

A NEW CHEYLETID MITE *METACHEYLETIA* *NGAII* N. SP. (ACARIFORMES:
CHEYLETIDAE) FROM QUILLS OF *CORYTHAIXOIDES LEUCOGASTER*
(MUSOPHAGIDAE) FROM TANZANIA

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ABSTRACT — *Metacheyletia ngaii* n. sp. (Acariformes: Cheyletidae) is described from quills of *Corythaixoides leucogaster* (Rüppell, 1842) (Cuculiformes: Musophagidae) from Tanzania.

KEYWORDS — Acari; Cheyletidae; *Metacheyletia*; systematics; feather quills; *Corythaixoides leucogaster*

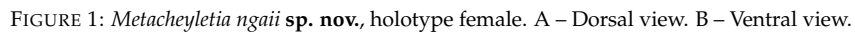
INTRODUCTION

The genus *Metacheyletia* Fain, 1972 (Acariformes: Cheyletidae) is a single genus of the tribe Metacheyletiini (Bochkov and Fain, 2001). Mites of this genus, currently including four species, live inside the feather quills. Three species are known from various parrots (Psittaciformes: Psittacidae), *M. obesa* Fain, 1972 from *Psittacula krameri* (Scopoli, 1769) from Africa (Fain, 1972, 1980), *M. longisetosa* Atyeo *et al.*, 1984 from *Amazona finschi* (Sclater, 1864) from Mexico (Atyeo *et al.*, 1984), *M. amazonae* Bochkov & OConnor, 2003 from *Amazona amazonica* (Linnaeus, 1766) from Guyana (Bochkov and OConnor, 2003); one species, *M. degenerata* Fain & Bochkov, 2003 was described from *Serinus mozambicus* (Muller, 1776) (Passeriformes: Fringillidae) from Tanzania (Fain and Bochkov, 2003).

Few data are known on biology of these mites,

and suggestions concerning their mode of life are controversial. Atyeo *et al.* (1984) believed that these mites are predators because their movable cheliceral digits are too short to penetrate the quill wall, pierce the quill wall and reach live tissues of a host. Bochkov and Fain (2001) considered these mites parasitic based on morphological characters such as the short tarsi of legs I–III, the absence of legs IV, the short and nude eupathidia of the palpal tarsus and the relatively small sizes of the gnathosoma and suggested that *Metacheyletia* spp. use the orifices in quill walls which were made by adult syringophilids.

In this paper, we describe a new species of this genus from *Corythaixoides leucogaster* (Rüppell, 1842) (Cuculiformes: Musophagidae) from Tanzania. A key to females of all known species of the genus *Metacheyletia* is provided.



FAMILY CHEYLETIDAE

Metacheyletia ngaii n. sp.
(Figures 1 and 2)

Description — Female (holotype) — *Gnathosoma* 90 long (90 in 1 paratype) and 115 wide (120). Peritremes arch-like, each peritremal branch with 7–8 segments. Palpal femur 40 long (40) and 37 wide (35). Palpal claw with 1 basal tooth. Palpal setation: palpal femur – *dF*; palpal genu – *dG*; palpal tibia – *dTi*, *l'Ti*, *l''Ti*; palpal tarsus – smooth eupathidia *amc*, *sul*, *ul'*, *ul''*, and solenidion $\omega 1$. Subcapitular setae *n* absent, adoral setae *ao1*, *ao2*, and subcoxal setae *elcp* present. *Idiosoma* 495 long (585) and 355 wide (415),

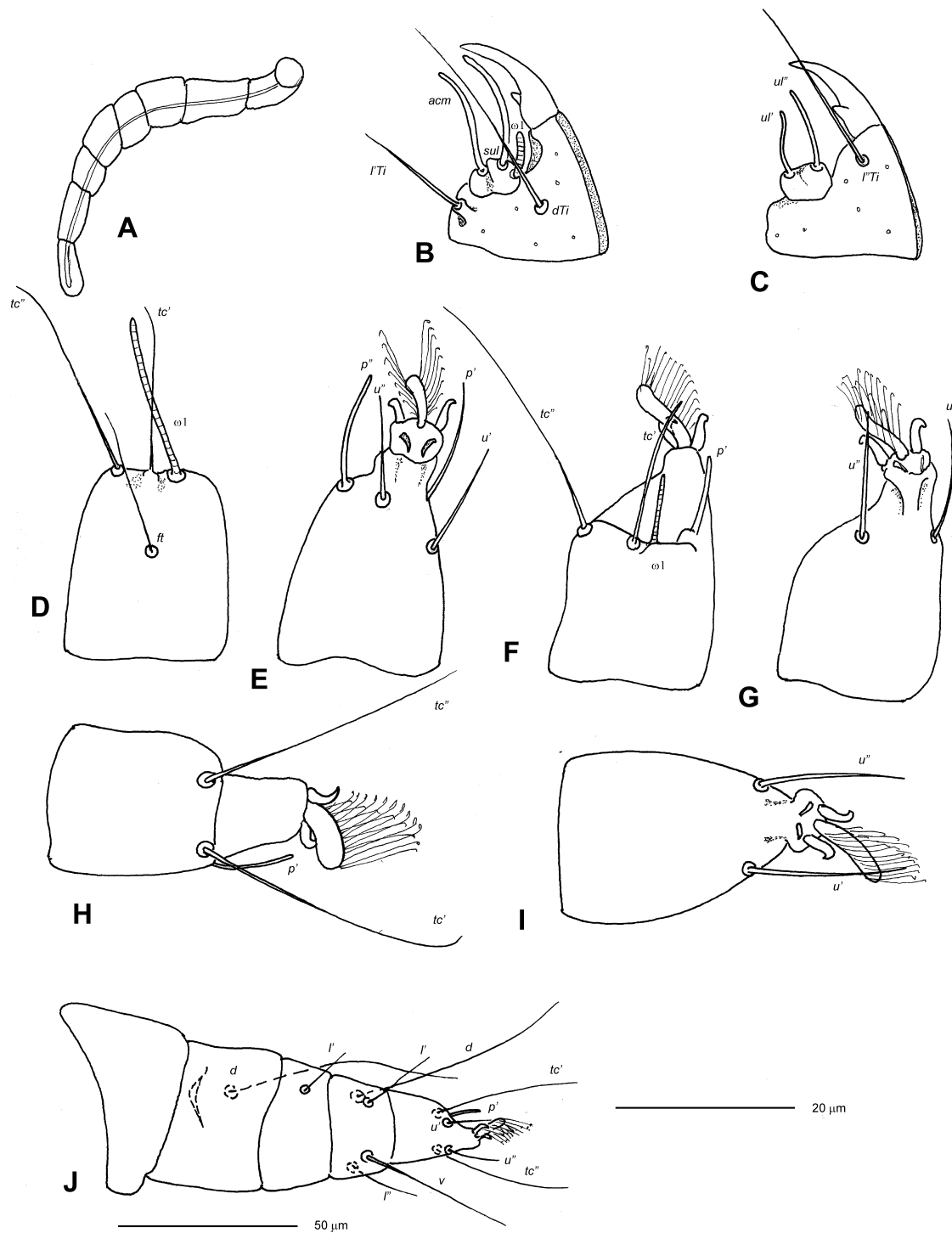


FIGURE 2: *Metacheyleletia ngaii* sp. nov., details of holotype female. A – Peritremal branch. B – Palpal tibiotarsus in dorsal view. C – Same in ventral view. D – Tarsus I in dorsal view. E – Same in ventral view. F – Tarsus II in dorsal view. G – Same in ventral view. H – Tarsus III in dorsal view. I – Same in ventral view. J – Leg III in ventral view. Scale bars: A–I = 20 μm; J = 50 μm.

ovoid. Propodonal shield indistinct. No cupules observed. All idiosomal setae smooth filiform. Setae *vi* 2 times shorter than *ve*; setae *si* and *d2* 1.4–1.5 times shorter than *se* and *e2*; *c1* and *d1* about 2 times longer than *d2*; setae *c1* longer than distance between setal bases *c1* and *d1*; setae *h1* and *h2* subequal. Three pairs of pseudogenital (*ps1*–*ps3*), 2 pairs of genital (*g1* and *g2*), and 3 pairs of aggenital (*ag1*–*ag3*) setae present. Lengths of setae: *vi* 30 (35), *ve* 65 (70), *si* 50, *se* 70 (70), *c1* 130, *c2* 120 (125), *d1* 120 (115), *d2* 50 (65), *e2* 80 (75), *f2* 65 (75), *h1* 120 (115), *h2* 115 (120), *ps1*–*ps3* 23–25, *g1* and *g2* 24–25, *ag1*–*ag3* 23–27, *1a* 35 (35), *1b* 45 (55), *3a* 35 (35). Setae *4a* absent. Legs IV completely absent. Leg I–IV setation: I – tarsus with 7 setae (*ft*, *tc'*, *tc''*, *p'*, *p''*, *u'*, *u''*) + solenidion $\omega 1$, tibia with 4 setae (*d*, *l'*, *l''*, *v*) + solenidion φ , genu with 1 seta (*l'*) + solenidion σ , femur with 2 setae (*dF* and *vF*), trochanter without setae, coxal field with 1 seta (*1b*); II – tarsus with 5 setae (*tc'*, *tc''*, *p'*, *u'*, *u''*) + solenidion $\omega 1$, tibia with 4 setae (*d*, *l'*, *l''*, *v*), genu with 1 seta (*l'*), femur with 2 setae (*dF* and *vF*), trochanter and coxal field without setae; III – tarsus with 5 setae (*tc'*, *tc''*, *p'*, *u'*, *u''*), tibia with 4 setae (*d*, *l'*, *l''*, *v*), genu with 1 seta (*l'*), femur with 1 seta (*dF*), trochanter and coxal field without setae.

Male — Unknown.

Type Material — Holotype female and female paratype from *Corythaixoides leucogaster* (Rüppell, 1842) (Cuculiformes: Musophagidae), Tanzania: Tanganyika, 23 March 1960, coll. unknown.

Type deposition — All material is deposited in the Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia.

Etymology — This new species is dedicated to the Maasai God – Ngai, the creator of everything.

Differential diagnosis. This new species is morphologically closest to *M. degenerata*. In females of both species, three pairs of aggenital setae are present and the propodonal shield is indistinct. It differs from *M. degenerata* by the following features. In females of *M. ngaii* n. sp., setae *vi* are two times shorter than *ve*, setae *d2* are two times shorter than *d1*, setae *h1* and *h2* are subequal, setae *c1*, *d1*, and *e2* are 130, 115–120, and 75–80 long, respectively. In females of *M. degenerata*, setae *vi* are 1.1–1.2 times shorter than *ve*, setae *d1* and *d2* are subequal, setae

h1 are about 1.3 times shorter than *h2*, setae *c1*, *d1*, and *e2* are 65, 60, and 50 long, respectively.

Remarks — The genus *Metacheyletia* is, probably, initially associated with parrots, because its representatives inhabit these hosts in Africa and South America. Unfortunately these mites are unknown from Australia, and records of *Metacheyletia* spp. from the Australian parrots would be very desirable as an additional prove of this hypothesis. The two species of this genus from non-parrot hosts, *M. degenerata* and *M. ngaii*, are still known exclusively from central Africa and morphologically very close to each other. Parrots are widely distributed in central Africa and, therefore, we suggest that in this region, mites of the genus *Metacheyletia* shifted on a non-parrot host from a parrot with the following dispersion and speciation on birds of different non-parrot orders.

Key to females of the genus *Metacheyletia* Fain, 1972

1. Propodonal shield weakly developed, but distinct; setae *ag3* absent (hosts – Psittacidae) 3
— Propodonal shield almost indistinct; setae *ag3* present. 2
2. Setae *vi* 2 times shorter than *ve*; setae *d2* 2 times shorter than *d1*; setae *h1* and *h2* subequal. Setae *c1*, *d1*, and *e2* 130, 115–120, and 75–80 long, respectively *M. ngaii* n. sp.
— Setae *vi* 1.1–1.2 times shorter than *ve*; setae *d1* and *d2* subequal; setae *h1* about 1.3 times shorter than *h2*. Setae *c1*, *d1*, and *e2* 65, 60, and 50 long, respectively *M. degenerata* Fain & Bochkov, 2003
3. Remnants of legs IV absent 4
— Remnants of legs IV present . *M. obesa* Fain, 1972
4. Peritremal branches with 7–8 segments each. Propodonal shield devoid of setae; length ratios of dorsal idiosomal setae: *h2*:*e2*, *f2* 2:1 and *h2*:*h1* 1.2–1.6:1, length of setae *c1* subequal to distance between bases of setae *c1*–*d1*. Setae *ve*, *si*, *se*, *c1*, *e2*, *f2* shorter than 80
..... *M. amazonae* Bochkov & OConnor, 2003
— Peritremal branches with 10–11 segments each.

Propodonal shield bearing setae *vi* and *ve*, dorsal idiosomal setae *e2*, *f2*, *h1*, and *h2* subequal in length, ratio between length of seta *c1* and distance between *c1–d1* approximately 2.8:1. Setae *ve*, *si*, *se*, *c1*, *e2*, *f2* longer than 100
.....*M. longisetosa* Atyeo, Kethley & Perez, 1984

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