

NEW SPECIES AND NEW RECORDS OF QUILL MITES
(ACARI: SYRINGOPHILIDAE) INHABITING
AFRICAN PASSERINES (AVES: PASSERIFORMES)

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Three new species of the quill mites (Acari: Prostigmata: Syringophilidae) are described and illustrated from African passerines trapped in Bamenda Highlands (Cameroon): *Syringophilopsis veselovsky* sp. n. from *Pycnonotus barbatus* (Pycnonotidae); *Neoaulonastus zosterops* sp. n. from *Zosterops senegalensis* (Zosteropidae) and *Picobia oritis* sp. n. from *Cyanomitra oritis* (Nectarinidae). Additionally, two new host records are reported: *Cisticola chubbi* (Sylviidae) for *Aulobia cisticolae* SKORACKI et SIKORA and *Linurgus olivaceus* (Fringillidae) for *Syringophilopsis kirgizorum* BOCHKOV, MIRONOV et KRAVTSOVA.

Key words: Acari, Syringophilidae, quill mites, ectoparasites, African birds, Passeriformes

INTRODUCTION

The quill mites of the family Syringophilidae (Acari: Prostigmata: Cheyletoidea) are diverse group of obligatory bird ectoparasites. They live and reproduce inside of the flight and covert feathers feeding on soft tissue fluids of their hosts by piercing the calamus wall with their long and flexible chelicerae (KETHLEY 1971). Transmission of these mites is mainly vertical, from parents to their offspring. The horizontal transfer, from one adult host to another during molt is also possible. Although, we have little data about pathogenicity and negative impact on condition of birds, some authors suggest that they may be potential enzootic vectors for pathogens (SKORACKI *et al.* 2006).

The family is subdivided into two subfamilies, Syringophilinae LAVOPIERRE, 1953 with 36 genera and Picobiinae JOHNSTON et KETHLEY, 1973 with two genera (BOCHKOV *et al.* 2004). The representatives of Syringophilinae occur in quills of rather diverse feather types e.g. primaries, secondaries, tertials, coverts and tail feathers, the picobiines live inside the quills of body feathers only. Probably, this difference is a result of basal divergence at the early stages of the syringophilid evolution (SKORACKI *et al.* 2004). Although, syringophilids are widely distributed

on their host, and have been reported from representatives of 18 orders of birds (BOCHKOV *et al.* 2004), the host–parasite relations of this family and systematics are still poorly known.

There are about 2500 of birds in the Ethiopian Region (DICKINSON 2003), most of which are potential hosts for quill mites. Unfortunately, only 32 bird species are recorded as hosts for 25 species of syringophilids (SKORACKI & DABERT 2002, SKORACKI & SIKORA 2008).

In this paper we describe three new species: *Syringophilopsis veselovsky* sp. n. from the Common Bulbul, *Pycnonotus barbatus* (DEFONTAINES) (Pycnonotidae), *Neoaulonastus zosterops* sp. n. from the African Yellow White-eye, *Zosterops senegalensis* BONAPARTE (Zosteropidae), and *Picobia oritis* sp. n. from the Cameroon Sunbird, *Cyanomitra oritis* (REICHENOW) (Nectarinidae). Additionally, we report two new host records: the Chubb's Cisticola *Cisticola chubbi* SHARPE (Sylviidae), for *Aulobia cisticolae* SKORACKI et SIKORA and the Oriole Finch *Linurgus olivaceus* (FRASER) (Fringillidae), for *Syringophilopsis kirgizorum* BOCHKOV, MIRONOV et KRAVTSOVA.

MATERIALS AND METHODS

Birds were trapped using mist nets, from 20 November, 2007 to 5 January, 2008. All birds were trapped at the same study plot called Mendongbuo, located in Bamenda Highlands, North–Western Province, Cameroon, West Africa (geographical position: 06°05'N, 10°18'E, 2200 m a.s.l.). For further details about our study site and local bird community, see REIF *et al.* (2006).

Mites were mounted on slides in Hoyer's medium and examined using a Olympus BH2 light microscope with DIC (interference contrast phase) optics. The nomenclature of the idiosomal setae is based on that of FAIN (1979) adapted for the family Syringophilidae by BOCHKOV and MIRONOV (1998), and that of the leg chaetotaxy of the legs follows GRANDJEAN (1944). Bird taxonomy follows DICKINSON (2003). All measurements are given in micrometers. Abbreviations for locations where the specimens are deposited: AMU – Department of Morphology, Adam Mickiewicz University, Poznan, Poland; ZIN – Zoological Institute of the Russian Academy of Science, St. Petersburg, Russia; and MRAC – Musée Royal de l'Afrique Centrale, Tervuren, Belgium.

DESCRIPTIONS

Family Syringophilidae LAVOIEPIERRE, 1953

Subfamily Syringophilinae LAVOIEPIERRE, 1953

Genus *Syringophilopsis* KETHLEY, 1970

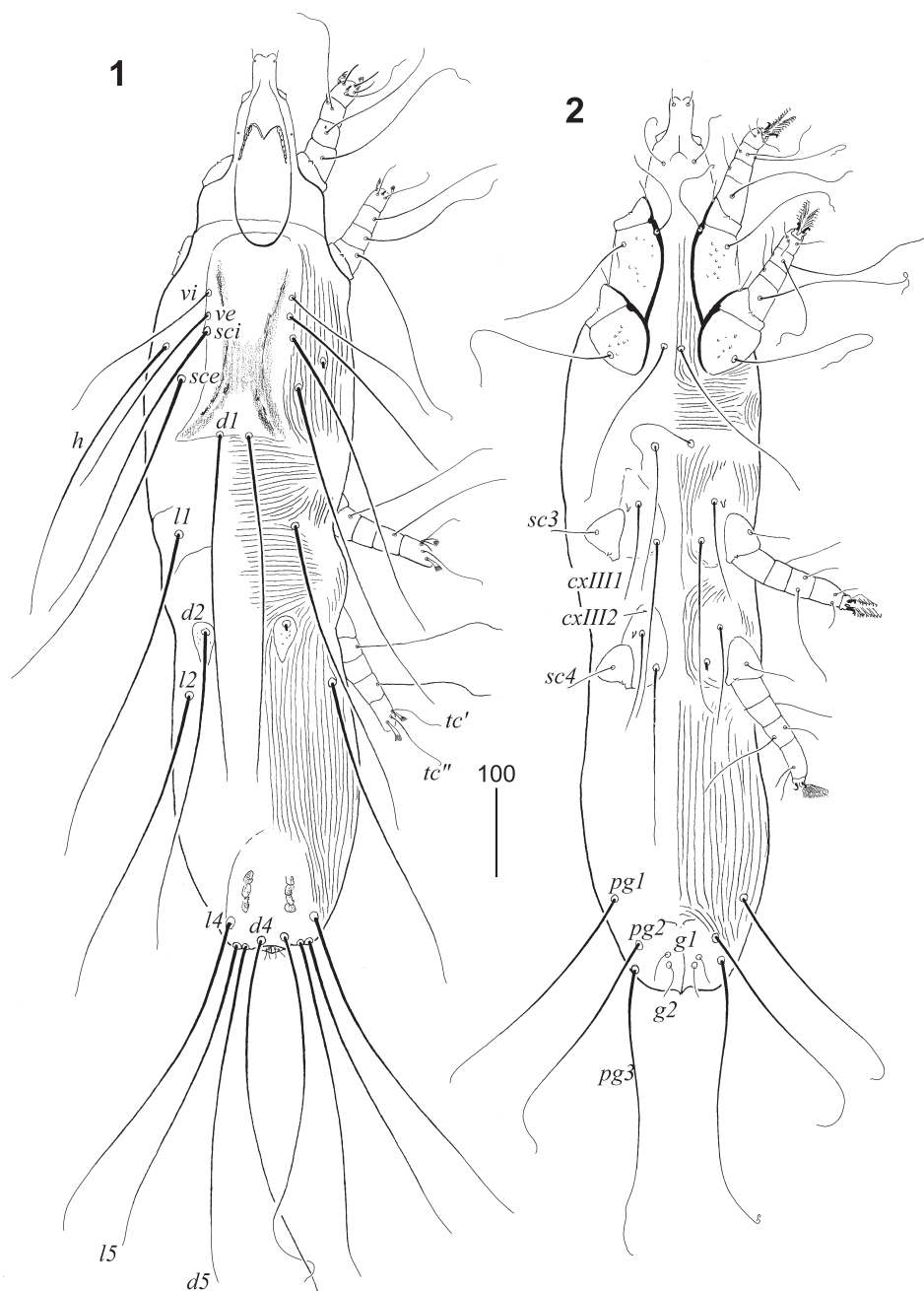
Representatives of *Syringophilopsis* are large-sized mites (800–1200 µm) occupying quill feathers of primary and secondary quill feathers. Mites of this ge-

nus are broadly distributed among passerines, and have been reported from bird families: Sylviidae, Icteridae, Fringillidae, Turdidae, Sturnidae, Motacillidae, Ploceidae, Passeridae, Tyrannidae, Laniidae, Corvidae, and Pycnonotidae (BOCHKOV & GALLOWAY 2004, present paper). Although the Ethiopian Region has an unique and rich fauna of passeriform birds, only five species of the genus *Syringophilopsis* have been recorded from this ecozone: 1) *S. yosefi* SKORACKI, TRYJANOWSKI et HRMADA, 2002 from an undetermined bird species of the genus *Lanius* sp. (Laniidae) from Cameroon, 2) *S. corvinae* SKORACKI et SIKORA, 2002 from the Yellow-billed Shrike, *Corvinella corvina* (SHAW) (Laniidae), also from Cameroon, 3) *S. lagonostictus* SKORACKI et DABERT, 2002 from two passerid species (Passeridae), the Red-billed Firefinch, *Lagonosticta senegala* (LINNAEUS), and the Bar-breasted Firefinch, *L. rufopicta* (FRASER), both from Togo, 4) *S. nitens* SKORACKI et DABERT, 2001 from two ploceid host species (Ploceidae), the Gray's Malimbe, *Malimbus nitens* (GRAY) and the Black-necked Weaver, *Ploceus nigricollis* (VIEILLLOT), both from Togo, and 5) *S. emberizae* FAIN, BOCHKOV et MIRONOV, 2000 from the Grassland Yellow-Finch, *Sicalis luteola* (SPARRMAN) (Fringillidae), from Rwanda (SKORACKI *et al.* 2002, SKORACKI & SIKORA 2003, SKORACKI & DABERT 2001a, 2002, FAIN *et al.* 2000).

Below, we describe a new species found inside quills of the Common Bulbul, *Pycnonotus barbatus* (DESFONTAINES) (Passeriformes: Pycnonotidae). This host species represents a new avian family (Pycnonotidae) for the genus *Syringophilopsis*. Additionally, we give a record of quill mite species new for this region.

***Syringophilopsis veselovsky* SKORACKI, ANTCZAK et RIEGERT sp. n.**
(Figs 1–6)

Female (Figs 1–6). Total body length of holotype 1145 (1050–1145 in 2 paratypes). *Gnathosoma*. Hypostomal apex ornamented by two pairs of minute protuberances and two pairs of blunt-ended hypostomal lips (Fig. 3). Each lateral branch of peritremes with 3 chambers, each longitudinal branch with 9 chambers (Fig. 4). Cheliceral digit 150 (150–160) long. Stylophore rounded posteriorly, 230 (220–230) long. *Idiosoma*. Propodonal shield sculptured, bearing bases of setae *vi*, *ve*, *sci* and *dl*. Bases of setae *sce* situated distinctly anterior to level of bases of setae *dl* (Fig. 6). Bases of setae *h* located posterior to bases of setae *sci*. Length ratio of setae *vi:ve:sci* 1:1.2:1.8. Hysteronotal and pygidial shields well developed. Setae *d2* situated closer to *l2* than to *l1*. All dorsal setae of idiosoma, except *vi* and *ve*, subequal in length. Paragenital setae *pg3* slightly (1.1–1.3 times) longer than *pg1* and *pg2*. All paragenital setae at least 5 times longer than genital setae (*g1*, *g2*). Cuticular striations as in figures 1 and 2. *Legs*. Coxal fields well sclerotized. Setae *tc'''III–IV* 1.3 times longer than *tc'''III–IV*. Fan-like setae *p'* and *p''* of legs III and IV with 11–14 tines (Fig. 5). Setae *cxIII2* about twice longer than *cxIII1*. *Length of setae*: *vi* 215; *ve* 250 (255); *sci* 380 (365–400); *h* (400–405); *sce* 400 (385–400); *l1* 400; *l2* 380 (370–400); *l4* 405 (385–400); *l5* (385–430); *dl* 400 (400–405); *d2* 380 (385–400); *d4* 380 (385–400); *d5* (385–400); *a1* and *a2* 40 (40–50); *g1* and *g2* 50 (50–70); *pg1*



Figs 1–2. *Syringophilopsis veselovsky* sp. n., female: 1 = dorsal view, 2 = ventral view

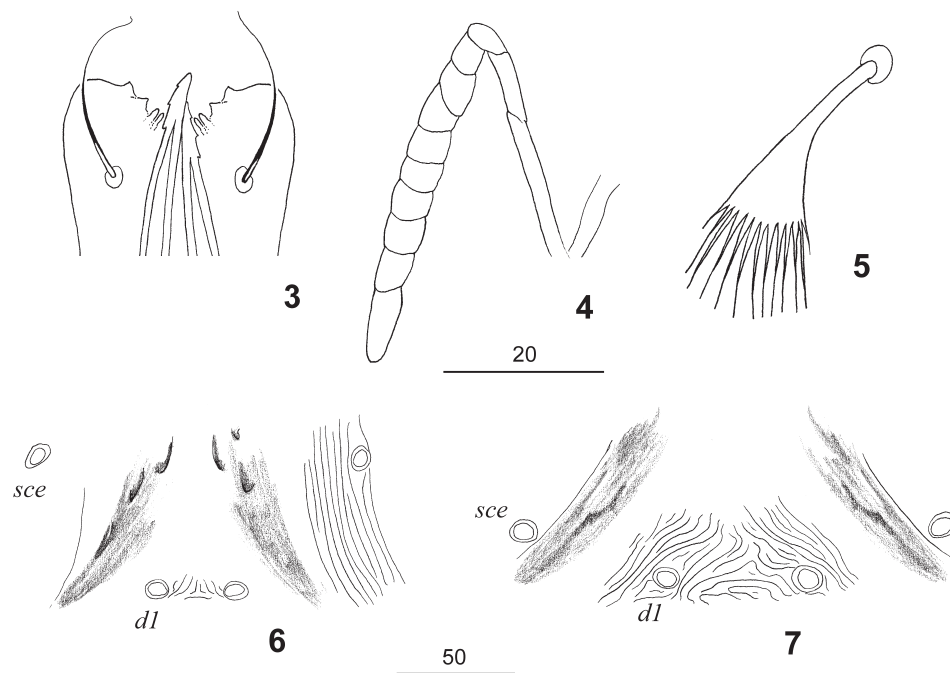
250 (250–285); pg2 275 (280–285); pg3 315 (320–330); tc'III–IV 60 (55–65); tc''III–IV 80 (70–80); cxIII 120 (115–130); cxIII2 220 (200–215).

Male. Not found.

Type material. Holotype female and 2 female paratypes from quill of secondary feather of *Pycnonotus barbatus* (DESFONTAINES, 1789) (Passeriformes: Pycnonotidae); Western Africa, Cameroon; 24.11.2007; coll. J. Riegert. Specimens deposited: holotype and 1 female paratype deposited at AMU, 1 female paratype at ZIN.

Etymology. The name *veselovsky* refers to the name of the prominent Czech zoologist – Prof. Zdeněk Veselovský (26.8.1928 – 24.11.2006).

Differential diagnosis. *Syringophilopsis veselovsky* sp. n., belongs to the “*elongatus*” species group, containing seven species (BOCHKOV & GALLOWAY 2004). *Syringophilopsis veselovsky* sp. n., is most similar to two closely related species reported from North American birds: to *S. elongatus* (EWING, 1911) restricted to icterid hosts (Icteridae), and to *S. tyranni* BOCHKOV et GALLOWAY,



Figs 3–7. *Syringophilopsis* spp., females. 3–6 = *S. veselovsky* sp. n.: 3 = hypostomal apex in dorsal view, 4 = peritreme, 5 = fan-like seta p' of leg III, 6 = posterior part of propodonotal shield. 7 = *S. elongatus* (EWING, 1911), posterior part of propodonotal shield

2004, which inhabit quills of tyrannid hosts (Tyrannidae). In females of all three species, setae *d4*, *d5*, *l4* and *l5* are subequal in the length, genital setae are shorter than paragenital setae, and there is a pair of the hysteronotal shields. *Syringophilopsis veselovsky* sp. n. differs from *S. elongatus* by the following characters: in females of *S. veselovsky* sp. n., the longitudinal branch of the peritremes has nine chambers, the length ratio of setae *vi:sci* is 1:1.8, setae *sci* are situated anterior to the level of setae *h*, and setae *sce* are situated distinctly anterior to the level of setae *d1* (Fig. 6). In females of *S. elongatus*, longitudinal branch of the peritremes has 12–14 chambers, the length ratio of setae *vi:sci* is 1:1.2, setae *sci* and *h* are situated at the same transverse level, and setae *sce* are situated slightly anterior to the level of *d1* bases (Fig. 7).

Syringophilopsis veselovsky sp. n. is distinguished from *S. tyranni* by characteristics as follow: in females of *S. veselovsky*, the hysteronotal and pygidial shields are well developed and with discernible margins, the hypostomal apex is ornamented by two pairs of the protuberances, and the length of setae *vi* is 215. In females of *S. tyranni*, the hysteronotal and pygidial shields are weakly sclerotized with indiscernible margins, the hypostomal apex is ornamented by a pair of minute protuberances, and the length of setae *vi* is 115–135.

Syringophilopsis kirgizorum BOCHKOV, MIRONOV et KRAVTSOVA, 2000

This species has been reported from three cardueline hosts (Fringillidae: Carduelinae): the European Greenfinch, *Carduelis chloris* (LINNAEUS) (type host), from Kirghizia, the Desert Finch, *Rhodospiza obsoleta* (LICHTENSTEIN), also from Kirgizia (BOCHKOV *et al.* 2000), and the European Goldfinch, *Carduelis carduelis* (LINNAEUS), from Poland (SKORACKI 2004). Below, we record a new host for *S. kirgizorum*.

Material examined. From quill of secondary of the Oriole Finch, *Linurgus olivaceus* (FRASER, 1842) (Passeriformes: Fringillidae); 7 females (Syr. 230), Western Africa, Cameroon, 05.12.2007, coll. J. Riegert. Specimens deposited: 4 females at AMU, 1 female at ZIN, 2 females at MRAC.

Remark. The new host species for *Syringophilopsis kirgizorum*, the Oriole Finch, is the only species within the genus *Linurgus* (Carduelinae) which is common in African tropical mountain forests. *Syringophilopsis kirgizorum* found on this host is the first record of the quill mite of the genus *Syringophilopsis* found in both the Palaearctic and Ethiopian Regions. Our results also support the hypothesis that the Oriole Finch is a basal and distinct species, closely related to *Carduelis* and *Rhodospiza* (ARNAIZ-VILLENA *et al.* 2007).

Genus *Neoaulonastus* SKORACKI, 2004

The genus *Neoaulonastus* comprises only one species: *N. scirpaceus* SKORACKI, 1999 described from tail feathers of the Reed Warbler, *Acrocephalus scirpaceus* (HERMANN) (Sylviidae), from Poland (SKORACKI 1999). These mites occupy the quills of tail and secondary wing feathers. Below, we give the description of a new species of this genus found inside quills of the African Yellow White-eye, *Zosterops senegalensis* BONAPARTE (Zosteropidae).

***Neoaulonastus zosterops* SKORACKI, ANT CZAK et RIEGERT sp. n.**
(Figs 8–12)

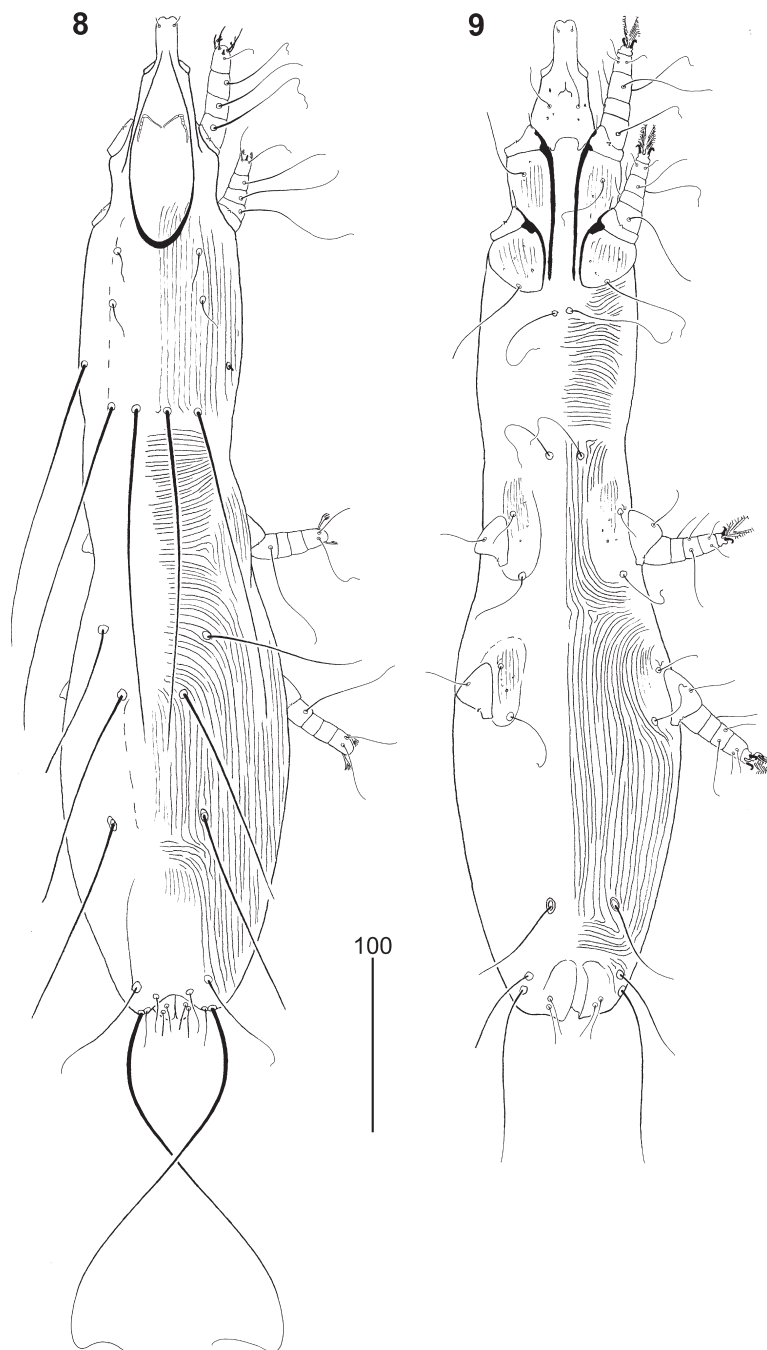
Female. Total body length of holotype 495 (500–530 in 6 paratypes). *Gnathosoma.* Hypostomal apex rounded, with 2 pairs of small and blunt-ended hypostomal lips. Each lateral branch of M-shaped peritremes with 2 chambers, each longitudinal branch with 4–5 chambers (Fig. 10). Cheliceral digit 90 (90–95), long. Stylophore rounded posteriorly, 130 (130–135) long. Subcapitulum, well sclerotized and sparsely punctured. *Idiosoma.* Propodonal shield very weakly sclerotized, striations on whole surface visible and anterior and posterior margins indiscernible (Fig. 11). Setae *sce* and *d1* situated at same transverse level. Length ratio of setae *ve:sci:d1* 1:1:8–10. Hysteronotal shield very weakly sclerotized, all margins indiscernible, situated between bases of setae *d2* and *l2*. Bases of setae *d2* located half distance to *l1* compared to *l2*. Setae *l1* 1.4–1.8 times shorter than *d2* and 1.3–1.5 times shorter than *l2*. Pygidial shield, well sclerotized in middle and posterior part, anterior margin not evident. Setae *d4* and *d5* subequal in length and about twice shorter than *l4*. Length ratio of paragenital setae *pg1:pg2:pg3* 1.4–1.6:1:1.8–2. Genital setae (*g1*, *g2*) subequal in length, and 1.7 times longer than anal setae (*a1*, *a2*). Cuticular striations as in figures 8 and 9. *Legs.* Coxal fields weakly sclerotized and sparsely punctured. Fan-like setae *p'* and *p''* of legs III and IV with 6–7 times (Fig. 12). Setae *tc'''III–IV* about 1.5–1.7 times longer than *tc'III–IV*. Setae *cxIII2* 1.7 times longer than *cxIII1*. *Length of setae:* *ve* 20 (20–30); *sci* 20 (20–30); *h* 155 (155–180); *sce* 180 (170–190); *l1* 95 (80–105); *l2* 115 (115–125); *l4* 85 (70–80); *l5* 260 (260–270); *d1* 205 (195–205); *d2* 130 (130–150); *d4* 25 (20–30); *d5* 25 (20–30); *a1* and *a2* 15 (15); *g1* and *g2* 25 (25); *pg1* 60 (45); *pg2* 45 (40–50); *pg3* 90 (75–90); *sc3* 25 (25–30); *sc4* 20 (20–25); *tc'III–IV* 25 (20–30); *tc'''III–IV* 40 (35–40); *cxIII1* 20 (20); *cxIII2* 35 (35–40).

Male. Not found.

Type material. Holotype female, 6 female and 10 nymphal paratypes from quill of secondary of the African Yellow White-eye, *Zosterops senegalensis* BONAPARTE, 1850 (Passeriformes: Zosteropidae); Western Africa, Cameroon, 6.12.2006; coll. J. Riegert. Specimens deposited: holotype and 4 female paratypes deposited at AMU, 1 female paratype at ZIN, 1 female paratype at MRAC.

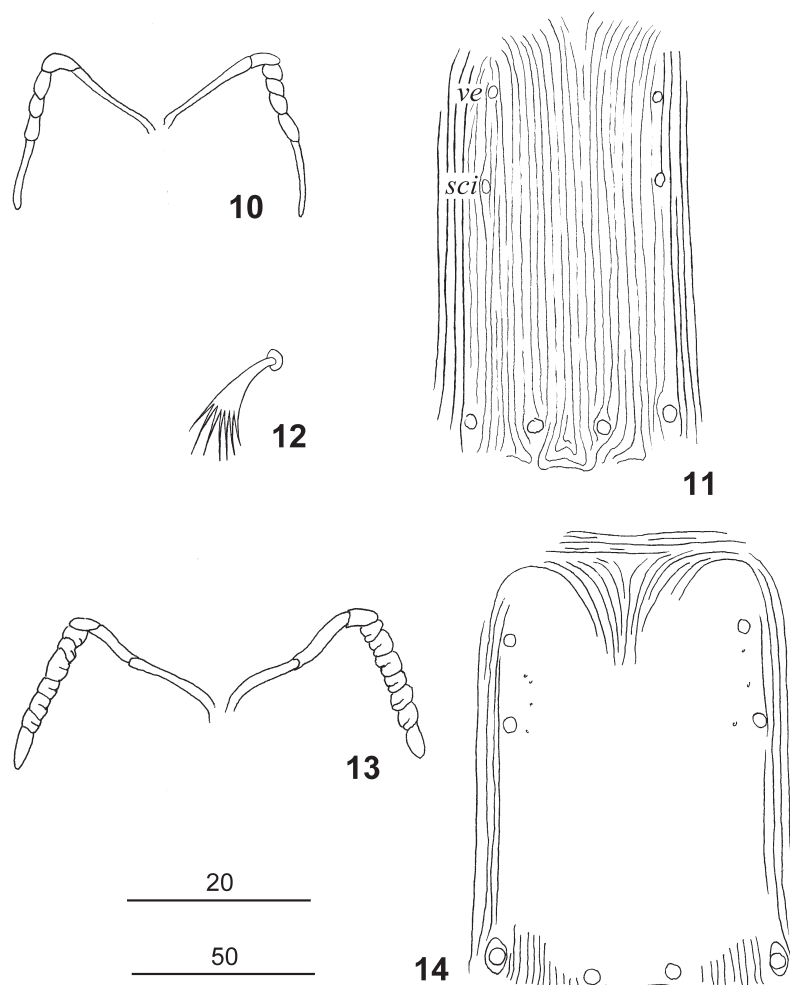
Etymology. The name *zosterops* refers to the generic name of the type host, *Zosterops senegalensis*.

Differential diagnosis. *Neoaulonastus zosterops* sp. n. is distinguished from *N. scirpaceus* SKORACKI, 1999 by the number of chambers in longitudinal branch



Figs 8–9. *Neoaulonastus zosterops* sp. n., female: 8 = dorsal view, 9 = ventral view

of the peritremes and degree of sclerotization of the propodonotal and hysteronotal shields, and coxal fields. In females of *N. zosterops*, each longitudinal branch of the peritremes has 4 chambers (Fig. 10), the propodonotal and hysteronotal shields and the coxal fields I–IV are weakly sclerotized and the striations are visible (Fig. 11). In females of *N. scirpaceus*, each longitudinal branch of the peritremes has 8 chambers (Fig. 13), the propodonotal and hysteronotal shields and the coxal fields I–IV are well sclerotized, and the striations are not visible (Fig. 14).



Figs 10–14. *Neoaulonastus* spp., females. 10–12 = *N. zosterops* sp. n.: 10 = peritremes, 11 = region of propodonotal shield, 12 = fan-like seta p' of leg III. 13–14 = *N. scirpaceus* SKORACKI, 1999: 13 = peritremes, 14 = propodonotal shield. Scale lines 20 μm for figs 10, 12, 13, 50 μm for figs 11, 14

Genus: *Aulobia* KETHLEY, 1970

Mites of the genus *Aulobia* are medium-sized syringophilids (700–900 µm) inhabiting quills of secondary feathers and coverts. This uniform genus comprises five named species, mainly restricted to passerines of the family Sylviidae, except *A. dendroicus* (CLARK, 1964), recorded from a species of Parulidae (SKORACKI & DABERT 2001).

Only three species of this genus have been reported from the Ethiopian Region: *A. erythroptera* SKORACKI et DABERT, 2001 described from the Red-winged Warbler, *Heliolais erythropterus* (JARDINE) and *A. virens* SKORACKI et DABERT, 2001 described from the Green Crombec, *Sylvietta virens* CASSIN, both of them have been collected in Togo (SKORACKI & DABERT 2001). *Aulobia cisticolae* is discussed below.

Aulobia cisticolae SKORACKI et SIKORA, 2003

Aulobia cisticolae, is known only from *Cisticola* spp. (Cisticolidae) in Africa, of there are about 45 species (DICKINSON 2003). Unfortunately, only three avian species of this family have been noted as hosts for this species of quill mite: the Red-faced Cisticola, *C. erythropus* (HARTLAUB), the Whistling Cisticola, *C. lateralis* (FRASER), both from Togo, and from the Singing Cisticola, *C. cantans* (HEUGLIN), from Congo (SKORACKI & SIKORA 2003). Here we report a new host species, also in the genus *Cisticola*, and a new locality for *A. cisticolae*.

Material examined. From quill of secondary feathers of the Chubb's Cisticola, *Cisticola chubbi* SHARPE, 1892; 8 females, 1 male, 3 nymphs; Western Africa, Cameroon, 01.12.2007; coll. J. Riegert. Specimens deposited: all material is deposited at AMU, except 2 female at ZIN and 2 females at MRAC.

Subfamily: Picobiinae JOHNSTON et KETHLEY, 1973

Genus *Picobia* HALLER, 1878

The genus *Picobia* includes 19 named species described from six orders of bird hosts: Passeriformes, Upupiformes, Psittaciformes, Galliformes, Columbiformes, Piciformes (SKORACKI *et al.* 2004). African quill mite fauna comprises only four picobiin species. Each of these is associated with a different host order: 1) *P. zumpti* LAWRENCE, 1959 recorded from South Africa from two bird species of the genus *Streptopelia* (Columbiformes: Columbidae) – the Ring-necked Dove, *S.*

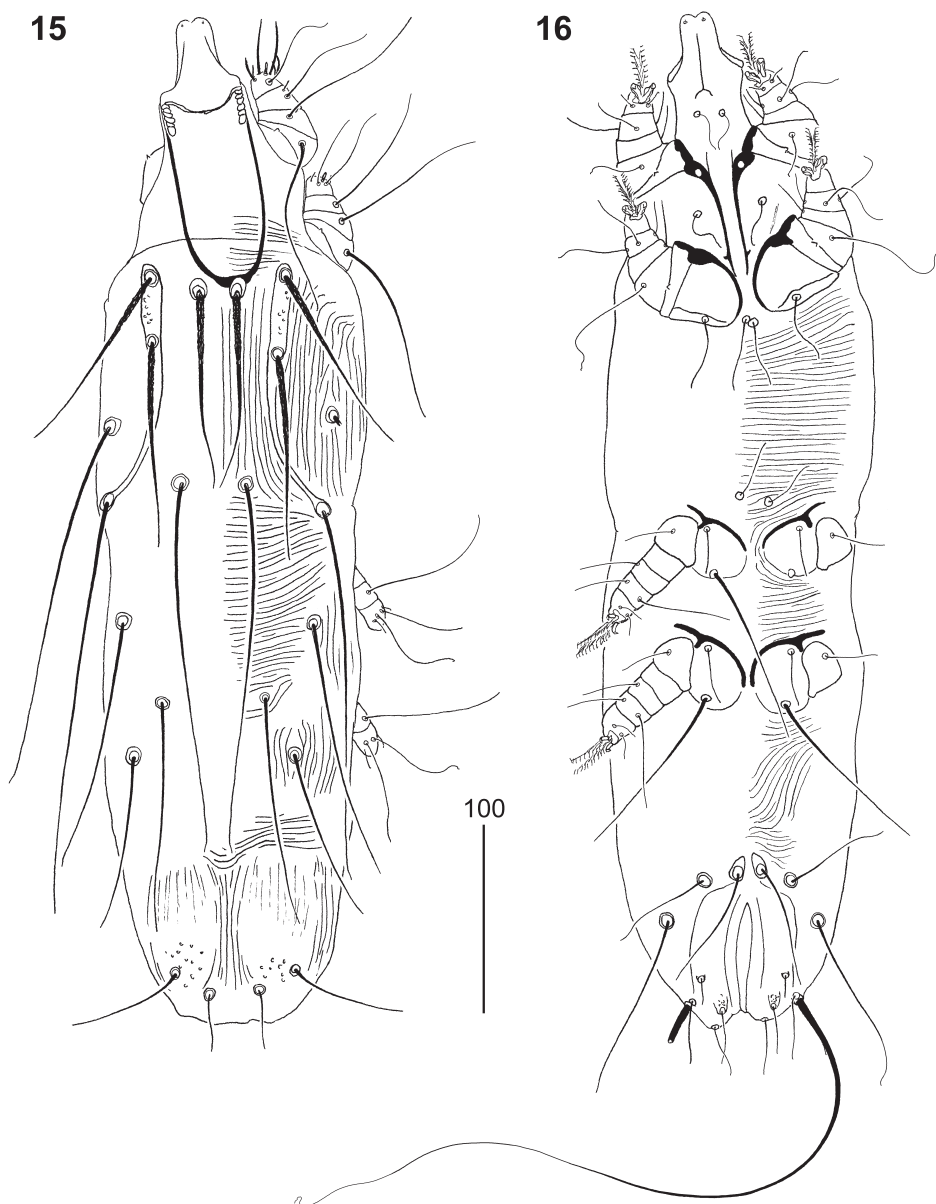
capicola (SUNDEVALL), and the Laughing Dove, *S. senegalensis* (LINNAEUS), 2) *P. alectoris* FAIN, BOCHKOV et MIRONOV, 2000 described from an undetermined bird host of the genus *Alectoris* (Galliformes: Phasianidae) from Rwanda, 3) *P. phoeniculi* FAIN, BOCHKOV et MIRONOV, 2000 found inside quills of the Green Woodhoopoe, *Phoeniculus purpureus* (MILLER) (Upupiformes: Phoeniculidae), from Rwanda and 4) *P. poicephali* SKORACKI et DABERT, 2002 described from the Senegal Parrot, *Poicephalus senegalus* (LINNAEUS) (Psittaciformes: Psittacidae), from Cameroon (LAWRENCE 1959, FAIN *et al.* 2000, SKORACKI & DABERT 2002). Below, we give the description of a new species found in the quills of its nectariniid host, the Cameroon Sunbird, *Cyanomitra oritis* (REICHENOW). It is worth noting, that this host species represents a new host family (Nectariniidae) for the genus *Picobia*.

***Picobia oritis* SKORACKI, ANT CZAK et RIEGERT sp. n.**
(Figs 15–25)

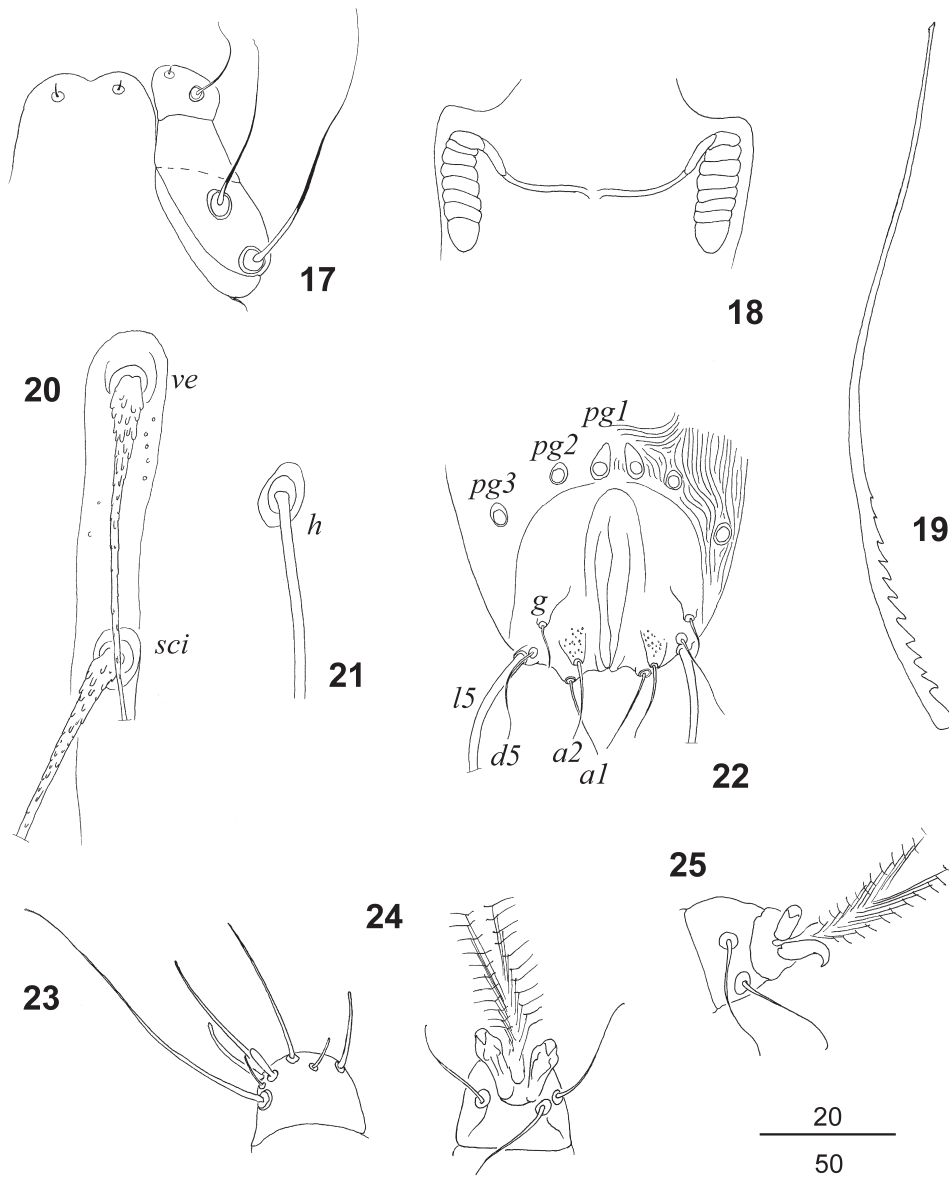
Female. Total body length of holotype 500 (520–615 in 4 paratypes). *Gnathosoma.* Hypostomal apex rounded (Fig. 17). Each lateral branch of M-shaped peritremes with 3 chambers, each longitudinal branch with 7 chambers (Fig. 18), borders between all chambers clearly visible. Cheliceral digit 100 (100–110) long, posterior part with cuticular processes (Fig. 19). Stylophore rounded posteriorly, 140 (140–150) long. *Idiosoma.* Propodonotum with two narrow and sparsely punctated propodonotal shields bearing bases of setae *ve*, *sci* and *sce*. Setae *vi*, *ve* and *sci* subequal in length and strongly knobbed (Fig. 20), remaining setae of idiosoma smooth (Fig. 21). Bases of setae *vi* and *ve* situated at same transverse level, bases of setae *d1* located slightly anterior to level of setae *sce*. Hysteronotal shield absent. Setae *l1* slightly (1.2 times) longer than *d2* and 1.4–1.6 times longer than *l2*. Pygidial shield, divided longitudinally, weakly sclerotized in anterior part, punctated in posterior part. Setae *l4* about twice longer than *d4*. Bases of paragenital setae *pg1* and *pg2* situated at same transverse level. Length ratio of setae *pg1:pg2:pg3* 1.1–1.3:1:1.6–2.2. Anal series with two pairs of setae subequal in length, setae *a1* situated terminally, setae *a2* located ventrally, on short punctated projections. Genital series with one pair of filiform setae situated on short projections (Fig. 22). Cuticular striations as in figures 15 and 16. *Legs.* Coxal fields well sclerotized. All setae situated on coxal fields, smooth. Setae *tc'* and *tc''* of legs III–IV subequal in length. Tarsus of legs I as in figures 23 and 24. Antaxial and paraxial members of claws pair III–IV unequal in size (Fig. 25). Dorsal setae of legs I and II smooth. Setae *cxIII2* 2.4–3 times longer than *cxIII1*. *Length of setae:* *vi* 125 (110–125); *ve* 125 (110–125); *sci* 130 (125–140); *h* 190 (195–205); *sce* 215 (210–225); *l1* 130 (120–145); *l2* 95 (90–95); *l4* 55 (55–60); *l5* 295 (285–295); *d1* 215 (210–245); *d2* 105 (105–130); *d4* 20 (20–30); *d5* 40 (30–45); *a1* and *a2* 30 (30–40); *g* 15 (15–20); *pg1* 70 (60–65); *pg2* 55 (45–65); *pg3* 90 (100–120); *sc3* 25 (25–30); *sc4* 25 (25–30); *tc'III–IV* and *tc''III–IV* 45 (45–50); *cxIII1* 35 (30–40); *cxIII2* 85 (80–95).

Male. Not found.

Type material. Holotype female and 6 female paratypes from quill of contour feather of the Cameroon Sunbird, *Cyanomitra oritis* (REICHENOW, 1892) (Passeriformes: Nectariniidae); Western



Figs 15–16. *Picobia oritis* sp. n., female: 15 = dorsal view, 16 = ventral view



Figs 17–25. *Picobia oritis* sp. n., female: 17 = gnathosoma in dorsal view, 18 = peritremes, 19 = chelicerae, 20 = propodonotal setae *ve* and *sci*, 21 = seta *h*, 22 = opisthosoma in ventral view, 23 = tarsus I in dorsal view, 24 = tarsus I in ventral view, 25 = tarsus III in ventro-lateral view. Scale lines 20 μm for figs 17–21 and 23–25, 50 μm for fig. 22

Africa, Cameroon, coll. J. Riegert. Specimens deposited: holotype and 4 female paratypes deposited at AMU, 1 female paratype at ZIN, 1 female paratype at MRAC.

Etymology. The name *oritis* refers to the specific name of the host, *Cyanomitra oritis*.

Differential diagnosis. This new species is morphologically similar to *Picobia cissa* SKORACKI, BOCHKOV et WAUTHY, 2004, described from the Green Magpie, *Cissa chinensis* (BODDAERT) (Passeriformes: Corvidae) (SKORACKI *et al.* 2004). In females of both species, the hypostomal apex is rounded, the propodotal shield is divided longitudinally, the bases of setae *vi* and *ve* are situated at the same transverse level, the hysterosomal shield is absent, the anal series comprises two pair of setae, the bases of setae *ic1* are fused, paragenital setae *pg1* and *pg2* are situated at the same transverse level. *Picobia oritis* is distinguished from *P. cissa* by the following characters. In females of *P. oritis*, each longitudinal branch of the peritremes has clearly visible borders between particular chambers, the length ratio of setae *vi:ve:sci* is 1:1:1 and all of these setae are strongly knobbed, the pygidial shield is divided longitudinally, setae *l4* are about twice longer than *d4*, antaxial and paraxial members of the claws pair III–IV are unequal in the size, and setae *tc'* and *tc''* of legs III–IV are subequal in length. In females of *P. cissa* there are no visible borders between particular chambers of each longitudinal branch of the peritremes, the length ratio of setae *vi:ve:sci* is 1.5:1:1.8 and all of these setae slightly knobbed, the pygidial shield is entire, setae *l4* are 1.3 times longer than *d4*, antaxial and paraxial members of the claws pair III–IV are equal in the size, and setae *tc'''III–IV* are about twice longer than *tc'''III–IV*.

*

Acknowledgements – We thank Dr. TERRY D. GALLOWAY (Department of Entomology, University of Manitoba, Canada) and Dr. ANDRE V. BOCHKOV (Zoological Institute, Russian Academy of Sciences, Saint Petersburg, Russia) for their critical review of the manuscript. Senior author was financial supported by the Grant of the Polish Committee for Scientific Research (Grant No. NN 303318433). The work of the junior authors in Africa was supported by the Grant Agency of the Academy of Science of the Czech Republic (Grant No. GAAV-IAA 601410709).

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Revised version received January 8, 2009, accepted April 14, 2009, published May 29, 2009