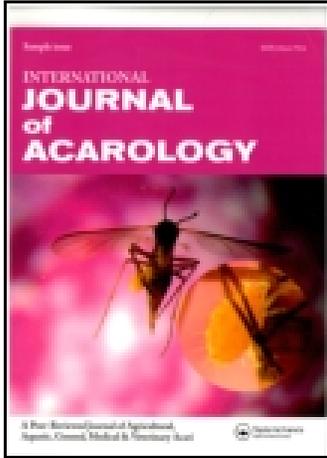


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### New observations on species of the genus *Ophionyssus* Mégnin (Acari: Macronyssidae) parasitic on lizards of the genus *Gallotia* Boulenger (Reptilia: Lacertidae) from the Canary Islands, Spain with description of a new species

Alex Fain <sup>a c</sup> & Brigitte Bannert <sup>b</sup>

<sup>a</sup> Institut royal des Sciences naturelles de Belgique , Rue Vautier 29, 1000, Bruxelles, Belgium

<sup>b</sup> Institut für Biologie , Freie Universität Berlin , Königin-Luise-Str. 1-3, D-14195, Berlin, Germany

<sup>c</sup> Institut für Molekulare Parasitologie , Humboldt-Universität zu Berlin , Philipstr. 13, D-10115, Berlin, Germany E-mail:

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**NEW OBSERVATIONS ON SPECIES OF THE GENUS *OPHIONYSSUS* MÉGNIN  
(ACARI: MACRONYSSIDAE) PARASITIC ON LIZARDS OF THE GENUS *GALLOTIA*  
BOULENGER (REPTILIA: LACERTIDAE) FROM THE CANARY ISLANDS, SPAIN  
WITH DESCRIPTION OF A NEW SPECIES**

**Alex Fain<sup>1</sup> and Brigitte Bannert<sup>2</sup>**

*1. Institut royal des Sciences naturelles de Belgique, Rue Vautier 29, 1000 Bruxelles, Belgium. 2. Institut für Biologie, Freie Universität Berlin, Königin-Luise-Str. 1-3, D-14195 Berlin, Germany (Current address: Institut für Molekulare Parasitologie, Humboldt-Universität zu Berlin, Philippstr. 13, D-10115 Berlin, Germany, e-mail: brigitte.bannert@museum.hu-berlin.de)*

**ABSTRACT** - The geographical distribution of species of the genus *Ophionyssus* Mégnin (Acari) parasitic on lacertid lizards of the genus *Gallotia* Boulenger, endemic to the Canary Islands, is studied. A new species *Ophionyssus dolatelacensis* n. sp. (Acari: Macronyssidae) is described from *Gallotia atlantica* from the island of Lanzarote, Canary Islands, Spain.

**Key words** - Acari, Macronyssidae, *Ophionyssus*, taxonomy, parasitic mites, Reptilia, lizards, *Gallotia*, Canary Islands, Spain.

### INTRODUCTION

Fain and Bannert (2000) described two new species of *Ophionyssus* Mégnin, 1884 (Acari: Macronyssidae) parasitic on lizards of the genus *Gallotia*, endemic to the Canary Islands, Spain. One of these species, *O. galloticolus* Fain and Bannert, was collected from *Gallotia galloti eisentrauti* in Bajamar, Tenerife. The second species, *O. setosus* Fain and Bannert, was found on *Gallotia stehlini* in San Lorenzo, Gran Canaria.

The promising results led the junior author to extend her investigations to three other islands of the Canarian Archipelago, i. e. El Hierro, La Gomera and Lanzarote. These islands are inhabited by three other species (or subspecies) of lizards of the genus *Gallotia*, i.e., *G. caesaris* and *G. simonyi* (both on El Hierro and La Gomera) and *G. atlantica* on Lanzarote.

More recently (April 2002), the junior author collected a series of mites of the genus *Ophionyssus* from the lizard *Gallotia galloti palmae* on two locations on the island La Palma, Canary Islands. All these mites belong to *Ophionyssus galloticolus* Fain and Bannert.

The material collected during the present work included a new species, *Ophionyssus dolatelacensis* n. sp., from Lanzarote, and numerous specimens of *O. galloticolus* from several new hosts and localities. These are presented below.

### MATERIALS AND METHODS

Mites were sampled in the field from *Gallotia caesaris caesaris* from Guinea, El Hierro island. Mites from *Gallotia simonyi machadoi*, a relict population near Guinea on El Hierro, were collected from specimens maintained in an outdoor terraria at the lizard breeding center "Centro de Reproducción e Investigación del Lagarto Gigante de El Hierro" at Guinea.

Mites were also collected from wild-caught lizards *G. caesaris gomerae* from Antoncojo on the island of La Gomera. Mites from *G. simonyi bravoana* (= *G. simonyi gomerae*), an endemic lizard to La Gomera, and almost extinct, were obtained from specimens maintained in an outdoor terraria of the lizard breeding center "Centro de Reproducción e Investigación del Lagarto Gigante de La Gomera" at Antoncojo.

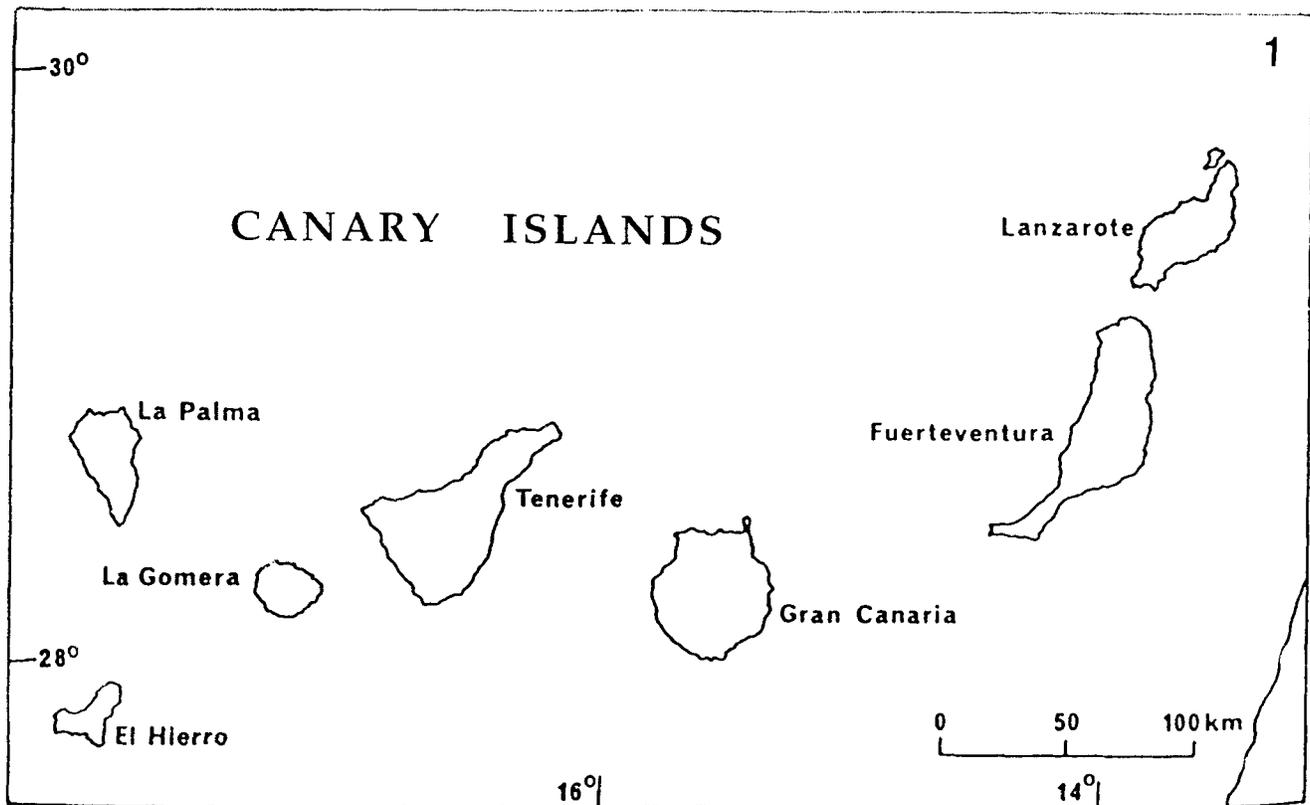


Fig. 1. Map of the Canary Islands.

Mites were also collected from wild-caught lizard *Gallotia atlantica* from Haria, on the island of Lanzarote.

Specimens of the endemic lizard *Gallotia galloti palmae* were caught at two sites: Mirca / Santa Cruz de La Palma (in the east) and Tazacorte (in the south) on the island of La Palma. Mites were collected from lizards from both sites.

Mites were very abundant on all lizard species. Rearing of mites from La Gomera and Lanzarote was conducted in the laboratory in separate mite-proof terraria, on their natural hosts *G. caesaris gomerae* and *G. atlantica*, respectively (Bannert *et al.*, 2000). Host lizards were maintained as described previously by Bannert (1998). In order to minimize extreme blood loss, individual host lizards were exposed to the mites no longer than three weeks.

Collected mites were preserved in 70% ethanol. They were cleared in lactic acid before mounting in polyvinyl lactophenol or Hoyer's medium.

All measurements are in micrometers ( $\mu\text{m}$ ). Setal nomenclature of the dorsal shield follows Evans and Till (1979).

## RESULTS

### Genus *Ophionyssus* Mégnin, 1884

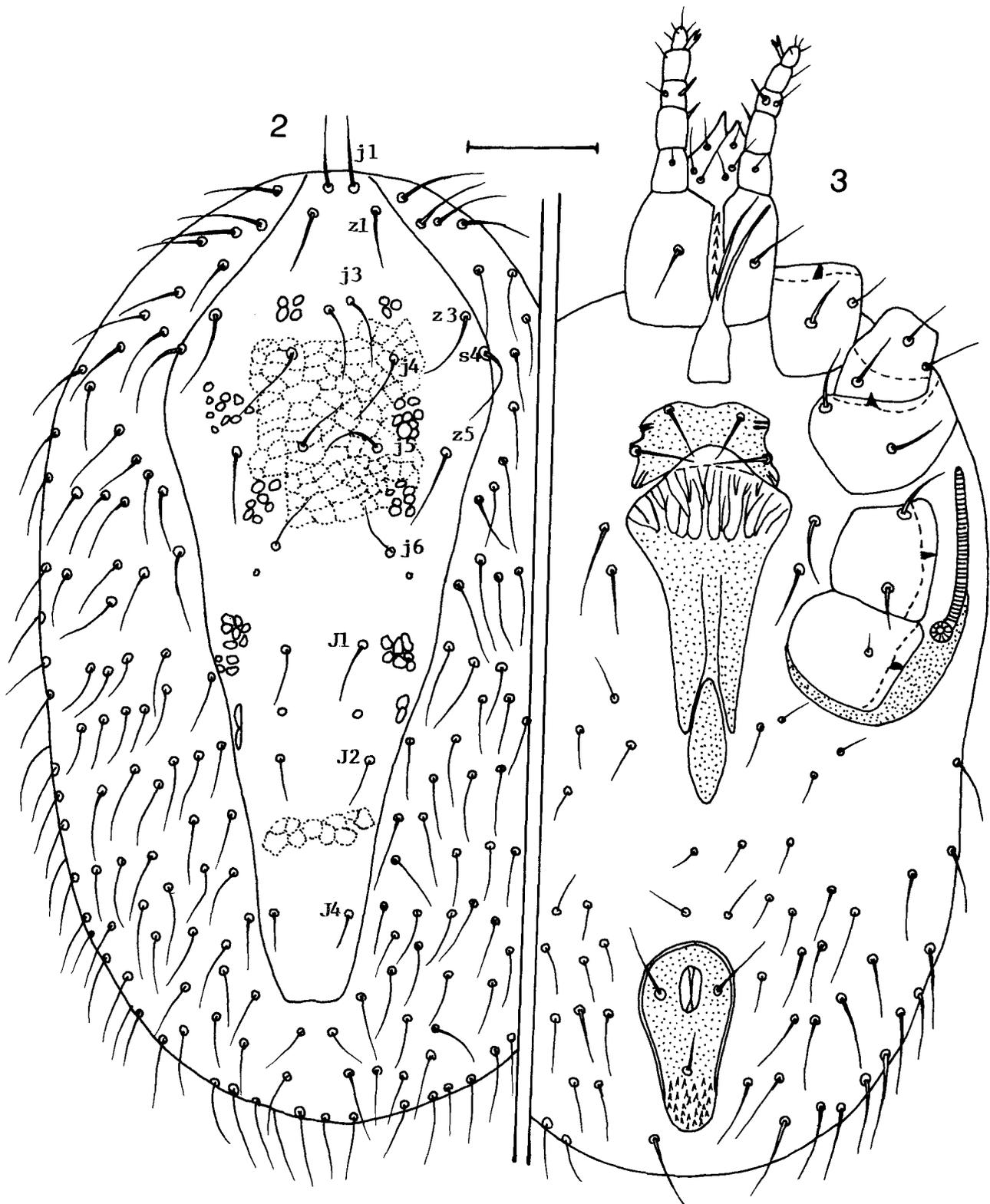
#### *Ophionyssus galloticolus* Fain and Bannert, 2000

This species was described from *Gallotia galloti eisentrauti* from Bajamar, Tenerife, and until now was known only from this host and locality.

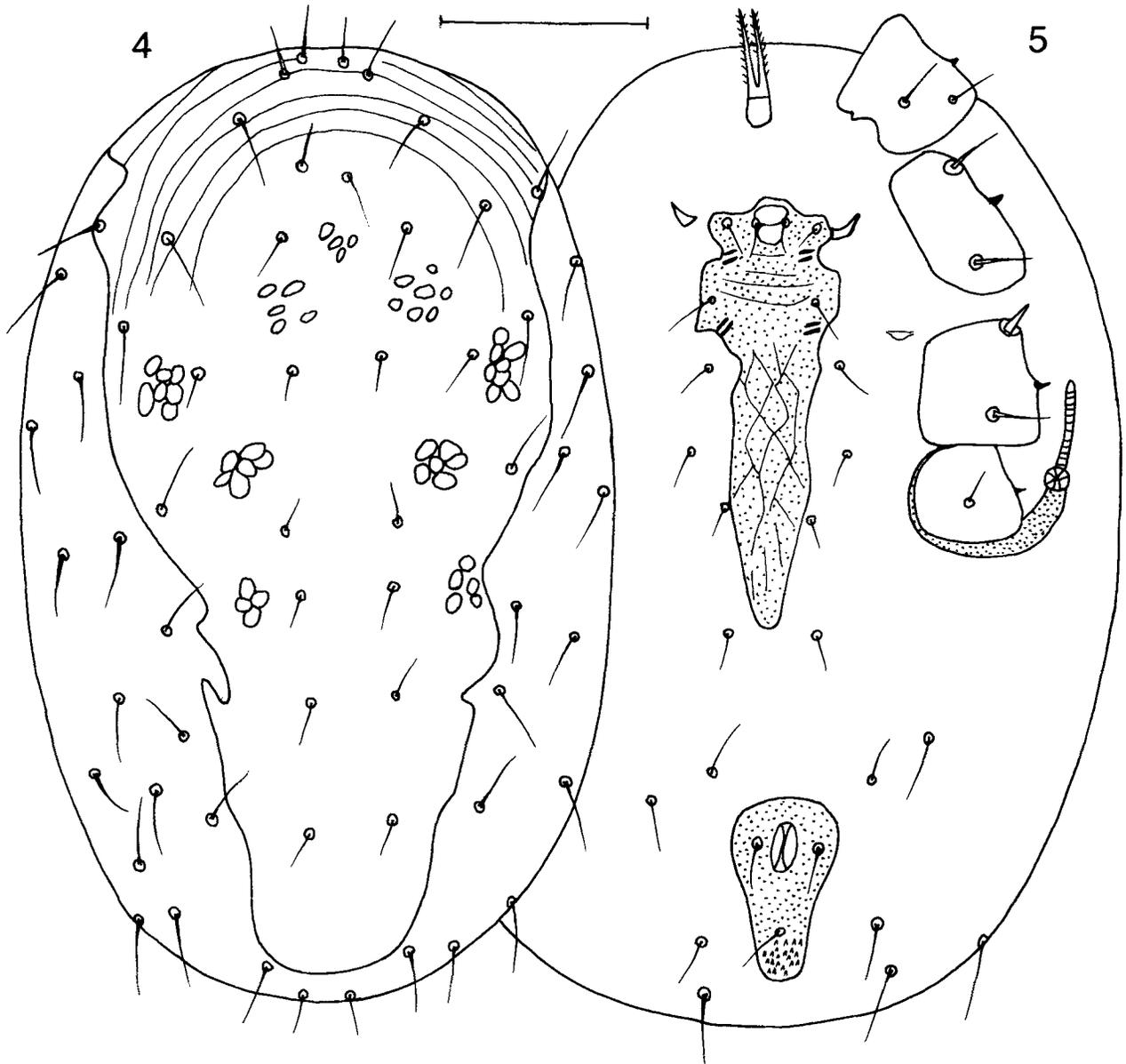
New investigations on other hosts and localities on the Canary Islands (Fig. 1) reveal that this species actually has a much wider distribution than expected. We give herein a list of the new hosts and localities for this species.

1. *Gallotia simonyi machadoi*, from Guinea, El Hierro -Numerous females, 2 males and 9 protonymphs.

The females collected from this locality agree perfectly with the typical specimens except for two characters. The first is the length of the dorsolateral setae which are a little longer than in the type specimens. The second difference consists of the shape of the dorsal shield which is slightly more elongate than in the type specimens. The shield ratio (length/width) varies from 1.9 to 2.0 in these specimens while in the type *O. galloticolus*, it varies from 1.5 to 1.9, and in *O. setosus* from 2.0 to 2.2. These specimens are therefore considered intermediate between these



Figs. 2-3. *Ophionyssus dolatelacensis* n. sp. (Female) - 2. dorsum, 3. venter (scale line = 100  $\mu$ m).



Figs. 4-5. *Ophionyssus dolatelacensis* n. sp. (Male) - 4. dorsum, 5. venter (scale line = 100  $\mu$ m).

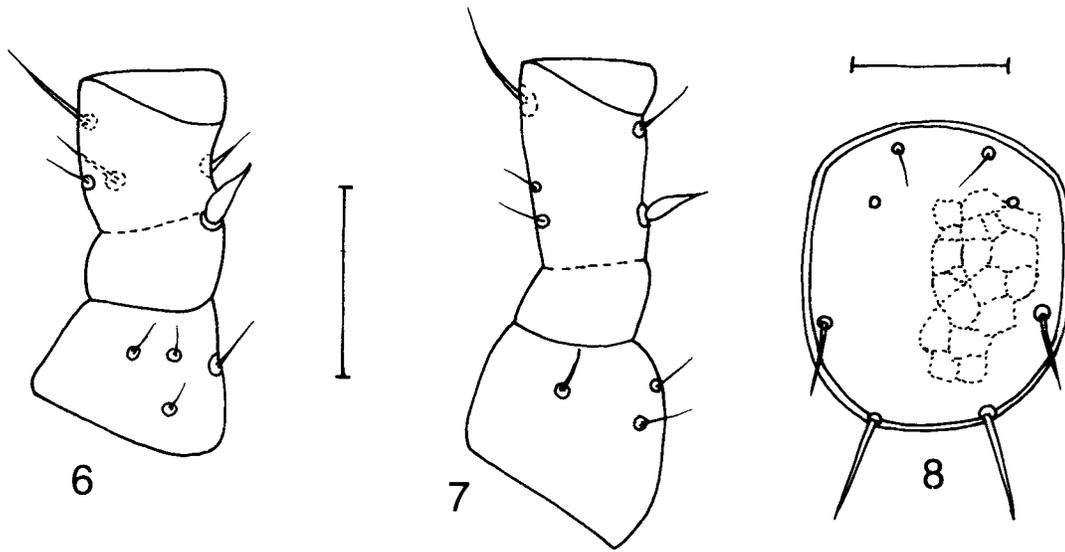
two species. However, they are not separable from *O. galloticolus* in length of peritremes, shape of sternal shield and chaetotaxy of the scutum (presence of *J6* and absence of *z2*). These characters seem to be specific for *O. galloticolus* and are different in *O. setosus*. In this last species, *J6* are always absent and *z2* always present.

2. *Gallotia caesaris caesaris* from Guinea, El Hierro - Only protonymphs were collected and therefore impossible to identify the specimens to species level. The lizards, *G. simonyi* and *G. caesaris*, live in sympatry in the same locality at Guinea, El Hierro.

3. *Gallotia simonyi bravoana* (= *G. simonyi gomerana*) from Antoncojo, La Gomera - These mites are not separable from *O. galloticolus*.

4. *Gallotia caesaris gomerae* from Antoncojo, La Gomera - These mites belong to *O. galloticolus*.

5. *Gallotia galloti palmae* from Mirca / Santa Cruz de La Palma (in the east) and from Tazacorte (in the south), both sites on La Palma - These mites belong to *O. galloticolus*.



Figs. 6-8. *Ophionyssus dolatelacensis* n. sp. - 6. Femur and trochanter III (ventral) in male, 7. Femur and trochanter IV (ventral) in male; 8. pygidial shield in protonymph (scale lines = 50  $\mu$ m).

### *Ophionyssus setosus* Fain and Bannert, 2000

This species is still known only from the type series collected from *Gallotia stehlini* from San Lorenzo, Gran Canaria.

### *Ophionyssus dolatelacensis* n. sp. (Figs. 2-8)

**FEMALE** (Figs. 2, 3), Holotype - Maximum length and width of idiosoma 738 x 450; 6 paratypes: 870 x 535, 744 x 605, 738 x 600, 720 x 486, 630 x 540 and 603 x 584. **Dorsum:** Length and maximum width of scutum 633 x 225 (ratio of length x width 2.4); 5 paratypes: 597 x 246 (ratio 2.42), 588 x 240 (ratio 2.45), 580 x 228 (ratio 2.54) and 540 x 201 (ratio 2.5). Ratio of 6 other paratypes varies from 2.4-2.9. Scutum with reticulate pattern, and 12 pairs of setae; setae *J6* and *z2* lacking in all specimens. Length of scutal setae: *j1* 45, *j3* 60-65, *j4* 60 (in a paratype), *j5* 40, *j6* 27, *z1* 63, *z3* 60, *z5* 42, *s4* 63, *J1* 39, *J2* 33, *J4* 21. Soft cuticle of idiosoma with about 120-130 dorsolateral pairs of setae, 30-65 long, and about 40 ventral pairs, 25-48 long, most setae curved. **Venter:** Tritosternum with the base, 30 long, and 2 short setulose laciniae, 100 long. Sternal shield slightly trapezoidal, with anterior border concave, 45 long in midline and 65 long laterally, distance *st2-st12* 105. Length of sternal setae *st1* 38, *st2* 36, *st3* 38, *st4* 42. Genital shield prolonged anteriorly by a membranous and rounded lobe, total length, including lobe, 350. Peritremes narrow, 126 long, reaching posterior third of coxae II. Anal shield 138 long, 75 wide, with 2 anterior setae, 35, and 1 posterior seta, 30 long. Chelicerae with

an anterior segment, 145 long (including fixed digit) and a posterior segment, 30 long. Moveable digit 42 long.

**MALE** (Figs. 4 - 7) - Length and width of idiosoma in 3 paratypes: 465 x 315, 450 x 250 and 425 x 260. **Dorsum:** Holodorsal shield with very irregular margins, about as long as wide, distinctly narrowed in its posterior half, bearing transverse and convex lines in its anterior part, and 15 pairs of thin setae, 12-35 long. Soft cuticle with 16 pairs of slightly thicker setae, 25-30 long. **Venter:** Sternogenital shield 190 long, 63 wide anteriorly, bearing pattern of transverse lines in anterior one third and a network of lozenges in posterior two thirds. Anal shield 85 long, 54 wide. Peritremes 50 long, extending to middle of coxa III. Opisthogaster with 5 pairs of setae, 15-30 long. **Legs:** Basifemur III with anteroventral conical spine, 18 long, strongly attenuated towards apex. A similar but smaller spine also present on ventral surface of telofemur IV. Chelicera 100 (including fixed digit), moveable digit 27 long.

**DEUTONYMPH** - Not observed.

**PROTONYMPH** (Fig. 8) - Length and width of 3 specimens: 360 x 225, 375 x 240 and 390 x 255 (last specimen distinctly flattened). Prodorsal shield 300 x 216. Pygidial shield 78-96 long, 75-88 wide, with 3 pairs of rodlike setae: anterior pair 10, 2 posterior pairs 30 and 38 long, respectively.

**LARVA** - Not observed.

**HOST AND LOCALITY** - All specimens were collected from *Gallotia atlantica* from Haria, Lanzarote, Canary Islands, Spain. Some of the specimens were obtained by rearing the mites in the laboratory. Holotype female was collected on 6 July 2001. Paratypes: 12 females, 7

males and 25 protonymphs. Holotype and paratypes are deposited in the collection of the Institut royal des Sciences naturelles de Belgique, Brussels, Belgium. Other paratypes were deposited in the collection of the junior author and in the following institutions: Museum of Natural History, Humboldt University of Berlin, Germany; Museo Insular de Ciencias Naturales, Tenerife, Spain; and in the Institute of Zoology and Zoological Museum of the University of Hamburg, Germany.

**ETYMOLOGY** - The species name is derived from the native name of the island of Lanzarote which was called "Dolatelac" by the aboriginals.

**DIAGNOSIS** - *Ophionyssus dolatelacensis* differs from *O. galloticolus* and *O. setosus* by the following characters:

Female - Peritremes much shorter, 126 long instead of 240 in *O. galloticolus*, 270 in *O. setosus*. Scutum more elongate (Fig. 2), ratio of length/width 2.40 to 2.90 instead of 1.50 to 1.90 in *O. galloticolus*, 2.02 to 2.19 in *O. setosus*. Chaetotaxy of scutum: with 12 pairs of setae and absence of *z2* and *J6*, while in *O. galloticolus* with 14 pairs of setae, setae *J6* present and *z3* absent. There are 14 pairs of setae in *O. setosus*, *z2* are present and *J6* are lacking.

The basifemur of leg III in the male of *O. dolatelacensis* bears a thick conical ventral spine strongly attenuated at apex. Telofemur IV bears a similar but slightly smaller spine. The basifemur III in *O. galloticolus* and *O. setosus* is prolonged ventroapically by a strong curved spur (not a spine). Femur IV lacks spur or big spine.

Pygidial shield in the protonymph of *O. dolatelacensis* is much larger than in the two other species. The two posterior pairs of setae are subequal in length while setae *Z5* in the two other species are much shorter (9 instead of 30).

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