

A REVIEW OF THE QUILL MITES (ACARI: SYRINGOPHILIDAE) PARASITIZING PARROTS (AVES: PSITTACIFORMES) WITH DESCRIPTION OF THREE NEW SPECIES

ОБЗОР ОЧИННЫХ КЛЕЩЕЙ (ACARI: SYRINGOPHILIDAE), ПАРАЗИТИРУЮЩИХ НА ПОПУГАЯХ (AVES: PSITTACIFORMES), С ОПИСАНИЕМ ТРЕХ НОВЫХ ВИДОВ

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Ключевые слова: Syringophilidae, очинные клещи, эктопаразиты, Psittaciformes, таксономия

ABSTRACT

Three new species of syringophilid mites (Acari: Syringophilidae) associated with parrots are described: *Neoaulobia krafti* sp. n. from *Cacatua tenuirostris* (Kuhl, 1820) (Cacatuidae) from Australia, *Megasyringophilus eos* sp. n. from *Eos bornea* (L., 1758) (Psittacidae) from Indonesia and *Megasyringophilus geoffroyus* sp. n. from *Geoffroyus geoffroyi* (Bechstein, 1811) (Psittacidae) from New Guinea. *Loriculus pusillus* Gray, 1859 and *L. philippensis* (Psittacidae) recorded for the first time as hosts of *Neoaulobia puylaerti* (Skoracki et Dabert, 1999), *Trichoglossus euteles* (Temminck, 1835) and *T. chlorolepidotus* (Kuhl, 1820) (Psittacidae) are new hosts for *Megasyringophilus trichoglossus* Bochkov et Perez, 2002. All known syringophilid records from parrots are summarized in table.

РЕЗЮМЕ

Три новых вида сириногофилидных клещей (Acari: Syringophilidae), связанных с попугаями, описаны как новые для науки: *Neoaulobia krafti* sp. n. с *Cacatua tenuirostris* (Kuhl, 1820) (Cacatuidae) из Австралии, *Megasyringophilus eos* sp. n. с *Eos bornea* (L., 1758) (Psittacidae) из Индонезии и *Megasyringophilus geoffroyus* sp. n. с *Geoffroyus geoffroyi* (Bechstein, 1811) (Psittacidae) из Новой Гвинеи. Попугай *Loriculus pusillus* Gray, 1859 и *L. philippensis* (Psittacidae) впервые зарегистрированы как хозяева для *Neoaulobia puylaerti* (Skoracki et Dabert, 1999); *Trichoglossus euteles* (Temminck, 1835) и *T. chlorolepidotus* (Kuhl, 1820) (Psittacidae) являются новыми хозяевами для *Megasyringophilus trichoglossus*

Bochkov et Perez, 2002. Обобщены все известные находки сириногофилид с попугаев и сведены в таблицу.

INTRODUCTION

The quill mites Syringophilidae are obligatory permanent ectoparasites of birds inhabiting quills of the flight and covert feathers. These mites are widely distributed on these hosts, and to date they were reported from representatives of 18 avian orders [Bochkov et al., 2004; Skoracki and Sikora, 2004]. The order Psittaciformes includes about 340 species in 81 genera [Hovard, Moore, 1991]; however the quill mite fauna associated with birds of this order is still poorly known. Up to now, 18 species belonging to six syringophilid genera were reported from parrots: *Castosyringophilus* Bochkov et Perez 2002 (2 species), *Megasyringophilus* Fain, Bochkov et Mironov, 2000 (4), *Neoaulobia* Fain, Bochkov et Mironov 2000 (6), *Picobia* Haller, 1878 (2), *Psittaciphilus* Fain, Bochkov et Mironov, 2000 (2), and *Terratosyringophilus* Bochkov et Perez, 2002 (2). The genera *Neoaulobia*, *Psittaciphilus*, and *Megasyringophilus* are restricted exclusively to parrots, while the genera *Castosyringophilus* and *Terratosyringophilus* were recorded both on parrots and pigeons (Columbiformes). Species of the widely distributed genus *Picobia* are known from six orders, namely Passeriformes, Piciiformes, Psittaciformes, Galliformes, Columbiformes, and Coraciiformes [Skoracki et al., 2004].

In this paper, I describe three new species from parrots, *Neoaulobia krafti* sp. n. from *Cacatua tenuirostris* (Kuhl, 1820) from Australia, *Megasy-*

Mite species	Host species	Distribution	Reference
<i>Neoaulobia</i> Fain, Bochkov et Mironov, 2000			
<i>N. agapornis</i> Fain, Bochkov et Mironov, 2000	<i>Agapornis nigrigenis</i> Sclater, 1877	Zambia	Fain et al., 2000
	<i>A. fisheri</i> Reichenow, 1887	Tanzania	Bochkov, Fain, 2003
	<i>A. personatus</i> Reichenow, 1887	Tanzania	Bochkov, Fain, 2003
	<i>A. roseicollis</i> (Vieillot, 1818)	Namibia	Bochkov, Fain, 2003
	<i>A. taranta</i> (Stanley, 1814)	Ethiopia	Bochkov, Fain, 2003
<i>N. mironovi</i> Bochkov et Perez, 2002	<i>Amazona finchi</i> (Sclater, 1864)	Mexico	Bochkov, Perez, 2002
<i>N. mexicana</i> Bochkov et Perez, 2002	<i>Aratinga canicularis</i> (L., 1758)	Mexico	Bochkov, Perez, 2002
	<i>A. pertinax</i> (L., 1758)	Brasil	Bochkov, Fain, 2003
<i>N. aratingae</i> Fain, Bochkov et Mironov, 2000	<i>A. jandaya</i> (Gmelin, 1788)	Brasil	Fain et al., 2000
<i>N. puylaerti</i> (Skoracki et Dabert, 1999)	<i>Poicephalus senegalus</i> (L., 1766)	Togo	Skoracki, Dabert, 1999
	<i>Loriculus pusillus</i> (Gray, 1859)	Indonesia	p.p.
	<i>L. philippensis</i> (Muller, 1843)	the Philippines	p.p.
<i>N. psittaculae</i> Fain, Bochkov et Mironov, 2000	<i>Psittacula cyanocephala</i> (L., 1766)	India	Fain et al., 2000
<i>N. krafti</i> sp.n.	<i>Cacatua tenuirostris</i> (Kuhl., 1820)	Australia	p.p.
<i>Psittaciphilus</i> Fain, Bochkov et Mironov, 2000			
<i>P. amazonae</i> Fain, Bochkov et Mironov, 2000	<i>Amazona amazonica</i> (L., 1766)	Colombia	Fain et al., 2000
	<i>A. aestiva</i> (L., 1766)	Brasil	Bochkov, Fain, 2003
<i>P. fritschi</i> Fain, Bochkov et Mironov, 2000	?	?	Fain et al., 2000
<i>Megasyringophilus</i> Fain, Bochkov et Mironov, 2000			
<i>M. kethleyi</i> Fain, Bochkov et Mironov, 2000	<i>Aratinga jandaya</i> (Gmelin, 1788)	Brasil	Fain et al., 2000
	<i>A. pertinax</i> (L., 1758)	Brasil	Bochkov, Fain, 2003
	<i>Brotogeris versicolurus</i> (Muller, 1776)	Brasil	Bochkov, Fain, 2003
<i>M. cyanocephala</i> Fain, Bochkov et Mironov, 2000	<i>Psittacula cyanocephala</i> (L., 1766)	India	Fain et al., 2000
	<i>P. europatria</i> (L., 1766)	India	Bochkov, Fain, 2003
	<i>P. krameri</i> (Scopoli, 1769)	India	Bochkov, Fain, 2003
<i>M. rhynchopsittae</i> Bochkov et Perez, 2002	<i>Rhynchopsitta pachyrhyncha</i> (Swain., 1827)	Mexico	Bochkov, Perez, 2002
<i>M. trichoglossus</i> Fain, Bochkov et Mironov, 2000	<i>Trichoglossus</i> sp.	New Guinea	Fain et al., 2000
	<i>T. euteles</i> (Temminck, 1835)	Indonesia	p.p.
	<i>T. chlorolepidotus</i> (Kuhl, 1820)	Australia	p.p.
<i>M. dubinini</i> Bochkov et Fain, 2003	<i>T. ornatus</i> (L., 1758)	Indonesia	Bochkov, Fain, 2003
<i>M. platycercus</i> Bochkov et Fain, 2003	<i>Platycercus eximius</i> (Shaw, 1792)	Australia	Bochkov, Fain, 2003
<i>M. eos</i> sp.n.	<i>Eos bornea</i> (L., 1758)	Indonesia	p.p.
<i>M. geoffroyus</i> sp.n.	<i>Geoffroyus geoffroyi</i> (Bechstein, 1811)	New Guinea	p.p.
<i>Picobia</i> Heller, 1878			
<i>P. brotogeris</i> Fain, Bochkov et Mironov, 2000	<i>Brotogeris jugularis</i> (Muller, 1776)	Brasil	Fain et al., 2000
<i>P. poicephali</i> Skoracki et Dabert, 2002	<i>Poicephalus senegalus</i> (L., 1766)	Cameroun	Skoracki, Dabert, 2002
<i>Castosyringophilus</i> Bochkov et Perez, 2002			
<i>C. forpi</i> Bochkov et Perez, 2002	<i>Forpus cyanopygius</i> (Souance, 1856)	Mexico	Bochkov, Perez, 2002
<i>C. mucuya</i> (Casto, 1980)	<i>Trichoglossus haematodus</i> (L., 1771)	Indonesia	Bochkov, Fain, 2003
	<i>Bolborhynchus aymara</i> D'Orbigny 1839	? South America	Bochkov, Fain, 2003
	<i>Brotogeris versicolurus</i> (Muller, 1776)	Brasil	Bochkov, Fain, 2003
<i>Terratosyringophilus</i> Bochkov et Perez, 2002			
<i>T. pioni</i> Bochkov et Perez, 2002	<i>Pionus senilis</i> (Spix, 1824)	Mexico	Bochkov, Perez, 2002
<i>T. lorcinus</i> Bochkov et Fain, 2003	<i>Lorius garrulus</i> (L., 1758)	Indonesia	Bochkov, Fain, 2003
	<i>Trichoglossus haematodus</i> (L., 1771)	Indonesia	Bochkov, Fain, 2003

ringophilus: *M. eos* sp. n. from *Eos bornea* (L., 1758) from Indonesia and *M. geoffroyus* sp. n. from *Geoffroyus geoffroyi* (Bechstein, 1811) from New Guinea. Syringophilids are recorded from birds of the family Cacatuidae for the first time. Parrot species *Loriculus pusillus* Gray, 1859 and *L. philippensis* (Müller, 1776) (Psittacidae) are new hosts for *Neoaulobia puylaerti* (Skoracki et Dabert, 1999), and *Trichoglossus euteles* (Temminck, 1835) and *T. chlorolepidotus* (Kuhl, 1820) (Psittacidae) are new hosts for *Megasyringophilus trichoglossus* Bochkov et Perez, 2002. All records of syringophilids from parrots known up to date are summarized in the Table.

MATERIAL AND METHODS

The syringophilids were acquired from the bird collection (dry skins) deposited in the Zoologische Staatssammlung München, Germany (ZSM). Mites were mounted on microslides in a polyvinylolactophenol medium and examined with the Nomarsky interference-contrast-phase with an Olympus BH2 microscope.

The nomenclature of idiosomal setae follows Fain [1979] in the version adapted for the family Syringophilidae [Bochkov and Mironov, 1998] and the leg chaetotaxy that of Grandjean [1944]. Formats of generic and species descriptions follow Kethley [1970].

Bird taxonomy follows Howard and Moore [1991]. In descriptions, all measurements are in micrometers (μm). The holotypes and most of the paratypes are deposited at the Department of Animal Morphology, A. Mickiewicz University, Poznań, Poland (UAM). Some paratypes are deposited at the ZSM and Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia (ZISP).

Family Syringophilidae Lavoipierre, 1953

Subfamily Syringophilinae Lavoipierre, 1953

Genus *Neoaulobia*

Fain, Bochkov et Mironov, 2000

Neoaulobia krafti sp. n.

Figs 1–8.

Female (holotype). Total body length 650 (610–730 in 7 paratypes). *Gnathosoma*: Hypostomal apex rounded, without ornamentation (Fig. 3), two pairs of hypostomal lips present. Chelicerae

(215) long. Stylophore constricted posteriorly, 260 (250–260) long. Each transverse branch of peritremes with 2–3 chambers, each longitudinal branch with 5–6 chambers (Fig. 4). *Idiosoma*: Propodosomal shield well sclerotized, punctated near bases of setae *vi*, *ve* and *sci*, bearing all prodorsal setae except *h*. Setae *vi*, *ve* and *sci* subequal in length. Hysterosomal shield present, bearing bases of setae *d2* and *l2*. Setae *l1* about 2 times shorter than *l2*. Pygidial shield present and well sclerotized. Setae *l4* about 3–4 times longer than *d4* and *d5*. Paragenital setae *pg1* and *pg2* subequal in length and slightly shorter than setae *pg3*. Anal setae *a1* and *a2* subequal, genital setae *g1* and *g2* subequal or setae *g1* slightly longer than *g2*. Cuticular strations as in Figs 1 and 2. *Legs*: All coxae well sclerotized. Setae *p'* and *p''* of legs III and IV with 12–13 tines (Fig. 5). Setae *tc''* III–IV 2 times longer than *tc' III–IV*. Setae *dTIV* present.

Length of setae: *vi* 30 (20–30); *ve* 35 (20–35); *sci* 35 (20–35); *sce* 230 (220–240); *h* 230 (220–235); *d1* 250 (245–265); *d2* (60–80); *l1* (45–60); *l2* 110 (100–120); *l4* 145 (150–175); *l5* 520 (510); *d4* 50 (40–50); *d5* 45 (40–45); *a1* and *a2* (35); *g1* and *g2* 45 (45–60); *pg1* 180 (180–220); *pg2* (190–210); *pg3* (235–260); *sc3* and *sc4* 65 (60–70); *tc' III–IV* (40); *tc'' III–IV* (85); *cxIII1* (110); *cxIII2* (160).

Male (2 paratypes). Total body length 505–535. *Gnathosoma*: Hypostomal apex without ornamentation. Stylophore constricted posteriorly, 215 long. Chelicerae 195 long. Each transverse branch of peritremes with 4–5 chambers, each longitudinal branch with 5 chambers (Fig. 8). *Idiosoma*: Propodosomal shield well sclerotized, bearing bases of setae *vi*, *ve*, *sci* and *d1* (Fig. 6). Setae *vi*, *ve* and *sci* subequal in length. Hysterosomal shield present and fused with pygidial shield (Fig. 7). Length ratio of setae *d5:l5* 1: 6–7. Genital setae *g1* set distant from setae *g2*. Paragenital setae *pg2* slightly shorter than *pg1* and *pg3*. *Legs*: Setae *sc3* and *sc4* extend to the tarsus. Setae *tc''* III–IV 2 times longer than *tc' III–IV*.

Length of setae: *vi* 20; *ve* 20; *sci* 20–25; *h* 120; *sce* <95; *d5* 50; *l5* 310–340; *pg1* 160–190; *pg2* 150; *pg3* 180; *cxIII1* 70; *cxIII2* 120; *sc3* 55–65; *sc4* 50; *g1* and *g2* 20; *tc' III–IV* 35; *tc'' III–IV* 65.

Type material. **Female** holotype (Syr. 137), paratypes: 20 females, 2 males and 3 nymphs from

Table

A complete check-list of the quill mites parasitizing parrots (p.p. — present paper)

Таблица

Полный список очинных клещей, паразитирующих на попугаях (p.p. — данная статья)

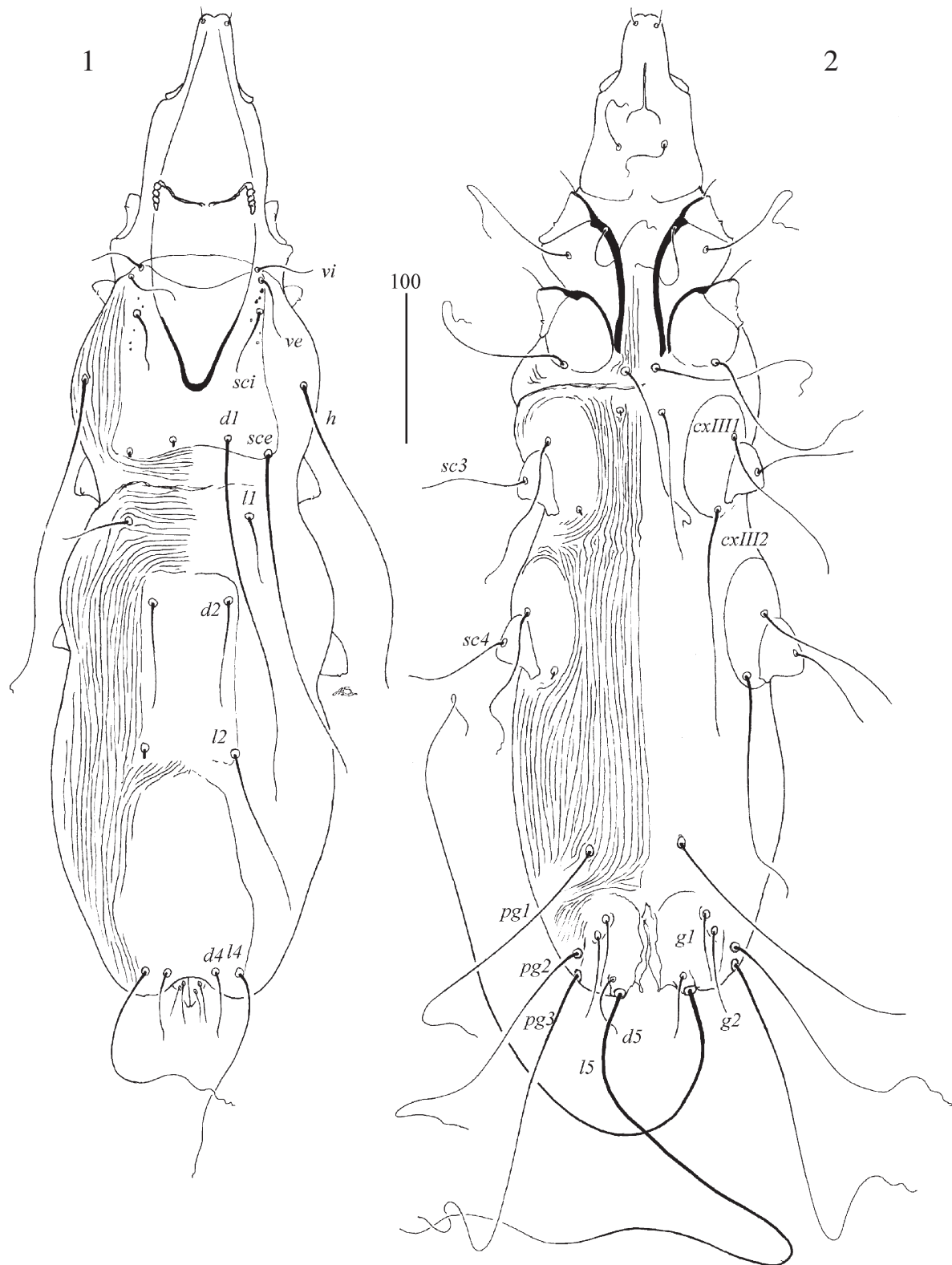


Fig. 1, 2. *Neoaulobia krafti* sp. n., female: 1 — dorsal view, 2 — ventral view.

Cacatua tenuirostris (Kuhl, 1820) (Cacatuidae) (ZSM), Australia: New Holland, 1853 [no other data].

Type deposition. Female holotype and most of paratypes are deposited at UAM; 3 female para-

types and 1 male paratype at ZSM; 3 female paratypes at ZISP.

Etymology. This name is dedicated to my friend Dr. Richard Kraft (Zoologische Staatssammlung München, Germany).

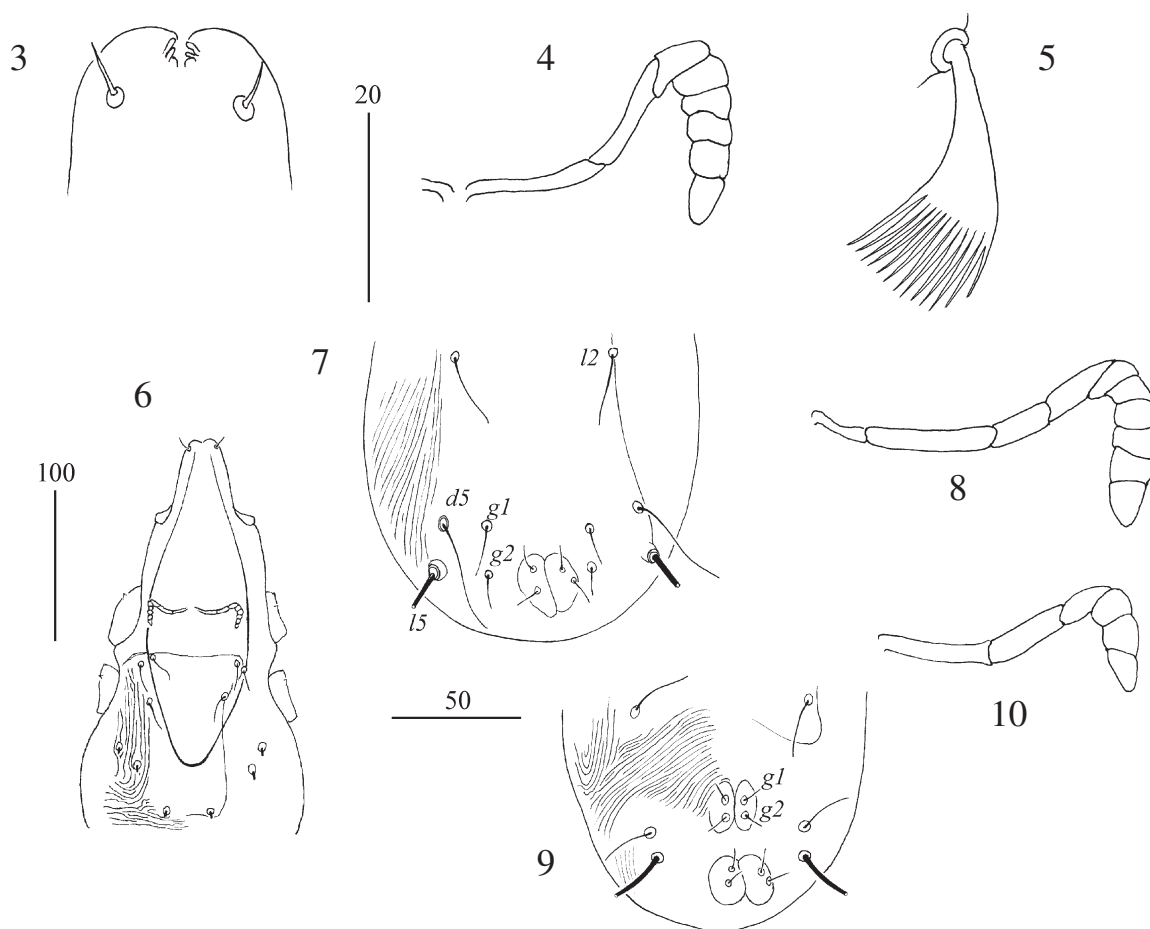


Fig. 3–10. *Neoaulobia* spp. *Neoaulobia krafti* sp. nov., female: 3 — gnathosoma, ventral view, 4 — peritremes, 5 — fan-like seta of tarsus IV, male: 6 — propodosoma in dorsal view, 7 — opisthosoma in ventral view, 8 — peritreme. *Neoaulobia puylaerti* (Skoracki et Dabert, 1999), male: 9 — opisthosoma in dorsal view, 10 — peritreme.

Differential diagnosis. *Neoaulobia krafti* sp. n. is closely related to *N. puylaerti* (Skoracki et Dabert, 1999) from *Poicephalus senegalus* (L., 1766) (Psittacidae) and *N. psittaculae* Fain, Bochkov et Mironov, 2000 from *Psittacula cyanocephala* (L., 1766) (Psittacidae) [Fain et al., 2000; Skoracki and Dabert, 1999]. In females of these species setae *dTIV* are present and setae *vi* and *ve* are subequal in length. *N. krafti* sp. n. is distinguished from *N. puylaerti* by the following characters. In females of *N. krafti* sp. n. the lengths of the stylophore and the chelicerae are 250–260 and 215, respectively, the propodosomal shield is rectangular in the shape; in males the lengths of the stylophore and the chelicerae are 215 and 195 respectively, the peritremal branches each have 9–10 chambers (Fig. 8), the distance *g1–g2* is 25 (Fig. 7). In females of *N. puylaerti* the lengths of the stylophore and the chelicerae are 160–185 and 145, respectively, the propodosomal shield is deeply concave on the anterior margin, in males the lengths of stylophore and chelicerae are 160–170 and 140 respectively, the peritremal branches each have 6

chambers (Fig. 10), the distance *g1–g2* is 10 (Fig. 9). Females of *N. krafti* sp. n. are distinguished from *N. psittaculae* by the length ratio of setae *tc'* and *tc''* III and IV. In *N. krafti* sp. n. setae *tc''* are two times longer than *tc'*. In *N. psittaculae* setae *tc'* and *tc''* are subequal in length.

***Neoaulobia puylaerti*
(Skoracki et Dabert, 1999)**

Material examined. 13 females and 2 males (Syr. 143) from *Loriculus pusillus* Gray, 1859 (Psittacidae) (ZSM) (new host), Indonesia: Java, Mons, Gede; 1910, coll. A. Primavesi. 13 females, 7 males, and 5 nymphs (Syr. 144) from *Loriculus philippensis* (Müller, 1776) (Psittacidae) (ZSM) (new host), Philippines: Luzon Island, Manila, coll. I. Marschall.

Material deposition. *L. pusillus*: Nine females and 1 male at UAM; 2 females and 1 male at ZISP; 2 females at ZSM. *L. philippensis*: 8 females, 5 males and 5 nymphs at UAM; 3 females and 1 male at ZISP; 2 females and 1 male at ZSM.

Remarks. This species was described from *Poicephalus senegalus* (Psittacidae) from Togo [Skoracki and Dabert, 1999] and is not recorded since the original description. *L. philippensis* and *L. philippensis* are new hosts of this species.

Genus *Megasyringophilus*

Fain, Bochkov et Mironov, 2000

Megasyringophilus trichoglossus

Fain, Bochkov et Mironov, 2000

Figs 11, 12.

Material examined. One female (Syr. 138) from *Trichoglossus euteles* (Temminck, 1835) (Psittacidae) (ZSM) (new host), Indonesia: Timor Island, 3 July 1911, coll. C.B. Haniel.

One female (Syr. 140) from *Trichoglossus chlorolepidotus* (Kuhl, 1820) (ZSM) (Psittacidae) (new host); Australia: New Holland, no other data.

Material deposition. *T. euteles*: 1 female at UAM. *T. chlorolepidotus*: 1 female at UAM.

Remarks. This species was described from *Trichoglossus* sp. from New Guinea [Fain et al., 2000]. *T. euteles* and *T. chlorolepidotus* are new hosts of this species. Mites of the type series are strongly damaged and many characters of this species were unknown. Therefore I provide below measurements of newly obtained female from *T. euteles*.

Female. *Gnathosoma*: Stylophore constricted posteriorly, 390 long. Length of chelicera 280. *Idiosoma*: Propodosomal shield with indistinct posterior margin, its anterior margin concave, bearing setae *vi* and *ve*, setae *sci* situated near this shield. Genital setae *g1* and *g2* subequal in length. Anal setae *a1* and *a2* subequal in length. Cuticular striations as in Figs 11 and 12. Length of setae: *vi* 110; *sci* 490; *h* 555; *sce530*, *d1* 510; *l1* 510; *d2* 530; *l2* 510; setae *l4*, *l5* and *d5* subequal, about 600 long; *d4* 535; *sc3* 110; *sc4* 100; *pg1* 405; *pg2* 555; *pg3* 605; *a1* and *a2* 125; *g1* and *g2* 320.

***Megasyringophilus eos* sp. n.**

Figs 13–16.

Female (holotype). Total body length 1195. *Gnathosoma*: Hypostomal apex with 3 pairs of small protuberances (Fig. 15). Stylophore constricted posteriorly, (415) long. Each transverse branch of peritremes with 4–5 chambers. Chelicerae 295 (300) long. *Idiosoma*: Propodosomal shield distinctly sclerotized, with concave anterior and posterior margins. Setae *vi* about 3 times shorter than *ve* and *sci*. Hysterosomal and pygidial shields absent. Bases of setae *d2* situated equidistant between levels of seta *l1* and *l2* bases. Genital setae *g1* and *g2* about 2 times shorter than *pg2* and *pg3*.

Cuticular striations as in Figs 13 and 14. *Legs*: All coxae well sclerotized, setae *cxIII1* slightly shorter than *cxIII2*. Setae *sc3* and *sc4* not extend beyond genua. Setae *tc'''III–IV* 1.5 times longer than *tc'III–IV*. Setae *p'* and *p''* of legs III and IV with 14–17 tines (Fig. 16). Claws with basal angle.

Length of setae: *vi* 165; *ve* 520; *sci* 550; *h* 620; *d1* 570; *l1* (570); *l2* 570 (570); *d2* (570); *d4* 550 (570); *d5* 605 (600); *l4* 605; *g1* and *g2* 190; *pg1* 365 (305); *pg2* (400); *pg3* (400); *3b* 200 (195); *3c* 255 (215); *sc3* 100 (130); *sc4* 95 (120); *tc'III–IV* 75 (80); *tc'''III–IV* 115 (120).

Male unknown.

Type material. Female holotype (Syr. 141), 2 female, 12 nymph and 3 larva paratypes from *Eos bornea* (L., 1758) (ZSM) (Psittacidae); Indonesia: Ceram Island, 03°00'00"S, 129°00'00"E, 11 June 1912, coll. E. Stresemann.

Material depositions. Holotype, 1 female, 10 nymphs and 3 larva paratypes at UAM; one female and 2 nymph paratypes at ZSM.

Etymology. The name *eos* refers to the generic name of the host.

Differential diagnosis. This new species is very close to *Megasyringophilus rhynchopsittae* Bochkov et Perez, 2002 described from *Rhynchopsittia pachyrhyncha* (Swainson, 1827) (Psittacidae) from Mexico [Bochov and Perez, 2002]. In both species females have the claws with a basal angle, setae *tc'* and *tc'''III* and *IV* are unequal in the length, setae *sce* are situated posterior to the level of setae *h*, setae *ve* are two or more times longer than *vi*. *M. eos* sp. n. differs from *M. rhynchopsittae* by the following characters. In females of *M. eos* sp. n. the hysterosomal shield is absent, the stylophore is constricted posteriorly, genital setae *g1* and *g2* are subequal in the length, leg setae *tc'''III–IV* are 1.5 times longer than *tc'III–IV*. In females of *M. rhynchopsittae* the hysterosomal shield is present and fused to the pygidial shield, the stylophore is rounded posteriorly, genital setae *g1* are two times shorter than *g2*, leg setae *tc'''III–IV* are more than two times longer than *tc'III–IV*.

***Megasyringophilus geoffroyus* sp. n.**

Figs 17–20.

Female. Total body length in holotype about 1300. *Gnathosoma*: Hypostomal apex slightly ornamented. Each transverse branch of peritremes with 6–7 chambers, each longitudinal branch with 5 chambers (Fig. 19). Stylophore rounded posteriorly, 400 (395) long. Chelicerae 305 long. *Idiosoma*: Propodosomal shield distinctly sclerotized

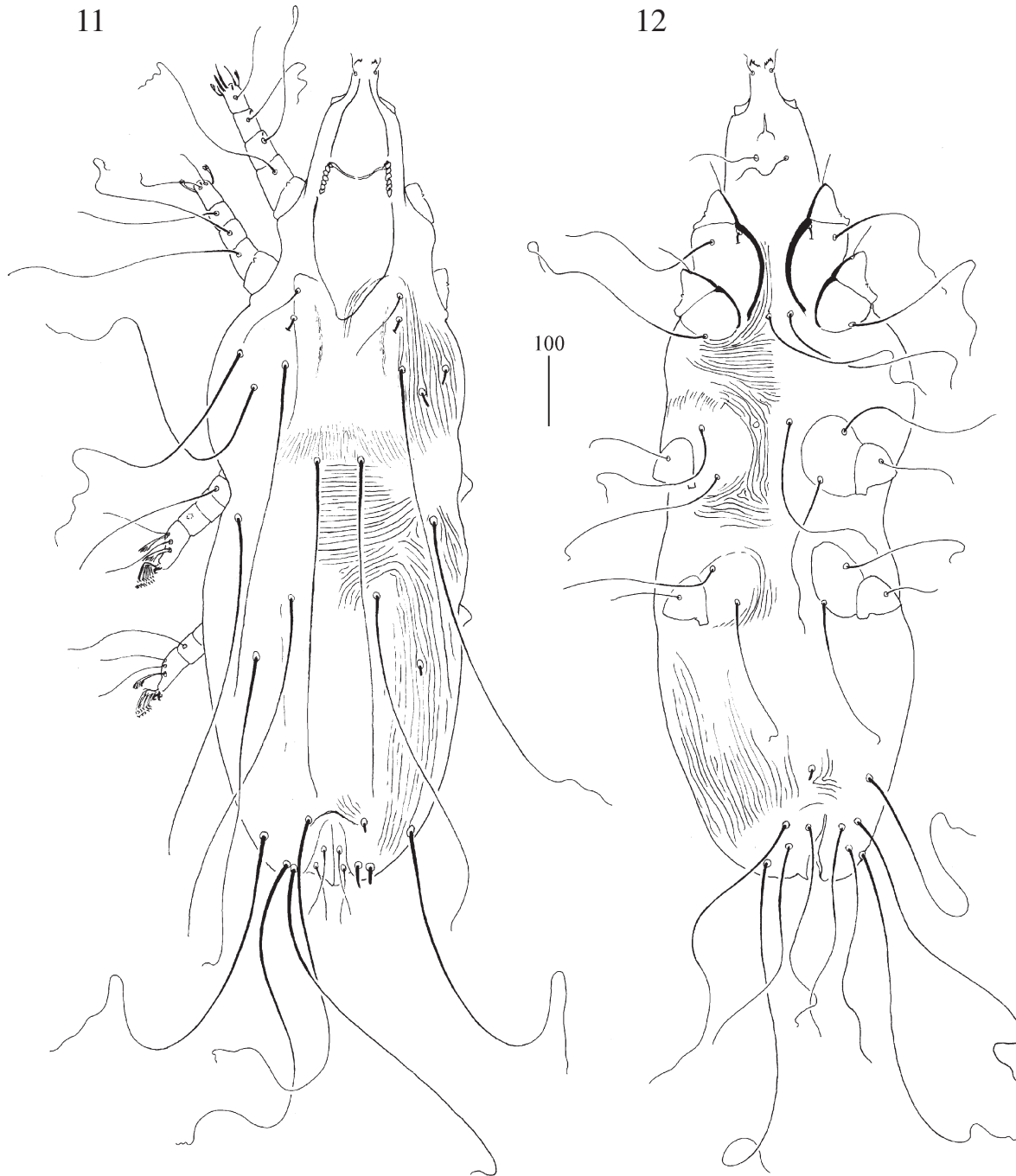


Fig. 11, 12. *Megasyringophilus trichoglossus* Fain, Bochkov et Mironov, 2000, female: 11 — dorsal view, 12 — ventral view.

bearing bases of setae *vi*, *ve* and *d1*. Bases of setae *sce* situated posterior to level of setae *h*. Length ratio of setae *vi:ve* 1:4. Hysterosomal shield present, well sclerotized and fused to pygidial shield, bearing bases of setae *d2*, *d4*, *d5* and *l5*. Setae *d2* situated slightly (1.2 times) closer to level of setae *l2* than to *l1*. Genital setae *g1* and *g2* thick and short (5 and more times shorter than *pg3*). Anal setae *a1* and *a2* short and subequal in length. Cuticular striations as in Figs 17 and 18. *Legs*: All coxae well sclerotized, without punctu-

ation. Setae *cxIII1* slightly shorter than *cxIII2*. Setae *tc'' III-IV* 2 times longer than *tc' III-IV*. Setae *p'* and *p'' III* and *IV* with about 33 tines (Fig. 20). Setae *sc1* not extend to genua, setae *sc3* and *sc4* extend between femora and genu.

Length of setae: *vi* 170 (185); *ve* 680 (735); *sci* 830; *h* (785); *sce* (820); *d1* (855); *l2* (795); *d2* 720; *d4*, *d5*, *l4* and *l5* all more than 800; *pg3* 595; *a1* and *a2* 95 (95–105); *g1* 120 (130); *g2* 75 (85); *cxIII1* 255; *cxIII2* 280.

Male unknown.



Fig. 13, 14. *Megasyringophilus eos* sp. n., female: 13 — dorsal view, 14 — ventral view.

Type material. Female holotype (Syr.145) and two female paratypes from *Geoffroyus geoffroyi* (Bechstein, 1811) (Psittacidae) (ZSM), New Guinea: May 1910, coll. Von Wiedenfeld, no other data.

Material deposition. Holotype and one female paratype is deposited at UAM; one female paratype at ZSM.

Etymology. The name *geoffroyus* refers to the generic name of the host.

Differential diagnosis. This new species is closely related to *M. cyanocephala* Fain, Bochkov et Mironov, 2000 from *Psittacula cyanocephala*

(L., 1766) (Psittacidae) from India [Fain et al., 2000] by the following characters. In both these species, the hypostomal apex is slightly ornamented, the stylophore is rounded posteriorly, genital setae *g1* and *g2* are shorter than paragenital setae *pg3*. It differs from *M. cyanocephala* by the following characters. In females of *M. geoffroyus* sp. n. setae *ve* are four times longer than setae *vi*, setae *sc1* are short and not extend beyond of femora I, length of setae *g1* is 120–130 long. In females of *M. cyanocephala* setae *ve* are two times longer than setae *vi*, setae *sc1* are long and extend to tibiae I, length of setae *g1* is 50 long.

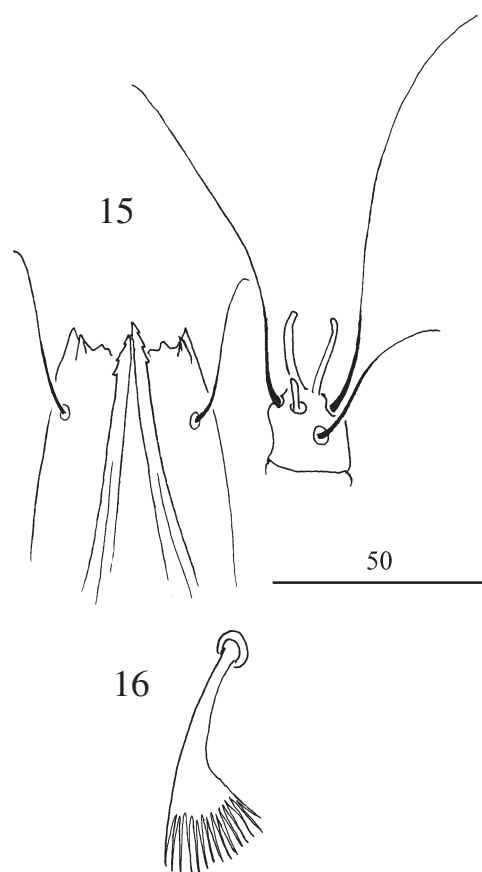


Fig. 15, 16. *Megasyringophilus eos* sp. n., female: 15 — gnathosoma, ventral view, 16 — fan-like seta of tarsus IV.

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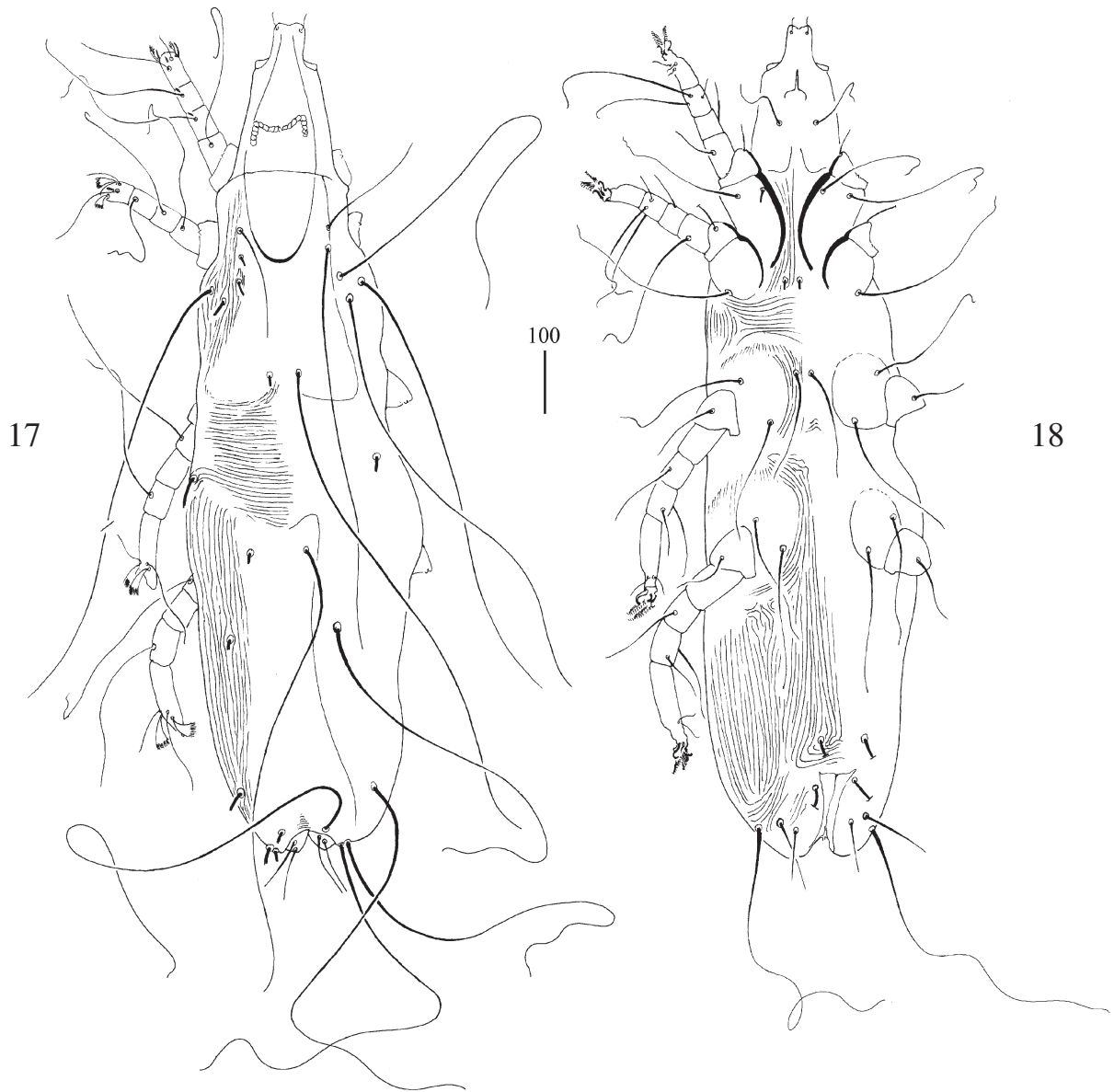


Fig. 17, 18. *Megasyringophilus geoffroyus* sp. n., female: 17 — dorsal view, 18 — ventral view.

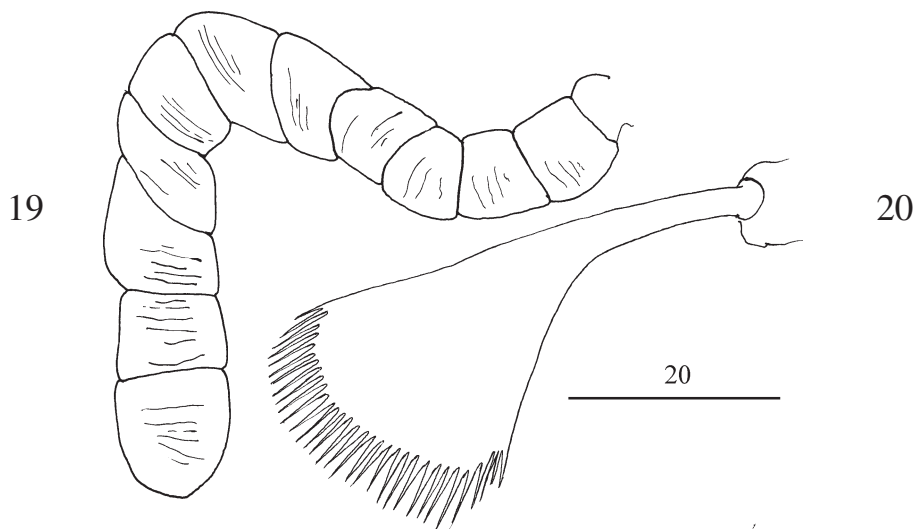


Fig. 19, 20. *Megasyringophilus geoffroyus* sp. n., female: 19 — peritreme, 20 — fan-like seta of tarsus IV.