

DESCRIPTION OF TWO NEW QUILL MITE SPECIES (ACARI: SYRINGOPHILIDAE)

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ABSTRACT: The paper contains a description of two new species of quill mites: *Neosyringophilopsis lonchurae* sp. n. from *Lonchura cucullata* (Passeriformes: Estrildidae) from Continental Africa and *Aulonastus galbulicus* sp. n. from *Jacamaralcyon tridactyla* (Piciformes: Galbulidae) from South America.

KEY WORDS: Acari, Syringophilidae, quill mites, ectoparasites, birds

INTRODUCTION

Mites of the family Syringophilidae Lavoipierre, 1953 (Acari: Prostigmata: Cheyletoidea) are permanent, mono- or oligoxenous avian ectoparasites that live and reproduce inside the quill feathers of various types: primaries, secondaries, major primary and secondary coverts, alular, tail and body feathers. They siphon fluids from the surrounding tissues by piercing the quill wall with their flexible and styletiform chelicerae. The mites enter to the feather during the growth of feathers of nestlings or during molt. Transmission is vertical from parent hosts to their offspring during reproduction and probably horizontal from one adult host individual to another during molt. Only adult female mites disperse, while males reproduce locally and then die (Kethley 1971).

The family contains more than 140 species described up to date and grouped in two subfamilies and 33 genera. They are known from more than 200 host species belonging to 19 orders (Bochkov et al. 2004; Skoracki 2005).

This paper presents the description of two new species of syringophilid mites: *Neosyringophilopsis lonchurae* sp. n. from *Lonchura cucullata* (Passeriformes: Estrildidae) from Continental Africa and *Aulonastus galbulicus* sp. n. from *Jacamaralcyon tridactyla* (Piciformes: Galbulidae) from South America.

MATERIALS AND METHODS

The syringophilid material were acquired from the bird collection (dry skins) kept at the Museum of Natural History, Wrocław University, Poland (MNHW). The nomenclature of idiosomal setae is based on that of Fain (1979) in the version adapted for the family Syringophilidae (Bochkov and Mironov 1998). The terminology for morphology and leg chaetotaxy follows those of Grandjean (1944) and Kethley (1970). Bird taxonomy follows those

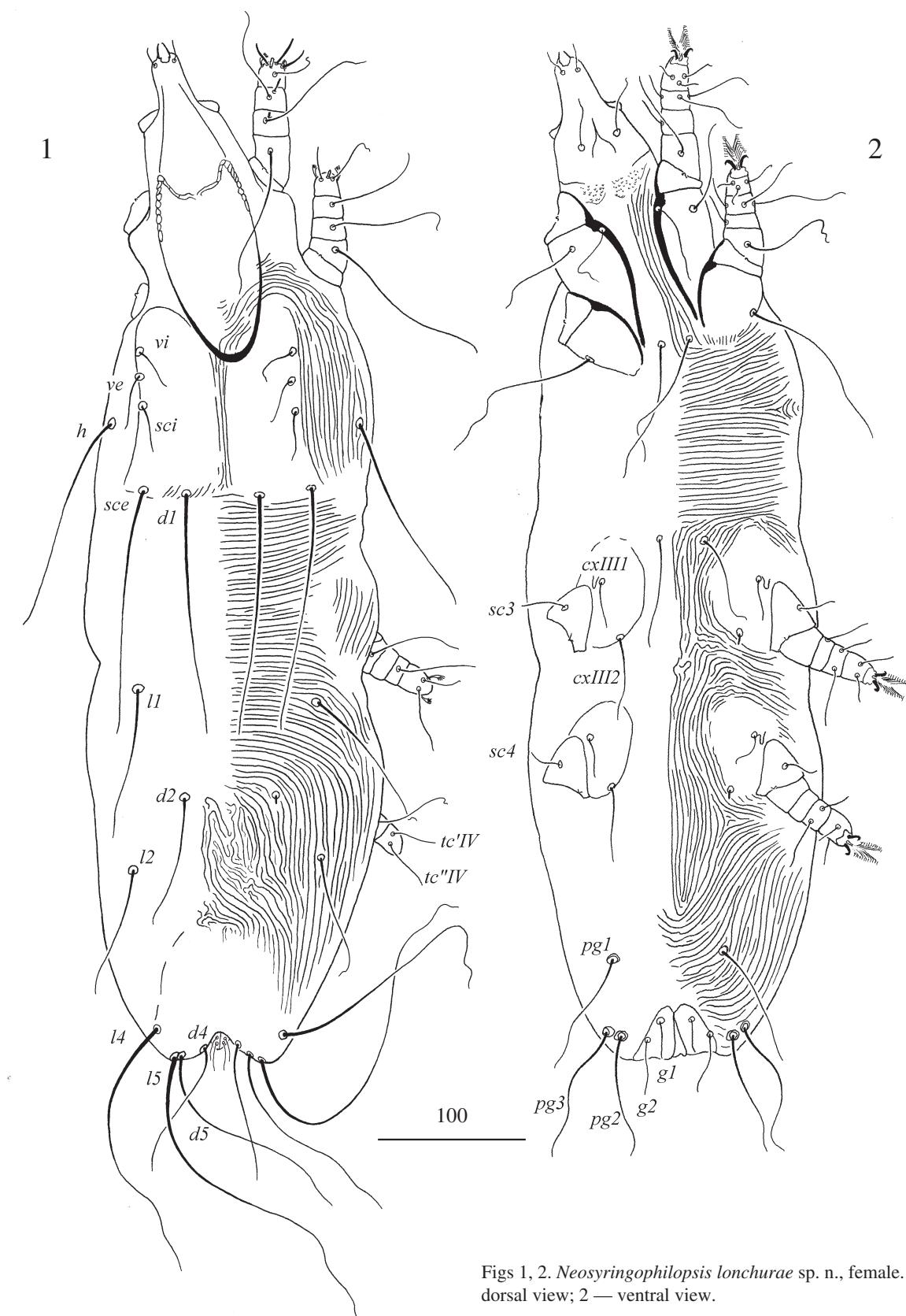
of Howard and Moore (1991). All measurements in descriptions are given in micrometers (μm). Abbreviations for locations where the materials are deposited: AMU — A. Mickiewicz University, Department of Animal Morphology, Poznań, Poland; ZIN — Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia; MRAC — Musée Royal de l'Afrique Centrale, Tervuren, Belgium.

Family: Syringophilidae Lavoipierre, 1953

Subfamily: Syringophilinae Lavoipierre, 1953

***Neosyringophilopsis lonchurus* Skoracki, sp. n.**

Female (holotype, Figs 1–5). Total body length 715 in holotype (630–730 in 8 paratypes). Gnathosoma. Hypostomal apex with 1 pair of large protuberances and 2 pairs of small hypostomal lips (Fig. 3). Chelicerae dentate, 150 (150) long. Stylophore 215 (215–235) long. Each transverse branch of peritremes with 4–5 chambers, each longitudinal branch with 9–12 chambers (Fig. 4). Idiosoma. Propodosomal shield divided longitudinally. Setae *vi*, *ve* and *sci* subequal. Bases of setae *d1* and *sce* set at the same transverse level. Setae *sce* and *d1* subequal. Hysterosomal shield absent. Setae *l1*, *d2* and *l2* subequal. Bases of setae *d2* set 1.3 times closer to *l2* than to *l1*. Pygidial shield with indistinct anterior margin. Setae *l4* twice longer than *d4*. Genital setae *g2* 1.6 times longer than *g1*. Cuticular striations as in Figs 1 and 2. Legs. All coxae well sclerotized, not punctated. Fan-like setae *p'* and *p''* of legs III and IV with 10 tines (Fig. 5). Lengths of setae: *vi* 30 (20–30); *ve* 30 (25–30); *sci* 35 (30–35); *h* 160 (150–185); *sce* 175 (170–190); *d1* 175 (170–200); *d2* 115 (105–125); *d4* 95 (90–105); *d5* 145 (130–155); *l1* 105 (105–135); *l2* 130 (125–155); *l4* 195 (180–245); *l5* 230 (215–280); *pg1* 95 (70–95); *pg2* 85 (80–105); *pg3* (70–110); *g1* 25 (20–25); *g2* 35 (40–50); *lGIII* (40); *cxIII1* (25); *cxIII2* (40–45);

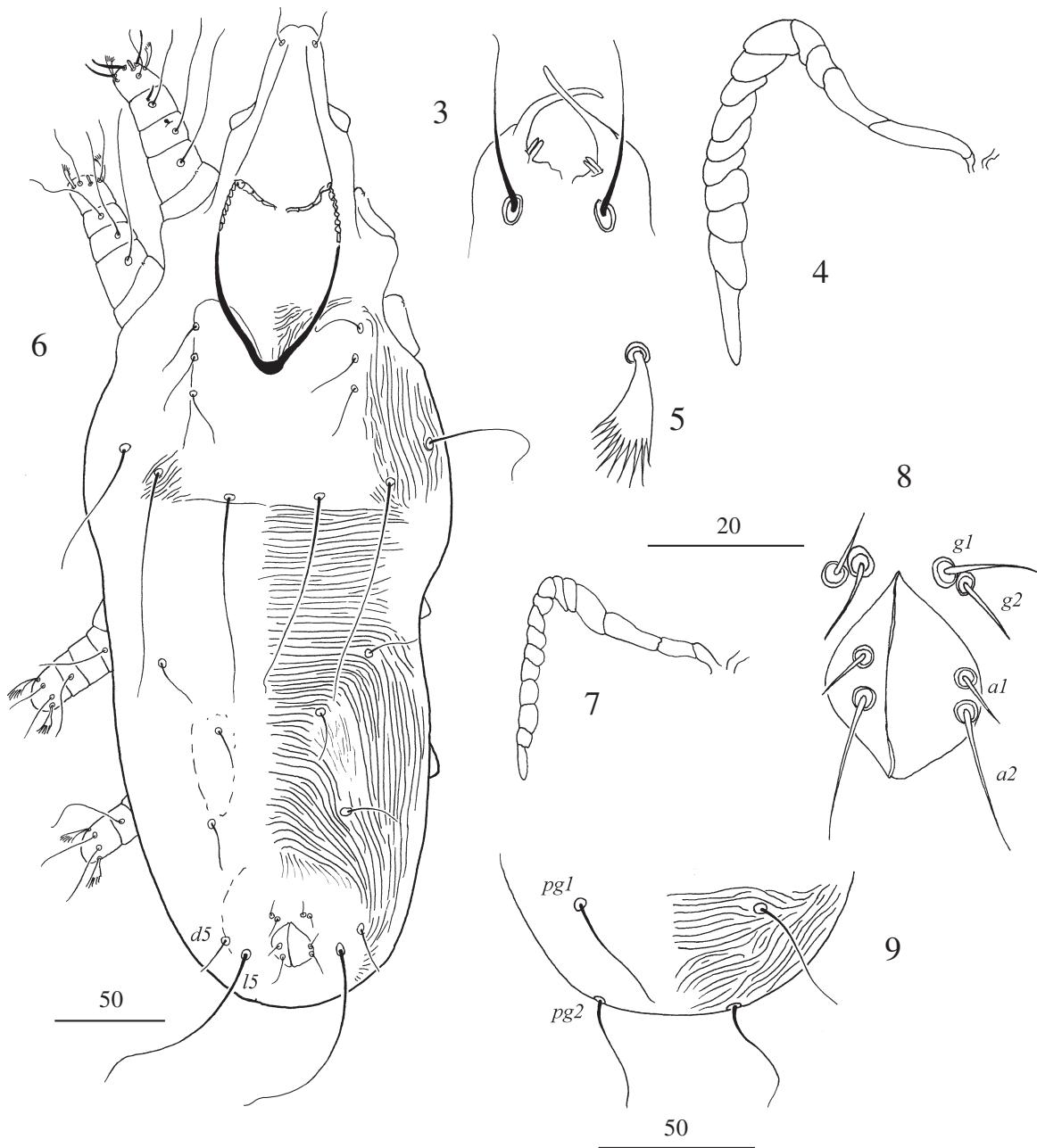


Figs 1, 2. *Neosyringophilopsis lonchurae* sp. n., female. 1 — dorsal view; 2 — ventral view.

$a1$ 25 (20); $a2$ 25 (25–30); $sc3$ 20 (20–30); $sc4$ 20 (20–30).

Male (Figs 6–9). Total body length 430–450 in 3 paratypes. Gnathosoma. Chelicerae edentate,

130–135 long. Stylophore constricted posteriorly, 155–165 long. Each transverse branch of peritremes with 6 chambers, each longitudinal branch with 10 chambers (Fig. 7). Idiosoma. Propodosom-



Figs 3–9. *Neosyringophilopsis lonchurae* sp. n., female. 3 — hypostomal apex; 4 — peritreme; 5 — fan-like setae *p'III*. Male. 6 — dorsal view, 7 — peritreme, 8 — genito-anal region, 9 — opisthosoma in ventral view.

al shield deeply concave on anterior margin, bearing bases of setae *vi*, *ve*, *sci* and *d1*, setae *sce* situated near this shield. Setae *vi*, *ve* and *sci* subequal in length. Bases of setae *d1* set slightly posterior to the level of *sce* setal bases. Two poorly sclerotized hysterosomal shield present, striae are visible. Setae *l1*, *d2* and *l2* subequal. Pygidial shield with indistinct anterior margin. Setae *l5* 4–6 times longer than *d5*. Two pairs of paragenital setae present, both subequal in length (Fig. 9). Anal setae unequal in length (Fig. 8). Cuticular striations as in

Fig. 6. Lengths of setae: *vi* 15–20; *ve* 20; *sci* 20–25; *h* 50–70; *sce* 85–105; *d1* 80–120; *d2* 20–25; *d5* 20–25; *l1* 20–25; *l2* 20–25; *l5* 100–125; *pg1* 40–45; *pg2* 40–45.

Type material. Female holotype, 11 females and 4 males paratypes (Syr.129) from *Lonchura cucullata* (Swainson, 1837) (Passeriformes: Estrildidae); no other data. This host specimen is deposited at MNHW.

Remark. Distribution of this host species is restricted to the Continental Africa (Avibase 2007).

Type depositories. Holotype and most of paratypes are deposited at UAM, 2 females at MRAC, 2 females at ZIN.

Etymology. The name *lonchurus* refers to the generic name of the host — *Lonchura*.

Differential diagnosis. *Neosyringophilopsis lonchurus* sp. n. is most similar to *N. aegithali* (Bochkov, Mironov et Skoracki, 2001) described from *Aegithalos caudatus* (Linnaeus, 1758) (Passeriformes: Aegithalidae) (Bochkov et al. 2001) and differs the last species by the following characters. In females of *N. lonchurus* sp. n., the length ratios of setae *d4:l4* and *sce:d1* are 1:2 and 1:1, respectively; the each longitudinal branch of the peritremes consists of 9–12 chambers; the length of the stylophore is 215. In females of *N. aegithali* the length ratios of setae *d4:l4* and *sce:d1* are 1:3.5 and 1:1.4, respectively; the each longitudinal branch of the peritremes consists of 7 chambers; the length of the stylophore is 165–190.

Aulonastus galbulicus Skoracki, sp. n.

Female (holotype, Figs 10–13). Total body length 465. Gnathosoma. Gnathosoma punctated ventrally. Hypostomal apex rounded with 2 pairs of hypostomal lips (Fig. 12). Each transverse and longitudinal branch of peritremes with 3 chambers (Fig. 13). Length of stylophore and chelicerae 135 and 95, respectively. Idiosoma. Propodosomal shield punctated, indistinctly sclerotized, cuticular striae are recognizable. Length ratio of setae *ve:sci* 1:1. Bases of setae *sce* set slightly anterior to level of bases *d1* setae. Setae *d1* 1.2 times longer than *sce*. Length ratio of setae *l1:d1* 1:7.4. Hysterosomal shield weakly sclerotized, punctated, margins indistinct, cuticular striae are recognizable. Pygidial shield well sclerotized in posterior part, punctated. Setae *d2* set twice closer to *l1* than to *l2*. Paragenital setae *pg1* and *pg2* subequal, both slightly (1.2 times) shorter than *pg3*. Cuticular striations as in Figs. 10 and 11.

Legs. All coxae punctated. Fan-like setae *p'* and *p''* of legs III and IV with 7 tines. Setae *cxIII1* twice shorter than *cxIII2*. Tarsal setae *tc''* of legs III and IV about twice shorter than *tc'III-IV*. Lengths of setae: *ve* 25; *sci* 25; *h* 135; *sce* 155; *l1* 25; *l2* 25; *l4* >25; *l5* 265; *d1* 185; *d2* 25; *d4* 20; *d5* 20; *a* 15; *g1* 25; *g2* 30; *pg1* 70; *pg2* 70; *pg3* 85; *tc'III-IV* 25; *tc''III-IV* 40; *cxIII1* 25; *cxIII2* 45; *sc3* 35; *sc4* 20.

Male unknown.

Type material. Female holotype (Syr. 194) from body feather of *Jacamaralcyon tridactyla* (Vieillot, 1817) (Piciformes: Galbulidae — new host family for syringophilid mites); South Amer-

ica, no other data. The host specimen is deposited at MNHW.

Type depository. Holotype is deposited at AMU.

Etymology. The name *galbulicus* refers to the family name of the host — Galbulidae.

Differential diagnosis. This new species is closely related to *A. buczekae* Skoracki, 2002 described from *Sturnus vulgaris* Linnaeus, 1758 (Passeriformes: Sturnidae) from Poland (Skoracki 2002). In both species the females have the setae *d1* longer than *sce* and the setae *l1*, *l2*, *d2* are subequal.

Aulonastus galbulicus sp. n. is distinguished from *A. buczekae* by the following characters: In females of *A. galbulicus* sp. n., the paragenital setae *pg2* are slightly shorter (1.2 times) than *pg3*; the ratio of distances between setal bases *d2-l1:d2-l2* is 1:2, the each lateral and longitudinal branch of the peritremes has 3 chambers, the propodosomal shield margins are indistinct and cuticular striation in this area is recognizable. In females of *A. buczekae*, the paragenital setae *pg2* are twice shorter than *pg3*; the ratio of distances between setal bases *d2-l1:d2-l2* is 1:1.3–1.7, the each lateral branch of the peritremes has 2 chambers, the each longitudinal branch has 4–5 chambers, the lateral and posterior margins of the propodosomal shield are distinct and cuticular striation in this area is not recognizable.

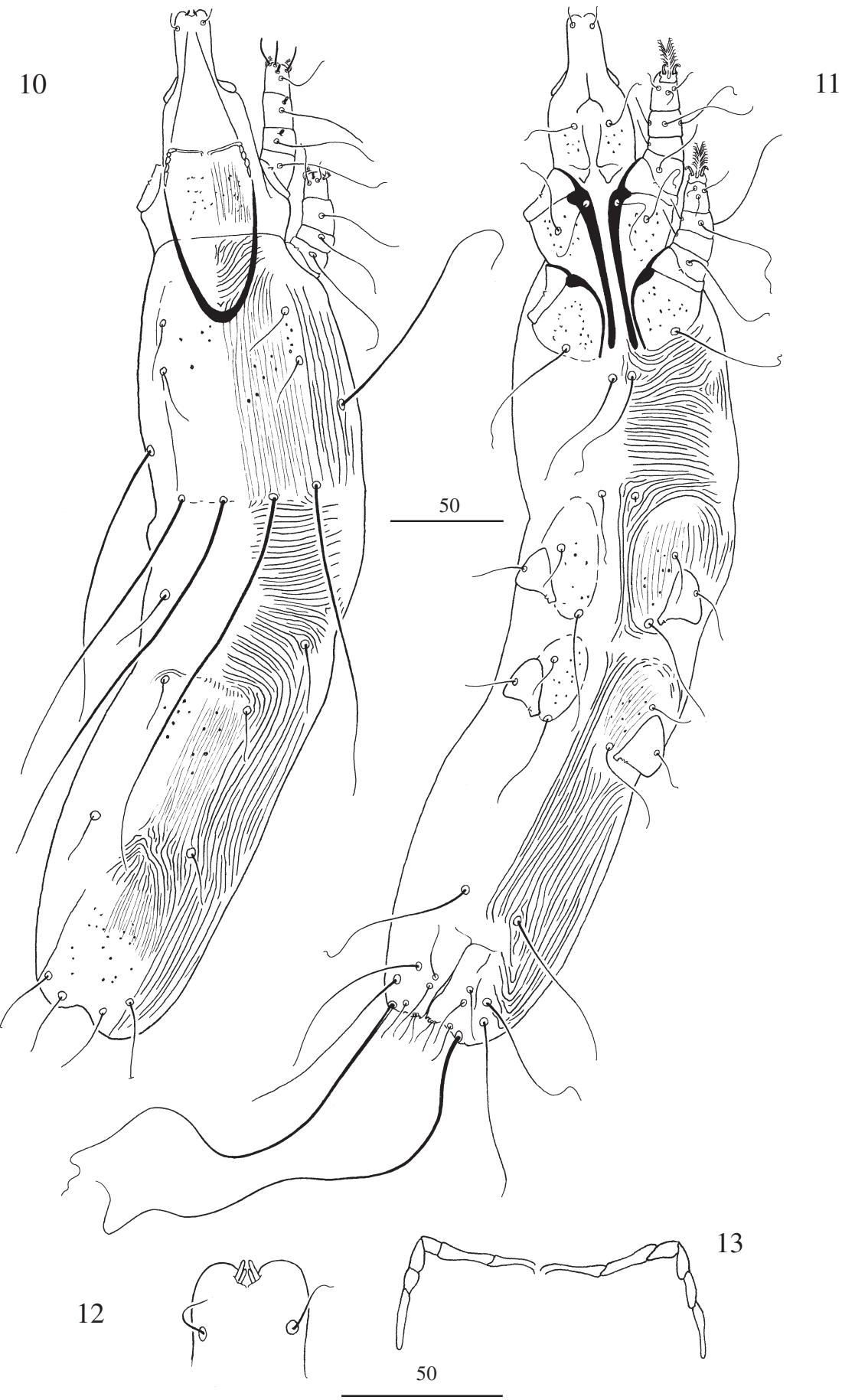
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Figs 10–13. *Aulonastus galbulicus* sp. n., female. 10—dorsal view; 11—ventral view; 12—hypostomal apex; 13—peritremes.

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