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TWO NEW SPECIES OF THE FEATHER MITE GENUS *TROUESSARTIA* (ACARIFORMES: TROUESSARTIIDAE) FROM PASSERINES (PASSERIFORMES) FROM ASIAN RUSSIA

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ABSTRACT: Two new species of the feather mite genus *Trouessartia* (Astigmata: Trouessartiiidae) are described from passerine hosts from Northern Asia: *Trouessartia aureolae* sp.n. from the Yellow-breasted Bunting, *Emberiza aureola* Pallas (Emberizidae) and *T. cyanoptilae* sp.n. from the Blue-and-white Flycatcher, *Cyanoptila cyanomelana* (Temminck) (Muscicapidae). *Trouessartia aureolae* is very close to *T. emberizae* Mironov, 2021. The new species most clearly differs from *T. emberizae* in the following features: in males, the membranous apophyses of adanal apodemes are triangular, and the anterior ends of epimerites IVa are roughly rounded; in females, setae *h1* extend to the free margin of the interlobar membrane, and the primary spermaduct guide extends to the level of setae *h2*. *Trouessartia cyanoptilae* is most similar to *T. microfolia* Gaud, 1952 and *T. saularis* Constantinescu, 2018. The new species differs from *T. microfolia* and *T. saularis* in the following features: in both sexes, setae *d1* are absent; in males, the terminal lamellae are triangular with oblique posterior margin, thus, the whole posterior end of the opisthosoma resembles a fish tail; in females, the collar of the spermathecal head is short and smooth.

KEY WORDS: feather mites, Trouessartiidae, *Trouessartia*, systematics, Passeriformes, Northern Asia.

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INTRODUCTION

The present paper continues the studies of feather mites associated with passerines in the Russian Far East (Mironov 2011, 2019, 2021a, b; Mironov *et al.* 2012) and presents descriptions of two new species of the genus *Trouessartia* Canestrini, 1899 (Astigmata: Trouessartiidae). The feather mite genus *Trouessartia* is the second most speciose genus among all feather mites. Representatives of the genus are distributed worldwide and predominately associated with passerines (Passeriformes), with a few species reliably associated with woodpeckers (Piciformes) (Santana 1976; Gaud 1993; Mironov and González-Acuña 2013; Hernandes 2014, 2017; Mironov and Bermúdez, 2017; Mironov 2022; Mironov and Zabashta 2022). Owing to its wide distribution on passerines, this genus is one of the most extensively examined genera of feather mites over the past two decades.

The only world revision of the genus presented by Santana (1976) contained unified redescriptions and a key to almost all species known at the time. His monograph is still the main work on the systematics and the morphology of *Trouessartia*. References to the species described since this revision can be found in the taxonomic works on the genus *Trouessartia* published over the last decade (e.g., Mironov and González-Acuña 2013; Hernandes 2014, 2017, 2022, 2023; Hernandes and Valim 2015; Hernandes and OConnor 2017; Constantinescu *et al.* 2016a, b, 2017, 2018a, b, 2021, 2023; Mironov and Overstreet 2016; Mironov and Palma 2016; Mironov and Galloway 2019; Mironov and Chandler 2020; Mironov *et al.* 2021; Hernandes *et al.* 2022).

According to a recently published checklist (Mironov 2022), the world fauna of the genus *Trouessartia* includes 147 species, plus two species missing in the list, *T. puylaerti* Gaud, 1993 and *T. kharkhanensis* Constantinescu, 2017, and two species, *T. bulbuli* Constantinescu, 2023 and *T. cacica* Hernandes, 2023, described in the current year (Gaud 1993; Constantinescu *et al.* 2017, 2023; Hernandes 2023). In contrast to *Trouessartia*, in the content of eight other trouessartiid genera which were revised by Orwig (1968), just a few species belonging to the genera *Calcealges* Gaud, 1952 and *Neocalcealges* Orwig, 1968 have been described over the past fifty five years (Hernandes 2015; Dabert 2019; Wang and Proctor 2015).

The two new *Trouessartia* species described in the present work were recovered from the Russian Far East, from the Yellow-breasted Bunting, *Emberiza aureola* Pallas (Emberizidae), and the Blue-and-white Flycatcher, *Cyanoptila cyanomelana* (Temminck) (Muscicapidae). The Yellow-breasted Bunting is widely distributed in the Boreal and East

Palearctic, and the Blue-and-white Flycatcher inhabits northeastern China and the Russian Far East (Koblik and Arkhipov 2014).

MATERIALS AND METHODS

The bulk of the material used in the present study was collected by the author at a bird-banding field station (Institute of Biology and Soil Sciences of the Russian Academy of Sciences, Vladivostok) in the Primorsky Krai (Russian Far East) in the autumn of 2007 and 2008. Other specimens of the new species came from the feather mite collection of the Zoological Institute of the Russian Academy of Sciences (Saint Petersburg). At the bird-capturing field site, passerine birds were captured with mist-nets, after which they were identified, banded and examined for the presence of feather mites and other ectoparasites. Detected feather mites were collected under a stereomicroscope with a preparation needle or fine forceps and fixed in 96% ethanol. After processing, the captured birds were released to the wild.

In the laboratory, the feather mites were mounted on slides in Hoyer's medium according to the technique for small mites (Krantz and Walter 2009). The investigation of the mite specimens as well as their drawings were made using light microscopes (Leica DM 2500 and DM 5000B, Leica Microsystems, Inc.) equipped with differential interference contrast illumination (DIC) and a camera lucida.

The species descriptions and measuring techniques used in this paper follow the format used in recent taxonomic works on feather mites of the family Trouessartiidae (Mironov and González-Acuña 2013; Hernandes 2014, 2015, 2017; Constantinescu *et al.* 2018a, b, 2021, 2023; Mironov and Galloway 2019; Mironov and Chandler 2020; Mironov *et al.* 2021). General morphological terms and idiosomal chaetotaxy follow the definitions by Gaud and Atyeo (1996) with minor corrections for chaetotaxy by Norton (1998); leg chaetotaxy is that of Grandjean (1939). All measurements are in micrometers (μm).

Scientific names of birds and their classification follow Gill *et al.* (2023). All type materials are deposited in the Zoological Institute of the Russian Academy of Sciences (Saint Petersburg, Russia). The abbreviations ZISP and SVM used in specimen numbers refer to the accession and the field collection numbers, respectively.

SYSTEMATICS

Family **Trouessartiidae Gaud, 1957**

Genus ***Trouessartia* Canestrini, 1899**

Trouessartia aureolae sp. n.
(Figs. 1–4, 9A)

Type material. Male holotype (ZISP 22276), 17 male and 15 female paratypes (ZISP 22277–22308) from *Emberiza aureola* Pallas, 1773 (Passeriformes: Emberizidae) (SVM 08-0928-6), Russia, Primorsky Krai, 9 km NE of Novolitovsk, 42° 57′40″ N 132°53′12″ E, 28 September 2008, coll. S.V. Mironov.

Additional material. 3 males and 3 females (ZISP 22309) from *Emberiza aureola,* Russia, Leningradskaya Oblast, Gumbaritsy, 60°40′36″ N 32°56′21″ E, 21 August 1981, coll. S.V. Mironov; 5 males and 5 females (ZISP 22310), same host species, Russia, Tomskaya Oblast, Lake Manatka, 15 June 1986, coll. Lisina; 2 females (ZISP 22311), same host species, Russia, Khabarovsky Krai, Nizhnetambovskoie, 24 September 1939, coll. D.I. Blagoveshchenskii; 1 male (ZISP 22 312); same host species, Russia, Primorsky Krai, Kraskino, 19 July 1947, coll. M. Volkova; 1 male and 1 female (ZISP 22313), same host species, Russia, Primorsky Krai, Lake Lotos (Lake Doritsini), 29 July 1947, coll. N. Gorchakovskaia.

Description. *Male* (holotype, ranges for 10 paratypes in parentheses) (Figs. 1, 3A, B, 4A–D, F). Idiosoma, length × width, 510 (480–525) × 260 (250–270), length of hysterosoma 335 (320–350). Prodorsal shield: length along midline 155 (150–155), greatest width posterior to scapular setae 160 (160–175), anterior part at level of trochanters II not narrowed, anterolateral extensions acute, not extending to bases of epimerites Ia between legs I and II, lateral margins not fused with scapular shields, posterior margin straight, surface with barely distinct reticulate ornamentation. Internal scapular setae *si* narrowly lanceolate, 38 (35–40) long, separated by 50 (48–58); bases of external scapular setae *se* separated by 105 (100–115). Setae *c2* spiculiform, strongly enlarged basally, 54 (50–58) long, situated at anteromedian angle of humeral shields. Setae *c3* narrowly lanceolate with bidentate or truncate apex, 27 (23–28) long. Anterior and posterior parts of the hysteronotal shield delimited from each other by narrow lateral incisions extending medially beyond bases of setae *e2*, total length of this shield from anterior margin to lobar apices excluding lamellae 325 (315–340),

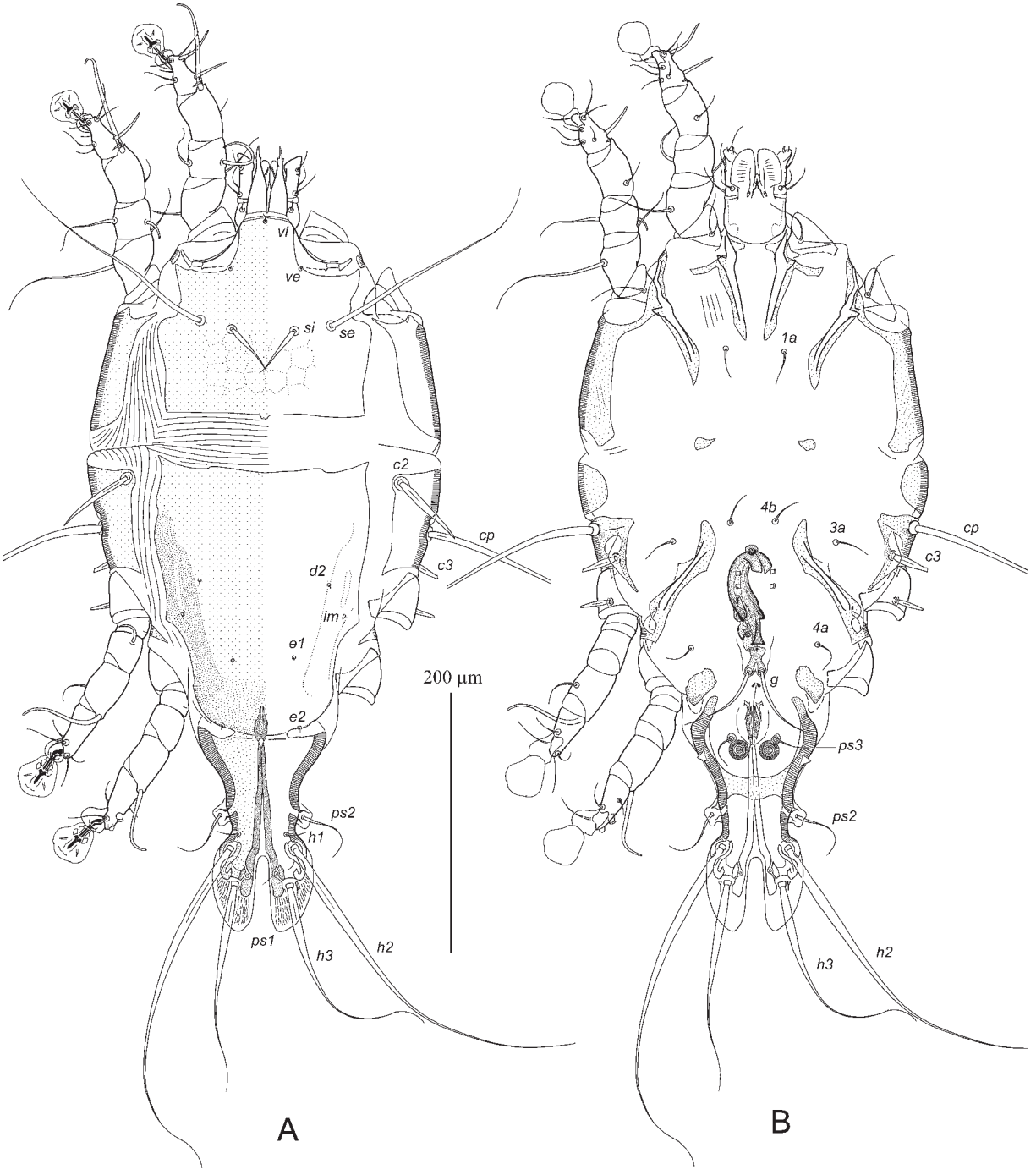

Fig. 1. *Trouessartia aureolae* sp.n., male. A—dorsal view, B—ventral view.

width at anterior margin 160 (155–175). Length of prohysteronotal part along midline 200 (195–215), lateral margins at level of trochanters III without noticeable concavities and dark-sclerotized patch at margin, median area without ornamentation. Dorsal setae *d2*, *e2* present, setae *d1*, *f2* absent. Length of lobar shield 120 (115–120). Opisthosoma strongly attenuate posteriorly; opisthosomal lobes fused to 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 (30–35); length from anterior end to posterior margins of terminal lamellae 55 (52–60), width 12 (8–13). Terminal lamellae semi-ovate,

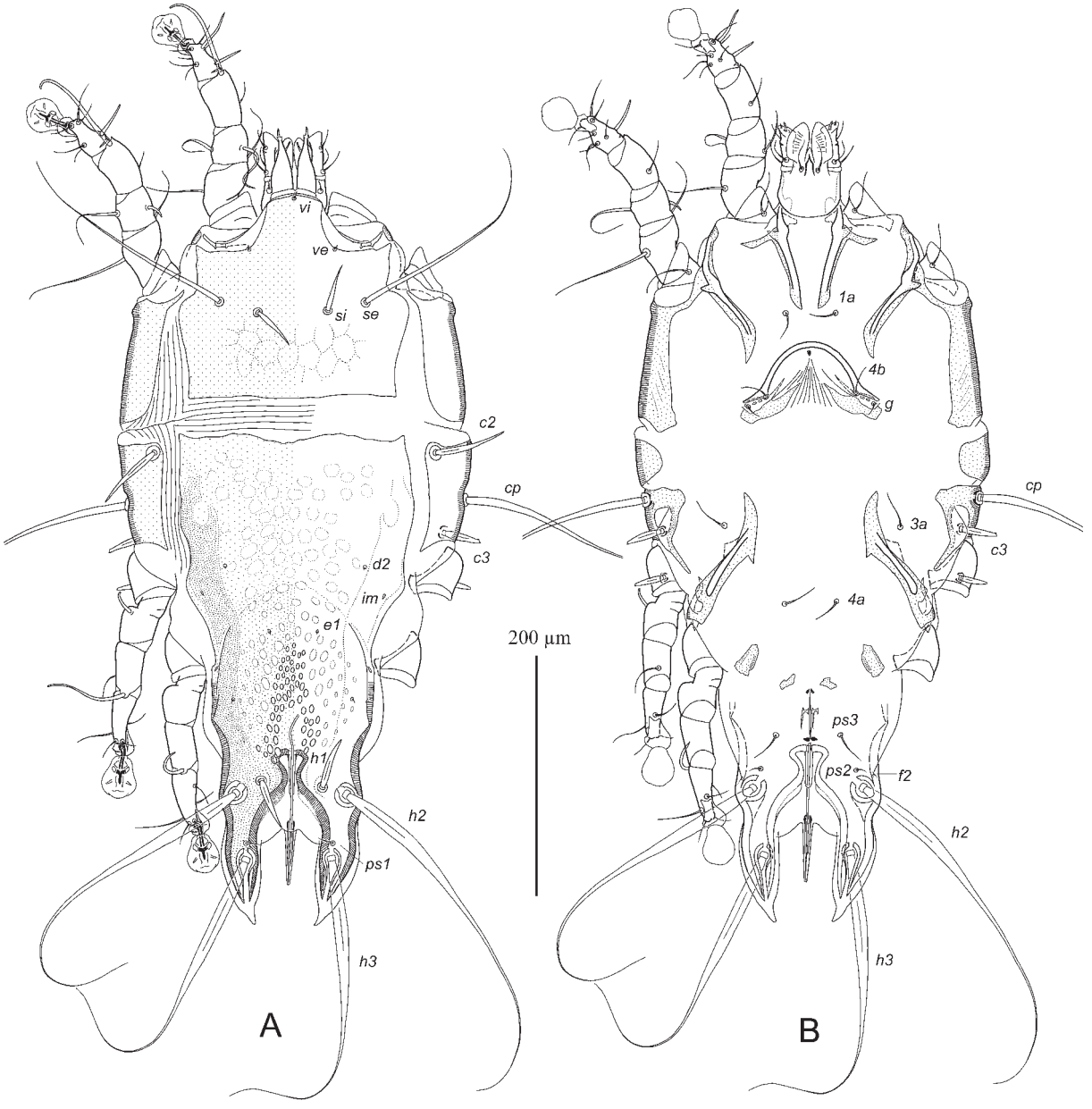

Fig. 2. *Trouessartia aureolae* sp.n., female. A—dorsal view, B—ventral view.

widely rounded posteriorly, with smooth margins, length from bases of setae *h3* to lamellar apices 32 (32–35), greatest width 30 (28–34). Distance between dorsal setae: *c2:d2* 80 (75–80), *d2:e2* 110 (105–120), *e2:h2* 90 (90–95), *h2:h3* 30 (28–32), *h2:h2* 50 (45–55), *h3:h3* 47 (35–48), *e1:e2* 52 (48–54), *ps1:h3* 12 (8–12).

Epimerites I free. Rudimentary sclerites rEpIIa small, irregular in form, with acute inner ends. Genital apparatus: long and narrow, strongly curved dorsally (in lateral view resembles a question mark), length excluding basal sclerite 72 (68–72), greatest width 18 (16–18); epiandrum (pregenital sclerite) roughly ovate; distal ends of parameres without denticles; aedeagus shaped as small cone; latigenital sclerites absent, basal sclerite extending to level of setae *4a*. Anterior and posterior pairs of genital papillae similar in size, equidistant from midline. Genital shield shaped as a small inverted Y. Setae *g* long filiform, well separated from each other and situated on posterior tips of genital shield, extending to or beyond level of setae *ps3*. Postgenital plaque (a fold flanking area of genital shield) small trapezoidal, with deeply concave

posterior margin. Apophyses of adanal apodemes triangular, situated submarginally, slightly posterior to adanal suckers. Lateral margins of opisthosoma without membranes. Translobar apodeme present. Adanal shields represented by small ovate sclerites around bases of setae *ps3*. Adanal suckers 14 (12–14) 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 roughly ovate form, with anterior ends extending slightly beyond level of setae *g*. Setae *4b* situated anterior to level of setae *3a*, both these pairs anterior to genital apparatus apex; setae *g* posterior to level of setae *4a*. Distance between ventral setae: *4b:3a* 15 (12–16), *4b:g* 110 (105–115), *4a:g* 20 (15–20), *g:ps3* 53 (50–60), *ps3:h3* 110 (105–115), *g:g* 10 (8–10).

Legs. Setae *cG*, *mG* of genua I, II filiform. Genual solenidia σI and σII situated slightly closer to basal margin of corresponding genu. Trochanteral setae *sR*III narrowly lanceolate with truncate or rounded apex, 23 (19–23) long. Legs IV with ambulacral disc almost extending to level of setae *h3*. Tarsus IV 37 (36–40) long; modified setae *d*

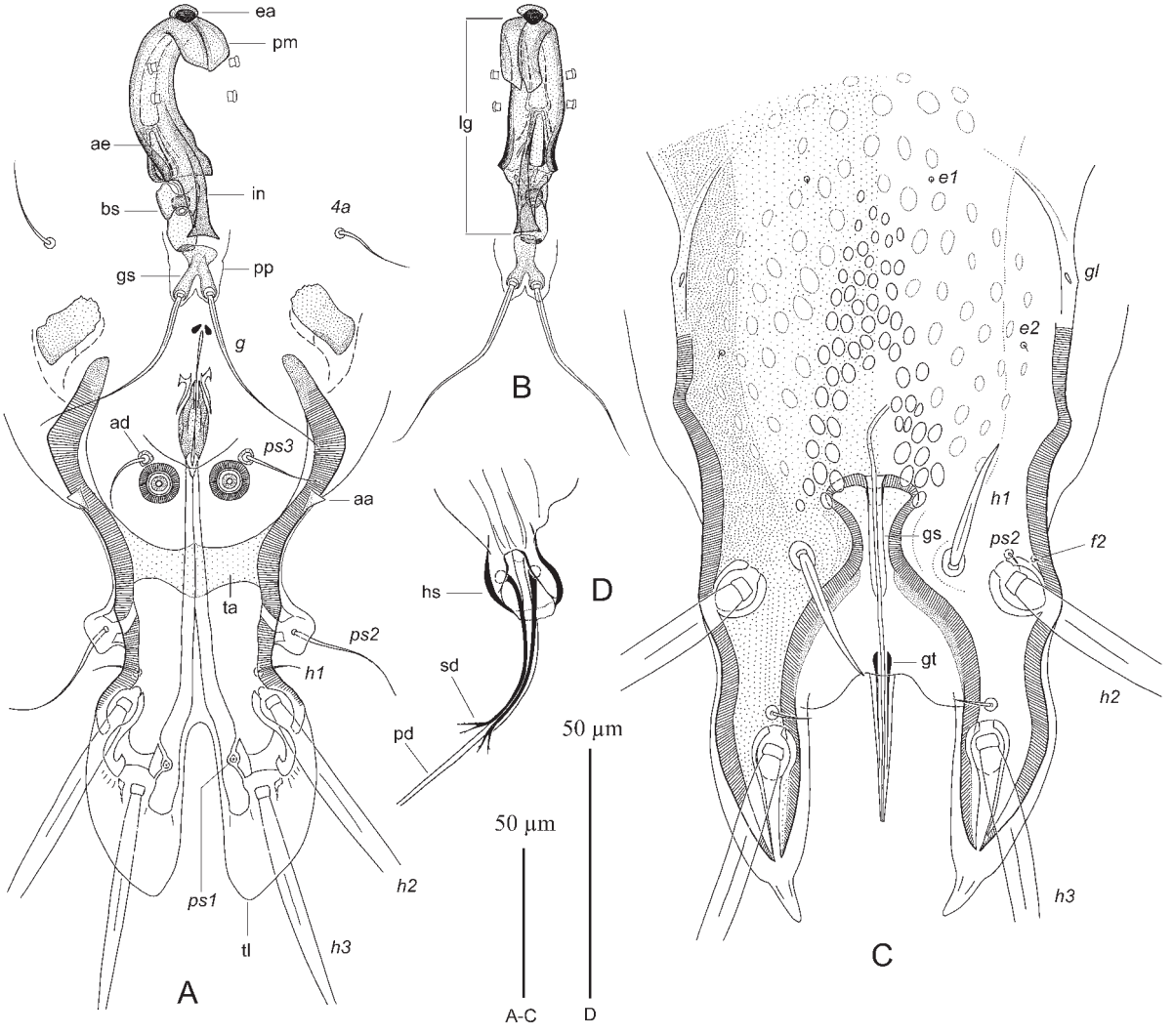

Fig. 3. *Trouessartia aureolae* sp. n., opisthosoma and genital apparatus. A—genital apparatus and opisthosoma of male, ventral view;B—genital apparatus of male, frontal view; C—opisthosoma of female, dorsal view; D—spermatheca and spermaducts.

Abbreviations: aa—apophysis of adanal apodeme, ad—adanal shield, ae—aedeagus, bs—basal sclerite, ea—epiandrum, gs—guide of primary spermaduct, gt—guides of external copulatory tube, hs—head of spermatheca, in—intermedial sclerite, lg—measured length of genital apparatus, pd—primary spermaduct, pm—parameres of genital apparatus, pp—postgenital plaque, sd—secondary spermaducts, ta—translobar apodeme, tl—terminal lamella.

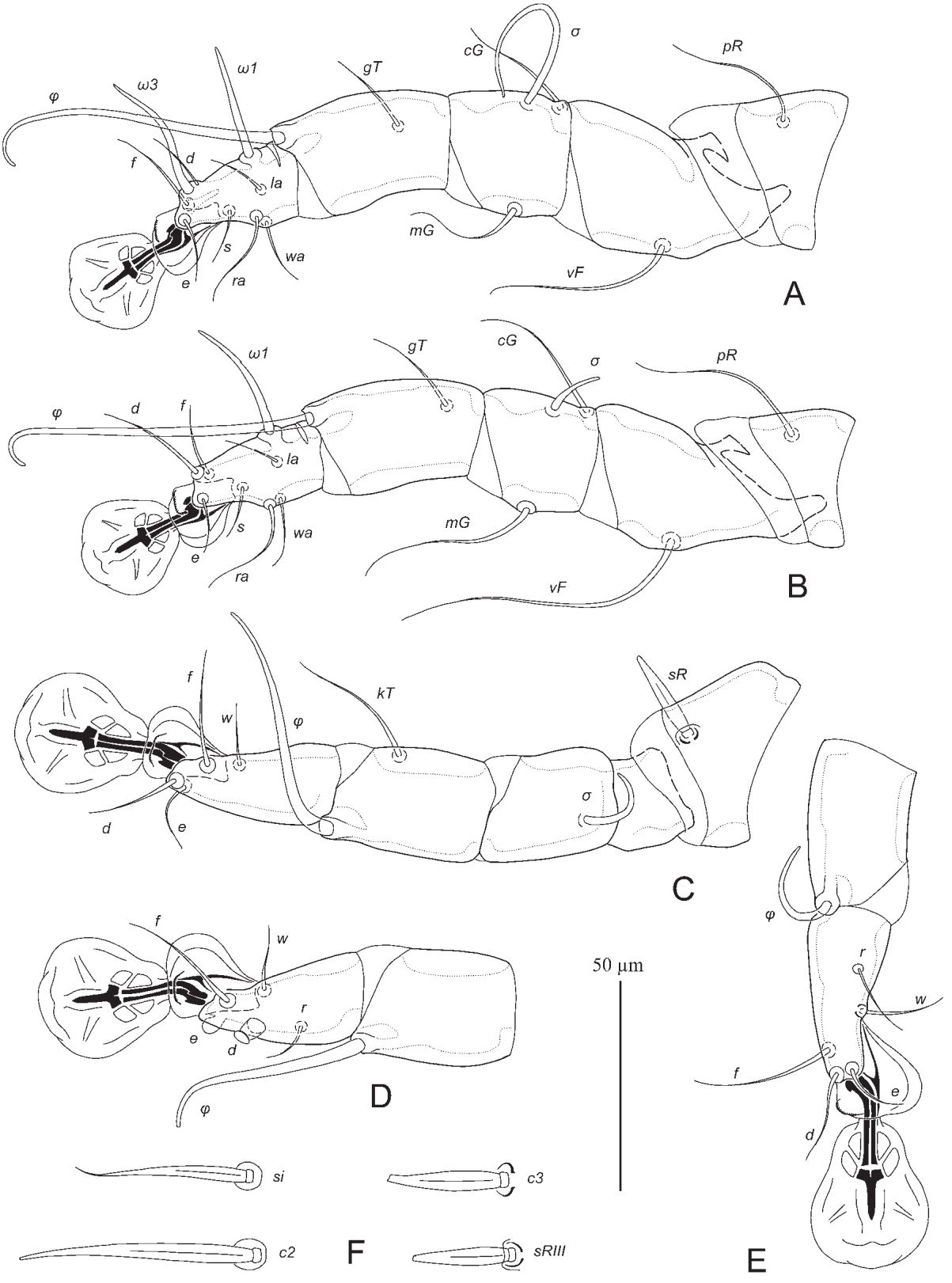

Fig. 4. *Trouessartia aureolae* sp.n., details. A–C—legs I–III of male, respectively; D—tibia and tarsus IV of male; E—tibia and tarsus IV of female; F—setae *si*, *c2*, *c3* and *sR*III of male, respectively.

barrel-shaped, with discoid cap, situated in distal one third of this segment; modified setae *e* hemispheroid, without cap, situated apically (Fig. 4D). Lengths of solenidia: σI 40 (40–55), σII 13 (12–14), σIII 23 (19–23), φIV 50 (43–50).

Female (range for 10 paratypes) (Figs. 2, 3C, D, 4E, 9A). Idiosoma, length × width, 565–590 × 265–285, length of hysterosoma 370–400. Prodorsal shield: shaped as in male, 155–170 × 170–190 wide, surface with barely distinct reticulate ornamentation. Setae *si* narrowly lanceolate with short filiform apex, 35–43 long, separated by 55–58; setae *se* separated by 110–120. Setae *c2* spiculiform, strongly enlarged basally, 50–58 long, situated in anteromedial angle of humeral shields. Setae *c3* narrowly lanceolate, with bidentate or truncate apex, 25–31 long. Hysteronotal shield: length from anterior margin to posterior tips 350–385, width at anterior margin 170–190; lateral margins at level of trochanters III without concavities and dark-sclerotized patch; anterior part of the shield with weakly distinct large ovate lacunae; median area of posterior part (from level of setae *e1* to supranal concavity) with well outlined small ovate lacunae arranged in a patch shaped as an inverted Y, lateral areas of posterior part with sparsely disposed and weakly outlined small ovate lacunae (Figs. 2A, 3C, 9A). Dorsal setae *d2*, *e2* present, *d1* absent. Setae *h1* narrowly lanceolate, 40–45 long, situated anteromesal from setae *h2*, 27–30 from corresponding lateral margins of hysteronotal shield. Width of opisthosoma at level of setae *h2* 105–120. Setae *ps1* situated dorsally, slightly closer to inner margins of opisthosomal lobes than to outer ones. Supranal concavity opens posteriorly into terminal cleft. Length of terminal cleft from anterior end of supranal concavity to lobar apices 135–145, length from free margin of interlobar membrane to apices 78–83, greatest width of cleft 38–50. Interlobar membrane occupying anterior one third of terminal cleft. External copulatory tube stylet-like, gradually attenuate to apex, situated on free margin of interlobar membrane, 42–49 long; copulatory tube guides and primary spermaduct guide well developed; primary spermaduct guide extending to or beyond level of setae *h2* (Fig. 3C). Distances between dorsal setae: *c2:d2* 90–95, *d2:e2* 100–110, *e2:h2* 75–78, *h2:h3* 48–53, *h2:h2* 80–90, *h3:h3* 55–70, *e1:e2* 45–55, *h1:h2* 8–13, *h1:h1* 42–52, *ps1:h3* 12–15.

Epimerites I free. Epigynum 41–46 long, 100–110 wide. Inner margins of epimerites IIIa with acute extension. Epimerites IVa present. Adanal sclerites present. Setae *f2*, *ps2* present. Head of spermatheca with short and smooth collar; primary spermaduct without enlargements; secondary spermaducts 38–45 long (Fig. 3D).

Legs I, II as in males (Fig. 4A, B). Trochanteral setae *sR*III narrowly lanceolate, with truncate or rounded apex, 21–24 long. Legs IV with ambulacral disc extending to level of setae *h3*. Length of solenidia: σI 50–58, σII 15–18, σIII 18–20.

Differential diagnosis. Among currently described species, the new species, *Trouessartia aureolae* sp.n., is most similar to *T. emberizae* Mironov, 2021 in the following features. In both sexes, setae *d1* are absent, the lateral margins of the hysteronotal shield are shallowly concave and without sclerotized patches; in males, the hysteronotal shield is entire and its parts are demarked from each other by narrow lateral incisions at bases of setae *e2*, the postgenital plaque is well developed, the genital shield is shaped as an inverted Y, setae *g* are long, and the apophyses of the adanal apodemes are represented by membranous angular projections; in females, the external copulatory tube is long stylet-like, extending beyond the level of setae *h3*, and setae *h1* are lanceolate. *Trouessartia aureolae* differs from *T. emberizae* in the following features: in males, the membranous apophyses of adanal apodemes are triangular, the anterior ends of epimerites IVa are roughly rounded, without thin extensions, and the terminal cleft is 10–13 wide; in females, setae *h1* are 40–45 long and extend to the free margin of interlobar membrane, the width of terminal cleft is 38–50, and the guide of primary spermaduct extends to the level of setae *h2*. In males of *T. emberizae*, the apophyses of adanal apodemes are shaped as longitudinal ridges with rectangular anterior ends, the anterior end of each epimerite IVa has a thin sinuous extension, the terminal cleft is 5–8 wide; in females, setae *h1* 30–36 long and do not extend to the free margin of interlobar membrane, the width of terminal cleft is 32–35, and the guide of primary spermaduct does not extend to the level of setae *h2*.

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

Remark. In the majority of their morphological features, *T. aureolae* and *T. emberizae* are similar to the *capensis* species group (Mironov and Chandler 2020) and are apparently related to

this group. However, in both sexes of these two species, C- or bean-shaped sclerotized patches at the lateral margins of the hysteronotal shield are absent; in males, the hysteronotal shield is entire and its parts are delimited only by lateral incisions at *e2*, and in females, the collar on the head of spermatheca has a straight margin, without a peak-like extension. In the species of the *capensis* group, the lateral incisions on the hysteronotal shield are flanked by C- or bean-shaped sclerotized patches; in males, the hysteronotal shield is completely split into prohysteronotal and lobar parts, and in females, the collar on the head of spermatheca has a semi-ovate extension (Mironov 2022).

Trouessartia cyanoptilae sp.n.
(Figs. 5–8, 9B)

Type material. Male holotype (ZISP 22314), 8 male and 9 female paratypes (ZISP 22315–22331) from *Cyanoptila cyanomelana* (Temminck, 1829) (Passeriformes: Muscicapidae), (SVM 07-0915-3/2), Russia, Primorsky Krai, Partizansky District, 9 km NE of Novolitovsk, 42°57′40″ N 132°53′12″ E, 15 September 2007, coll. S.V. Mironov; other paratypes: 4 males and 8 females (ZISP 22332–22343), same host species and locality (SVM 08-0901-5/2), 1 September 2008, coll. S.V. Mironov; 4 males and 3 females (ZISP 22344–22350), same host species and locality (SVM 07-0904-4/2), 4 September 2007, coll. S.V. Mironov.

Description. *Male* (holotype, ranges for 10 paratypes in parentheses) (Figs. 5, 7A, B, 8A–D, F). Idiosoma, length × width, 490 (480–510) × 230 (225–240), length of hysterosoma 330 (325–340). Prodorsal shield: length along midline 150 (140–155), greatest width posterior to scapular setae 155 (150–165), anterior part at level of trochanters II not narrowed, anterolateral extensions rounded, not extending to bases of epimerites Ia between legs I and II, lateral margins not fused with scapular shields, posterior margin straight, surface with weakly distinct reticulate ornamentation. Internal scapular setae *si* spiculiform, 25 (23–28) long, separated by 52 (50–55); external scapular setae *se* separated by 110 (100–115). Setae *c2* spiculiform, 63 (58–65) long, situated in anteromedian angle of humeral shields. Setae *c3* narrowly lanceolate with acute apex, 28 (25–28) long. Anterior and posterior parts of the hysteronotal shield delimited from each other by narrow lateral incisions extending to bases of setae *e2*; total length of shield from anterior margin to lobar apices excluding lamellae 320 (305–330) width at anterior margin 155 (150–160). Length of prohysteronotal part along midline 195 (190–205), lateral margins at level of trochanters III with deep and wide incisions, bow-shaped sclerotized patch at margins of these incisions poorly distinct; surface from anterior margin to level of trochanters IV with barely distinct ovate depressions (lacunae). Dorsal setae *d2*, *e2* present, setae *d1*, *f2* absent. Length of lobar shield 120 (105–125). 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 25 (25–28); length from anterior end to posterior margins of terminal lamellae 58 (52–60), width 30 (27–33). Terminal lamellae with smooth margins and roughly rectangular in shape, with posterior margin obliquely cut and posterolateral angle acute, length from bases of setae *h3* to lamellar apices (posterolateral angles) 35 (32–35), greatest width 30 (27–33). Distances between dorsal setae: *c2:d2* 70 (70–75), *d2:e2* 110 (105–120), *e2:h2* 98 (95–100), *h2:h3* 28 (25–30), *h2:h2* 43 (40–45), *h3:h3* 40 (38–42), *e1:e2* 55 (50–55), *ps1:h3* 8 (8–10).

Epimerites I free. Rudimentary sclerites rEpIIa small, roughly ovate. Genital apparatus: relatively short and narrow, strongly curved dorsally, length excluding basal sclerite 40 (38–42), greatest width 20 (20–23); epiandrum roughly ovate; distal ends of parameres curved backward, narrowed distally, and without denticles; aedeagus long, extending to ends of parameres; latigenital sclerites absent, basal sclerite extending to level of setae *g*. Anterior and posterior pairs of genital papillae similar in size, equidistant from midline or posterior papillae separated slightly wider. Genital shield and postegenital plaque absent. Setae *g* short filiform, about one third the distance between setae *g* and *ps3*, adjacent to each other at bases. Lateral margins of opisthosoma without lateral membranes at level of adanal suckers. Apophyses of adanal apodemes represented by long submarginal membranes with convex lateral margins. Translobar apodeme present. Adanal shields represented by small longitudinal sclerites bearing bases of setae *ps3* on posterior ends. Adanal suckers 18 (15–18) in diameter. Inner ends

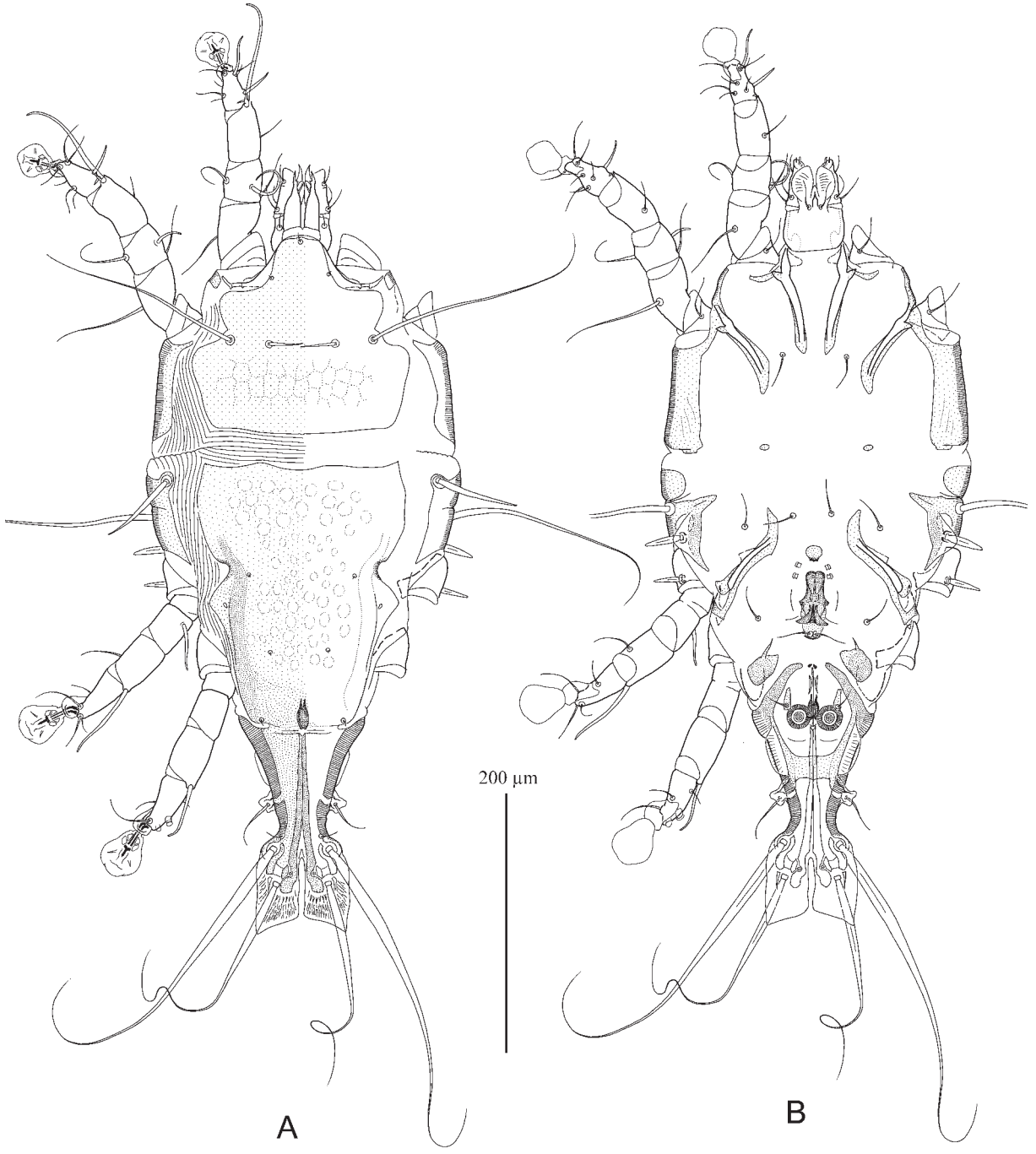

Fig. 5. *Trouessartia cyanoptilae* sp.n., male. A—dorsal view, B—ventral view.

of epimerites IIIa extending to level of setae *4b*, without angular extensions on inner margins. Epimerites IVa as plates of roughly ovate form, with thin and acute extension on anterior end extending to level of setae *g*. Setae *4b* situated anterior to level of setae *3a*, both pairs anterior to genital apparatus apex; setae *g* posterior to level of setae *4a*. Distances between ventral setae: *4b:3a* 10 (5–10), *4b:g* 95 (92–98), *4a:g* 13 (12–18), *g:ps3* 53 (52–55), *ps3:h3* 125 (120–135).

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 *sR*III narrowly lanceolate, with simple acute apex, 23 (20–25) long. Legs IV with ambulacral disc extending to level of setae *h3*. Tarsus IV 42

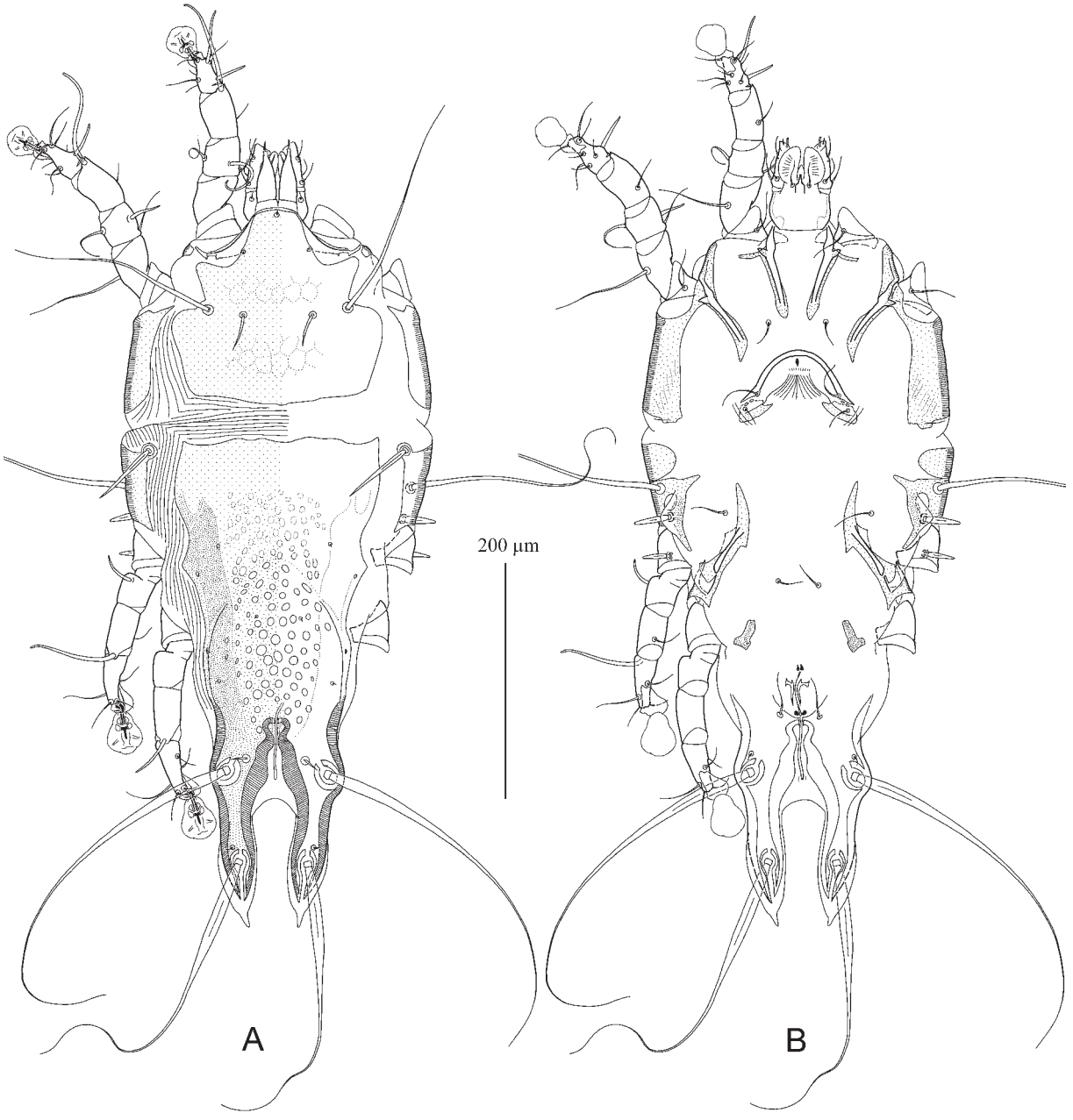

Fig. 6. *Trouessartia cyanoptilae* sp.n., female. A—dorsal view, B—ventral view.

(40–42) 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. 3D). Lengths of solenidia: σI 50 (48–55), σII 22 (22–25), σIII 32 (30–33), φIV 40 (40–43).

Female (range for 10 paratypes) (Figs. 6, 7C, D, 8E, 9B). Idiosoma, length × width, 560–625 × 240–260, length of hysterosoma 390–440. Prodorsal shield: generally shaped as in male, except longer anterolateral extensions and posterior margin slightly convex, 150–165 × 165–180, surface with barely discernible reticulate pattern. Setae *si* spiculiform, 28–30 long, separated by 58–60; setae *se* separated by 110–120. Setae *c2* spiculiform, 50–62 long, situated in anteromedial angle of humeral shields. Setae *c3* narrowly lanceolate, with acute tip, 28–30 long. Hysteronotal shield: length from anterior margin to posterior tips 360–405, width at anterior margin 160–175; lat-

eral margins at level of trochanters III shallowly concave, sclerotized patch at margins of these concavities indiscernible; anterior part of the shield with weakly distinct small ovate lacunae; median area of posterior half with well outlined circular and ovate lacunae, which are larger along midline and smaller in lateral areas (Figs. 6A, 7C, 9B). Dorsal setae *d2*, *e2* present, *d1*, *f2* absent. Setae *h1* thin spiculiform, 10–12 long, situated anteromesal from setae *h2*, 25–31 from corresponding lateral margins of hysteronotal shield. Width of opisthosoma at level of setae *h2* 105–115. Setae *ps1* situated dorsally, closer to outer margins of opisthosomal lobes. Supranal concavity opens posteriorly into terminal cleft. Length of terminal cleft from anterior end of supranal concavity to lobar apices 160–185, length from free margin of interlobar membrane to apices 95–120, greatest width of cleft 32–35. Interlobar membrane occupying approximately anterior one fourth of terminal cleft. External copulatory tube absent, copulatory opening situated ventrally on interlobar membrane and anterior from its free edge; primary spermaduct guide short and poorly outlined (Fig. 7C). Distance between dorsal setae: *c2:d2* 75–88, *d2:e2* 110–120, *e2:h2* 68–75, *h2:h3* 73–83, *h2:h2* 80–85, *h3:h3* 53–60, *e1:e2* 55–60, *h1:h2* 10–13, *h1:h1* 45–50, *ps1:h3* 12–15.

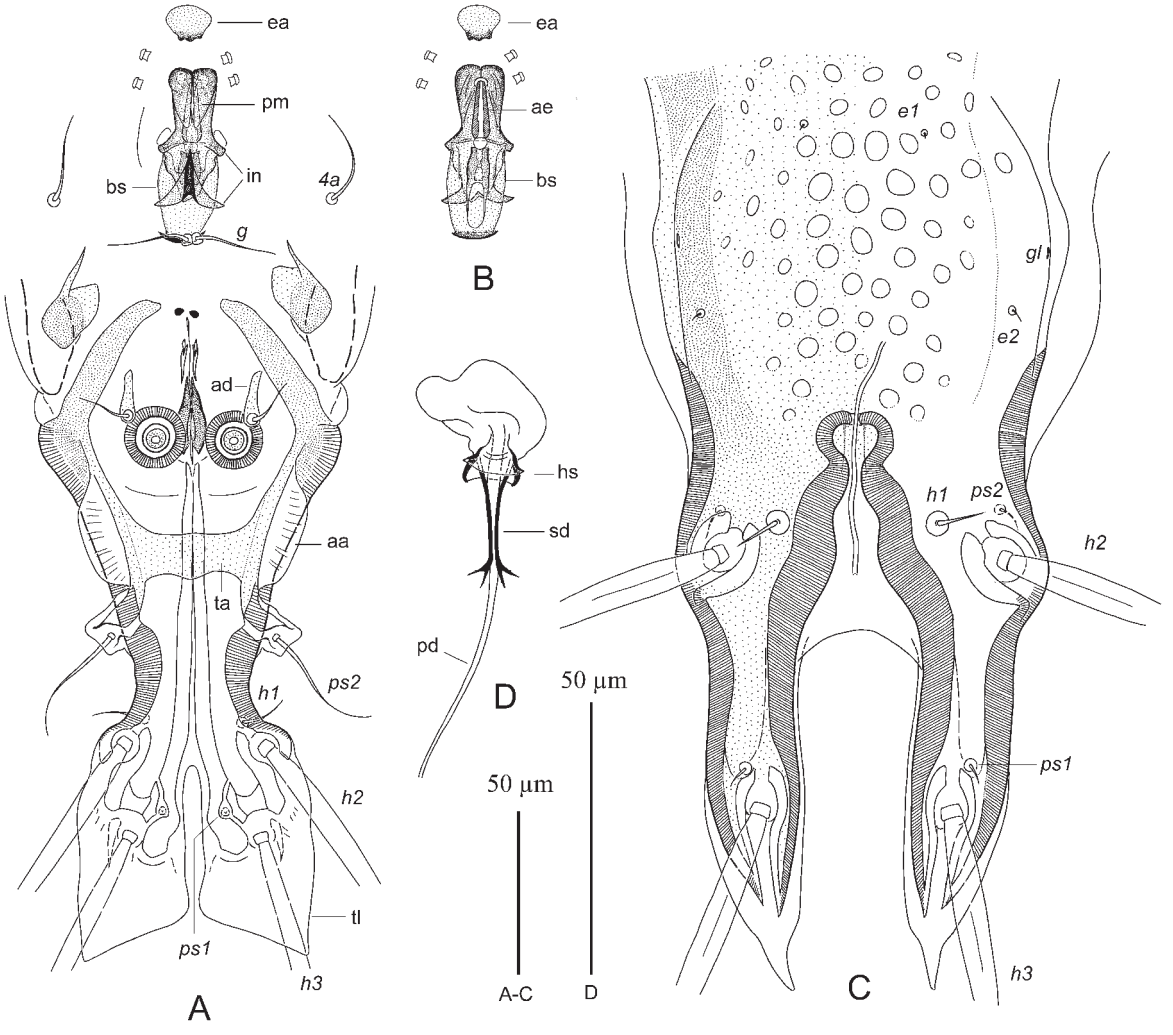

Fig. 7. *Trouessartia cyanoptilae* sp.n., opisthosoma and genital apparatus. A—genital apparatus and opisthosoma of male, ventral view; B—genital apparatues of male, dorsal view; C—opisthosoma of female, dorsal view; D—spermatheca and spermaducts.

Abbreviations: aa—membranous apophysis of adanal apodeme, ad—adanal shield, ae—aedeagus, bs—basal sclerite, ea—epiandrum, hs—head of spermatheca, in—intermedial sclerite, pd—primary spermaduct, pm—parameres of genital apparatus, sd—secondary spermaducts, ta—translobar apodeme, tl—terminal lamella.

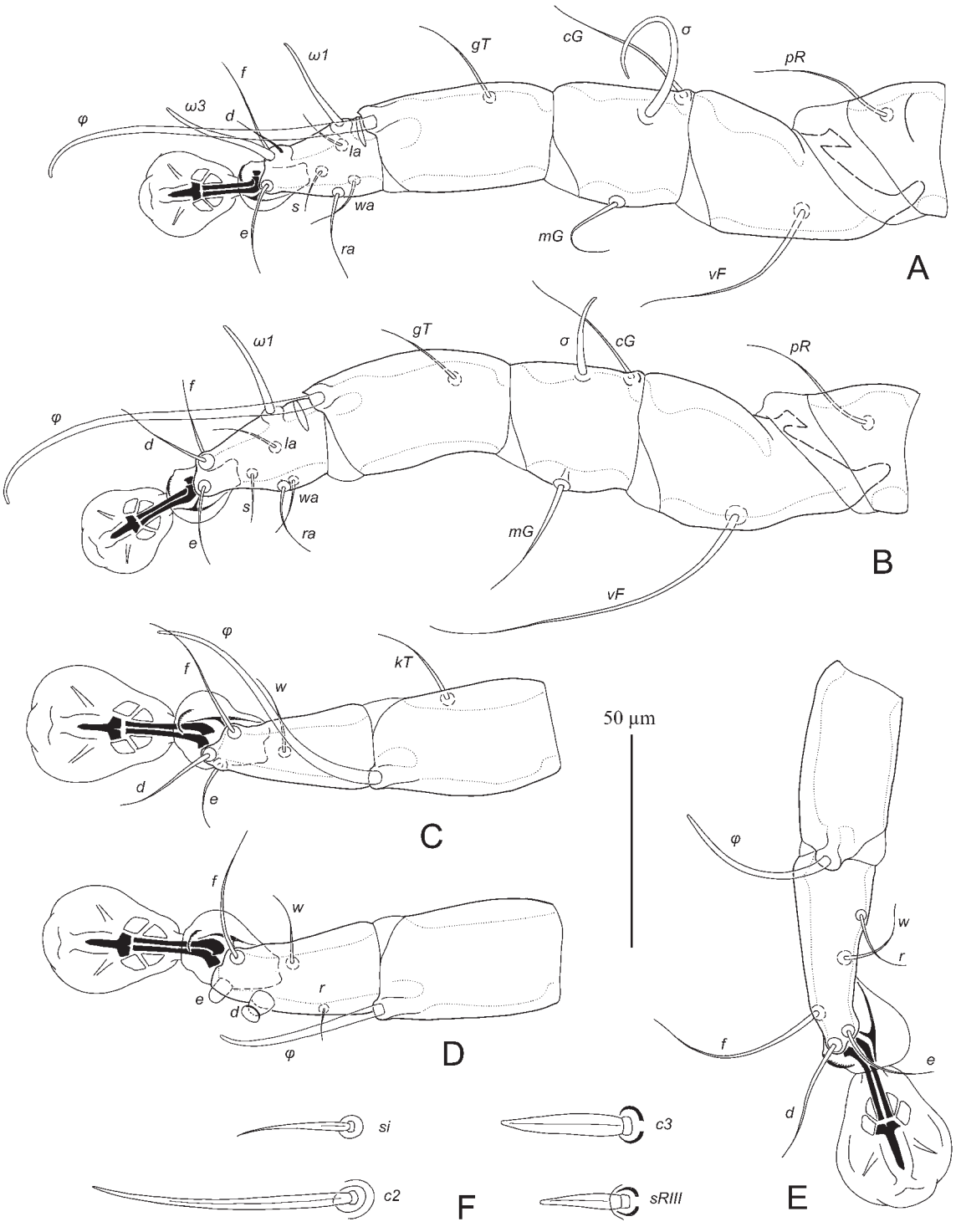

Fig. 8. *Trouessartia cyanoptilae* sp.n., details. A–C—legs I–III of male, respectively; D—tibia and tarsus IV of male; E—tibia and tarsus IV of female; F—setae *si*, *c2*, *c3* and *sR*III of male, respectively.

Epimerites I free. Epigynum 43–50 long, 90–100 wide. Inner margins of epimerites IIIa with angular extension. Epimerites IVa present. Adanal sclerites absent. Setae *ps2* present, setae *f2* absent. Head of spermatheca with short and smooth collar and with a pair of short spine-like extensions directed backward; primary spermaduct without enlargements; secondary spermaducts 25–28 long (Fig. 7D).

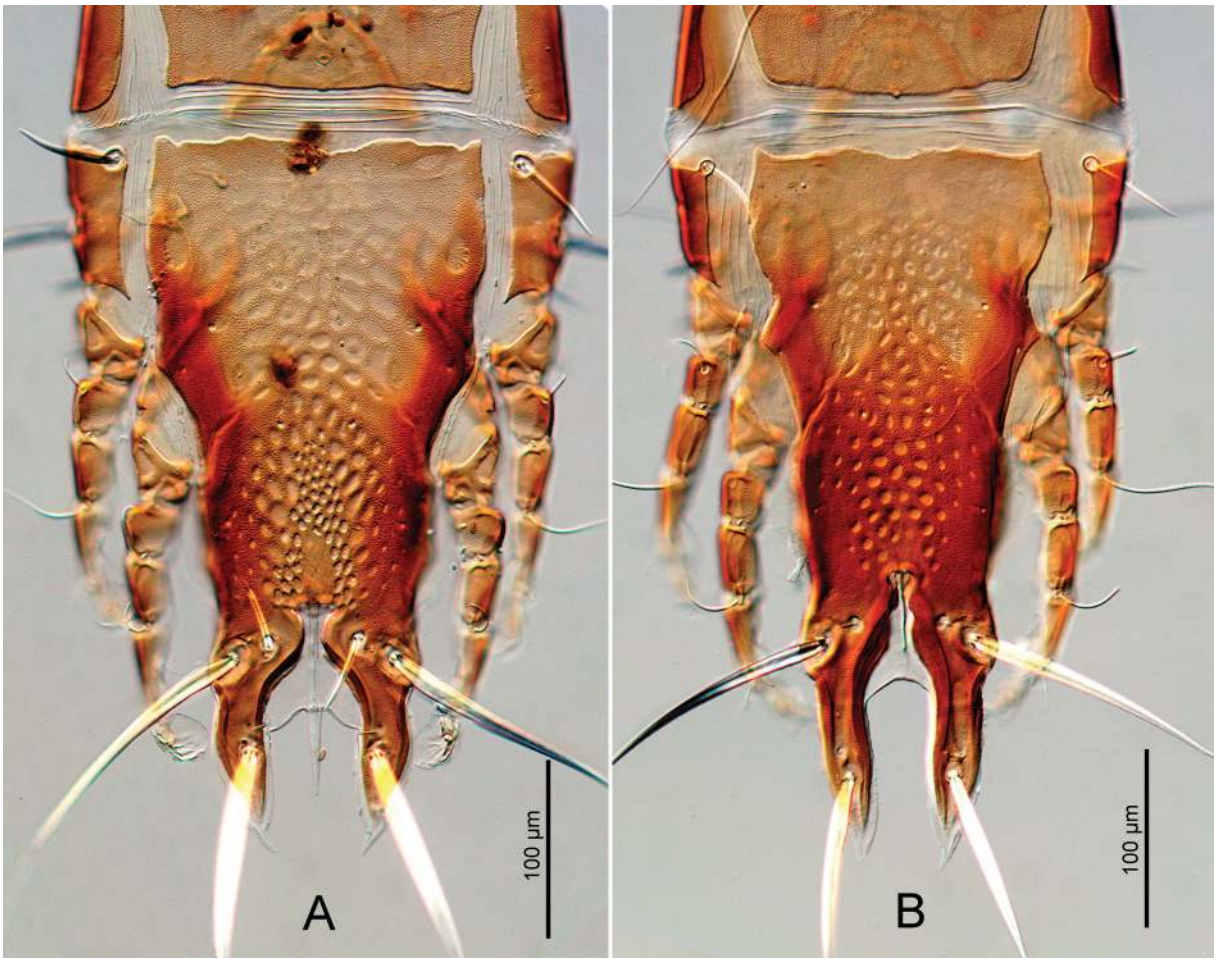

Fig. 9. Hysteronotal shields of *Trouessartia* females. A— *Trouessartia aureolae* sp.n., B— *T. cyanoptilae* sp.n.

Legs I, II as in males (Fig. 8A, B). Trochanteral setae *sR*III narrowly lanceolate, with simple acute apex, 23–25 long. Legs IV with ambulacral disc extending to midlength between setae *h2* and *h3*. Lengths of solenidia: σI 53–60, σII 15–18, σIII 30–35.

Differential diagnosis. The new species, *Trouessartia cyanomelanae* sp.n., is the closest to *T. microfolia* Gaud, 1952 collected from *Copsychus albospeclaris pica* Pelzeln in Madagascar and to *T. saularis* Constantinescu, 2018 described from *C. saularis* (Linnaeus) (Muscicapidae) in Indonesia (Gaud 1952; Santana 1976; Constantinescu *et al.* 2018a). The three aforementioned species are similar in the following characteristics: in both sexes, the anterolateral extensions of prodorsal shield are rounded, the lateral margins of hysteronotal shields are without heavily sclerotized patches; in males, the hysteronotal shield is entire, with small lateral incisions at bases of setae *e2*, the apophyses of adanal apodemes are represented by submarginal membranes with convex edge, and the bases of setae *g* are adjacent to each other; in females, the external copulatory tube is absent, the copulatory opening is situated ventrally, distant from the free edge of interlobar membrane, and setae *f2* are absent. The new species differs from *T. microfolia* and *T. saularis* in the following features. In both sexes of *T. cyanoptilae*, setae *d1* are absent; in males, the posterior margin of each terminal lamella is oblique with the posterolateral angle forming an angular lobar apex, so the whole posterior end of opisthosoma resembles a fish tail (Fig. 7A); in females, the collar of spermathecal head is smooth, the length of idiosoma is 560–625, and the length of terminal cleft is 160–185. In both sexes of *T. microfolia* and *T. saularis*, setae *d1* are present; in males, the terminal lamellae are semiovate with a widely rounded posterior end (in *T. microfolia*) or with slightly attenuate apex (in *T. saularis*); in females, the collar of spermathecal head has a fringe of numerous thin denticles, the lengths

of idiosoma and terminal cleft in *T. saularis* are 400–435 and 95–110, respectively, and in *T. microfolia*, these measurements are about 535 and 140, respectively (Santana 1976; Constantinescu *et al.* 2018a).

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

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