

***Neoaulonastus grewlingi* sp. nov. (Prostigmata: Cheyletoidea: Syringophilidae) a new quill mite species parasitizing *Falcunculus frontatus* (Passeriformes: Falcunculidae) in Australia**

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Abstract

A new quill mite species *Neoaulonastus grewlingi* sp. nov. parasitizing Australian endemic *Falcunculus frontatus* (Latham) (Passeriformes: Falcunculidae) is described. This new species differs from *N. caligatus* Skoracki by the following characters: apunctate pygidial shield and coxal fields I–IV, setae *c1* 1.4 times longer than *d1*, and lengths of setae *ve* 20, *si* 15–25, *se* 155–175 and *c2* 145–155. This is the first record of syringophilid mites from hosts of the family Falcunculidae and first register of *Neoaulonastus* genus in Australian region.

Keywords

Quill mites, ectoparasites, *Neoaulonastus*, *Falcunculus frontatus*, systematics

Introduction

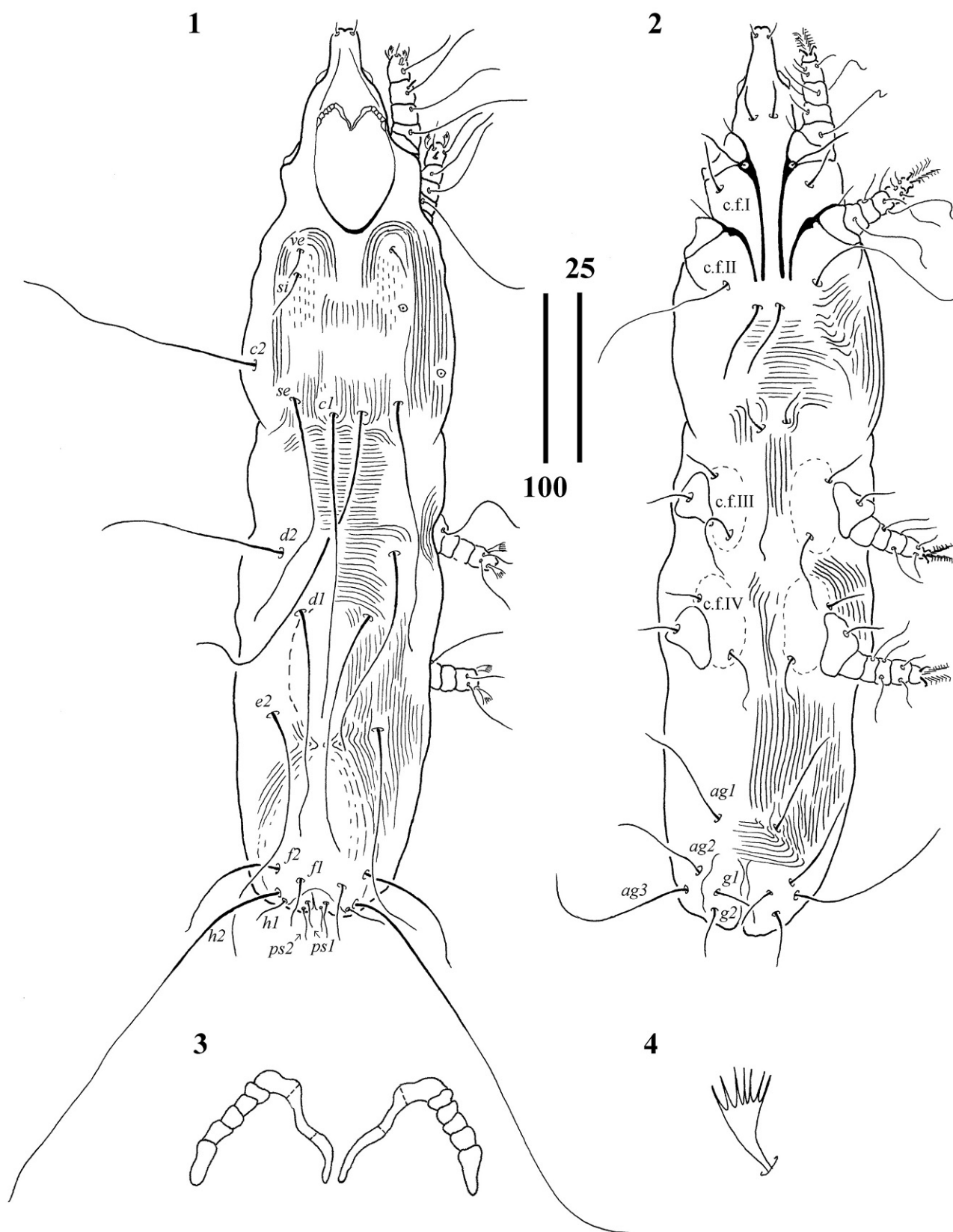
Mites of the family Syringophilidae (Acari: Prostigmata: Cheyletoidea) are permanent parasites inhabiting the feather quills in many avian groups. Up to now, quill mites have been represented by 280 species grouped in 53 genera. Their current host spectrum contains 374 bird species belonging to 78 families and 21 orders. The world fauna of the genus *Neoaulonastus* Skoracki, 2004 comprises eight species associated with passeriform (Aegithalidae, Hirundinidae, Remizidae, Sturnidae, Sylviidae, Zosteropidae) and piciform (Picidae) birds and so far has been recorded only from Palearctic (6 species), Ethiopian (1) and Oriental (1) regions (Skoracki 2011).

In this paper a new quill mite species *Neoaulonastus grewlingi* sp. nov. parasitizing Australian endemic *Falcunculus frontatus* (Latham) (Passeriformes: Falcunculidae) is described. This is the first record of syringophilid mites from hosts of the family Falcunculidae and first register of *Neoaulonastus* genus in Australian region.

Materials and methods

The quill mite material was derived from the Eastern Shrike-tit *Falcunculus frontatus* (Passeriformes: Falcunculidae) during an expedition to Western Australia and then deposited in the Biozentrum Grindel und Zoologisches Museum Hamburg in the University of Hamburg, Germany, coll. Lukoschus, 02.10.1976.

Drawings were made under an Olympus BH2 microscope with differential interference contrast (DIC) optics and a camera lucida. All measurements are given in micrometers (μm). The idiosomal setation follows Grandjean 1939 with modifications adapted for Prostigmata by Kethley 1990. The system of nomenclature for leg chaetotaxy follows that proposed by Grandjean 1944. The application of these chaetotaxic schemes to Syringophilidae was recently provided by Bochkov *et al.* 2008 with changes by Skoracki 2011. Bird taxonomy and nomenclature of the birds follow Clements 2007.



Figs 1–4. *Neoaulonastus grewlingi* sp. nov. Female: 1 – dorsal view, 2 – ventral view, 3 – peritremes, 4 – fan-like setae *p'*. Scale bars: 1, 2 = 100 μ m; 3, 4 = 25 μ m

Results

Family: Syringophilidae Lavoipierre, 1953

Subfamily: Syringophilinae Lavoipierre, 1953

Genus: *Neoaulonastus* Skoracki, 2004

Neoaulonastus grewlingi sp. nov. (Figs 1–4)

Female (holotype). Total body length 515 (520 in paratype). Gnathosoma: Infracapitulum apunctate. Medial branches of peritremes with indistinct chamber boundaries (probably 3 chambers), lateral branches with 5–6 chambers (borders poorly visible) (Fig. 3). Length of stylophore and movable cheliceral digit 120 (120) and 80 (90), respectively. Idiosoma: Propodonal shield weakly sclerotized with concave anterior margin and indistinct posterior margin, apunctate. Length ratio of setae *ve:si* 1:1. Setae *se* situated slightly anterior to level of *c1*. Hysteronotal shield weakly sclerotized, not fused to pygidial shield, apunctate and situated between bases of setae *d1* and *e2*. Pygidial shield well sclerotized, apunctate. Length ratio of setae *f1:f2* 1:4 for holotype; setae *h2* about 10 times longer than *h1*. Length ratio of setae *ag1:ag2:ag3* 1.2–1.3:1:1.6–1.7. Pseudanal setae *ps1* and *ps2* subequal in length. Both pairs of genital setae subequal in length. Legs: Coxal fields apunctate. Setae *3c* about twice longer than *3b*. Legs: Fan-like setae *p'* and *p''* of legs III and IV with 7 tines (Fig. 4). Setae *tc''* of legs III and IV about 1.8 times longer than *tc'*. Lengths of setae: *ve* 20 (20), *si* 25 (15), *se* 155 (175), *c1* 170, *c2* 145 (155), *d1* 120 (120), *d2* 115 (105), *e2* 120 (95), *f1* 20 (30), *f2* 80, *h1* 25 (25), *h2* 255 (270), *ps1* and *ps2* 20 (15), *g1* and *g2* 30 (30), *ag1* 70 (65), *ag2* 60 (50), *ag3* 95 (85), *tc'III–IV* (25), *tc''III–IV* (45), *3b* 15 (15), *3c* 35 (25), *l'RIII* 25 (30), *l'RIV* 20 (30).

Male. Unknown.

Type material: Female holotype and paratype from *Falcunculus frontatus* (Latham) (Passeriformes: Falcunculidae), Australia, Brooking Springs, 02.10.1976, coll. Lukoschus.

Type deposition: Material is deposited in the Biozentrum Grindel und Zoologisches Museum Hamburg in the University of Hamburg, Germany.

Distribution: Australia.

Etymology. This new species *Neoaulonastus grewlingi* is named in honor of the great Polish aeropalynologist – Dr. Łukasz Grewling, in recognition of his scientific merit, artistic skills and uncommon knowledge in the field of “elfology”.

Differential diagnosis. This new species *Neoaulonastus grewlingi* sp. nov. is morphologically similar to *N. caligatus* Skoracki described from *Iduna caligata* (Lichtenstein) (Passeriformes: Sylviidae) from Europe (Skoracki 2011). In females of both species the propodonal shields are present, setae *f2* are about 3 times longer than *f1*, setae *d1* are about 100, and agenital setae *ag1* and *ag2* are subequal in the length. These two species are distinguishable by the following characters. In females of *Neoaulonastus grewlingi* sp. nov., the pygidial shield and the coxal fields I–IV are apunctate, setae *c1* are 1.4 times longer than *d1*, lengths of setae are: *ve* 20, *si* 15–25, *se* 155–175 and *c2* 145–155. In females of *N. caligatus* both the pygidial shield and coxal fields are densely punctate, setae *c1* are twice as long as *d1*, and lengths of setae are: *ve* 40–50, *si* 45–65, *se* 205–230 and *c2* 190–200.

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