

**Two new species of Cheyletidae (Acari Prostigmata) of the genera
Neoeucheyla RADFORD, 1950 and
Granulocheyletus FAIN & BOCHKOV, 2002**

by A. FAIN

Institut royal des Sciences naturelles de Belgique, rue Vautier 29, B-1000 Bruxelles.

Abstract

Two new species of mites of the family Cheyletidae (Acari: Astigmata) are described: *Neoeucheyla bochkovi* n.sp., found from flowers in Algeria and *Granulocheyletus gallowayi* n.sp. from the nest of an oceanic bird *Eudyptula albosignata* in New Zealand.

Introduction

Two new species of Cheyletidae (Acari: Astigmata) are described here: *Neoeucheyla bochkovi* n.sp. discovered on flowers in Algeria and *Granulocheyletus gallowayi* n.sp. from the nest of *Eudyptula albosignata* in New Zealand. The genus *Neoeucheyla* Radford, 1950 includes now five valid species and several other insufficiently described or belonging to other genera. The genus *Granulocheyletus* FAIN & BOCHKOV, 2002 was represented until now by two species: *G. corpuzraroae* FAIN & BOCHKOV, 2002, described from a cave in W. Australia and *G. kureatollensis* (GOFF, 1982) from the Hawaiian Islands. A third, new species, is now added to this genus: *G. gallowayi* from New Zealand.

Abbreviations: IRSNB = Institut royal des Sciences naturelles de Belgique.

The chaetotaxy of the body follows FAIN, 1979 and FAIN *et al.*, 1997.

Family CHEYLETIDAE

Genus *Neoeucheyla* RADFORD, 1950

The genus *Neoeucheyla* forms with two other genera, *Bothrocheyleta* Volgin, 1964 and *Cunlifella* Volgin, 1969, a small group of closely related genera. The taxonomic status of the members of this group have been discussed by BOCHKOV & MIRONOV (1997) and FAIN & ARDESHIR (2000).

In the present paper we will restrict the genus *Neoeucheyla* to the species presenting the following combination of characters: peritremes in an inverted U without vesicular chambers, all the

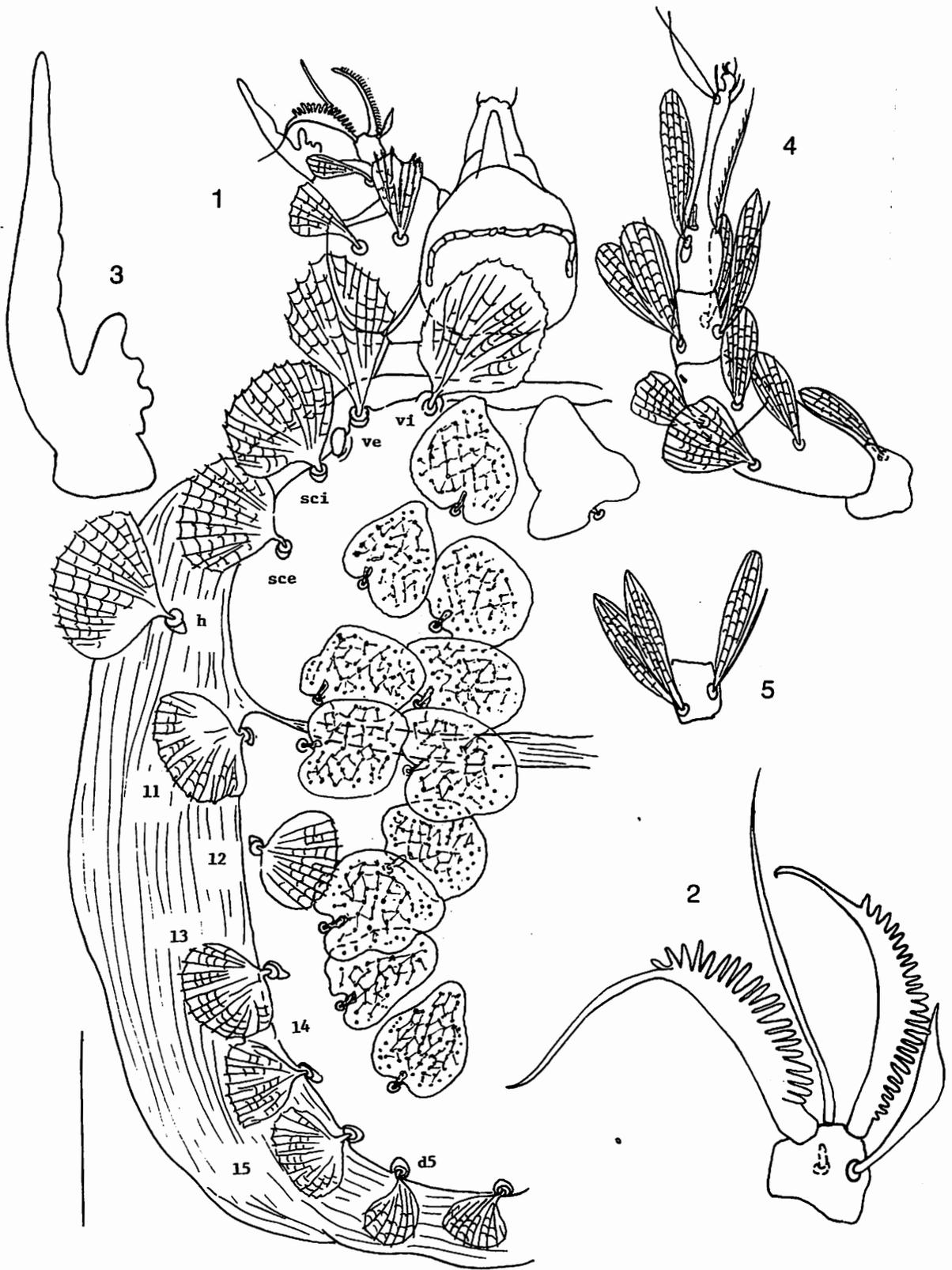
median and submedian setae on the two dorsal shields aberrant, cloudlike and not mixed with normal setae, inner sickle-like seta of palpal tarsus inflated. This group includes the following species: *N. loricata* (Berlese, 1913), *N. macrocorneus* Soliman, 1975, *N. iranica* Fain & Ardeshir, 2000 and *N. bochkovi* n.sp.

We have not retained in this group three other species described in the genus *Neoeucheyla*: *N. minuta* Barelo, 1986, *N. ornata* Wafa & Soliman, 1968 and *N. mumai* Volgin, 1969, because in these species the median and submedian setae of the dorsal shields are not modified but similar to the dorso-lateral setae (flabellate or fan-like). According to BOCHKOV & MIRONOV (1997) *N. mumai* could be a synonym of *N. ornata*.

***Neoeucheyla bochkovi* n. sp.**

This new species is named for the brilliant Russian Acarologist Dr Andrei Bochkov, of the Russian Academy of Sciences, St Petersburg, Russia.

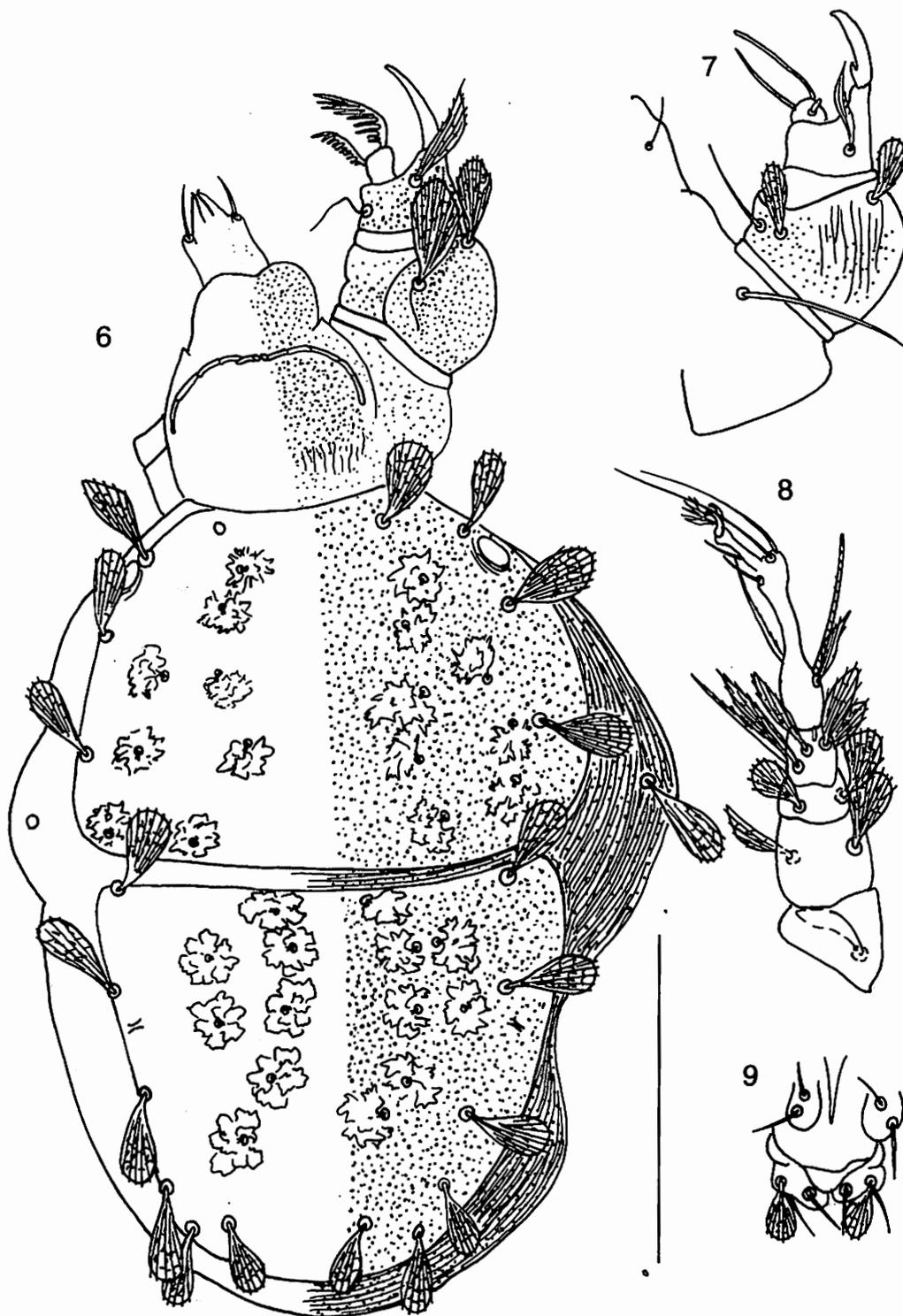
Female, holotype (Figs 1-5): Idiosoma 430 long and 405 wide. Total length, including gnathosoma, 570. **Gnathosoma**: Palpal tarsus with inner falciform seta inflated 30 long, outer falciform seta thin 48 long. Outer comblike seta toothed in its basal half or two thirds, inner comblike seta with teeth in its basal three quarters. Palpal tibia with two ventral setae, the inner piliform, the outer fan-like. Tibial claw almost straight, 60 long, bearing in its basal third a large blunt tooth divided on its base into three unequal much smaller teeth. Palpal genu with a large fan



Figs 1-5. *Neoeucheyla bochkovi* n.sp. Female in dorsal view (1), palpal tarsus (2), tibial claw (3), leg I in dorsolateral view (4) tibia of leg I (5). Scale line (fig 1) 100 μ m.

like seta. Palpal femur with two large and unequal dorsal setae, the outer smaller and fan-like, the inner larger and incised apically. Peritremes in an inverted-U, with 6 or 7 links. **Idiosoma:** Dorsum

with two large median shields completely devoid of striations or punctations. These shields bear in their median or submedian regions 11 pairs of aberrant setae, flattened and cloudlike (five pairs



Figs 6-9. *Granulocheyletus gallowayi* n.sp. Female in dorsal view (6), palp in ventral view (7); leg 1 in dorsal view (8), ano-genital area (9). Scale line (fig. 6) 100 μ m.

on anterior and six pairs on posterior shield). All these setae bear a fine reticulum and numerous very small granulations either rounded or slightly conical and pointed. Anterior and lateral parts of these shields bearing the normal setae (*vi*, *ve*, *sci*, *sce*, *ll* to *l5*, *d5*). The setae *h* are on the soft skin. All these setae are fan-like. **Venter:** All coxal setae piliform, except anterior seta of coxae III

which is fan-like. **Legs:** Tarsi I-IV 104-81-88-93 long. All the tarsi are strongly narrowed in their apical two thirds. Chaetotaxy of tarsi (solenidia excluded): Tarsus I with 6 apical or subapical thin setae, basal third with two long setae, one thick barbed, the other flabellate (guard seta). Tarsi II to IV as tarsus I but without the flabellate seta; solenidion ω 10 long.

Diagnosis:

We have compared the redescription of *N. loricata* by Volgin, 1969, with our new species and observed the following differences. In *N. loricata* the idiosoma is 280 long, the anterior transverse part of the peritremes is slightly concave in its middle, the median and submedian aberrant setae (5 pairs + 5 pairs) of the shields bear a strong reticulum without granulations, the tarsi IV bear 2 thin and short setae in their median part and the palpal tibial claw is much shorter and bears only one large basal tooth.

In *N. bochkovi* the idiosoma is 430 long, the anterior transverse part of the peritreme is straight, the dorsomedian and submedian aberrant setae bear a faint granulated reticulum, tarsi IV with only one median long and strong barbed seta reaching the bases of the claws, palpal tibial claw much longer and straight bearing basally one large and 3 much smaller teeth, with 5 pairs + 6 pairs of aberrant setae in the median and submedian areas of dorsal shields.

N. bochkovi is also clearly distinct from *N. macrocorneus* Soliman, 1975 by the following characters: In this last species the median and submedian areas of the dorsal shields bear 16 pairs of aberrant cloudlike setae (8 in anterior and 8 in posterior shield), completely devoid of reticulum and granulations, the palpal tibial claw is relatively very short and bears four large teeth extending almost to the tip of the claw. In *N. bochkovi* there are only 11 pairs of dorsal aberrant setae and these setae bear a granulated reticulum, the palpal tibial claw is longer and bears in its basal third one large blunt tooth and 3 much smaller teeth more basally.

N. bochkovi differs from *N. iranica* by several important characters. In this last species the palpal tibial claw is very thick and bears 6 strong triangular teeth in the apical third of the claw, the dorsal shields bear 23 pairs of aberrant cloud like setae bearing a reticulum without granulations. In *N. bochkovi* the palpal tibial claw is relatively very long, straight and bears in its basal part one strong blunt and three much smaller rounded teeth and the dorsal shields bear only 11 pairs of aberrant cloudlike setae.

Host and locality:

The holotype female, and only known specimen of this species, was collected from a flower in a garden in Alger, Algeria. This specimen is deposited in IRSNB.

Genus *Granulocheyletus* Fain & Bochkov, 2002***Granulocheyletus gallowayi* n. sp.**

This new species is named for Dr T. Galloway, University of Manitoba, Canada, who collected this mite in New Zealand.

Female, holotype (figs 6-9): **Gnathosoma** 99 long and 100 wide at its base. Femur 45 long and 48 wide, palpal tibia with a claw 26 long bearing a tooth in its basal third. All the segments of the gnathosoma and the palps are densely covered with fine granulations. Palpal-tarsus with two comblike setae bearing numerous teeth and two thin sickel-like setae. Palpal-tibia with three setae, one dorsal flabellate and two ventral of which one flabellate and one thin piliform. Genu without setae. Femur with 5 setae, 4 flabellate and 1 piliform. Peritreme in an inverted-U with 5 links at both sides. **Idiosoma**: 258 long and 210 wide. Dorsal shields densely covered with fine granulations and bearing laterally the setae *vi*, *ve sci*, *sce*, *ll* to *l5*, all flabellate; the median and submedian setae, are aberrant and cloudlike (8 pairs on propodonotal shield and 7 pairs pairs on hysteronotal shield). Setae *h* on soft skin. Eyes normally developed. **Legs**: Tarsi I to IV 68-45-45-51 long. Tarsi I strongly narrowed in their apical two-thirds, other tarsi much less or not constricted apically, solenidion ω 37 long, the guard seta is foliate and 21 long. Venter: Seta *a3* and anterior seta of coxa III flabellate.

Diagnosis:

G. gallowayi is distinguished from *G. kurea-tollensis* (Goff, 1983) described from Kura Atoll, Hawaiian Islands, by several important characters. In this species the idiosoma measures 320 × 225, the dorsal shields bear 14 pairs of aberrant median or submedian setae (7 pairs on each shield). The hysteronotal shield bears setae *ll* to *l4*, the *l5* is set on the soft cuticle, far behind the shield. On the gnathosoma the tarsus I bears a long solenidion about twice as long as the guard seta, which is foliate. The claw of the palpal tibia is very thick at its base where it bears 7-9 teeth. In *G. gallowayi* the idiosoma is 258 long and 210 wide, the dorsal shields bear 15 pairs of aberrant setae (7 and 8 pairs), the solenidion of tarsus I is 37 long, the guard seta 21 long, and the palpal tibial claw bears one basal tooth.

G. corpuzrarosae Fain & Bochkov, 2002, described from Australia, differs from our new species by the following characters: aberrant setae

on the shields less numerous (only 17 setae) and more rounded, on tarsus I the solenidion is distinctly shorter than the guard seta and the latter is a thick not foliate barbed hair.

Host and locality:

Holotype female, and only known specimen, from the nest of *Eudyptula albosignata* from Motunau Island, New Zealand. Coll. T. Galloway. Holotype deposited in the Museum of New Zealand Te Papa Tongarewa., Wellington, New Zealand.

**Key to the species of the genus
Granulocheyletus (Females)**

- 1. Tarsi I with a foliate guard seta much shorter than the solenidion ω . Dorsal shields with 28 to 30 aberrant setae. Palpal tibia claw with either one or 7-9 teeth 2
- Tarsi I with a thick barbed guard seta longer than the solenidion ω . Dorsal shields with 17 aberrant setae. Palpal tibial claw with one basal tooth
... *G. corpusrarosae* Fain & Bochkov, 2000
- 2. Palpal tibial claw with 7 -9 teeth in its basal half or two thirds. Dorsal shields with 28 aberrant setae
..... *G. kureatollensis* (Goff, 1982)
- Palpal tibial claw with a single basal tooth. Dorsal shields with 30 aberrant setae
..... *G. gallowayi* n.sp.

References

BARILO A.B., 1986. - New species of Stigmaeid and Cheyletid mites (Acariformes, Sitgmaeidae). *Nauchnyye Doklady Vyssbey Sbkoly Series Biologii*

Zhurnal, 1: 25-29 (in Russian).
 BERLESE A., 1913. - *Acari Nuovi. Redia* 9 (1): 77-105.
 BOCHKOV A.V. & MIRONOV S.V., 1997. - On a taxonomy of predatory mites of the genus *Neoeucheyla* Radford, 1950 and related genera (Acari, Cheyletidae). *Acarina* 5 (1-2): 73-78.
 FAIN A., 1979. - Idiosomal and leg chaetotaxy in the Cheyletidae. *International Journal of Acarology* 5(4): 305-310.
 FAIN A., SMILEY R. & GERSON U., 1997. - New observations on the chaetotaxy and the solenidiotaxy in the Cheyletidae (Acari: Prostigmata). *Bulletin de l'Institut royal des Sciences naturelles de Belgique*, 67: 65-87.
 FAIN A. & ARDESCHIR F., 2000. - Notes on the genus *Neoeucheyla* Radford, 1950 (Acari, Cheyletidae) with description of a new species from Iran. *International Journal of Acarology* 26(4): 329-334.
 FAIN A. & BOCHKOV A.V., 2002. - A new genus and species of Cheyletid mite (Acari Cheyletidae) from a cave in Australia. *International Journal of Acarology* 28(1): 37-40.
 GOFF L.M., 1982. - A new species of *Hemichyletia* (Acari: Cheyletidae) from Kura Atoll, Northwestern Hawaiian Islands. *Proc. Hawaiian Entomol. Soc.* 24(1): 83-86.
 RADFORD C.D., 1950. - Systematic list of the genera and type species. *International Union of Biological Sciences* (ser C, n°1): 1-232.
 SOLIMAN Z.R., 1975. - Three new species of Cheyletid mites from Egypt (Acari: Prostigmata) with a key to the genera. *Acarologia* 17 (1): 95-102.
 VOLGIN V.I., 1964. -Data on the taxonomy of predaceous mites of the family Cheyletidae VII. Genus *Neoeucheyla* Radford. *Parazitologii Sbornik*: 28-99 (in Russian).
 VOLGIN V.I., 1969. - Acarina of the family Cheyletidae of the World. *Academy of Sciences USSR*, 101: 1-31 (In Russian).