

NEW QUILL MITE SPECIES OF THE FAMILY SYRINGOPHILIDAE (ACARI: CHEYLETOIDEA) FROM THE EUROPEAN PART OF RUSSIA

НОВЫЕ ВИДЫ ОЧИННЫХ КЛЕЩЕЙ СЕМЕЙСТВА SYRINGOPHILIDAE (ACARI: CHEYLETOIDEA) ИЗ ЕВРОПЕЙСКОЙ ЧАСТИ РОССИИ

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ABSTRACT

A four new syringophilid mite species from North-West of Russia are described: *Stibarokris langei* sp.n. ex *Ciconia alba*, *Aulonastus prunellae* sp.n. ex *Prunella modularis*, *Torotroglia cardueli* ex *Carduelis spinus*, and *Syringophilopsis borini* sp.n. ex *Sylvia borin*.

РЕЗЮМЕ

Описано 4 новых вида Syringophilidae с северо-запада России: *Stibarokris langei* sp.n. с *Ciconia alba*, *Aulonastus prunellae* sp.n. с *Prunella modularis*, *Torotroglia cardueli* с *Carduelis spinus* и *Syringophilopsis borini* sp.n. с *Sylvia borin*.

The quill mites of the family Syringophilidae (Acari: Cheyletoidea) are permanent ectoparasites of birds. Only 9 species belonging to 6 genera of the Syringophilidae were recorded from the European part of Russia (Leningrad Prov. and Kaliningrad Prov.) [Bochkov, Mironov, 1998].

The present paper gives descriptions of 4 new species found in the North-West Russia.

MATERIALS AND METHODS

The mite material was collected from alive birds captured by means of mist nets in the Novgorod Prov. (Chudovo Distr., Oskuy village) in spring and summer of 1998–1999. This study was a part of work of the North-West parasitological expedition carried out by the laboratory of parasitology, Zoological Institute Russian Academy of Sciences, St. Petersburg, Russia (ZISP).

The nomenclature of idiosomal setae follow that of A. Fain [1979], developed for the family Cheyletidae. We use this nomenclature instead of that proposed specially for the Syringophilidae by Kethley [1970], because it allow to compare chaetom and recognise homologies in the most families of Cheyletoidea.

The terminology and leg chaetotaxy follows that of Kethley [1970] with simple addition of Philips and Norton [1978] for the tarsal chaetom.

All measurements are given in micrometers.

Holotypes and paratypes of all new species are deposited in ZISP.

Genus *Stibarokris* Kethley, 1970

1. *Stibarokris langei* Bochkov et Mironov sp.n.
Figs. 1–2.

DESCRIPTION

Female (holotype). Length 731 (731–810 in paratypes), width at level of setae *h* 184 (189–207).

Gnathosoma (Fig. 1b). Hypostomal apex unornamented, smooth; lateral hypostomal teeth present. Cheliceral digit with 2 very little teeth. Peritremes: lateral branch with 7–8 chambers, longitudinal branch with 11–12 chambers.

Dorsal idiosoma (Fig. 1a). Hysterosomal shield well developed, interrupted by narrow transversal band behind bases of setae *l2*; encompassing setae *d2* and *l2*. Pygidial shield well developed, fused with hysterosomal shield; encompassing setae *d4* and *l4*. Length of setae: *vi* 67 (58–72), *ve* 75 (67–76), *sci* 84 (72–78), *see* 157 (148–157), *h* 180 (170–202), *d1* 121 (117–135), *d2* 112 (99–108), *l1* 130 (125–157) — all knobbed; *d4* 24 (27–29), *d5* 38 (42–51), *l5* 405 (418–427) — all smooth.

Ventral idiosoma (Fig. 2a). Epimeres I weakly divergent, not fused to epimeres II. Cuticular striations as in Fig. 2a. All setae smooth. Length of setae: *pg1* 121 (103–135), *pg2* 135 (135–157), *pg3* 166 (180–211), *g1* and *g2* 45 (38–45).

Legs. Coxae strongly sclerotized. All setae smooth, except *p'*, *p''*. Setae *p'*, *p''* I–II subequal, each with 8 tines (Fig. 2b); *p'*, *p''* III–IV with 11–12 tines; *sc3* 78 (72–80) long, extending beyond genu III; *sc4* 60 (49–60), slightly extending beyond genu IV; *vfl* not extending to ambulacrum; *vfl* extending to ambulacrum; *tc* III–IV longer than *tc* III–IV.

Male. Unknown.

DIFFERENTIAL DIAGNOSIS

This species is closely related to single formerly known species *Stibarokris phalacrus* Kethley, 1970 ex *Phalacrocorax auritus* (Pelecaniformes: Phalac-

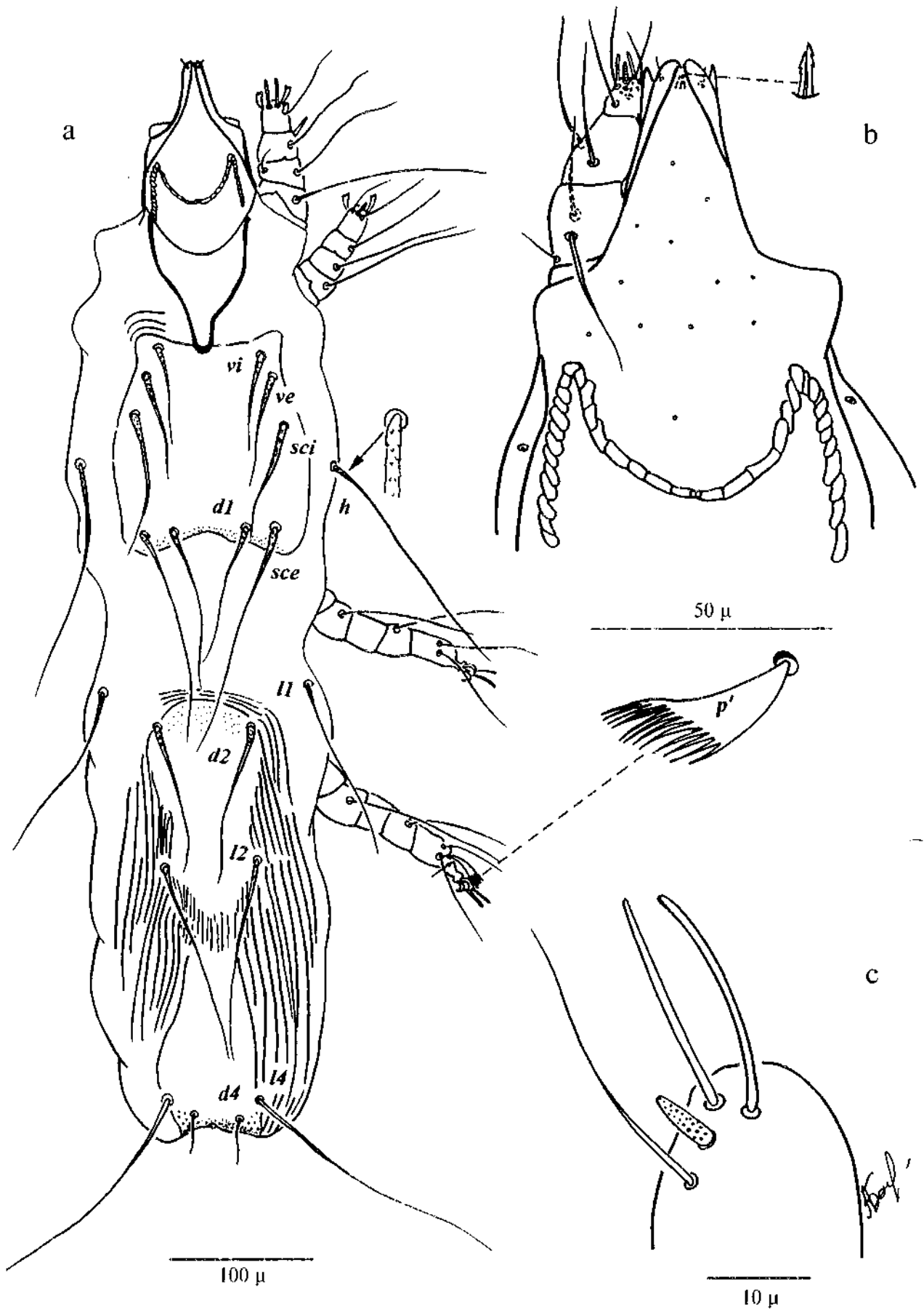


Fig. 1. *Stibarokris langei* sp.n., female, dorsal view: a — body; b — gnathosoma; c — tarsus I.
 Рис. 1. *Stibarokris langei* sp.n., самка дорсально: а — тело; б — гнатосома; в — лапка I.

rocoracidae) from Florida, USA [Kethley, 1970]. Females of these species are distinguished by characters as follow. In *S. langei* sp.n., the hysterosomal shield is well developed and divided transversally, it bears setae *d2* and *l2*; the pygidial shield is fused with the hysterosomal shield; setae *p', p''* III-IV with 11-12 tines; cheliceral digit with 2 little teeth. In *S. phalacrus*, the hysterosomal shield is small, divided longitudinally, and bears setae *d2* only; the pygidial shield is not fused with the hysterosomal shield; setae *p', p''* III-IV narrow, with 8 tines; the cheliceral digit edentate.

Type material. Holotype female (T-Sy-9), paratypes 3 females ex *Ciconia alba* (Ciconiiformes: Ciconiidae), Novgorod Prov., Chudovo Distr., Oskuy village, 15.08.1999. S. Mironov coll.

ETYMOLOGY

This species is named in a honour of the prominent russian acarologist Dr. A.B. Lange (Moskow State University, Russia).

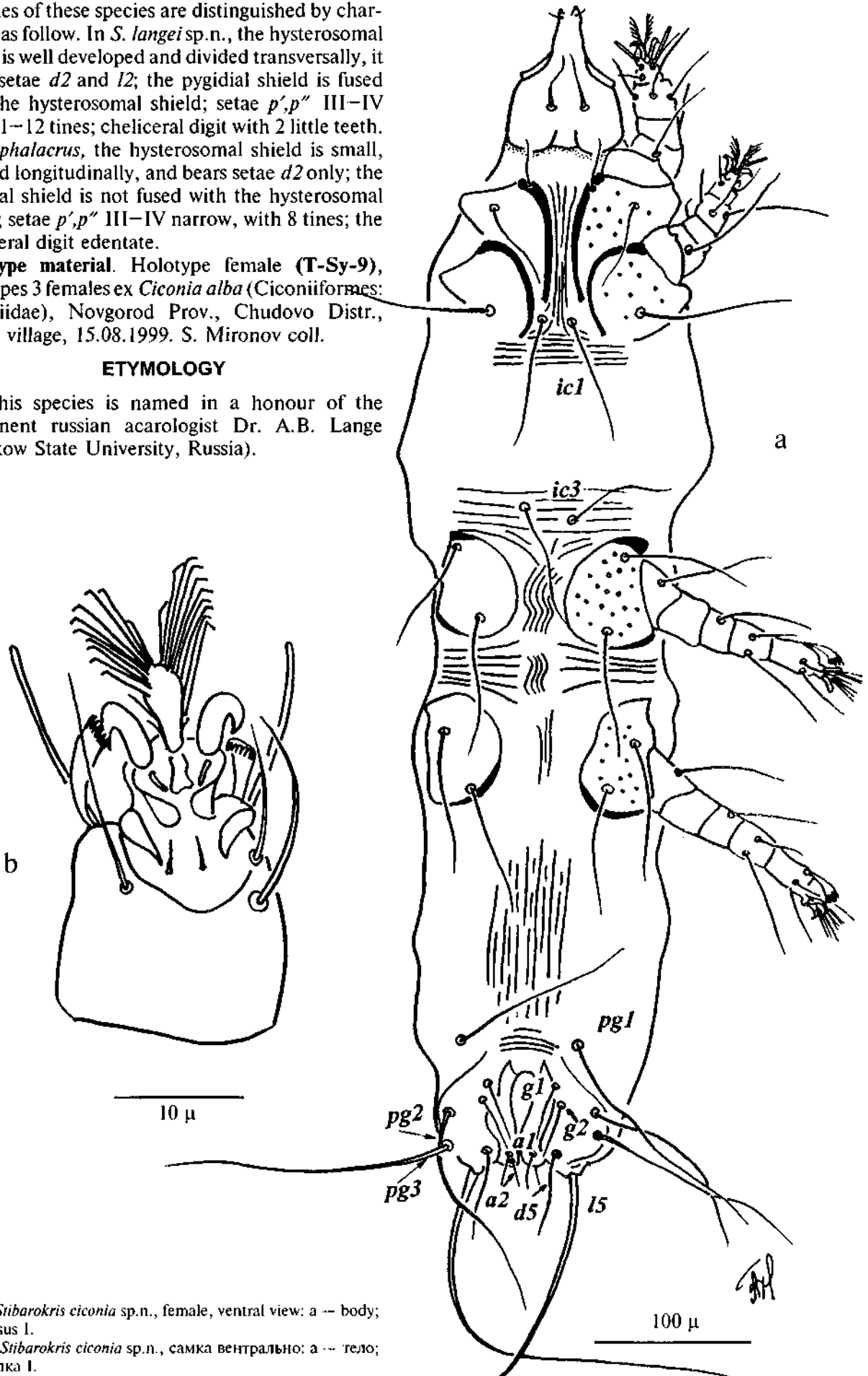


Fig. 2. *Stibarokris ciconia* sp.n., female, ventral view: a -- body; b -- tarsus I.

Рис. 2. *Stibarokris ciconia* sp.n., самка вентрально: а -- тело; б -- лапка I.

Genus *Aulonastus* Kethley, 1970

2. *Aulonastus prunellae* Bochkov et Mironov sp.n.

Figs. 3-4.

DESCRIPTION

Female (holotype). Length 427 (417-461 in paratypes), width at level of setae *h* 112 (103-120).

Gnathosoma. Hypostomal apex (Fig. 3c) unornamented, smooth; lateral hypostomal teeth absent. Peritremes (Fig. 1d): lateral branch consist of one chamber only; longitudinal branch with 3-4 chambers. Cheliceral digit edentate.

Dorsal idiosoma (Fig. 3a). Propodosomal shield not divided. Hysterosomal shield almost absent, cuticular surface in this place covered with specific striations and bearing setae *d2* and *l2* (Fig. 1a). Pygidial shield absent. All setae smooth. Length of setae: *ve* 13 (12-14), *sci* 13 (11-14), *sce* 121 (139-153), *h* 94 (94-112), *d1* 148 (135-175), *d2* 15 (13-18), *d4* 22 (18-25), *l1* 94 (95-123), *l2* 15 (15-21), *l4* 45 (48-56), *d5* 15 (13-24), *l5* 202 (229-256).

Ventral idiosoma (Fig 3b). Epimeres I parallel, not fused with epimeres II. Cuticular striations as in Fig. 3b. All setae smooth. Length of paragenital setae: *pg1* 45 (47-56), *pg2* 48 (45-51), *pg3* 78 (80-96).

Legs. Coxae poorly sclerotized. All setae smooth, except *p'*, *p''*; setae *p'*, *p''* I-II with 3-4 times, *p'*, *p''* III-IV with 5-6 times; *sc3* and *sc4* subequal, extending beyond genu; *vFI* not extending to ambulacrum, *vFII* extending to ambulacrum.

Male (paratype). Length 328, width 112.

Gnathosoma as in female. Peritremes: lateral branch with 1-2 chambers, longitudinal branch with 4 chambers.

Propodosomal shield weakly sclerotized. Hysterosomal shield absent, cuticular surface in this place covered with specific striations as in Fig. 4a and bearing setae *d2* and *l2*. Aedeagus 56 long. All setae smooth, except *p'*, *p''*. Paragenital setae 2 pairs, anal setae one pair. Length of setae: *ve* 11, *sci* 11, *sce* 22, *h* 15, *d1* 21, *d2* 15, *d4* 15, *l1* 18, *l2* 13, *l4* 12, *l5* 31, *pg1* 29, *pg2* 17.

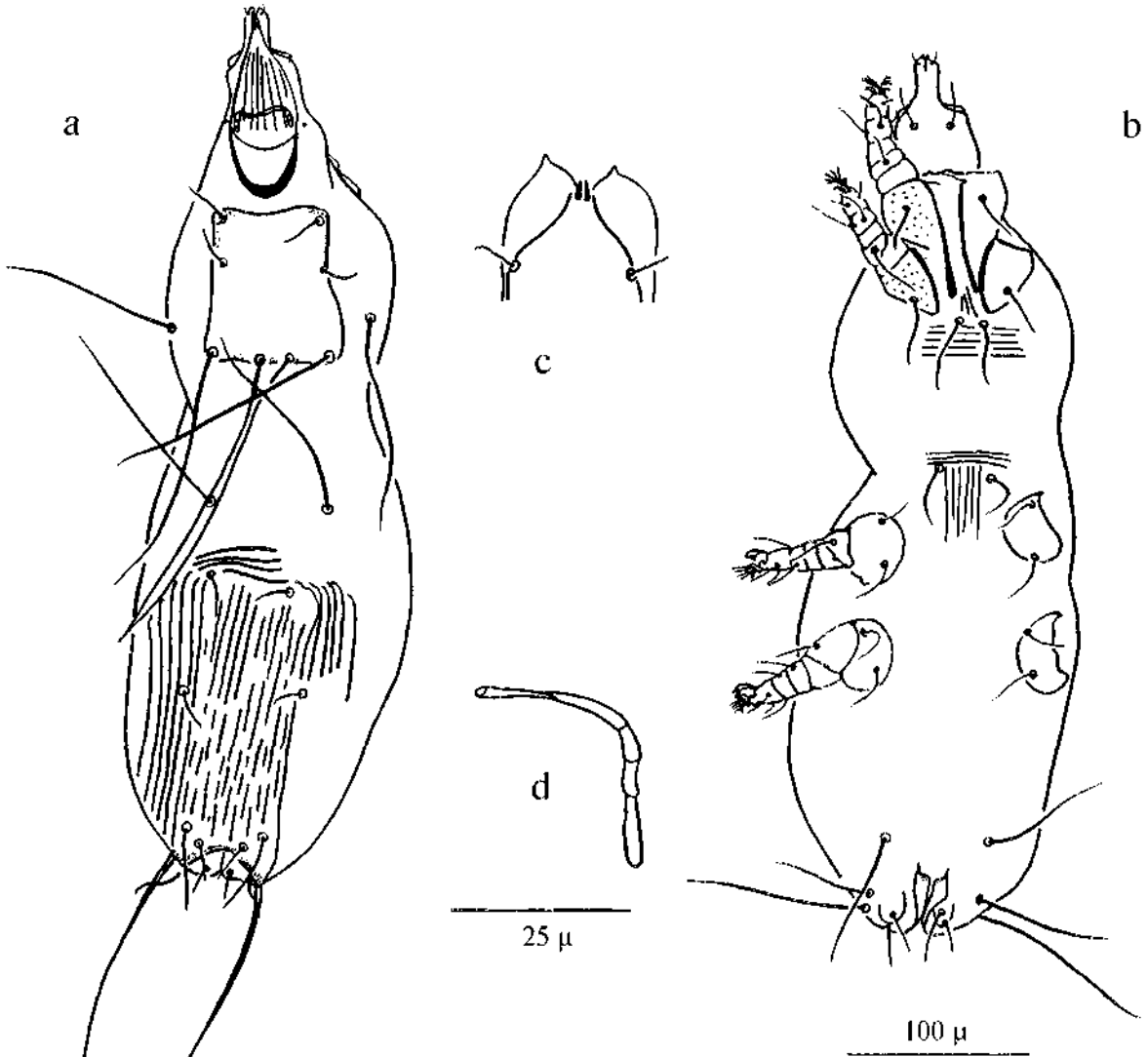


Fig. 3. *Aulonastus prunellae* sp.n., female: a - body, dorsal view, b - ventral view; c - hypostomal apex, ventral view; d - peritreme.

Рис. 3. *Aulonastus prunellae* sp.n., самка: а - тело дорсально, б - вентрально; с - верхушка гипостома дорсально; д - перитрема.

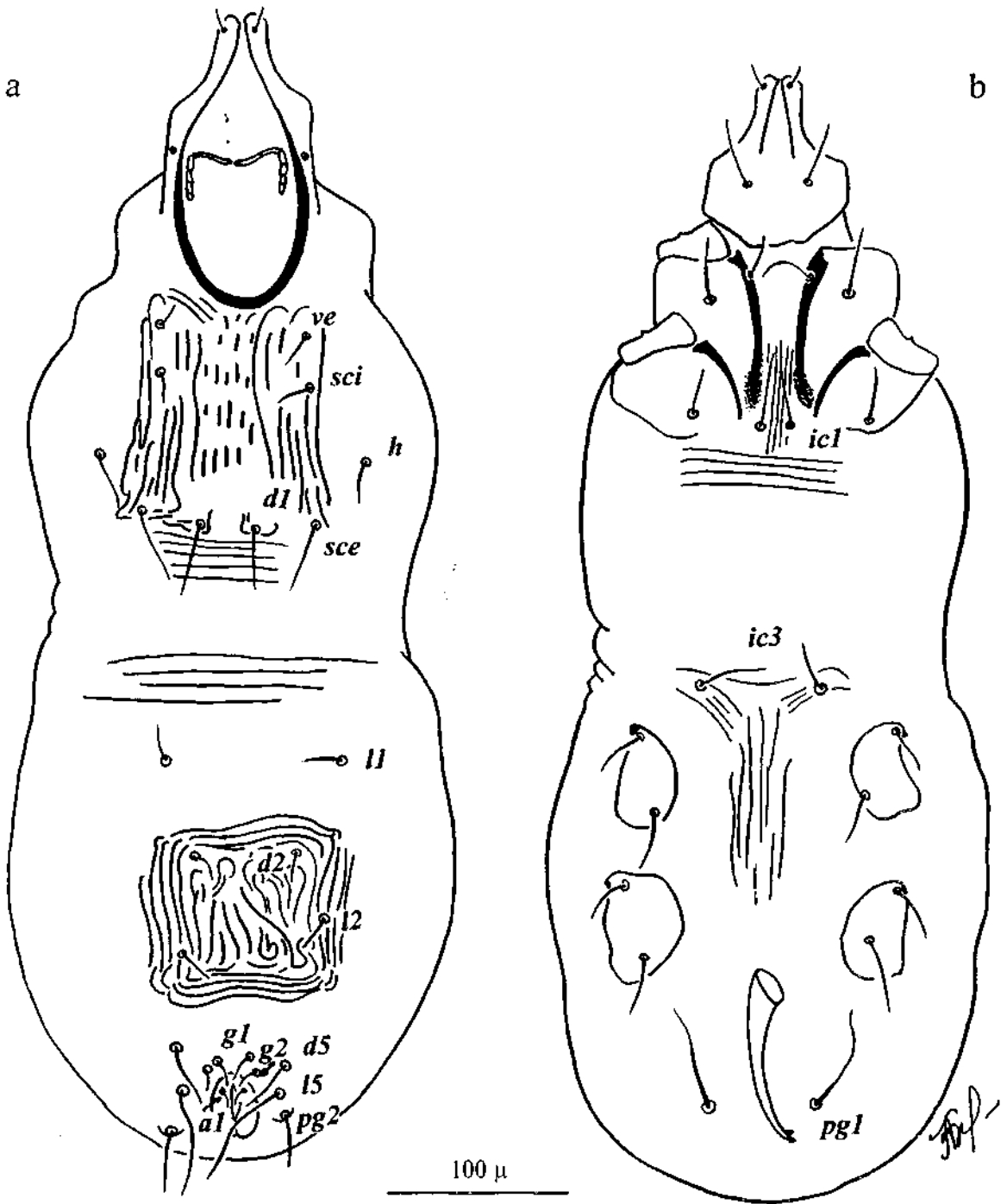


Fig. 4. *Aulonastus prunellae* sp.n., male, body: a — dorsal view; b — ventral view.
 Рис. 4. *Aulonastus prunellae* sp.n., самец, тело: а — дорсально; б — вентрально.

Leg chaetotaxy as in female. Setae p' , p'' I–II with 3 tines, p' , p'' III–IV with 4 tines.

DIFFERENTIAL DIAGNOSIS

The females of new species differ from single formerly known species, *Aulonastus pipili* Kethley, 1970 ex *Pipilio erythrophthalmus* (Passeriformes: Fringillidae) from Florida, USA [Kethley, 1970], by the length ratio of setae $d1$ and $l1$, number of peritreme chambers and number of tines in setae p', p'' . The male of *A. pipili* is unknown. In *A. prunellae* sp.n., setae $d1$ 1.3–1.5 times are longer than setae $l1$; longitudinal branch of peritremes

with 3–4 chambers; p', p'' with 3–4 tines. In *A. pipili*, setae $d1$ and $l1$ are subequal; longitudinal branches of peritremes with 6 chambers; setae p', p'' with 8 tines.

Type material. Holotype female (T-Sy-10), paratypes 10 females and 1 male ex *Prunella modularis* (Passeriformes: Prunellidae), Novgorod Prov., Chudovo Distr., Oskuy village, 11.06.1999. A. Bochkov coll.

ETYMOLOGY

The name *prunellae* refers to the generic name of the host.

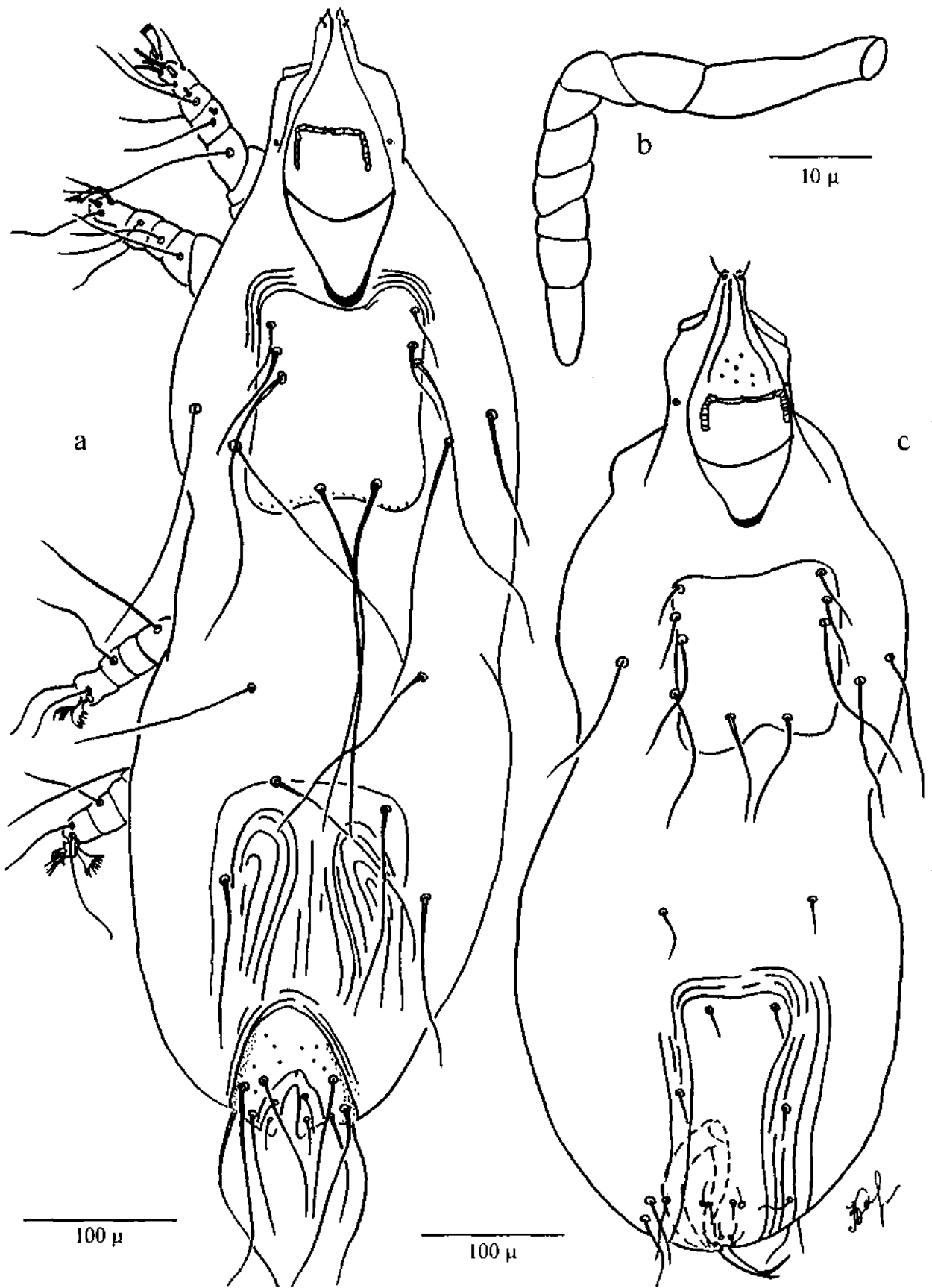


Fig. 5. *Torotrogla cardueli*: a -- body of female, dorsal view; b -- peritreme of female; c -- body of male, dorsal view.
Рис. 5. *Torotrogla cardueli*: а - тело самки дорсально; б - перитрема самки; с - тело самца дорсально.

Genus *Torotroglia* Kethley, 1970

3. *Torotroglia cardueli* Bochkov et Mironov sp.n.

Figs. 5-6.

DESCRIPTION

Female (holotype). Length 821 (798-877 in paratypes), width at level of setae *h* 225 (225-237).

Gnathosoma. Hypostomal apex (Fig. 6b) slightly ornamented, with one pair of median protuberances; lateral hypostomal teeth absent. Peritremes (Fig. 5b): lateral branch with 3 chambers; longitudinal branch with 6 chambers. Cheliceral digit with 2-3 teeth.

Dorsal idiosoma (Fig. 5a). Propodosomal shield not divided, bearing setae *vi*, *ve*, *sci*, *dI*; setae *sce*

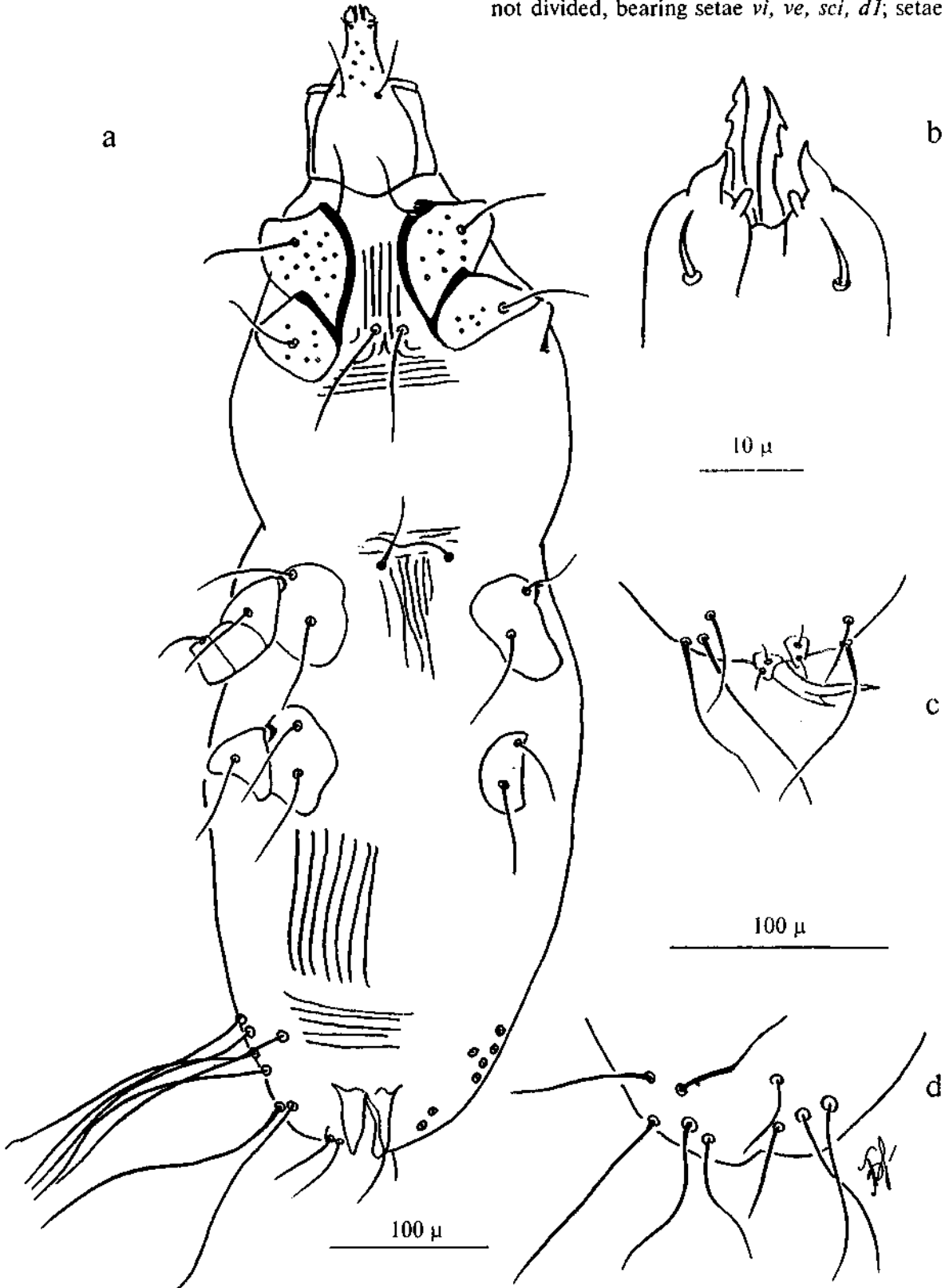


Fig. 6. *Torotroglia cardueli*: a — body of female, ventral view; b — hypostomal apex of female, ventral view; c, d — opisthosoma of male, dorsal view (c) and ventral view (d).

Рис. 6. *Torotroglia cardueli*: а — тело самки вентрально; б — вершина гипостома самки вентрально; с, d — опистосома самки дорсально (с) и вентрально (d).

situated out of this shield. Hysterosomal shield absent. Pygidial shield well developed. All setae smooth. Length of setae: *vi* 45 (31-49), *ve* 56 (60-72), *sci* 150 (141-157), *see* 155 (146-157), *h* 155 (144-157), *d1* 205 (202-208), *d2* 145 (150-168), *d475* (65-78), *l1* 146 (135-138), *l2* 150 (148-179), *l4380* (364-394), *d572* (45-64), *l5405* (389-423). Setae *d1* extending behind level of setae *l1* bases and almost reaching level of setae *d2* bases.

Ventral idiosoma (Fig. 6a). Epimeres I strongly divergent, fused with epimeres II. Cuticular striations as in Fig. 6a. All setae smooth. Paragenital setae - 7 pairs, about 275-306 long.

Legs. Coxae III-IV weakly sclerotized. All setae smooth, except *p'*, *p''*; setae *p'*, *p''* I-II with 7-8 tines, *p'*, *p''* III-IV with 12 tines; *sc3* and *sc4* subequal, not extending beyond genu; *vFII* extending to ambulacrum.

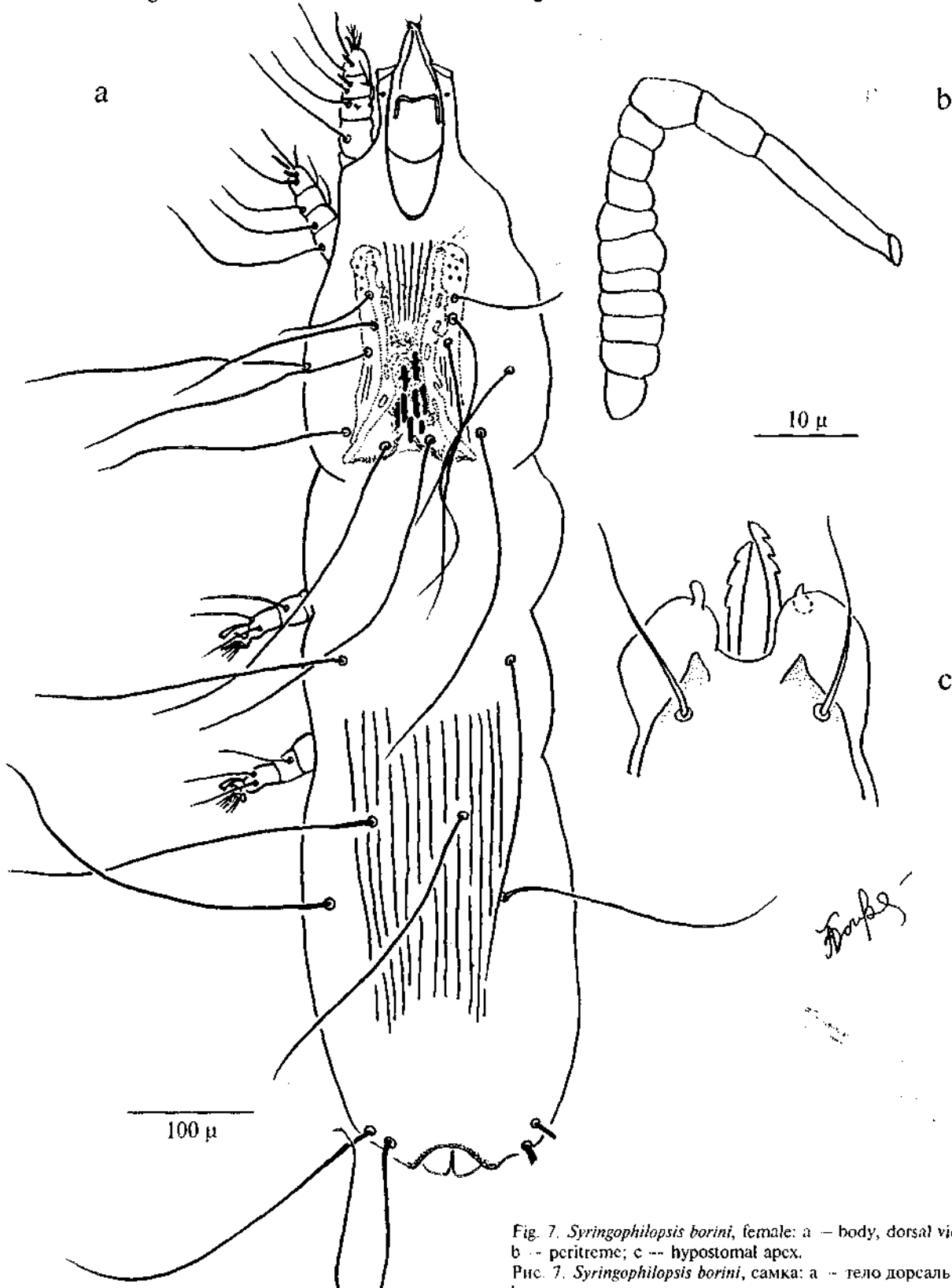


Fig. 7. *Syringophilopsis borini*, female: a - body, dorsal view; b - peritreme; c - hypostomal apex.

Рис. 7. *Syringophilopsis borini*, самка: а - тело дорсально; б - перитрема; с - вершина гипостома.

Male (paratype). Length 618–697, width 176–189.

Gnathosoma. Hypostomal apex unornamented, smooth. Peritremes: lateral branch with 2 chambers, longitudinal branch with 8 chambers.

Idiosoma (Fig. 5c). Propodosomal shield not divided. Hysterosomal shield present and fused to pygidial shield, bearing setae *d2*, *d4*, *l5*; setae *l2* situated out of shield. Aedeagus 114–123 long. All setae smooth. Length of setae: *vi* 22–33, *ve* 33–45, *sci* 87–90, *sce* 65–67, *h* 87–95, *d1* 69–85, *d2* 18–22, *d4* 22–25, *l1* 13–18, *l2* 15–22, *l5* 130–146. Paragenital setae 5–6 pairs, about 124–137 long; genital setae 2 pairs; anal setae 2 pairs.

Leg chaetotaxy as in female. Setae *p'*, *p''* I–II with 3 tines, *p'*, *p''* III–IV with 9 tines.

DIFFERENTIAL DIAGNOSIS

The new species is closely related to *Torotrogla mima* Kethley, 1970 ex *Mimus polyglotos* (Passeriformes: Mimidae) from Georgia, USA [Kethley, 1970]. Female of new species differs from *T. mima* by structure of leg setae. In *T. carduelis* sp.n., the setae *d1* about 1.3 times longer than *sce*; setae *sc3* and *sc4* not extending beyond genu; *p'*, *p''* I–II with 7–8 tines, *p'*, *p''* III–IV with 12 tines. In *T. mima*, the setae *d1* and *sce* are subequal; setae *sc3* and *sc4* extending beyond genu; *p'*, *p''* I–IV with 16–17 tines.

Type material. Holotype female (T-Sy-11), paratypes 5 females and 3 males ex *Carduelis spinus* (Passeriformes: Fringillidae), Novgorod Prov., Chudovo Distr., Oskuy village, 11.06.1999. A. Bochkov coll.

ETYMOLOGY

The name *cardueli* refers to the generic name of the host.

Genus *Syringophilopsis* Kethley, 1970

4. *Syringophilopsis borini* Bochkov et Mironov sp.n.

Figs. 7–8.

DESCRIPTION

Female (holotype). Length 1158 (1068–1125 in paratypes), width at level of setae *h* 194 (171–202).

Gnathosoma. Hypostomal apex (Fig. 7c) ornamented, one pair of median protuberances present; lateral hypostomal teeth absent. Cheliceral digit with 3 teeth. Peritremes (Fig. 7b): lateral branch with 3 chambers, longitudinal branch with 10 chambers.

Dorsal idiosoma (Fig. 7a). Hysterosomal and pygidial shields absent. All setae smooth. Distance *d2*–*l1* exceeds about 1.5–2 times distance *d2*–*l2*. Length of setae: *vi* 94 (90–103), *ve* 198 (180–202), *sci* 283 (292–301), *sce* 301 (301–360), *h* 260 (301–315), *d1* 360 (337–350), *d2* 358 (339–361), *d4* 305 (301–337), *l1* 337 (301–340), *l2* 315 (328–351), *d5* 298 (301–368), *l5* 360 (328–382).

Ventral idiosoma (Fig. 8a). Cuticular striations as in Fig. 8a. All setae smooth. Length of setae: *pg1* 171 (144–180), *pg2* 148 (145–157), *pg3* 184 (180–198), *g1* 138 (112–121), *g2* 171 (135–166).

Legs. Coxae III–IV moderately sclerotized. All setae smooth, except *p'*, *p''*. Setae *p'*, *p''* I–II subequal, with 8 tines; *p'*, *p''* III–IV with 12 tines; *sc3* and *sc4* 60 in length, relatively short, not extending beyond genu III, IV respectively.

Male (paratype). Length 753–843, width 157–180.

Gnathosoma almost as in female, but hypostome without hyaline lips and chelicerae edentate.

Idiosoma (Fig. 8b). Hysterosomal shield absent. Aedeagus 189–198 long. All setae smooth. Length of setae: *vi* 49–54, *ve* 67–72, *sci* 157–202, *sce* 184–238, *h* 202–225, *d1* 162–207, *d2* 39–45, *d4* 35–49, *l1* 39–49, *l5* 148–202, *pg1* 58–67, *pg2* 63–70, 65–72.

Leg chaetotaxy as in female.

DIFFERENTIAL DIAGNOSIS

Syringophilopsis borini sp.n. is closely related to *Syringophilopsis elongatus* (Ewing, 1911) ex *Agelaius phoeniceus* (Passeriformes: Icteridae) from USA [Ewing, 1911; Kethley, 1970]. In both species the setae *d4* are relatively long and subequal to *l4*. The new species is distinguished from *S. elongatus* by character as follows. In female *S. borini* sp.n., the length ratio of setae *vi* and *ve* is 1:2, the setae *g2* and *pg3* are subequal; in male, the hysterosomal shield is absent. In female *S. elongatus*, the length ratio of setae *vi* and *ve* is 1:1.4, the length ratio of setae *g2* and *pg3* is 1:4; in male, the hysterosomal shield present.

REMARK

Kethley [1970] considered *Syringophilus icteridae* Clark, 1964, described by Clark [1964], as a synonym of *S. elongatus*. However, the description given by Clark [1964: figs. 30, 31] differs from the description proposed by Kethley [1970: fig. 10] by the length of genital setae. These setae are only 2–2.5 times shorter than *pg3*. If *S. icteridae* is a valid species, it would also differ from *S. borini* sp.n. by the length ratio of setae *vi* and *ve* in female.

Type material. Holotype female (T-Sy-13), paratypes 5 females ex *Sylvia borin* (Passeriformes: Sylviidae), Novgorod Prov., Chudovo Distr., Oskuy village, 13.08.1999. A. Bochkov coll. Paratypes 4 females, 3 males, same data, 29.07.1998. Paratypes 2 females, male, same data, 29.07.1999. Paratypes 2 females, same data, 28.08.1999.

ETYMOLOGY

The name *borini* refers to the species name of the host.

ACKNOWLEDGEMENTS

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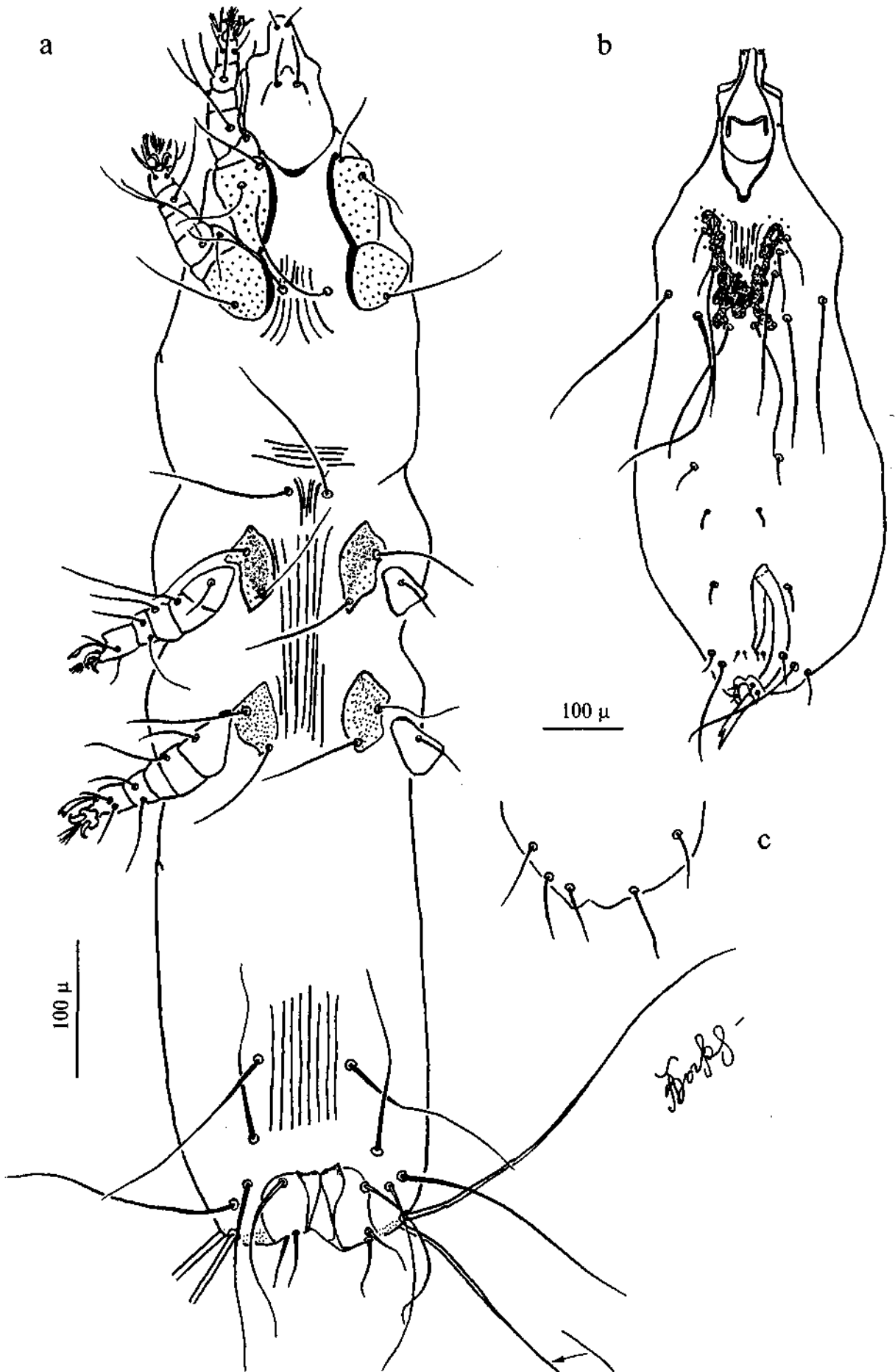


Fig. 8. *Syringophilopsis borini*: a — body of female, ventral view; b — idiosoma of male, dorsal view; c — opisthosoma of male, ventral view.

Рис. 8. *Syringophilopsis borini*: a — тело самки вентрально; b — идиосома самца дорсально; c — опистосома самца вентрально.

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