Acarologia is proudly non-profit, with no page charges and free open access

Please help us maintain this system by encouraging your institutes to subscribe to the print version of the journal and by sending us your high quality research on the Acari.

Subscriptions: Year 2019 (Volume 59): 450 €
http://www1.montpellier.inra.fr/CBGP/acarologia/subscribe.php
Previous volumes (2010-2017): 250 € / year (4 issues)
Acarologia, CBGP, CS 30016, 34988 MONTFERRIER-sur-LEZ Cedex, France

The digitalization of Acarologia papers prior to 2000 was supported by Agropolis Fondation under the reference ID 1500-024 through the « Investissements d’avenir » programme (Labex Agro: ANR-10-LABX-0001-01)

Acarologia is under free license and distributed under the terms of the Creative Commons-BY-NC-ND which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original author and source are credited.
A NEW *CHEYLETUS* (ACARINA : CHEYLETIDAE) FROM A BAT-ROOST

BY

I. G. Jeffrey *

INTRODUCTION

Among several slides of Cheyletid mites collected from bats, roosts in Hampshire, England (Woodroffe, 1956), were two bearing a *Cheyletus* species which did not agree with any descriptions in comprehensive works on the family Cheyletidae by Volgin (1969) and Summers and Price (1970). Woodroffe (1956) refers to these mites as follows. "An apparently undescribed species of *Cheyletus* was very abundant in the roost at Upton Grey. Males were nearly as common as females, which is unusual in Cheyletids; males are usually extremely uncommon and sometimes unknown". There is no record of further attempts to have these mites identified or described and they have remained in the collection of Pest Infestation Control Laboratory, Slough, England, until they were passed to me for study.

*Cheyletus woodroffei* is named for the late Mr. G. E. Woodroffe in recognition of his work on mites in nidicolous habitats.

*Dorsal idiosomal chaetotaxy.*

The chaetotaxy used in the following descriptions is that of Jeffrey (1976; 1978). The most anterior of the four pairs of dorsolateral setae on the propodosomal plate (the verticals of some authors) have been designated propodosomal dorsolateral (p.dl.) I, and the remaining three pairs numbered p.dl. II to IV. The single pair of aberrant dorsomedian "cloud setae" on the propodosomal plate of the female are designated propodosomal dorsomedian (p.dm.) as are the single pair of orthodox dorsomedians on the male propodosomal plate. The female *C. woodroffei* has six pairs of hysterosomal dorsolateral (h.dl.) setae, numbered h.dl. I to VI. H.dl. I are inserted on individual platelets, h.dl. II to IV on the main hysterosomal plate and h.dl. V and VI on the integument at the extreme posterior of the idiosoma. Two pairs of aberrant hysterosomal dorsomedian (h.dm.) setae are situated level with h.dl. II and h.dl. III on the hysterosomal plate. As in the female the h.dl. I setae in the male are situated on individual platelets, h.dl. II to IV are inserted on the hysterosomal plate and h.dl. V terminally on the integument. One pair of orthodox dorsomedians are present anterior to h.dl. II.

* Department of Agriculture and Fisheries for Scotland Agricultural Scientific Services, Edinburgh, Scotland.

Diagnosis

Both sexes of *C. woodroffei* n. sp. can be distinguished from other *Cheyletus* spp. except *C. linsdalei* Baker, by the width of the dorsolateral setae (plate 1) and the length of solenidion 0 on tibia I. Study of males and females of *C. malaccensis* Oudemans, *C. eruditus* (Schrank) and *C. trouessarti* Oudemans and of females of *C. aversor* Rhodendorf, *C. hendersoni* Baker and an undescribed species near *hendersoni* indicates that the length and shape of solenidion 0 is a reliable identification character (Fig. 4). Specimens of *C. linsdalei* were not examined but from descriptions by Baker (1949) and Summers and Price (1970) the greater number of aberrant dorsomedian setae, teeth on the palp claw and teeth on the inner and outer combs of the palp tarsus separate this species from *C. woodroffei*.

Descriptions

Female (Fig. 1).

*Gnathosoma*: Palp claw very slender (cf. *C. trouessarti* Fig. 3A) some specimens with a faint apophysis on the basal third of the claw, usually with 3 sharply pointed basal teeth (Fig. 3D), less commonly with 2 teeth (Fig. 1 and Fig. 3B), or with an intermediate condition (Fig. 3C). Palp tarsus twice as wide as long with 2 sickles, 2 combs and a small solenidion. Outer comb with 11-12 long blunt teeth, inner comb with ca. 15 teeth. Dorsal setae of palp femur with long fine barbs in closely set rows, in some specimens the angle between the barbs and the main axis is very acute giving the impression that the seta is barely pectinate. Proximal seta (that nearest the tegmen) 65 μ ± 10 μ, dorsolateral 48 μ ± 19 μ, posterolateral (that on the margin of the femur) 32 μ ± 4 μ. Protergum without distinctive decoration except for some continuation of the striae of the tegmen just anterior to the peritremes. Tegmen with broken striae spread fanwise from base, some thicker striae randomly dispersed, basal third with a group of cells each side of the midline containing numerous distinct pores. Peritremes with 3 transverse and 5 descending links per side.

*Idiosoma*: Propodosomal plate covers most of idiosoma, hysterosomal plate about two thirds area of propodosomal plate. No prominent decoration on either plate other than small pores and outlines of muscle bundles. Plates separated by a wide band of transversely striated integument. Propodosomal setae: 4 pairs of dorsolaterals, narrow spatulate (Plate 1) width 20-25 % of length, each with 3-5 rows of prominent sharp barbs. Propodosomal dorsolateral (p.dl.) I 37 μ ± 2 μ, II 33 μ ± 3 μ, III 35 μ ± 3 μ, IV 34 μ ± 4 μ. One pair of aberrant dorsomedian setae variable in shape, ca. 16 μ long, inserted just posterior to p.dl. IV. Humeral setae similar to dorsolaterals, 45 μ ± 4 μ. Hysterosomal setae: 6 pairs of dorsolaterals similar to those of propodosoma, first pair inserted on individual platelets. Hysterosomal dorsolateral (h.dl.) I 38 μ ± 4 μ, II 33 μ ± 3 μ, III 33 μ ± 3 μ, IV 33 μ ± 5 μ, V 34 μ ± 6 μ, VI 36 μ ± 8 μ. Two pairs of aberrant dorsomedians similar to those of propodosoma, first pair inserted on the level of h.dl. II, second pair between h.dl. III and IV.

*Genito-anal region*: 4 pairs of anal setae inserted on individual platelets, 3 pairs of scapular setae, 1 pair terminal and 2 pairs ventral.
Fig. 1. — *C. woodroffei* dorsum of female.
Legs: All legs with claws and rayed empodium; claws on tarsus I half to two thirds length of claws on tarsi II to IV. Chaetotaxy (Table 1): Leg I, tarsus 96 μ ± 10 μ, tibia 47 μ ± 3 μ, genu 48 μ ± 5 μ, femur 54 μ ± 10 μ, trochanter 33 μ ± 8 μ, total (measured from tip of claws to coxotrochanteral articulation) 274 μ ± 23 μ. Tarsal solenidion ωI 22 μ ± 1 μ, with fine acicular guard seta 38 μ ± 7 μ; tibia with solenidion 0 reaching tibia-tarsal articulation (Fig. 4A) 7 μ ± 1 μ; genu with solenidion σ ca. 5 μ. Addorsal setae minutely annulate. Leg II, tarsus 67 μ ± 7 μ, tibia 27 μ ± 2 μ, genu 37 μ ± 7 μ, femur 38 μ ± 8 μ, trochanter 31 μ ± 8 μ, total 201 μ ± 26 μ. Tarsal solenidion ωI 15 μ ± 1 μ. Leg III, tarsus 71 μ ± 7 μ, tibia 32 μ ± 9 μ, genu 43 μ ± 10 μ, femur 38 μ ± 13 μ, trochanter 39 μ ± 7 μ, total 222 μ ± 38 μ. Leg IV, tarsus 79 μ ± 10 μ, tibia 36 μ ± 10 μ, genu 51 μ ± 7 μ, femur 50 μ ± 15 μ, trochanter 44 μ ± 14 μ, total 260 μ ± 50 μ.

Body: Length of idiosoma 359 μ ± 37 μ, length of gnathosoma 154 μ ± 51 μ, total body length 511 μ ± 51 μ. Width (at level of humeral setae) 254 μ ± 40 μ. Length ratio: leg I to idiosoma 0.76.

Plate 1. — *C. woodroffei*, hysterosomal dorsolateral seta I.

Male (Fig. 2).

Gnathosoma: Palp claw with a single blunt conical basal tooth. Palp tarsus a little wider than long, with 2 sickles, 2 combs and a small solenidion. Outer comb with 11 long blunt teeth, inner comb with 9 teeth. Palp femur about twice as long as wide, dorsal setae as in female, proximal seta 53 μ, dorsolateral 67 μ, posterolateral 32 μ. Protegmen decorated with randomly...
Fig. 2. — *C. woodrofeli* dorsum of male.
distributed apophyses and with a pair of small alae. Anterior of tegmen ornamented with well
defined cells containing broken striae, microtubercules replacing striae within the cells of the pos­
terior of the tegmen. Peritremes form an inverted horseshoe with 3 transverse and 5 descending
links per side.

**Idiosoma**: Hysterosomal plate two thirds area of propodosomal plate, both plates without
prominent decoration and separated by transverse striae. Dorsal setae similar in form to female.
Propodosomal setae: 4 pairs of dorsolaterals, p.dl. I 30 μ, II 28 μ, III 28 μ, IV 28 μ, 1 pair of
dorsomedians 25 μ similar to dorsolaterals, inserted at the level of p.dl. IV. Humeral setae
similar to dorsolaterals and dorsomedians 35 μ. Hysterosomal setae: 5 pairs of dorsolaterals,
first pair on individual platelets, fifth pair on the extreme posterior margin of the idiosoma.
H.dl. I 28 μ, II 25 μ, III 21 μ, IV 23 μ, V 21 μ, 1 pair of dorsomedians 25 μ, similar to dorsola­
terals, inserted anterior to h.dl. II.

**Genito-anal region**: 2 pairs of dorsal papillae with narrow lancet-like setae, 1 pair of terminal
papillae with short sickle setae.

**Legs**: Claws as in female. Chaetotaxy (Table 1): Leg I, tarsus 97 μ, tibia 61 μ, genu 61 μ,
femur 61 μ, trochanter 25 μ, total 305 μ. Tarsal solenidion oI 30 μ, guard seta 46 μ, tibia with
solenidion 6 μ, genu with solenidion 3 μ. Addorsal setae minutely annulate. Leg II, tarsus
61 μ, tibia 28 μ, genu 40 μ, femur 35 μ, trochanter 23 μ, total 187 μ. Tarsal solenidion oI 14 μ.
Leg III, tarsus 61 μ, tibia 28 μ, genu 39 μ, femur 30 μ, trochanter 35 μ, total 193 μ. Leg IV,
tarsus 67 μ, tibia 32 μ, genu 48 μ, femur 39 μ, trochanter 41 μ, total 227 μ.

**Body**: Length of idiosoma 285 μ, length of gnathosoma 220 μ, total body length 505 μ. Width
205 μ. Length ratio: leg I to idiosoma 1.1.

<table>
<thead>
<tr>
<th>Table 1. Chaetotaxy of leg segments of Cheyletus woodroffei n. sp. (figures in brackets indicate a solenidion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trochanters</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Male</td>
</tr>
</tbody>
</table>

**Key to females of Cheyletus with guard setae on tarsus I longer than solenidion oI**
(based on Summers and Price 1970)

1. Guard seta on tarsus I absent or obviously shorter than solenidion oI..........................
   Guard seta of tarsus I present and obviously longer than solenidion oI.......................... 2
2. With setae h.dl. I arising on principal hysterosomal plate........... *cacahuamilpensis* Baker.
   With seta h.dl I arising on individual platelets................................. 3
3. With 8 pairs of aberrant dorsomedian setae................................. *linsdalei* Baker.
   With not more than 3 pairs of aberrant dorsomedian setae.......................... 4
4. Palp claw with 2 basal teeth................................. *aversor* Rohdendorf.
FIG. 3. — Pulp claws of (A) *C. trouessarti*, (B, C and D) *C. woodroffe*.  
FIG. 4. — Solenidion Θ on tibia I of (A) *C. woodroffe*, (B) *C. trouessarti*, (C) *C. eruditus*, (D) *C. hendersoni*, (E) *C. malaccensis*, (F) *Cheyletus* sp. nr. *hendersoni*, (G) *C. aversor*. 

---

50μm

A B C D

50μm

A B C D

E F G

4
Palp claw with 3 basal teeth (occasionally 2 teeth), dorsolateral body setae narrow spatulate, solenidion ϑ on tibia I long and slender, reaching tarsus-tibial articulation. 53. woodroffi n. sp. 
Palp claw with 3 or 4 basal teeth, solenidion ϑ on tibia I short club shaped, not reaching tarsus-tibial articulation. 

5. Dorsolateral body setae flattened to form a thin, narrow fusiform or parallel sided blade; no dorsolaterals flagelliform. 5. troubessarti Oudemans. Dorsolateral body setae not noticeably flattened; some dorsolaterals flagelliform. hendersoni Baker.

**Material Examined**


**Deposition of Specimens.**


**Acknowledgements**

I am grateful to Mr. D. Macfarlane of the Commonwealth Institute of Entomology for helpful comment and to my colleague Mrs. Helen B. McNeil who checked the measurements used in this paper.

**Summary**

C. woodroffi a new Cheyletus from a bat roost is described. The use of solenidion ϑ on tibia I as an identification character is discussed and a key to related species is included.

**Résumé**

On décrit C. woodroffi un nouveau Cheyletus d’un perchoir de chauve-souris. On discute l’emploi du solénidion ϑ ou tibia I comme caractère d’identification et une clé des espèces considérées est donnée.

**References**


