3A, B, 4A–E). Idiosoma, length \times width, 460 (450–500) \times 235 (230–255), length of hysterosoma 300 (300–325). Prodorsal shield: length along midline 140 (130–155), greatest width posterior to scapular setae 145 (135–160), anterior part at level of trochanters II not narrowed, anterolateral extensions elongate, attenuate distally and almost extending to epimerites Ia between legs I and II, lateral margins not fused with scapular shields, posterior margin straight, surface without ornamentation. Internal scapular setae *si* spiculiform, 30 (30–32) long, separated by 50 (48–50); external scapular setae *se* separated by 102 (98–110). Setae *c2* spiculiform, 48 (48–55) long, situated in anteromedian angle of humeral shields. Setae *c3* narrowly lanceolate with bidentate apex, 25 (25–27) long (Fig. 4E). Prohysteronotal and lobar parts of hysteronotal shield connected but delimited from each other by narrow lateral incisions extending to bases of setae *e2* and transverse fold between these setae, total length of hysteronotal shield from anterior margin to lobar apices excluding lamellae 295 (290–310) width at anterior margin 145 (140–165). Length of prohysteronotal part along midline 190 (180–200), lateral margins at level of trochanters III shallowly concave, dark-sclerotized patch at these concavities without a well-defined border, median area with barely distinct faint network. Dorsal setae *d1*, *d2*, *e2* present, setae *f2* absent. Length of lobar shield 105 (105–115). Opisthosoma strongly attenuate posteriorly; opisthosomal lobes fused with each other along midline forming a heavily sclerotized median septum, only apical parts of lobes posterior to level of setae *h2* separated by narrow parallel-sided terminal cleft. Length of terminal cleft from anterior end to lobar apices 30 (23–30); length from anterior end to posterior margins of terminal lamellae 52 (46–52), width 8 (5–8). Terminal lamellae semi-ovate, slightly attenuate posteriorly, with smooth margins, length from bases of setae *h3* to lamellar apices 22 (20–23), greatest width 30 (28–30). Distances between dorsal setae: *c2:d2* 75 (62–82), *d2:e2* 100 (98–105), *e2:h2* 83 (80–90), *h2:h3* 25 (23–25), *h2:h2* 43 (40–45), *h3:h3* 35 (30–35), *d1:d2* 40 (40–48), *e1:e2* 43 (42–45), *ps1:h3* 10 (7–10).

Epimerites I free. Rudimentary sclerites rEpIIa minute circular. Genital apparatus: long and narrow, length excluding epiandrum and basal sclerite 42 (42–48), greatest width 18 (15–18); epiandrum (pregenital sclerite) small ovate; distal ends of para-

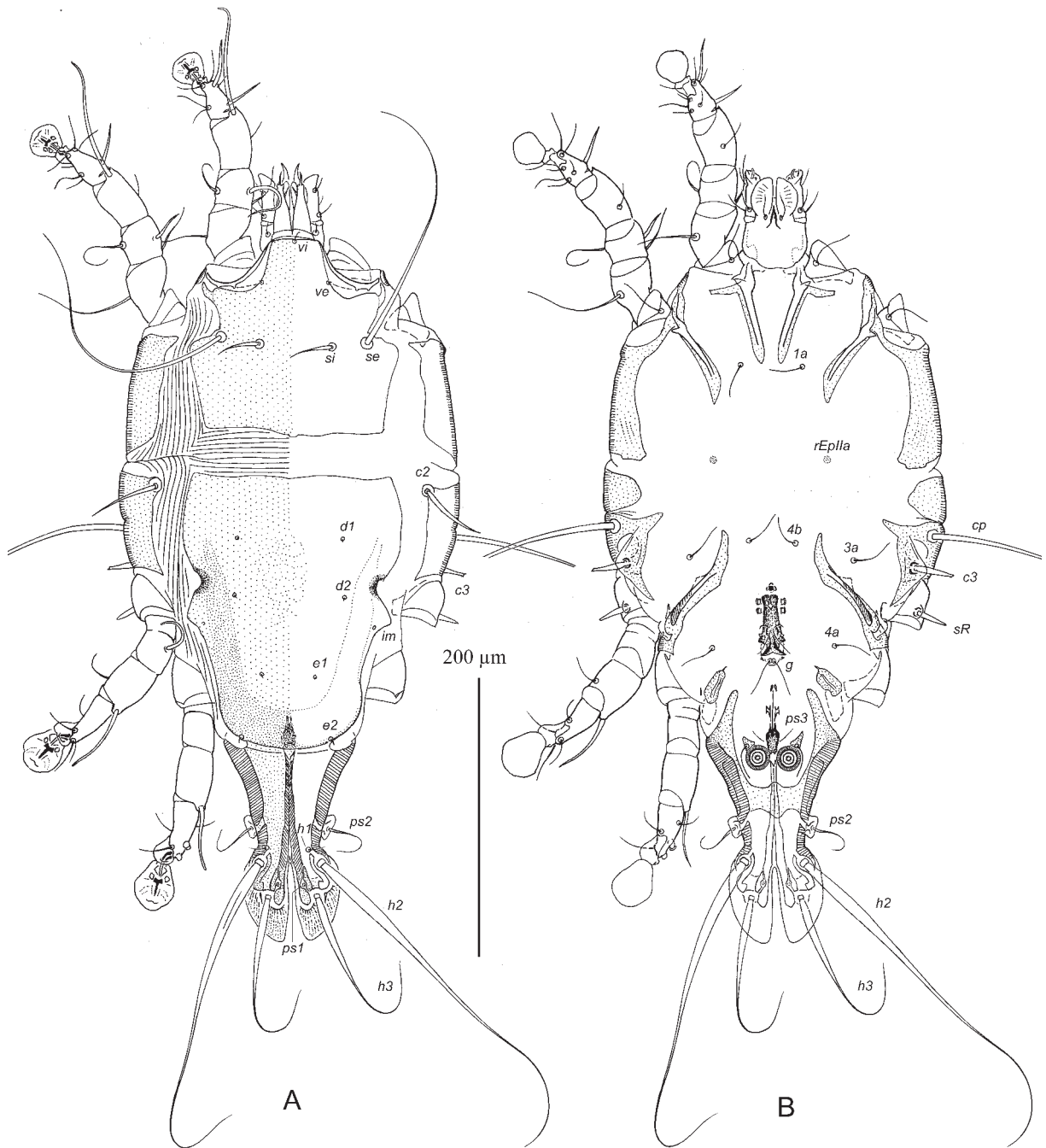


Fig. 1. *Trouessartia calliope* sp.n., male. A—dorsal view, B—ventral view.

meres without denticles; aedeagus shaped as long and narrow cone; latigenital sclerites poorly sclerotized, basal sclerite extending to level of setae *g* (Fig. 3A, B). Anterior and posterior pairs of genital papillae similar in size, equidistant from midline. Genital shield absent. Setae *g* filiform, about half the distance between setae *g* and *ps3*, bases of setae *g* adjacent to each other. Postgenital plaque (cuticular fold flanking area of genital setae) small trapezoidal. Apophyses of adanal apodemes long ridge-shaped,

with anterior end forming rectangular angle. Lateral margins of opisthosoma without membranes. Translobar apodeme wide. Adanal shields represented by small triangular sclerites bearing setae *ps3*. Adanal suckers 15 (15–16) in diameter. Inner ends of epimerites IIIa extending to level of setae *4b*, without extensions on inner margins. Epimerites IVa as plates of roughly ovate form, and usually with thin extension on anterior ends almost extending to level of setae *g*. Setae *4b* situated anterior to level

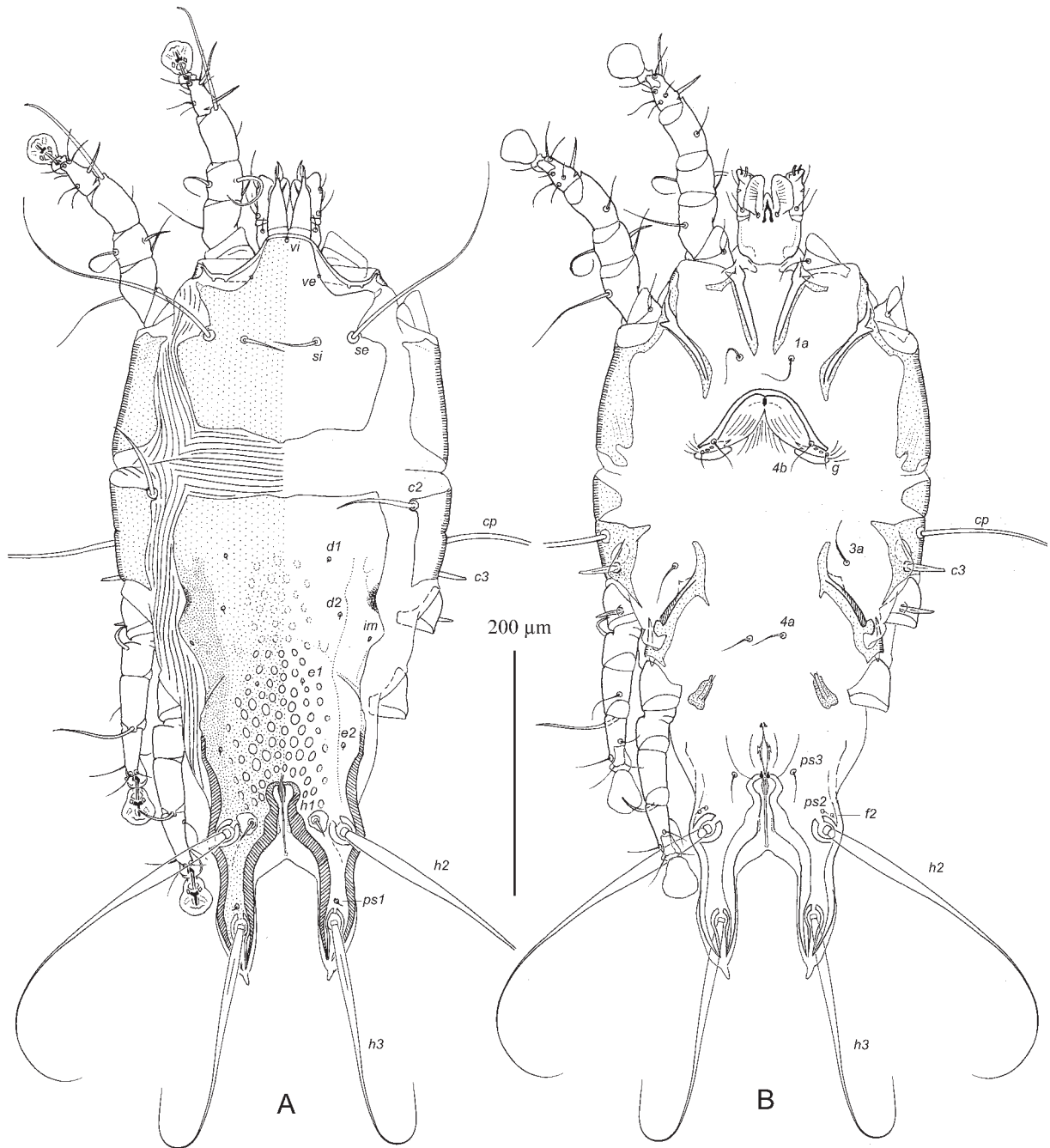


Fig. 2. *Trouessartia calliope* sp.n., female. A—dorsal view, B—ventral view.

of setae *3a*, both pairs anterior to genital apparatus apex; setae *g* posterior to level of setae *4a*. Distances between ventral setae: *4b:3a* 12 (12–14), *4b:4a* 70 (70–80), *4a:g* 10 (10–12), *g:ps3* 60 (60–68), *ps3:h3* 105 (100–110).

Legs. Setae *cG*, *mG* of genua I, II filiform. Genual solenidia σ I and σ II situated at midlength of corresponding genu (Fig. 4A, B). Trochanteral setae *sR*III narrowly lanceolate, with blunt apex, 23 (20–23) long. Legs IV with ambulacral disc almost extending to level of setae *h3*. Tarsus IV 35 (35–38) long; modified setae *d* barrel-shaped, with discoid

cap, situated in distal 1/3 of this segment; modified setae *e* hemispheroid, without cap, situated apically (Fig. 4D). Lengths of solenidia: σ I 45 (45–52), σ II 20 (15–20), σ III 30 (25–30), ϕ IV 40 (38–40).

Female (range for 7 paratypes) (Figs. 2, 3C, D, 4F, 9A). Idiosoma, length \times width, 555–585 \times 255–270, length of hysterosoma 390–405. Prodorsal shield: shape and ornamentation as in male, 155–160 \times 150–165 wide. Setae *si* spiculiform, 30–35 long, separated by 53–58; setae *se* separated by 105–115. Setae *c2* spiculiform, 52–60 long, situated in anteromedial angle of humeral shields.

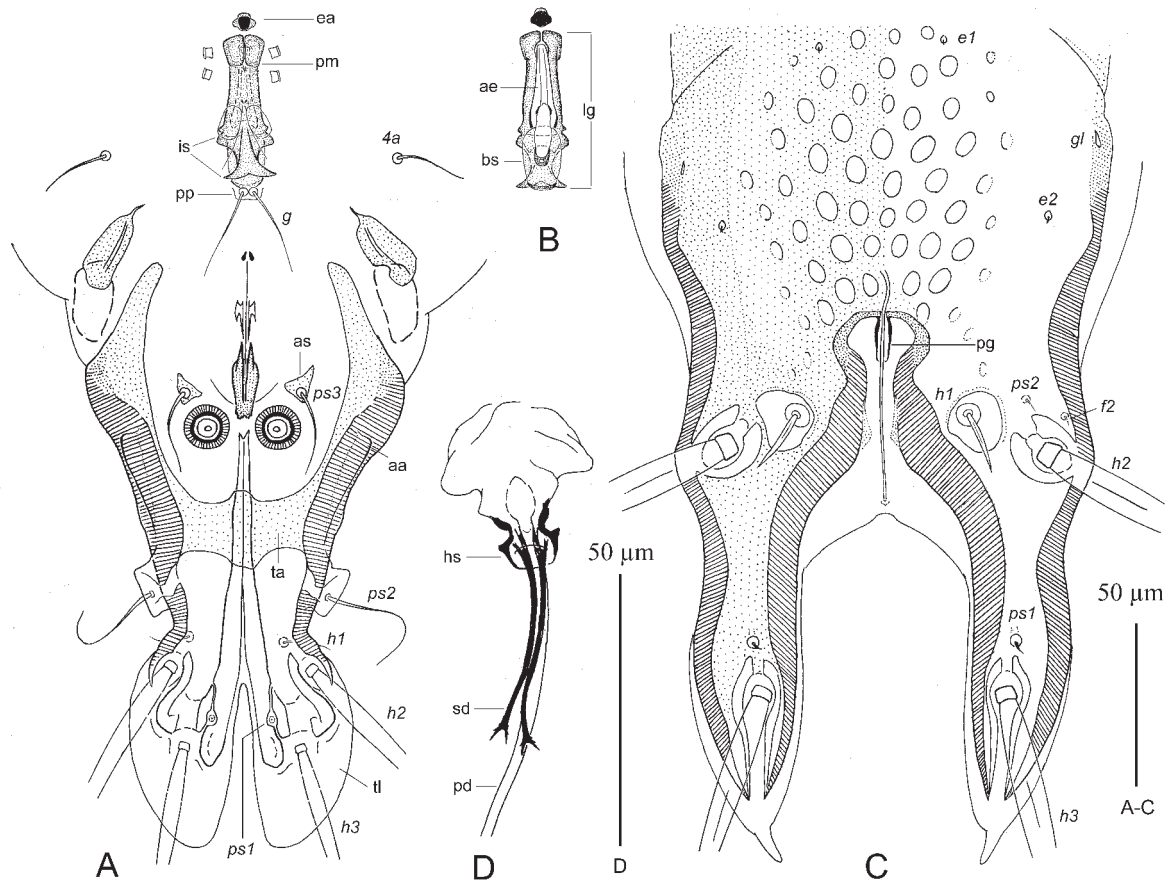


Fig. 3. *Trouessartia calliope* sp. n., opisthosoma and genital apparatus. A—genital apparatus and opisthosoma of male, ventral view, B—genital apparatus of male, dorsal view, C—opisthosoma of female, dorsal view, D—spermatheca and spermaducts. Abbreviations: aa—apophysis of adanal apodeme, ae—aeedeagus, as—adanal shield, bs—basal sclerite, ea—epiandrum, hs—head of spermatheca, is—intermedial sclerite, lg—measured length of genital apparatus, pd—primary spermaduct, pg—primary spermaduct guide, pm—paramere of genital apparatus, pp—postgenital plaque, sd—secondary spermaducts, ta—translobar apodeme, tl—terminal lamella.

Setae *c3* narrowly lanceolate, with bidentate or acute apex, 25–30 long. Hysteronotal shield: length from anterior margin to posterior tips 360–375, width at anterior margin 160–175; lateral margins at level of trochanters III shallowly concave, dark-sclerotized patch at these concavities without a well-defined border; anterior part of the shield with weakly distinct large ovate lacunae; posterior part with well outlined ovate lacunae (up to 8 long) (Figs. 3C; 9A). Dorsal setae *d1*, *d2*, *e2* present. Setae *h1* narrowly lanceolate, 18–20 long, situated anteromesal from setae *h2* in roughly ovate non-sclerotized areas (windows), 30–33 from corresponding lateral margins of hysteronotal shield. Width of opisthosoma at level of setae *h2* 115–125. Setae *ps1* situated dorsally, equidistant from margins of opisthosomal lobes. Supranal concavity open posteriorly into terminal cleft. Length of terminal cleft from anterior end of supranal concav-

ity to lobar apices 150–160, length from free margin of interlobar membrane to apices 92–100, greatest width of cleft 43–50. Interlobar membrane occupying anterior 1/4 of terminal cleft. External copulatory tube absent; copulatory opening situated ventrally, on minute tubercle near free margin of interlobar membrane; basal guides of copulatory tube absent; primary spermaduct guide short. Distances between dorsal setae: *c2:d2* 75–87, *d2:e2* 105–115, *e2:h2* 65–70, *h2:h3* 70–73, *h2:h2* 85–95, *h3:h3* 65–73, *d1:d2* 45–48, *e1:e2* 50–55, *h1:h2* 10–12, *h1:h1* 50–55, *ps1:h3* 15–18.

Epimerites I free. Epigynum 38–45 long, 95–100 wide. Inner margins of epimerites IIIa with short acute extension. Epimerites IVa present. Adanal sclerites absent. Setae *f2*, *ps2* minute. Head of spermatheca with short smooth collar; primary spermaduct without enlargement; secondary spermaducts 35–40 long (Fig. 3D).

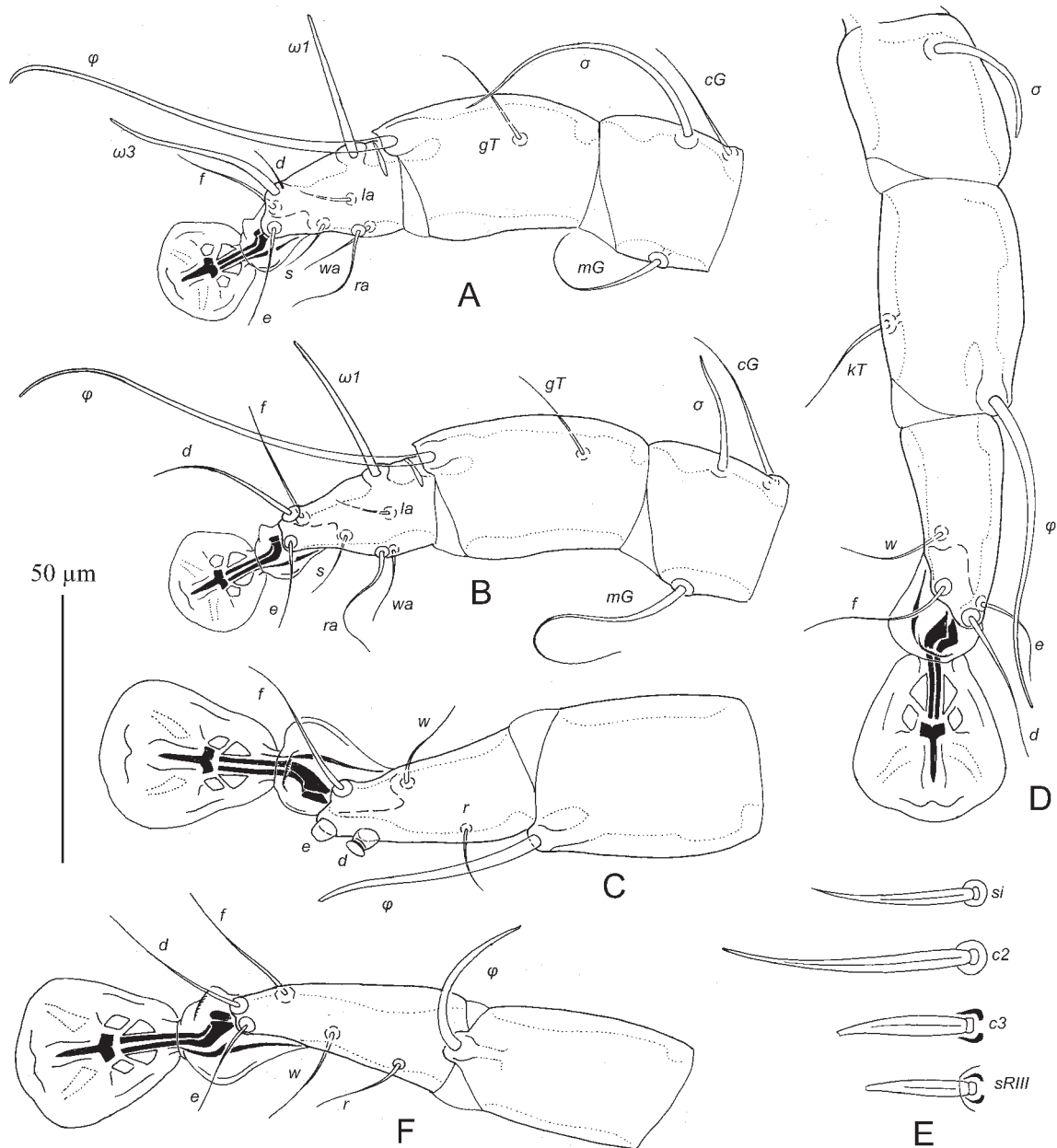


Fig. 4. *Trouessartia calliope* sp.n., details. A–C—genu, tibia and tarsus I–III of male; D—tibia and tarsus IV of male; E—setae *si*, *c2*, *c3*, and *sRIII* of male; F—tibia and tarsus IV of female.

Legs I–III as in males. Trochanteral setae *sRIII* narrowly lanceolate, with blunt acute apex, 20–23 long. Legs IV with ambulacral disc extending to level of setae *ps1*. Length of solenidia: σ I 45–52, σ II 20–25, σ III 25–28, ϕ IV 28–30.

Differential diagnosis. Among currently described species, *Trouessartia calliope* sp.n is most similar to *T. swidwiensis* Jablonska, 1968 from *Luscinia luscinia* (Linnaeus) (Muscicapidae) in having the prohystronotal and lobar parts of the hystronotal shield not separated in males, in having setae *h1* situated on large ovate non-sclerotized areas and in the absence of the external copulatory

tube in females. *Trouessartia calliope* differs from *T. swidwiensis* in the following measured characteristics: in males, the width of idiosoma is 230–255 (vs. 210–220 in *T. swidwiensis*), setae *c2* are about 2/3 the length of the humeral shields (vs. equal in length to the humeral shields); in females, the terminal cleft is 43–50 wide and nearly twice as wide as the opisthosomal lobes (vs. 28–35, equal to the width of the opisthosomal lobes), and setae *h1* are separated by 50–55 (vs. 38–42).

Etymology. The specific epithet is taken from the generic name of the type host and is a noun in apposition.

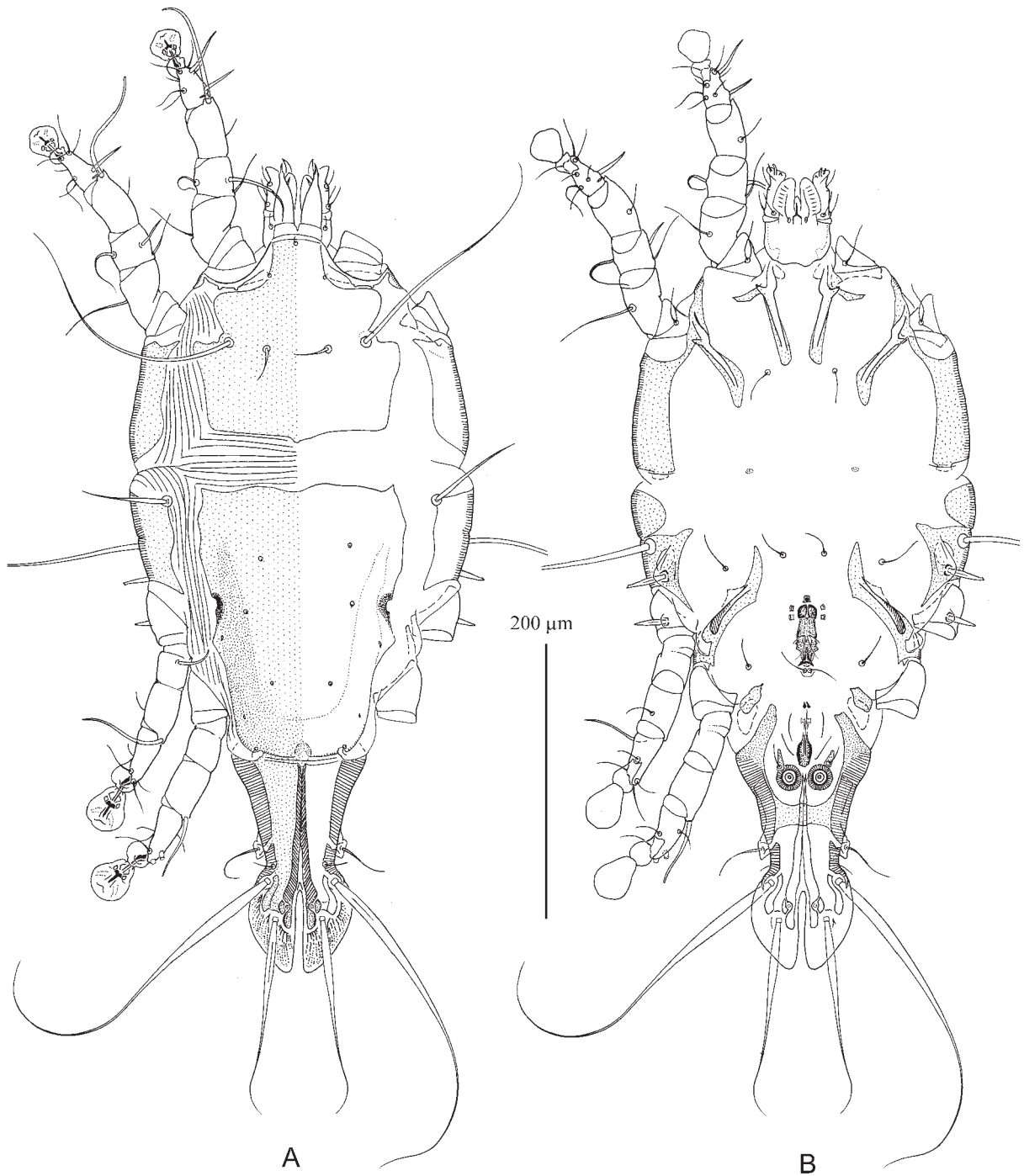


Fig. 5. *Trouessartia larvivora* sp.n., male. A—dorsal view, B—ventral view.

***Trouessartia larvivora* sp.n.**

(Figs. 5–8, 9B)

Type material. Holotype male (ZISP 21059), 3 male and 6 female paratypes (ZISP 21060–21068) from *Larvivora sibilans* (Swinhoe, 1863) (Passeriformes: Muscicapidae), Russia, Primorsky Krai, 9 km NE of Novolitovsk, 42°57'40"N, 132°53'12"E, 30 August 2007, coll. S. V. Mironov.

Description. *Male* (holotype, ranges for 3 paratypes in parentheses) (Figs. 5; 7A, B; 8A–E). Idiosoma, length \times width, 485 (475–490) \times 240 (225–240), length of hysterosoma 320 (310–325). Prodorsal shield: length along midline 145 (140–150), greatest width posterior to scapular setae 145 (140–145), anterior part at level of trochanters II not narrowed, anterolateral extensions rounded and not extending to bases of epimerites Ia between legs

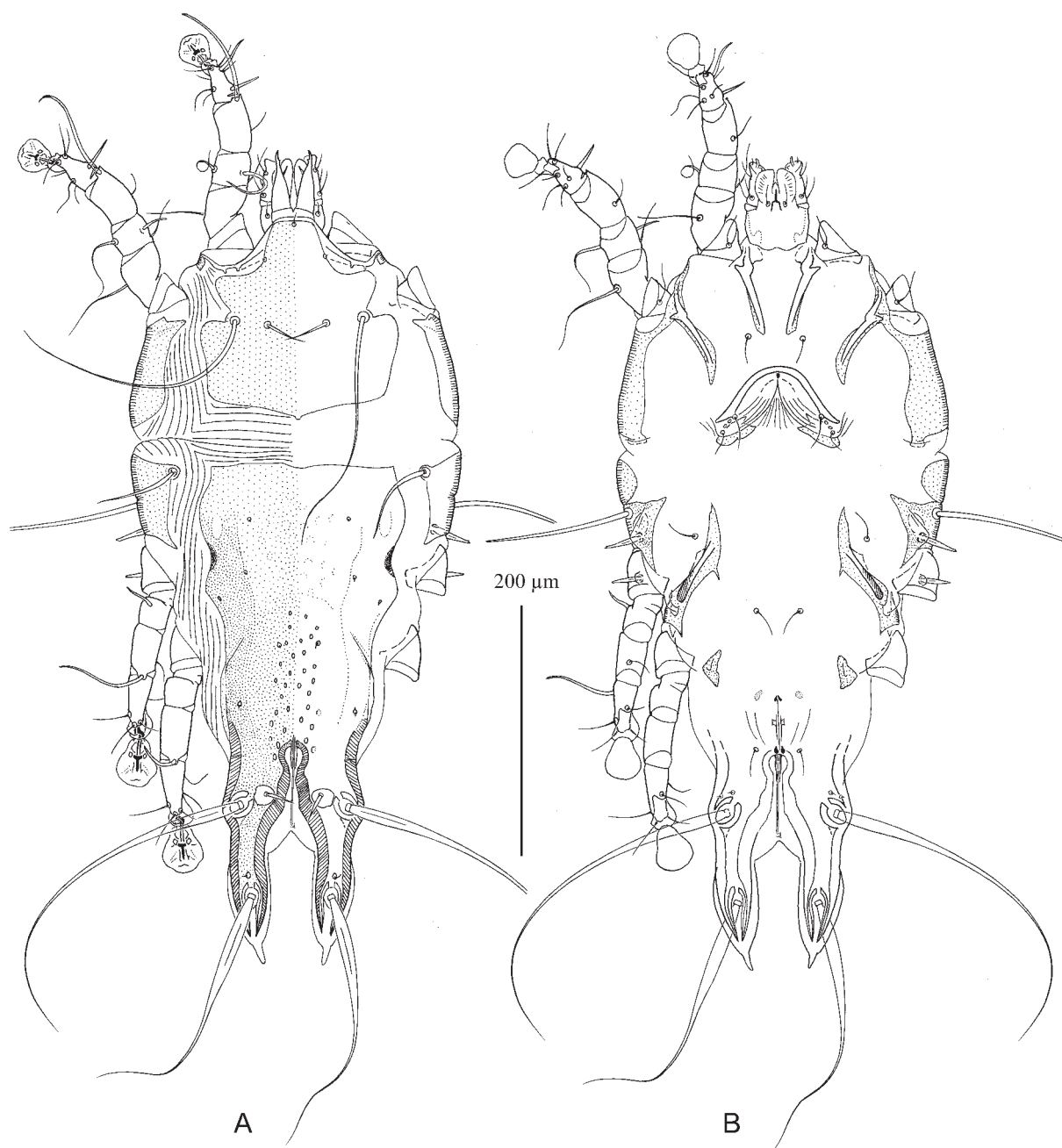


Fig. 6. *Trouessartia larvivorae* sp.n, female. A—dorsal view, B—ventral view.

I and II, lateral margins not fused with scapular shields, posterior margin straight, with small median extension, surface without ornamentation. Internal scapular setae *si* spiculiform with filiform apex, 22 (25–30) long, separated by 45 (42–45); external scapular setae *se* separated by 98 (92–100). Setae *c2* spiculiform, 60 (55–60) long, situated in anteromedian angle of humeral shields. Setae *c3* narrowly lanceolate with bidentate apex, 27 (25–27) long (Fig. 8E). Prohysteronotal and lobar parts of hysteronotal shield widely connected but delimited from each other by narrow lateral incisions extending to bases of setae *e2* and transverse fold between

these setae, total length of hysteronotal shield from anterior margin to lobar apices excluding lamellae 310 (295–305), width at anterior margin 145 (135–145). Length of prohysteronotal part along midline 185 (175–190), lateral margins at level of trochanters III shallowly concave, dark-sclerotized patch at these concavities without a well-defined border, surface without ornamentation. Dorsal setae *d1*, *d2*, *e2* present, setae *f2* absent. Length of lobar shield 115 (115–120). Opisthosoma strongly attenuate posteriorly; opisthosomal lobes fused with each other along midline forming a heavily sclerotized median septum, only apical parts of lobes posterior

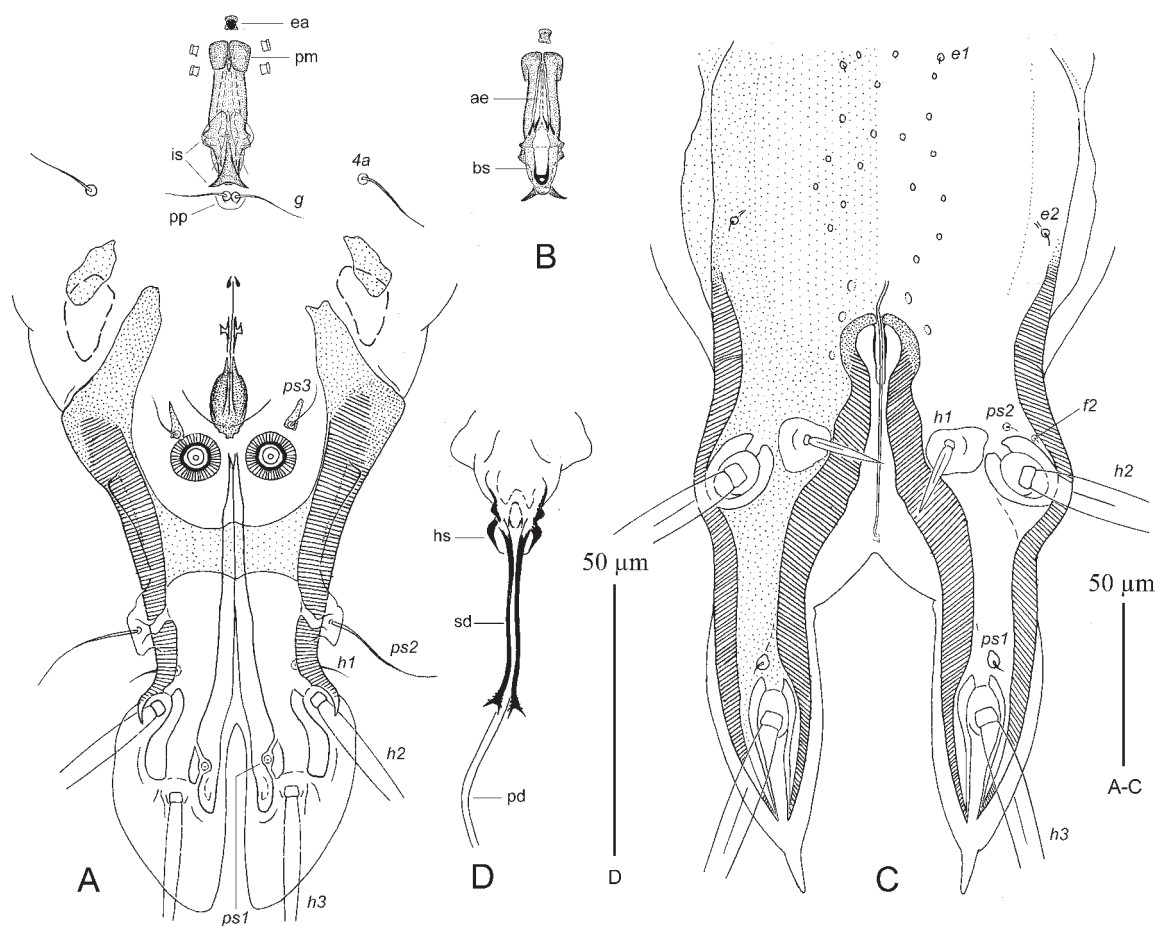


Fig. 7. *Trouessartia larvivora* sp. n., opisthosoma and genital apparatus. A—genital apparatus and opisthosoma of male, ventral view, B—genital apparatus of male, dorsal view, C—opisthosoma of female, dorsal view, D—spermatheca and spermatheca. Abbreviations: ae—aedeagus, bs—basal sclerite, ea—epiandrum, hs—head of spermatheca, is—intermedial sclerite, pd—primary spermatheca, pm—paramere of genital apparatus, pp—postgenital plaque, sd—secondary spermatheca.

to level of setae *h2* separated by narrow parallel-sided terminal cleft. Length of terminal cleft from anterior end to lobar apices 25 (25–30); length from anterior end to posterior margins of terminal lamellae 55 (52–58), width 5 (5–8). Terminal lamellae semi-ovate, slightly attenuate posteriorly, with smooth margins, length from bases of setae *h3* to lamellar apices 30 (26–28), greatest width 35 (32–35). Distances between dorsal setae: *c2:d2* 70 (70–75), *d2:e2* 100 (95–105), *e2:h2* 98 (93–98), *h2:h3* 25 (23–28), *h2:h2* 48 (45–48), *h3:h3* 35 (33–35), *d1:d2* 41 (35–42), *e1:e2* 45 (43–48), *ps1:h3* 10 (8–12).

Epimerites I free. Rudimentary sclerites *rE-pIIa* shaped as minute oval. Genital apparatus: long and narrow, length excluding epiandrum 45 (42–45), greatest width 14 (14–15); epiandrum roughly ovate; distal ends of parameres without denticles; aedeagus shaped as narrow and long cone; latigenital sclerites poorly sclerotized, basal sclerite not extending to level of setae *g* (Fig.

7A, B). Anterior and posterior pairs of genital papillae similar in size, equidistant from midline. Genital shield absent. Setae *g* long filiform, about 1/3 the distance between setae *g* and *ps3*, with bases adjacent to each other. Postgenital plaque (cuticular fold flanking area of genital shield) small trapezoidal. Apophyses of adanal apodemes ridge-shaped, with anterior end forming rectangular spine. Lateral margins of opisthosoma without membranes. Translobar apodeme wide. Adanal shields represented by small and narrow triangle-shaped sclerites bearing setae *ps3*. Adanal suckers 14 (13–14) in diameter. Inner ends of epimerites IIIa extending to level of setae *4b*, with blunt-angular extensions on inner margins or without them. Epimerites IVa as plates of irregular form, with anterior ends not extending to level of setae *g*. Setae *4b* situated anterior to level of setae *3a*, both pairs anterior to genital apparatus apex; setae *g* slightly posterior to level of setae *4a*. Distances between ventral setae:

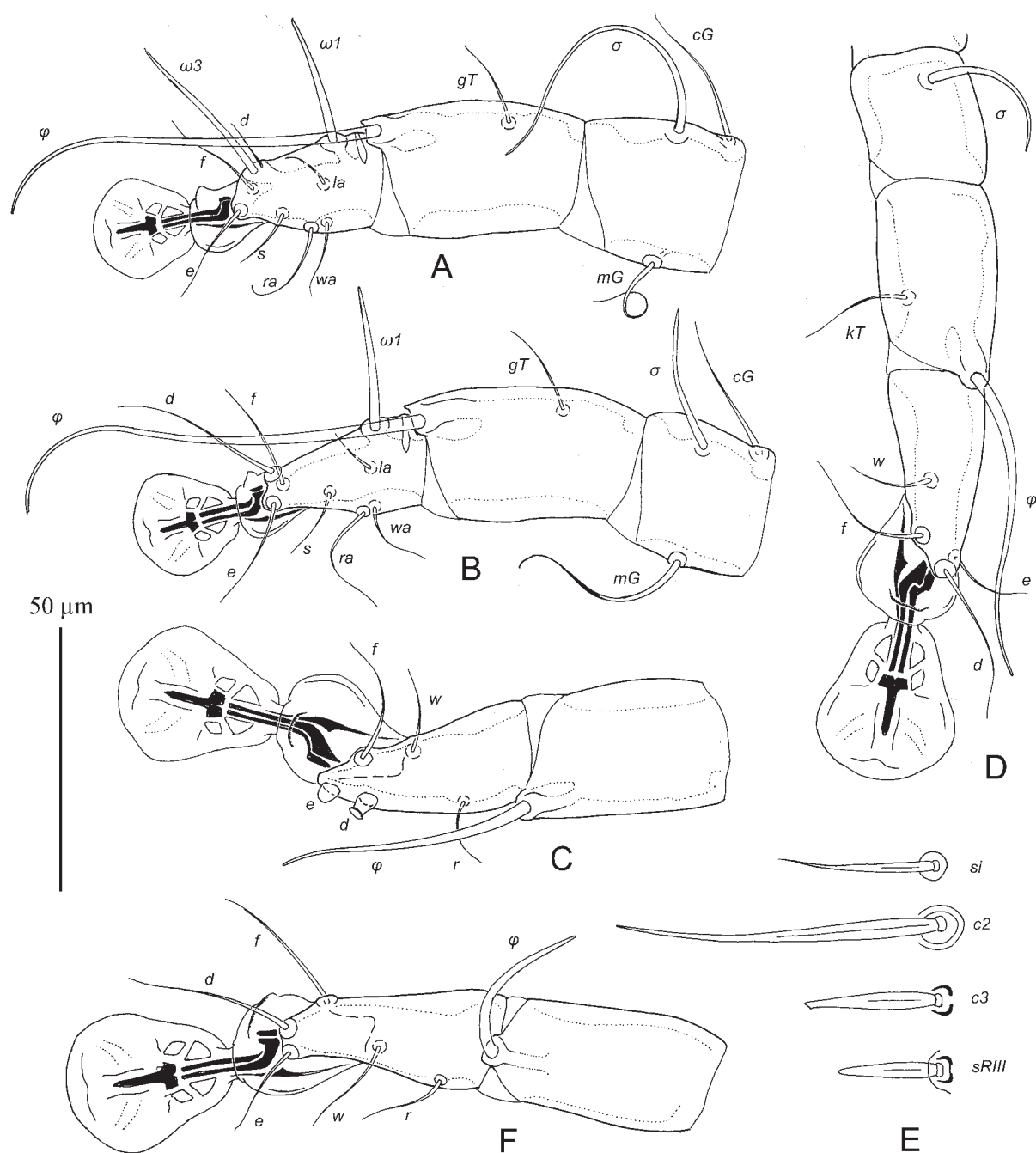


Fig. 8. *Trouessartia larvivora* sp.n., details. A–C— genu, tibia and tarsus I–III of male; D—tibia and tarsus IV of male; E—setae *si*, *c2*, *c3*, and *sRIII* of male; F—tibia and tarsus IV of female.

4b:3a 8 (8–12), *4b:4a* 80 (77–80), *4a:g* 5 (5–10), *g:ps3* 68 (66–68), *ps3:h3* 105 (100–110).

Legs. Setae *cG*, *mG* of genua I, II filiform. Genual solenidia σI and σII situated at midlength of corresponding genu (Fig. 8A, B). Trochanteral setae *sRIII* narrowly lanceolate, with acute apex, 18 (18–20) long. Legs IV with ambulacral disc extending to level of setae *h3*. Tarsus IV 38 (36–38) long; modified setae *d* barrel-shaped, with discoid cap, situated in distal one third of this

segment; modified setae *e* hemispheroid, without cap, situated apically (Fig. 8D). Lengths of solenidia: σI 55 (50–56), σII 18 (15–18), σIII 28 (22–28), φIV 45 (42–45).

Female (range for 6 paratypes) (Figs. 6, 7C, D, 8F, 9B). Idiosoma, length \times width, 555–590 \times 245–260, length of hysterosoma 385–410. Prodorsal shield: shape and ornamentation as in male, 145–160 \times 145–165 wide. Setae *si* spiculiform with filiform apex, 35–38 long, separated by 45–53; setae

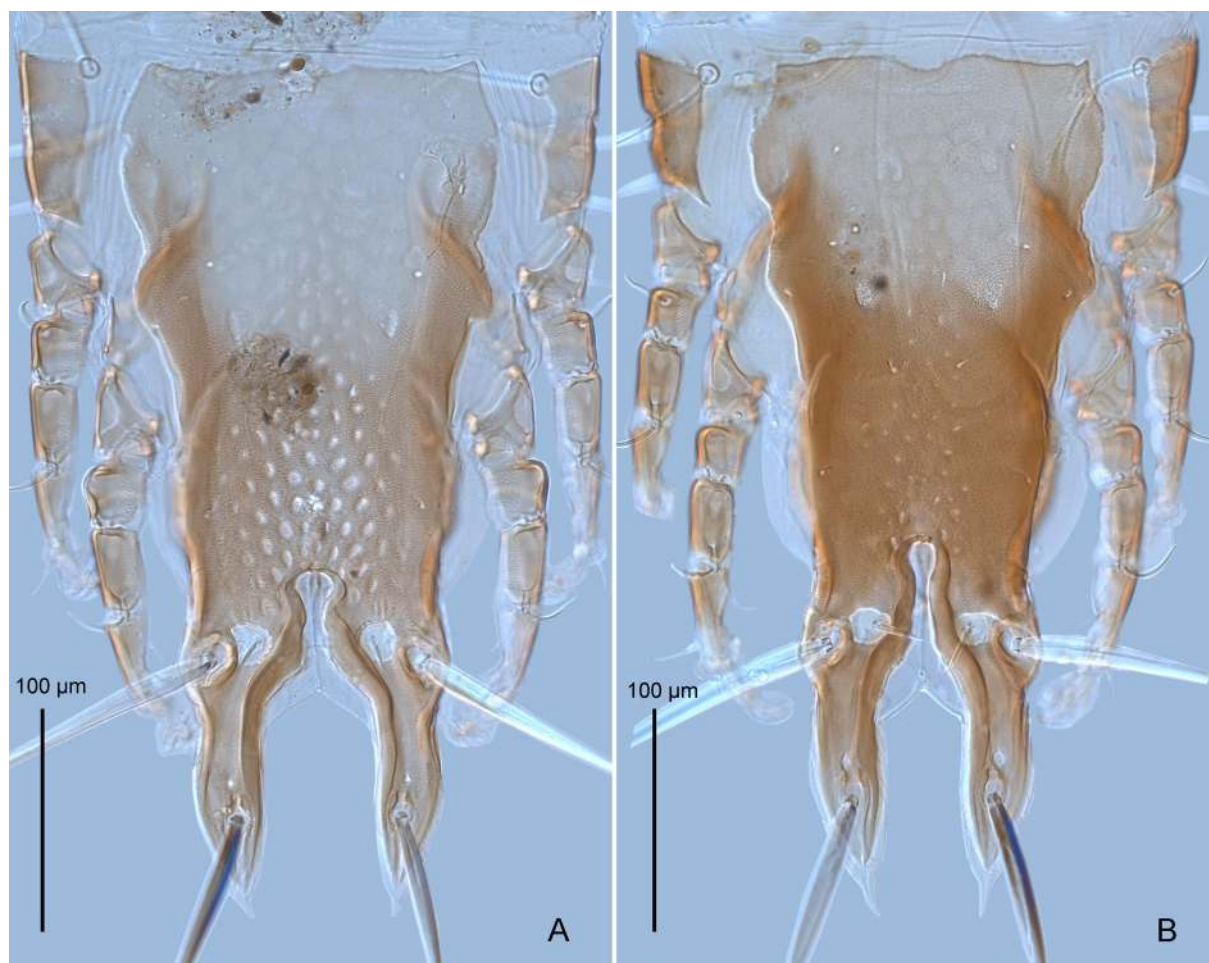


Fig. 9. Females of *Trouessartia* species, dorsal view of hysterosoma. A—*Trouessartia calliope*, sp.n., B—*T. larvivora* sp.n.

se separated by 100–105. Setae *c2* spiculiform, 55–70 long, situated in anteromedial angle of humeral shields. Setae *c3* narrowly lanceolate, with bidentate apex, 25–28 long. Hysteronotal shield: length from anterior margin to posterior tips 350–375, width at anterior margin 145–165; lateral margins at level of trochanters III shallowly concave, dark-sclerotized patch at these concavities without a well-defined border; anterior part of the shield with weakly distinct small ovate lacunae; median area of posterior part with well outlined small ovate lacunae (up to 5 long), lateral areas of this part usually without lacunae (Figs. 7C, 9B). Dorsal setae *d1*, *d2*, *e2* present. Setae *h1* narrowly lanceolate, 20–23 long, situated anteromesal from setae *h2* in roughly ovate non-sclerotized areas, 30–35 from corresponding lateral margins of hysteronotal shield. Width of opisthosoma at level of setae *h2* 105–110. Setae *ps1* situated dorsally, equidistant from margins of opisthosomal lobes. Supranal concavity open posteriorly into terminal cleft. Length of terminal cleft from anterior end of supranal concavity to lobar apices 155–170, length from free margin of interlobar

membrane to apices 95–105, greatest width of cleft 33–35. Interlobar membrane occupying anterior 1/3 of terminal cleft. External copulatory tube absent, copulatory opening situated ventrally on small nipple-like tubercle near free margin of interlobar membrane; basal guides of copulatory tube absent; primary spermaduct guide present. Distances between dorsal setae: *c2:d2* 72–82, *d2:e2* 100–115, *e2:h2* 70–73, *h2:h3* 68–75, *h2:h2* 78–87, *h3:h3* 58–67, *d1:d2* 42–44, *e1:e2* 50–53, *h1:h2* 10–12, *h1:h1* 40–45, *ps1:h3* 13–18.

Epimerites I free. Epigynum 38–45 long, 95–100 wide. Inner margins of epimerites IIIa with short acute extension. Epimerites IVa present. Adanal sclerites present, strongly reduced. Setae *f2*, *ps2* minute. Head of spermatheca with short smooth collar; primary spermaduct without enlargement; secondary spermaducts 35–38 long (Fig. 7D).

Legs I–III as in males. Trochanteral setae *sRIII* narrowly lanceolate, with acute apex, 22–23 long. Legs IV with ambulacral disc extending to level of setae *ps1*. Length of solenidia: σ I 50–58, σ II 20–28, σ III 22–30, ϕ IV 25–30.

Differential diagnosis. The new species *Trouessartia larvivora* sp.n. is similar to *T. calliope* described above and to *T. swidwiensis* Jablonska, 1968 in having the prohysteronotal and lobar parts of the hysteronotal shield not separated in males, and in having setae *h1* situated on large ovate non-sclerotized areas and in the absence of the external copulatory tube in females. *Trouessartia larvivora* differ from *T. calliope* and *T. swidwiensis* in having the following features: in both sexes, the anterolateral extensions of the prodorsal shield are short and rounded; and in females, lacunae are small, up to 5 long, and situated only in the median area of the shield. In both sexes of *T. calliope* and *T. swidwiensis*, the anterolateral extensions of the prodorsal shield are elongate, distinctly attenuate distally and almost extending to the body margin between trochanters I and II; in females, lacunae of the hysteronotal shield are large, up to 10 long, and occupy the entire posterior part of the shield. Additionally, females of *T. larvivora* differ from those of *T. calliope* in having the terminal cleft narrow, 33–35 wide, approximately equal in width to the opisthosomal lobes (vs. terminal cleft 43–50 wide, twice as wide as opisthosomal lobe).

Etymology. The specific epithet is derived from the generic name of the type host and is a noun in the genitive case.

ACKNOWLEDGEMENTS

The author thanks Olga P. Valchuk, the head of the bird-banding field station near Novolitovsk (Institute of Biology and Soil Sciences of the Russian Academy of Sciences, Vladivostok) for the opportunity to examine the captured birds and collect mites. The author also thanks Fabio A. Hernandez (Universidade Federal de Santa Catarina, Florianópolis, Brazil) for his useful comments on the manuscript. The study was supported by the Ministry of Science and Higher Education of the Russian Federation (project No. AAAA-A19-119020790133-6).

REFERENCES

- Constantinescu, I.C., Chişamera, G., Petrescu, A. and Adam, C. 2018a. Two new species of feather mites (Acarina: Psoroptidia) from the Oriental Magpie-Robin, *Copsychus saularis* (Passeriformes: Muscipidae). *Acarologia*, 58: 313–331.
- Constantinescu, I.C., Cobzaru, I., Mukhim, D.K.B. and Adam, C. 2016a. Two new species of the genus *Trouessartia* (Acari, Trouessartiidae) from leiothrichid birds (Aves, Leiothrichidae). *Zookeys*, 571: 59–79.
- Constantinescu, I.C., Cobzaru, I., Mukhim, D.K.B. and Adam, C. 2016b. Two new species of the feather mite genus *Trouessartia* (Acari: Trouessartiidae) in Asia. *Zootaxa*, 4137(3): 357–374.
- Constantinescu, I.C., Popa, O.P., Popa, L.O., Cobzaru, I., Mukhim, D.K.B. and Adam, C. 2018b. A new feather mite species of the genus *Trouessartia* Canestrini, 1899 (Acarina, Trouessartiidae)—an integrative description (morphology and DNA barcoding data). *Zookeys*, 789: 19–35.
- Doña, J., Sweet, A.D., Johnson, K.P., Serrano, D., Mironov, S. and Jovani, R. 2017. Cophylogenetic analyses reveal extensive host-shift speciation in a highly specialized and host-specific symbiont system. *Molecular Phylogenetics and Evolution*, 115 (October): 190–196.
- Dubinina, V.B. 1952. [Feather mites of birds of Wrangel Island]. *Trudy Zoologicheskogo Instituta Akademii Nauk SSSR*, 12: 251–268. [In Russian]
- Gaud, J. and Atyeo, W. T. 1986. Les *Trouessartia* (Analgoidea, Trouessartiidae) parasites des hirondelles de l’Ancien Monde. I. Le groupe *appendiculata*. *Acarologia*, 27: 263–274.
- Gaud, J. and Atyeo, W.T. 1987. Les *Trouessartia* (Analgoidea, Trouessartiidae) parasites des hirondelles de l’Ancien Monde. II. Le groupe *minutipes*. *Acarologia*, 28: 367–379.
- Gaud, J. and Atyeo, W.T. 1996. Feather mites of the World (Acarina, Astigmata): the supraspecific taxa. *Musée Royal de l’Afrique Centrale, Annales, Sciences Zoologiques*, 277(Pt. 1): 1–193 (text); (Pt. 2): 1–436 (illustrations).
- Gill, F., Donsker, D. and Rasmussen, P. (Eds.). 2021. IOC World Bird List (v 11.1). Date of access: 10 March 2021. <http://www.worldbirdnames.org/>
- Grandjean, F. 1939. La chaetotaxie des pattes chez les Acaridiae. *Bulletin de la Société zoologique de France*, 64: 50–60.
- Hernandes, F.A. 2014. Five new species of the feather mite genus *Trouessartia* Canestrini from South America (Acari: Trouessartiidae). *Zootaxa*, 3856(1): 50–72.
- Hernandes, F.A. 2017. Two new species of *Trouessartia* Canestrini, 1899 (Astigmata: Trouessartiidae) from passeriform birds in Brazil. *Systematic Parasitology*, 94: 1019–1032.
- Hernandes, F.A. and Valim, M.P. 2015. A new species of the genus *Trouessartia* Canestrini (Acari: Trouessartiidae) from Neotropical passerines (Aves: Tyrannidae). *International Journal of Acarology*, 41: 382–388.
- Krantz, G. and Walter, D. (Eds.) 2009. *A Manual of Acarology*. 3rd Edition. Texas Tech University Press, Lubbock, Texas, 807 pp.

- Mironov, S. V. 1996. [Feather mites of the passerines in the North-West of Russia]. *Parazitologiya*, 30(6): 521–539. [In Russian with English summary]
- Mironov, S. V. 2011. *Pteroherpus surmachi* sp.n., first record of the feather mite family Pteronyssidae (Acari: Analgoidea) from nuthatches (Passeriformes: Sittidae). *Proceedings of the Zoological Institute RAS*, 315(4): 452–460.
- Mironov, S. V. 2019. Two new feather mites of the genus *Proctophyllodes* Robin (Acariformes: Proctophyllodidae) associated with passerines (Aves: Passeriformes) in the Russian Far East. *Acarina*, 27(2): 151–164.
- Mironov, S. V. 2021. A new species of the feather mite genus *Trouessartia* (Acariformes: Trouessartiidae) from the Tristram's bunting *Emberiza tristrami* (Passeriformes: Emberezidae) in the Russian Far East. *Acarina*, 29(1): 35–42.
- Mironov, S. V. and Bermúdez, S. 2017. Feather mites (Acari: Analgoidea) associated with the Hairy Woodpecker *Leuconotopicus villosus* (Piciformes: Picidae) in Panama. *Acarologia*, 57(4): 941–955.
- Mironov, S. V. and Chandler, C. R. 2020. Feather mites of the genus *Trouessartia* (Acariformes: Trouessartiidae) from passerines (Aves: Passeriformes) in Georgia, USA. *Zootaxa*, 4860(1): 1–54.
- Mironov, S. V. and Galloway, T. D. 2019. Feather mites of the genus *Trouessartia* Canestrini (Acariformes: Trouessartiidae) from swallows (Passeriformes: Hirundinidae) in Canada. *Zootaxa*, 4568(1): 1–39.
- Mironov, S. V. and González-Acuña, D. A. 2013. A new feather mite species of the genus *Trouessartia* Canestrini, 1899 (Acariformes: Trouessartiidae) from the White-crested Elaenia *Elaenia albiceps* (Passeriformes: Tyrannidae) in Chile. *Acarina*, 21(2): 123–132.
- Mironov, S. V. and Kopij, G. 2000. New feather mites species of the genus *Trouessartia* (Analgoidea: Trouessartiidae) from South African passerines (Aves: Passeriformes). *Mitteilungen aus den Hamburgischen Zoologischen Museum und Institut*, 97: 99–115.
- Mironov, S. V., Dabert, J., and Dabert, M. 2012. A new feather mite species of the genus *Proctophyllodes* Robin, 1877 (Astigmata: Proctophyllodidae) from the Long-tailed Tit *Aegithalos caudatus* (Passeriformes: Aegithalidae)—morphological description with DNA barcode data. *Zootaxa*, 3253: 54–61.
- Mironov, S. V., Santillán, M. A. and Liébana, M. S. 2021. Two new feather mites of the genus *Trouessartia* Canestrini, 1899 (Acariformes: Trouessartiidae) from tyrant flycatchers (Passeriformes: Tyrannidae) in Argentina. *Systematic and Applied Acarology*, 26(9): 1735–1750.
- Norton, R. 1998. Morphological evidence for the evolutionary origin of Astigmata (Acari: Acariformes). *Experimental and Applied Acarology*, 22: 559–594.
- Orwig, K. R. 1968. The genera and species of the feather mite subfamily Trouessartiinae except *Trouessartia* (Acarina: Proctophyllodidae). *Bulletin of the University of Nebraska State Museum*, 8: 1–187.
- Rubtsov, G. A. and Yakimenko, V. V. 2012a. [Feather mite fauna (Astigmata) of birds of some passerine families (Passeriformes) in the South of Western Siberia]. *Parazitologia*, 46(3): 231–247. [In Russian with English summary]
- Rubtsov, G. A. and Yakimenko, V. V. 2012b. Feather mite fauna (Astigmata) of birds of some passerine families (Passeriformes) in the South of Western Siberia. *Entomological Review*, 92(9): 1020–1031. [English version of Rubtsov and Yakimenko 2012a]
- Rubtsov, G. A. and Yakimenko, V. V. 2012c. [Taxonomic characteristics of mites of the family Proctophyllodidae (Astigmata: Analgoidea) from migratory birds nesting in the South of Western Siberia]. *Sovremennye Problemy Nauki i Obrazovaniia*, 2. <https://www.science-education.ru/ru/article/view?id=5878> [In Russian]
- Rubtsov, G. A. and Yakimenko, V. V. 2012d. [Feather mites of the family Analgidae (Astigmata: Analgoidea) from migratory birds nesting in the South of Western Siberia]. *Sovremennye Problemy Nauki i Obrazovaniia*, 4. <https://www.science-education.ru/ru/article/view?id=6624> [In Russian]
- Santana, F. J. 1976. A review of the genus *Trouessartia* (Analgoidea: Allopidae). *Journal of Medical Entomology*, Supplement 1: 1–128.