A. FAIN & V. BOCHKOV

ON SOME NEW OR LITTLE KNOWN SPECIES OF PARASITIC CHEYLETIDAE (ACARI: PROSTIGMATA)

Extrait de
ACAROLOGIA
Tome XLII, fasc. 2, 2002

DIRECTION
61, rue de Buffon — 75005 Paris — France
ON SOME NEW OR LITTLE KNOWN SPECIES OF PARASITIC CHEYLETIDAE
(ACARI: PROSTIGMATA)

by Alex FAIN1 & Andre V. BOCHKOV2

(Accepted April 2001)

SUMMARY: Seven new species of parasitic Cheyletidae (Acari: Prostigmata) most of them originating from the Afrotropical region are described: Thryonomychelya angolensis sp. nov. ex Thryonomy sp. (Rodentia: Thryonomyidae), from Angola; Ornithocheyletia columbigallinae sp. nov. ex Columbigallina sp. (Columbiformes: Columbidae), from Brasil; O. oriol sp. nov. ex Oriolus oriolus (Passeriformes: Oriolidae), from Rwanda; O. wauthyi sp. nov. ex Lamprocolius sp. (Passeriformes: Sturnidae), from Rwanda; Neocheyletiella queleae sp. nov. ex Quelea quelea (Passeriformes: Ploceidae), from Rwanda; N. athene sp. nov. ex Antherea brahma (Strigiformes: Strigidae), from India and N. lonchurae sp. n. ex Lonchura tricolor (Passeriformes: Estrildidae), from Rwanda. In addition, Apodicheles apus FAIN, 1979, recorded from Rwanda, ex Apus caffer (Apodiformes: Apodidae) is redescribed and depicted here for the first time.

INTRODUCTION

The present paper is devoted to the descriptions of seven new species of parasitic mites of the family Cheyletidae (Acari: Prostigmata). Four of these species were collected from afrotropical birds, one from an afrotropical rodent, one from an oriental bird and one from a neotropical bird. In addition, we give here a more complete description and the first figures of Apodicheles apus FAIN, 1979.

The holotypes and paratypes of the African material have been deposited in the Musée royal de l’Afri-
Fig. 1: *Thryonomycheyla angolensis* sp. nov., male holotype. Dorsal view (A); palpal tarsus in dorsal view (B) and in ventral view (C); tarsus I in dorsal view (D). Scale lines 100 µm (A) and 10 µm (B-D).
FIG. 2: Thryonomycheyla angolensis sp. nov., nymph. Gnathosoma in dorsal view (A) and ventral view (B); idiosoma in dorsal view (C); coxa I. (D); legs in ventral view: leg I (E), leg II (F), leg III (G) and leg IV (H). Scale lines 10 μm (A, B, D-H) and 100 μm (C).
que Centrale (MRAC), the typical material of the Oriental and of the neotropical species has been deposited in the Institut royal des Sciences naturelles de Belgique (IRSNB).

The nomenclature of the idiosomal chaetotaxy follows Fain (1979c). All the measurements are given in micrometers (μm).

Genus **Thryonomycheyla** Fain, 1972

This genus has been redefined by Fain (1979a).

1. **Thryonomycheyla angolensis** sp. nov. (Figs 1, 2)

**MALE** (holotype): *Gnathosoma* 105 long in midline and 120 wide. Palpal claw covered by fine striations. Peritremes with 10 links at each side. *Idiosoma* 230 long and 265 wide. Propodosomal shield 132 long, it bears 6 pairs of piliform setae: 4 lateral pairs, each seta about 50 long, and 2 median pairs, about 13 long. Setae *h* 130 long, situated off the propodosomal shield. Hysterosomal shield trapezoidal, bearing 8 pairs of setae. Setae *i1* similar to the lateral setae of propodosoma, setae *i5* thickened, 75 long, the other 6 pairs of setae are similar to the median setae of the propodosoma. Distance between the propodosomal and the hysterosomal shields very short (about 3). Genital orifice dorsal, surrounded by 3 pairs of setae. Length of the posterior genital setae 25. Penis very narrow, 120 long.

**FEMALE.** Unknown.

**NYMPH:** Only represented by a moulting skin that had contained the holotype male. *Gnathosoma* poorly developed, 46 long and 41 wide. Palps consisting of 3 segments and without thumb-claw complex. Peritremes arch-like, with 8-10 links at each side. *Idiosoma* ovoid. **Dorsum:** All dorsal setae rod-like, about 13 long. Propodosomal shield 40 long and 85 wide, it bears 4 pairs of lateral and 1 pair of median setae. Setae *h* situated off the propodosomal shield. Hysterosomal shield 25 long and 58 wide, it bears 1 lateral pair and 1 median pair of the setae. The distance between propodosomal and hysterosomal shields is about 20. There are 2 pairs of setae behind the hysterosomal shield. **Venter:** Anus surrounded by 3 pairs of very short setae. All legs normally developed, with 2 claws and an empodium.

**HOST AND LOCALITY:** Holotype male and paratype nymph ex *Thryonomyx* sp. (Rodentia: Thryonomyidae) from Angola, 1946. Coll. B. Machado. Holotype and nymph paratype in MRAC.

**COMPARATIVE MATERIAL:** Holotype male of *Thryonomycheyla congolensis* Fain, 1972 ex *Thryonomyx swinderianus* from Bagata, Zaire, 1946. Coll. A. Fain.

**REMARKS:** This new species is distinguished from the other known species of the genus *Thryonomycheyla, T. congolensis* by the following characters: In the male of *T. angolensis* sp. nov., the peritremes consist of 10 links, the penis is 120 long, the hysterosomal shield is trapezoidal, setae *i1* and *i5* are situated on the hysterosomal shield. In the male of *T. congolensis*, the peritremes consist of 11-12 links, the penis is 66 long, the hysterosomal shield is oval and setae *i1* and *i5* are situated off the propodosomal shield.

Genus **Ornithocheyletia** Volgin, 1964

This genus has been revised by Fain (1981).

2. **Ornithocheyletia columbigalinae** sp. nov. (Figs. 3, 4)

**FEMALE** (holotype): *Gnathosoma* 80 long and 65 wide. Setae *rd* with one basal tine. Peritremes with 3 links. *Idiosoma* 345 long and 280 wide. **Dorsum:** Shields well sclerotized and punctate, without striations. Propodosomal shield 112 long and 65 wide; it bears setae *vi, ve, sci* and *d1*. Hysterosomal shield 78 long and 110 wide; it bears setae *l2* and *l3*. Distance between these shields 35. Setae *l5* set on the pygidial shield, distance *l5-l5* 35. Length of setae: *vi, ve, sce, i1* and *l2* 26, *sci* 130, *h* 150, *d1* 157, *l4* 33, *i5* 145, all these setae are smooth. Distance *sci-sce* 63, which is almost 2 times longer than the distance *sce-h* 32; distance between the posterior edge of the hysterosomal shield and *l4* is 28. **Venter:** All setae smooth except the external seta of the coxae III which is barbed. Inter-
FIG. 3: *Ornithocheyletia columbigallinae* sp. nov., female holotype in dorsal view. Scale line 100 μm.
FIG. 4: Ornithocheylettia columbigallinae sp. nov., female holotype in ventral view. Scale line 100 μm.
nal part of the coxae I-II without striations. Intercoxa
tae (icl, ic2, ic3, ic4) subequal in length. Genital
setae g1 and g2 serrate. Anal setae a1-a3 smooth. 

**Legs.** Tibiae I-II with a short ventral spur. Tibiae 
III-IV with 3 setae. Setae p’, p” of legs I-IV with about 
8 times. Solenidion of tibia I curved laterally, 5 long; 
solenidion of genu I ovoid. Setal structures of the legs 
as in Figs. 3, 4, most of the dorsal setae long. Claws 
without basal angle.

**Male:** Unknown.

**Host and locality:** Holotype female ex **Columbi-
gallina** sp. (Columbiformes: Columbidae), Piraci-
caba, Brasil, 10. IX. 1977. ColI. C. A. ROSA. Holotype 
and paratypes in IRSNB.

**Comparative material:** 6 females of **Ornithocheyle-
etia hallae** SMILEY, 1970 ex **Columba livia** (Columbi-
formes : Columbidae) from Jutland, DENMARK, X. 

**Remarks:** The female of this new species is closest 
to **Ornithocheyletia hallae** SMILEY, 1970 ex **Columba 
 livia** from USA. It may be distinguished from this 
species by the following characters: In **O. colombigall-
inae** sp. nov., setae vi, ve, sce and II are smooth and 
solenidion of tibia I is curved laterally. In **O. hallae**, 
setae vi, ve, sce and II are serrate and solenidion of 
tibia I is straight.

3. **Ornithocheyletia orioli** sp. nov. 

(Fig. 5)

**Female (holotype):** **Gnathosoma** 78 long and 122 
wide. Setae rd with one basal tine. Peritremes with 3 
links. **Idiosoma** 430 long (320-500 long in 10 paraty-
ypes) and 310 wide. **Dorsum:** Shields well scleritized 
and punctate, with very poorly distinct striations. 
Propodosomal shield 157 long and 166 wide; bearing 
the setae vi, ve, sci and d1. Hysterosomal shield 140 
long and 166 wide; bearing setae I2 and I3. Distance 
between the propodosomal and the hysterosomal 
shields 18. Pygidial shield 58 wide, setae I5 off the 
pygidial shield, separated by 80. Length of setae : vi, 
ve and sci about 65, sce 75, l1 70 - all barbed; h 160, d1 
155 (116-150 long in 10 paratypes), d2 30, l2 43 (35-50 
long in 10 paratypes), l4 83 (50-85 long in 10 paraty-
ypes), I5 220 - all smooth. Distances sce-sce 58 and 
sce-h 50; distance between the posterior edge of the 
hysterosomal shield and l4 25. **Venter:** All setae 
smooth except the external seta of the coxa III which 
is barbed. Internal part of the coxae I-II with very 
fine striations. Intercoxa setae (icl, ic2, ic3, ic4) subequal 
in length. Genital setae g1 and g2 serrate. Anal setae 
a1-a3 smooth. **Legs.** Tibiae III-IV with 3 setae. Setae 
p’, p” of the legs I-IV with 4-5 tines. Solenidion of the 
tibia I curved, 6 long; solenidion of the genu I 3 long 
and subcylindrical. Most of the dorsal setae of legs 
are long. Claws without basal angle.

**Male:** **Gnathosoma** as in the female. **Idiosoma** 250 
long and 185 wide. **Dorsum:** Propodosomal and hy-
terosomal shields large covering the entire dorsal sur-
face, without striations and punctuations. Length of 
setae: vi, ve, sci and sce about 58, l1 53, all barbed; h 
130, d1 115, d2 15, l2 28 and l4 45, all smooth. Penis 80 
long. Genital setae g1-g4 smooth. **Venter:** Medial 
shields absent. **Legs.** All legs with the same chaeto-
taxy and solenidiotaxy as in the female.

**Host and locality:** Holotype female and paraty-
ypes (14 females, 3 males, 5 telegymphs, 2 protonym-
phs and 7 larvae ex **Oriolus oriolus** (Passeriformes:
Oriolidae) from Akanyaru river, Rwanda, XII. 1955. 
Coll. A. FAIN. Holotype and paratypes in MRAC.

**Additional material:** 1 female ex **Lybius** sp. (Pic-
formes: Capitonidae), Akanyaru river, Rwanda, XII. 
1955. Coll. A. FAIN; 1 female ex **Indicator indicator** 
(Piciformes : Indicatoridae) with the same data; 2 
females and one male ex **Pachyphantes superciliosa** 
(Passeriformes: Ploceidae) with the same data; female 
ex **Chrysococcyx klaasi** (Cuculiformes: Cuculidae) 
with the same data.

**Comparative material:** Holotype and paratypes 
(3 females, 5 males, 5 telegymphs, 5 protonymphs 
and 5 larvae) of **Ornithocheyletia aitkeni** FAIN, 1972 
ex **Turdus fumigatus** (Passeriformes: Turdidae) from 
H. G. Aitken.

**Remarks:** (i) This new species is closest to **O. ait-
keni** and it is distinguished from this species by the 
following characters: In the female of **O. orioli** sp. 
<ref>nov., the length of setae l2 is 35-50 and l4 is 50-85; in 
telegymph (5 paratypes), setae l2 are 20-35 long and 
l4 are 50-66 long; in larva (3 specimens), posterior 
anal setae (65 long) are 1. 2 times shorter than l5 (80
In the female of *O. aitkeni* (holotype and 3 paratypes), the length of setae *l2* is 20-35 and *l4* is 35-48; in teleonymph (5 paratypes), setae *l2* are 17-20 and *l4* are 25-33; in larva (5 paratypes), posterior anal setae (30-40 long) are twice shorter than *l5* (70-80 long).

(ii) The mites were embedded in the hypertrophied epidermic layer of the skin.

4. *Ornithocheyletia wauthyi* sp. nov.  
(Fig. 6)

**Female** (holotype): *Gnathosoma* 86 long and 80 wide. Setae *rd* with basal tine. Peritremes with 3 links. *Idiosoma* 300 long (270 long in paratype) and 200 wide. **Dorsum:** Shields well sclerotized, with almost indistinguishable striations. Propodosomal shield 115 long and 175 wide; it bears setae *vi*, *ve*, *sci* and *dl*. Hysterosomal shield 135 long and 160 wide; it bears setae *l2* and *l3*. Distance between propodosomal and hysterosomal shields is 23. Setae *l5* set off the pygidial shield, separated by 60. Length of setae: *vi* 37, *ve* 43 and *sci* 50, *sce* 46 (52 in paratype), *li* 27 (35 in paratype), all barbed; *h* 180, *dl* 150, *di* 13, *l2* 17, *l4* 29 (31 in paratype), *l5* 200, all smooth, setae *l4* slightly thickened. Distances *sci-sce* 27 and *sce-h* 36 are subequal; distance between the posterior edge of the hysterosomal shield and *l4* is 10. **Venter:** All setae smooth except the external seta of the coxa III which is barbed. Internal part of the coxae I-II with fine striations. Intercoxal setae (*ic1*, *ic3*, *ic4*) subequal in the length. Genital setae *g1*, *g2* serrate. Anal setae *al-a3* smooth. **Legs.** Tibiae III-IV each bears 3 setae. Setae

![Diagram of Ornithocheyletia](image-url)
Fig. 6: *Ornithocheyletia wauthyi* sp. nov., female holotype. Dorsal view (A); coxae I-II (B). Scale line 100 μm.
Fig. 7: *Neocheyletiella queleae* sp. nov., female holotype. Dorsal view (A); palpal tarsus and palpal tibia in ventral view (B); tarsus I in ventral view (C) and dorsal view (D); seta ′ of tarsus I (E). Scale lines 100 μm (A) and 10 μm (B-E).
p', p" of legs I-IV with 4-5 tines. Solenidion of the tibia I curved, 5 long; solenidion of the genu I ovoid. Most of the dorsal setae of legs are long. Claws without basal angle.

**Host and Locality:** Holotype and 1 paratype, both females ex *Lamprocolius* sp. (Passeriformes: Sturnidae) from Rwanda. 6. II. 1958. Coll. A. FAIN. Holotype and paratype - in MRAC.

**Comparative Material:** Holotype and female paratype of *Ornithocheyletia lamprocolius* FAIN, 1972 ex *Lamprocolius chloropterus* (Passeriformes: Sturnidae) from Rwanda, 20. III. 1967. Coll. A. FAIN.

**Etymology:** This species is named in honour of Dr. G. Wauthy (Institut royal des Sciences naturelles de Belgique).

**Remarks:** The new species is closest to *O. lamprocolius* and it is distinguished from this species by the following characters: In the female of *O. wauthyi* sp. nov., the idiosoma is 270-300 long, setae II (27-35 long) 1.7 times shorter than sce, setae 14 are 29-31 long and slightly thickened. In *O. lamprocolius*, the idiosoma is 390 long, setae II and sce are subequal (58-65 long), setae 14 are 63-75, not thickened.

**Genus Neocheyletiella Baker, 1949**

This genus has been redefined and partly revised by FAIN (1980).

5. **Neocheyletiella queleae** sp. nov.  
(Fig. 7)

**Female** (holotype): *Gnathosoma* 85 long and 90 wide. Peritremes with 6 links, the 4 laterals being much larger than the internals. Dorsal setae of the palpal femur and the palpal genu are serrate. *Idiosoma* 360 long and 280 wide. *Dorsum:* Propodosomal shield triangular, 88 long, it covered by very fine transverse striations; setae vi situated on the anterior border of the shield. All setae smooth. Length of setae: vi 50, ve incomplete, sce 165, see, h 130, d1 66, d2 50, d3 75, d5 50, l1 150, l2 80, l4 and l5 169. *Venter:* Epimera I-II fused. Length of setae: pg1 95, pg2 115 and pg3 165. *Legs.* Chaetotaxy as in Fig. 7A. Tibia III bears 2 short ventral setae; tibia IV bears 1 long and strong dorsal setae and 2 short ventral setae.

**Male:** Unknown.

**Host and Locality:** Holotype female and 1 teleonymph paratype ex *Quelea quelea* (Passeriformes: Ploceidae) from Rubona, Rwanda, 11. X. 1955. Coll. A. FAIN. Holotype in IRSNB.

**Additional Material:** Female ex *Streptopelia semitorquata* (Columbiformes: Columbidae) from Kaninya, Rwanda, 18. V. 1955. Coll. A. FAIN.

**Comparative Material:** Female, male and teleonymph of *Neocheyletiella megaphallos* (LAWRENCE, 1959) ex *Estrilda* sp. (Passeriformes: Estrildidae) from Butare, Rwanda, 1955. Coll. A. FAIN.

**Remarks:** This new species is closest to *N. megaphallos* and it is distinguished from this species by the following characters: In the female of *N. queleae* sp. nov., setae pgl are present, setae sci are 165 long, the propodosomal shield is covered by very fine transverse striations. In the female of *N. megaphallos*, setae pgl are absent, setae sci are 110 long, the propodosomal shield is covered by strong longitudinal striations.

6. **Neocheyletiella athene** sp. nov.  
(Fig. 8)

**Female** (holotype): *Gnathosoma* 85 long and 90 wide. Peritremes with 6 links, the 4 laterals being much larger than the internals. Dorsal setae of the palpal femur and the palpal genu are serrate. *Idiosoma* 355 long and 265 wide. *Dorsum:* Propodosomal shield covered by fine longitudinal striations; setae vi situated on the anterior border of the shield. All setae smooth. Length of setae: vi 20, ve incomplete, sci 140, sce 130, h 140, d1, d2 and d3 17, d5 short, incomplete, l1 150, l2 75, l3 and l4 about 200, l5 incomplete. *Venter:* Epimera I-II fused. Setae pgl absent. Setae pg2 and pg3 about 140 long. *Legs.* Chaetotaxy as in Fig. 8A. Tibiae III and IV bearing 2 short ventral setae.

**Male:** Unknown.

**Host and Locality:** Holotype female ex *Athene brama* (Strigiformes: Strigidae) from India (bird died...
FIG. 8: Neocheyletiella athene sp. nov., female holotype. Dorsal view (A); seta p' of tarsus II (B). Scale lines 100 μm (A) and 10 μm (B).
Fig. 9: *Neocheyletiella lonchurae* sp. nov., male holotype in dorsal view. Scale line 100 μm.
FIG. 10: *Apodicheles apus* FAIR, 1979, female holotype. Dorsal view (A); palp in dorsal view (B) and ventral view (C); tarsus I in dorsal view (D) and ventral view (E). Scale lines 100 µm (A) and 10 µm (C-E).
in Antwerp Zoo), 22. XII. 1967. Coll. A. FAIN. Holotype in IRSNB


Remarks: This species is closest to *N. amandavae* and it is distinguished from this species by the following characters. In the female of *O. athene* sp. nov., setae *pg1* are absent, setae *l2* are 75 long. In female of *O. amandavae*, setae *pg1* are present, setae *l2* are 35 long.

7. *Neocheyletiella lonchurae* sp. nov.
(Fig. 9)


Female: Unknown.


Remarks: The male of this new species clearly differs from males of the other related species by the length of the penis.

Genus *Apodicheles* FAIN, 1979

8. *Apodicheles apus* FAIN, 1979
(Fig. 10)

This species has been shortly described ex *Apus caffer* (Apodiformes: Apodidae), from Rwanda (FAIN, 1979b). We give here a more complete description and the first figures of this species.

Female (holotype): Total length including the gnathosoma, in midline 365. *Gnathosoma*: Peritremes with 4 links. Palpal femur bears 4 setae: 1 serrate seta dorsally, 2 serrate setae and 1 smooth seta ventrally. Palpal genu with 1 dorsal serrate seta. Palpal tibia with 1 dorsal serrate seta and 2 smooth ventral setae. Palpal tarsus with 4 short and nude setae, solenidion of the palpal tarsus not visible. *Dorsum*: Propodosomal and hysterosomal shields are completely fused forming a common dorsal shield. This shield, about 195 long and 150 wide, is very poorly sclerotized and entirely striated. It bears the setae *vi, ve, sci, dl, d2* and *l2*. Setae *h, l4, l5, d4, d5* situated off this shield. Setae *h, ve, sci* and *l1* barbed, all other setae smooth. *Venter*: Ano-genital region bearing 2 pairs of paragenital setae (*pg*), 2 pairs of genital setae (*g*) and 2 pairs of anal setae (*a*). Length of setae: *vi* 25, *ve* 45, *sci* 33, *sce* 130, *h* 130, *d1*, *d2*, *d4*, *d5*, *l2* and *l4* 17, 15, 30, *pg1* 40, *pg2* 45, *g1* and *g2* 25. *Legs*: Chaetotaxy as in Fig. 10A.

Host and locality: Holotype female and 1 female paratype ex *Apus caffer* from Butare, Rwanda, VIII. 1954. Coll. A. FAIN.

Acknowledgements

This research is supported by the Belgian Federal Services for Scientific, Technical and Cultural Affairs.

References


FAIN (A.), 1979c. — Idiosomal and leg chaetotaxy in the Cheyletidae. — Int. J. Acarol. 5: 305-310.
