

*Echinonyssus molinae* sp. n. (Acari, Laelapidae)  
parasitic on the shrew *Crocidura osorio* MOLINA &  
HUTTERER, 1989 in Gran Canaria

ALEX FAIN and GISELA RACK  
(With 5 figures)

A b s t r a c t

*Echinonyssus molinae* sp. n. (Acari, Laelapidae) is described from *Crocidura osorio* Molina & Hutterer, 1989, an endemic shrew from north-eastern Gran Canaria, Canary Islands.

I n t r o d u c t i o n

The new species of hirstionyssine mite that we describe herein, *Echinonyssus molinae*, was found on a new species of insectivore, *Crocidura osorio* Molina & Hutterer, 1989, described from Gran Canaria.

Domrow (1955 and 1963), comparing the type species of the genus *Echinonyssus* Hirst, 1925 (*E. nasutus* Hirst, 1925), with some species of the genus *Hirstionyssus* Fonseca, 1948, concluded that both genera cannot be separated with certainty from each other and are synonymous. The existence of intermediate forms between these two genera was confirmed by Tenorio and Radovsky (1979). These authors accepted, therefore, the proposal of Domrow to consider both genera as synonyms. We agree with these authors that *Hirstionyssus* cannot be separated as a full genus from *Echinonyssus*. However, a better knowledge of the most primitive species of this group will probably reveal that *Hirstionyssus* should be conserved as a subgenus, and that even new subgenera should be created in order to classify properly this large genus *Echinonyssus*.

According to Tenorio (1984) the genus *Echinonyssus* includes at present 115 presumptively valid species and subspecies, most of them (ca. 98 species) described since 1950. The new species described herein is very close to *Echinonyssus soricis* (Turk, 1945) (= ? *E. eusoricis* (Bregtova, 1956)). However, it differs from it by several constant characters which justify its separation as a new species.

The measurements used herein are in microns, they have been taken following Evans and Till (1966).

Family Laelapidae Berlese, 1892  
 Subfamily Hirstionyssinae Evans and Till, 1966  
 Genus *Echinonyssus* Hirst, 1925

***Echinonyssus molinae* sp. n.**

This new species is named after Dr. Obdulia Maria Molina, Las Palmas, Gran Canaria.

**F e m a l e** (holotype) (figs 1-3): Dorsal shield 490 long and 290 wide. In 5 paratypes these measurements are: 504 x 276; 507 x 282; 516 x 294; 516 x 286; 528 x 291. This shield bears 24 pairs of setae, of which 8 pairs are situated in the posterior half of the shield. The setae s6 are present in the holotype and in all the paratypes, they are 25 long. The setae r2 and r3 are situated on the soft cuticle. Setae j2 are stronger and longer (34) than j3 (22). Setae z2, z4, s3, s4 are 30-33 long; the setae j5, j6, z5 are 15 long. Setae J1, J2 12-15 long; S4, S5 and Z5 are 15-18 long. Soft cuticle of body (including ventral and dorso-lateral surfaces) with 28 pairs of setae. **V e n t e r**: Sternal shield strongly concave posteriorly, 24 long and 121 wide. Distances between st1 60, between st2 108, between st3 135. Genital shield 110 long and 84 wide; maximum width behind genital setae (90). Anal shield 84 long and 66 wide; length of paraanal setae 20, of postanal setae 29. Peritremes ends reaching the middle of coxae I; posterior part fused with exopodal shield of coxa IV. Tarsus II with 2 claw-like spines (av1 and pv1). Coxa II with an antero-ventral seta thin and 12 long. Coxal spurs 0-2-2-1. Length/width of leg segments: Genu 57/51-57/48-39/42-51/42; Tibia 48/45-45/45-41/36-51/36; Tarsus 78/30-63/34-66/30-80/32. **G n a t h o s o m a** (including palps): 177 long, its base is 72 wide. Deutosternum with 14 transverse rows of denticles (generally one denticle, rarely 2, per row). Chelicerae: segment I 42 long, segment II 102 long; movable digit 43 long. Corniculi membranous. Chaetotaxy of palps: trochanter 2, femur 5, genu 6, tibia 12 (or ? 13). Apotele two-tined.

**M a l e** (figs 4-5): Length and width of dorsal shield in 2 paratypes: 447 x 255 and 438 x 253. The shield is progressively attenuated posteriorly and much more distinctly than in *E. soricis*, it bears 26 pairs of setae (the setae r2 and r3 being on the shield) and some setae are longer than in the female. j2 are longer (40) than j3 (21); the z2, z4, s3, s4 and s6 are about 45 long; the j5, j6, z5 are 9 long. The J2, J3 are 7,5 long. S4, S5 and Z5 are 8 to 9 long. Spermatodactyl 35 long. Soft cuticle of body (including opistogaster) with 28 to 30 pairs of setae. Holoventral shield 340 long and 100 wide, bearing 8 pairs of setae 3 pairs of pores in its part in front of the anus and 3 setae in its anal part. Preanal setae 18, postanal seta 25 long. Peritreme as in the female but it is not fused posteriorly with the exopodal shield. Tarsi II with 2 claw-like spines (av1 and pv1), as in the female. Strong spinous setae are present on ventral surface of femora III and IV and (1 spine) on genu, tibia and tarsus IV. Spurs of coxae as in female, antero-ventral seta of coxa II thin, 12 long.

**D e u t o n y m p h**: In one specimen the dorsal shield is 330 long and 180 wide, it bears 22 thin setae (6 to 15 long) except Z5 which is thick, barbed and 36 long. Sternal shield 150 long and 87 wide bearing 4 pairs of setae. Anal shield 39 long and 42 wide. Anal setae 15 long. Peritremes extending to posterior third of coxa I. Coxal spurs 0-2-1-0.

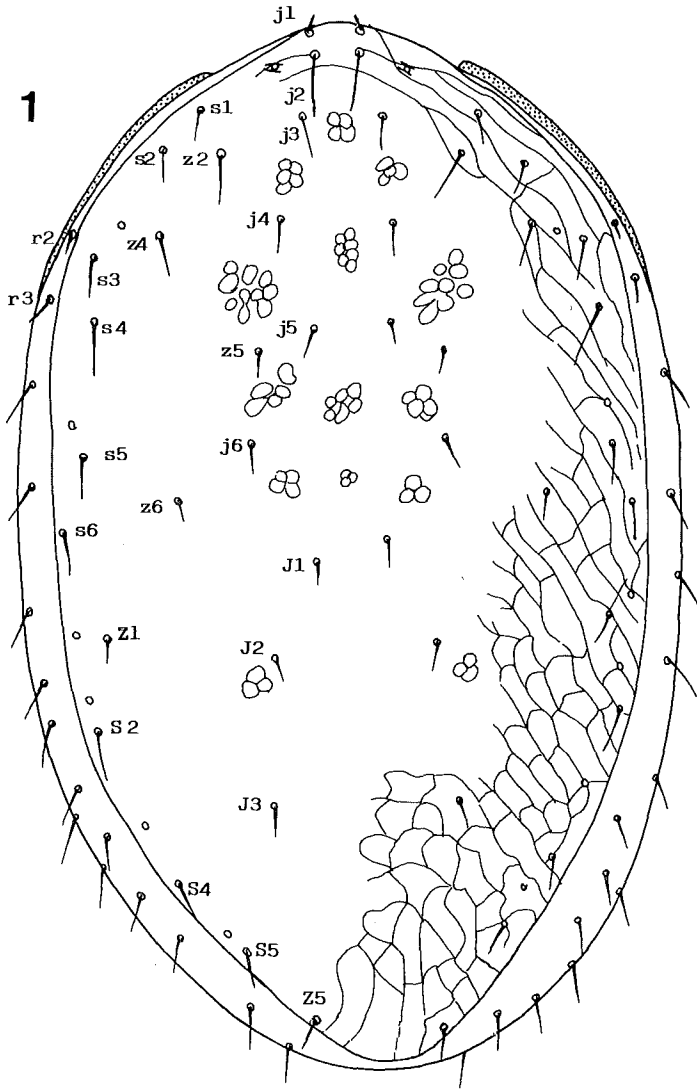
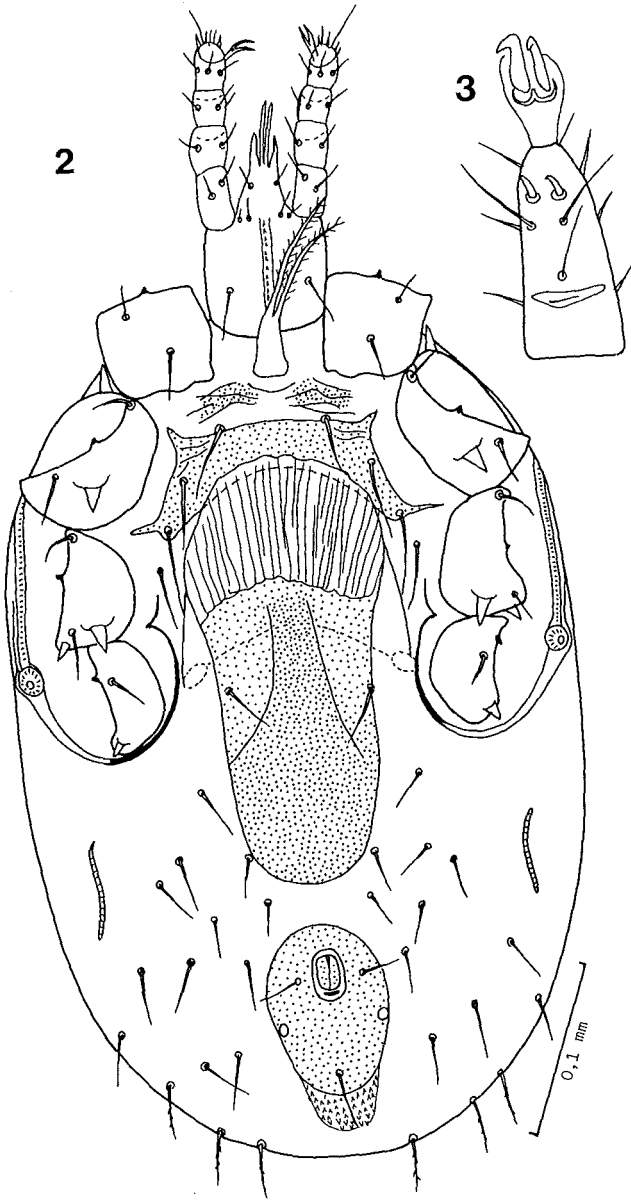


Fig. 1: *Echinonyssus molinae* sp. n. Female in dorsal view.



Figs 2-3: *Echinonyssus molinae* sp. n. Female in ventral view (2); tarsus II in ventral view (3).

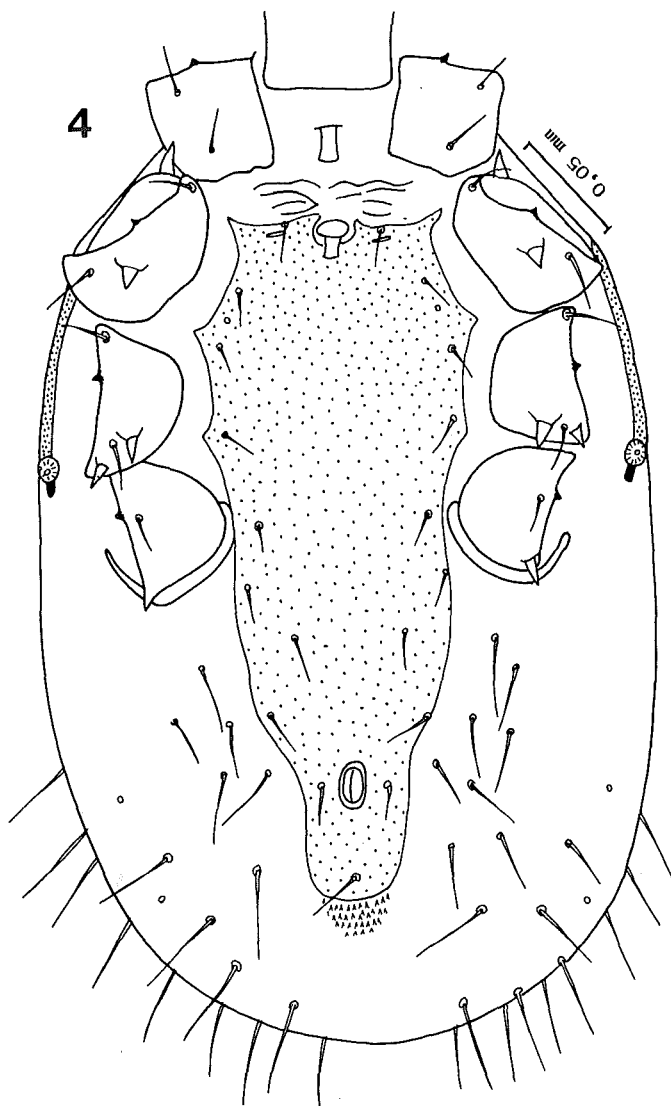


Fig. 4: *Echinonyssus molinae* sp. n. Male in ventral view.

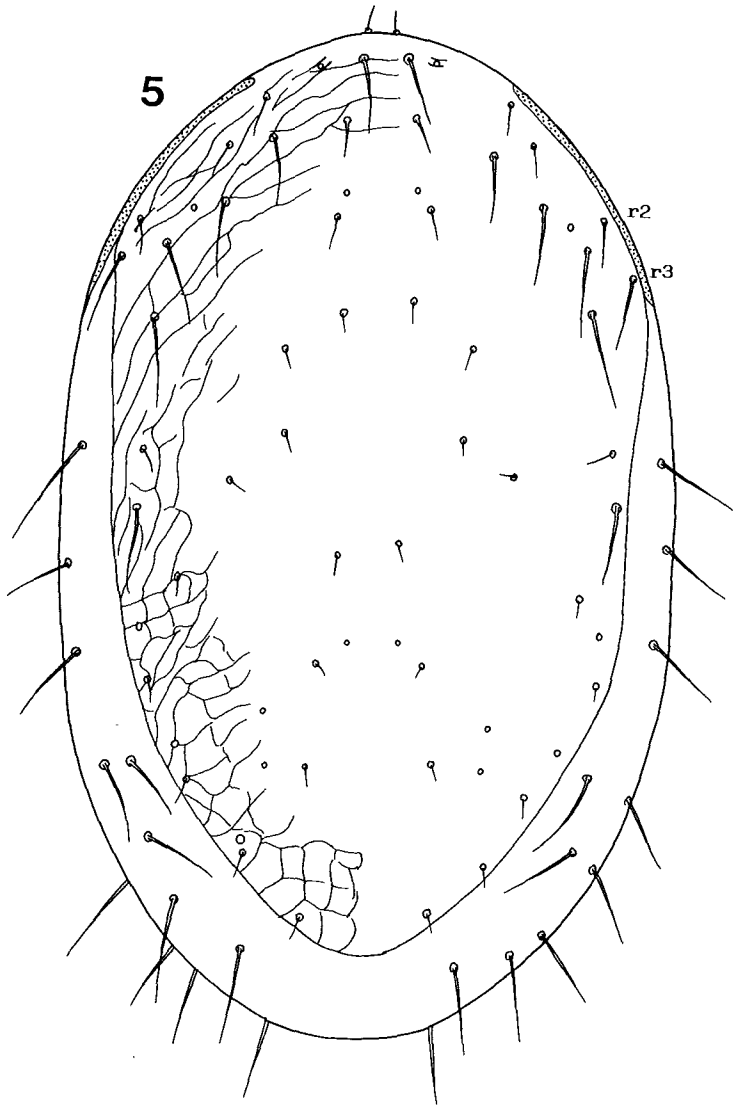


Fig. 5: *Echinonyssus molinae* sp. n. Male in dorsal view.

### Host and locality

Holotype and 45 paratypes female, 9 paratypes male and 4 paratypes deutonymph, all collected from *Crocidura osorio* Molina and Hutterer, 1989, from the Gran Canaria, 1.8.1989. In addition there are ca. 50 specimens in alcohol. Holotype, 30 female paratypes, 4 male paratypes and 2 deutonymph paratypes in the Zoological Museum Hamburg; 13 females, 3 males and 2 deutonymphs all paratypes in the collection of Institut royal des Sciences naturelles de Belgique; 1 paratype female and 1 paratype male are deposited in the British Museum (Nat. Hist.) and in the Bishop Museum, Honolulu. The specimens in alcohol are deposited in the Museum Alexander Koenig, Bonn.

### Remarks

*E. molinae* is close to *E. soricis* (Turk, 1945), also described from an insectivore (*Sorex minutus* L.) from England. *E. soricis* was inadequately described by Turk and only from the male and the nymph. Evans and Till (1966) have given a complete description of both sexes and the deutonymph. *E. molinae* differs from *E. soricis* by the following characters:

In the female:

1. Dorsal shield relatively wider (ratio length/width 1,68 to 1,8 in 6 specimens for 1,94 to 2 in *E. soricis*) and with lateral borders almost straight.
2. Setae j2 longer (32-35) and stronger than j3 (18-22). In *E. soricis* the j2 are shorter than j3.
3. Setae s6 present on the shield in all the specimens (absent in *E. soricis*).
4. Genital shield smaller and relatively narrower.
5. The antero-ventral seta of coxa II is a thin seta 12 long. In *E. soricis* it is a short and stout seta.
6. Opisthogaster with 14 pairs of setae, for more than 20 pairs in *E. soricis*.

In the male:

1. Dorsal shield distinctly smaller and much more attenuated posteriorly.
2. Setae s6 present in all the specimens (absent in *E. soricis*).
3. Setae j2 longer than j3 (both equal and very short in *E. soricis*).
4. Holovenral shield shorter and less expanded behind coxae IV.
5. Soft skin with 28-30 pairs of setae (only 17 pairs in *E. soricis*).
6. Antero-ventral seta of coxa II thin and 12 long (a short and stout seta in *E. soricis*).

Deutonymph:

Dorsal shield relatively wider and bearing 22 pairs of setae (for 21 pairs in *E. soricis*).

*E. molinae* is distinguished from *E. talpae* Zemskaya, 1955 by the following characters: In the female: by the setiform aspect of antero-ventral seta of coxa II (stout and blunt in *E. talpae*), the length of j2 distinctly longer and stronger than j3 (equal or subequal and shorter in *E. talpae*), the much smaller size of dorsal shield. In the male the setae S2, S4 and S5 are much shorter (8 to 9 long) than in *E. talpae* (25 to 30 long), the setae j2 and j3 are longer (40 and 21 respectively) than in *E. talpae* (10 and 8 respectively) and the seta s5 is shorter (9) than in *E. talpae* (30 long).

## References

- Domrow, R., 1955: A new species of **Echinonyssus**, Hirst 1925 from Queensland (Acarina: Liponyssinae). - Proc. Linn. Soc. N.S.W., **80**: 133-136. Sydney.
- Domrow, R., 1963: New records and species of Austromalayan laelapid mites. - Proc. Linn. Soc. N.S.W., **88**: 199-220. Sydney.
- Evans, G. O. & Till, W. M., 1966: Studies on the British Dermanyssidae (Acari: Mesotigmata. Part II. Classification. - Bull. Brit. Mus. (Nat. Hist.) Zoology, **14** (5): 109-370. London.
- Tenorio, J. M., 1984: Catalog of the World **Echinonyssus** (= **Hirstionyssus**) (Acari: Laelapidae). - Intern. J. Entom., **26**: 260-281. Honolulu.
- Tenorio, J. M. & Radowsky, F. J., 1979: Review of the subfamily Hirstionyssinae, synonymy of **Echinonyssus** Hirst and **Hirstionyssus** Fonseca, and descriptions of four new species of **Echinonyssus** (Acari: Laelapidae). - J. Med. Entomol., **16**: 370-412. Honolulu.
- Turk, F. A., 1945: Studies on Acari II. Description of new species and notes of established forms of parasitic mites. - Parasitology, **36**: 133-141. Cambridge.

Address of the authors:

Prof. Dr. Alex Fain, Institut royal des Sciences naturelles de Belgique, 29 Rue Vautier, 1040 Bruxelles, Belgique.

Dr. Gisela Rack, Zoologisches Institut und Zoologisches Museum der Universität Hamburg, Martin-Luther-King-Platz 3, 2000 Hamburg 13, Bundesrepublik Deutschland.