

A. FAIN & F. S. LUKOSCHUS.

A NEW GENUS AND SPECIES OF MYOBIIDAE  
FROM THE MARSUPIAL *LESTOROS INCA*  
(ACARINA : PROSTIGMATES)

Extrait de

*ACAROLOGIA*

Tom VIII, fasc. 3, 1976

DIRECTION

61, rue de Buffon — 75005 Paris — France

A NEW GENUS AND SPECIES OF MYOBIIDAE  
FROM THE MARSUPIAL *LESTOROS INCA* \*  
(ACARINA : PROSTIGMATES)

BY

A. FAIN AND F. S. LUKOSCHUS

INTRODUCTION

The junior author has collected from the marsupial *Lestoros inca*, several specimens of a very unusual Myobiid mite that combines some very primitive characters with others much specialized.

By the structure of the legs I in the female this mite appears to be very primitive, probably the most primitive ever observed in the Myobiidae. These legs have a normal shape and are devoid of defined attaching structure for clasping the hair of the host. In all the other known species of Myobiidae the legs I bear recurved hooks or ridged platelets serving as clasping organs.

Besides this primitive structure of leg I this mite presents one strongly modified claw on legs III and IV and an important hypertrichy and numerous cuticular scales on the ventral surface of the body.

Such a strange mixture of strongly primitive and other specialized characters seems to be in relation with the mode of fixation of the mite to the host. As a matter of fact this mite is not fixed by means of legs I as in all the other myobiids, but it attaches itself with the modified claws of legs III and IV at both sides of the body. In this position the ventral surface of the mite comes in contact with the skin of the host and this might explain the scaly and hypertrichous aspect of the ventral surface of the mite. The exact signification of these structures is not known but probably they could play an accessory role in the fixation to the host.

Instead of developing and modifying the legs I to clasp the hair of the host, as in the other Myobiidae, this mite has produced other structures able to play the same role. This new mite is, therefore, strikingly different from all the other known species described so far in the Myobiidae and we think that is necessary to erect for it not only a new genus and species but also a new subfamily.

\*. This research was supported in part by GRANT n° R 87-111 of the Netherlands Foundation for the Advance of Pure Research (ZWO).

FAMILY MYOBIIDAE MEGNIN, 1877

Recently, FAIN (1973) proposed to divide the family Myobiidae into two subfamilies (Myobiinae and Archemyobiinae) according to the different mode of clasping to the hair of the host. It is to be noted that in another group of fur-mites (e. g. the Listrophoroidea), this character has also been used at the family level.

In the Myobiinae Megnin the hair of the host is clasped between the genu and the femur of one leg I (either the left or the right leg) while in the Archemyobiinae the hair is clasped between the genua of the two legs I when these legs are pressed together.

In the Xenomyobiinae subf. n. the leg I are not modified, they are apparently not used for the attachment of the mite but this function seems to be conferred to the legs III and IV.

We give here a definition of these three subfamilies :

a) Myobiinae Megnin, 1877 : The clasping organ of the leg I is formed of a thick striated process of genu and of either a striated plate (Myobiini) or a striated spine (Australomyobiini Fain) on the femur. This plate, or spine, is situated ventrally in the external region of the femur. The attachment to the hair of the host is realized by only one leg I and it does not require the participation of the other leg I. The claws III and IV in the female are normal. In the Australomyobiini all the segments of leg I are free, while in the Myobiini the apical segments may be fused.

*Type genus* : *Myobia* von Heyden, 1826.

b) Archemyobiinae Fain, 1973 : The leg I bears on the genu a concave sclerotized and striated plate. This plate is situated on the internal surface of the genu. The hair of the host is placed in this plate and is clasped by the rapprochement of the two legs I. The attachment to the host requires therefore the participation of the two legs. The claws III and IV in the female are normal. Legs I with all the segments free and normal.

*Type genus* : *Archemyobia* Jameson, 1955.

c) Xenomyobiinae subfam. nov. : In both sexes the legs I are subequal to legs II and are devoid of defined clasping organs (striated platelets or strong clasping spines). Legs III and IV with one strong modified, thick and striated claw which apparently articulates with three short spines situated at the ventral surface of the tibiae respectively. These claws are the main clasping organs of the mite.

*Type genus* : *Xenomyobia* gen. nov.

GENUS *Xenomyobia* GEN. NOV.

*Definition* : With the characters of the subfamily. Legs I to IV with 2-2-1-1 claws respectively. Most of the dorsal hairs are subcylindrical and very fine apically. Ventral surface of body strongly scaly and hypertrichous.

*Type species* : *Xenomyobia hirsuta* spec. nov.

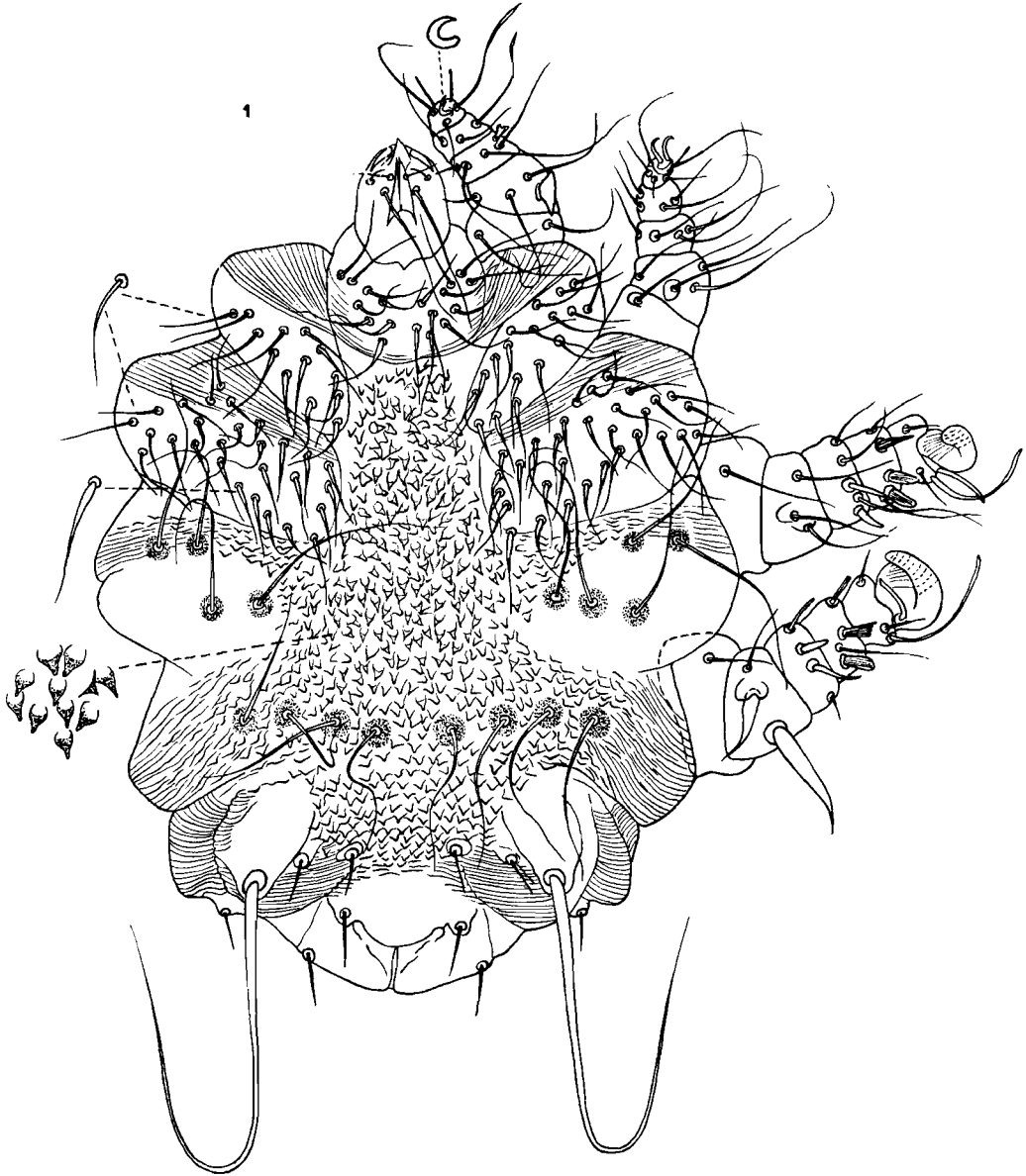


FIG. 1 : *Xenomyobia hirsuta* sp. n. Holotype female, in ventral view.

***Xenomyobia hirsuta* spec. nov.**

**FEMALE** (figs. 1-6) : The holotype is 358  $\mu$  long (gnathosoma included but without the palpes) and 270  $\mu$  wide.

*Dorsal surface* : Anus close to the vulva. Vulvar lobes absent.

*Ventral surface* : the median region is covered with very numerous small cuticular pointed scales. Coxae hypertrichous. Leg I normal in shape, only slightly thicker than leg II. Legs III and IV thicker than legs I and II. Tarsi I carrying 2 small claws. Leg II ending into two

subequal claws larger than on leg I. Tarsi III-IV with one large modified claw. This claw presents a long and thick ventro-apical process striated dorsally and directed forwards. The base of this claw is subglobulous and striated ventrally.

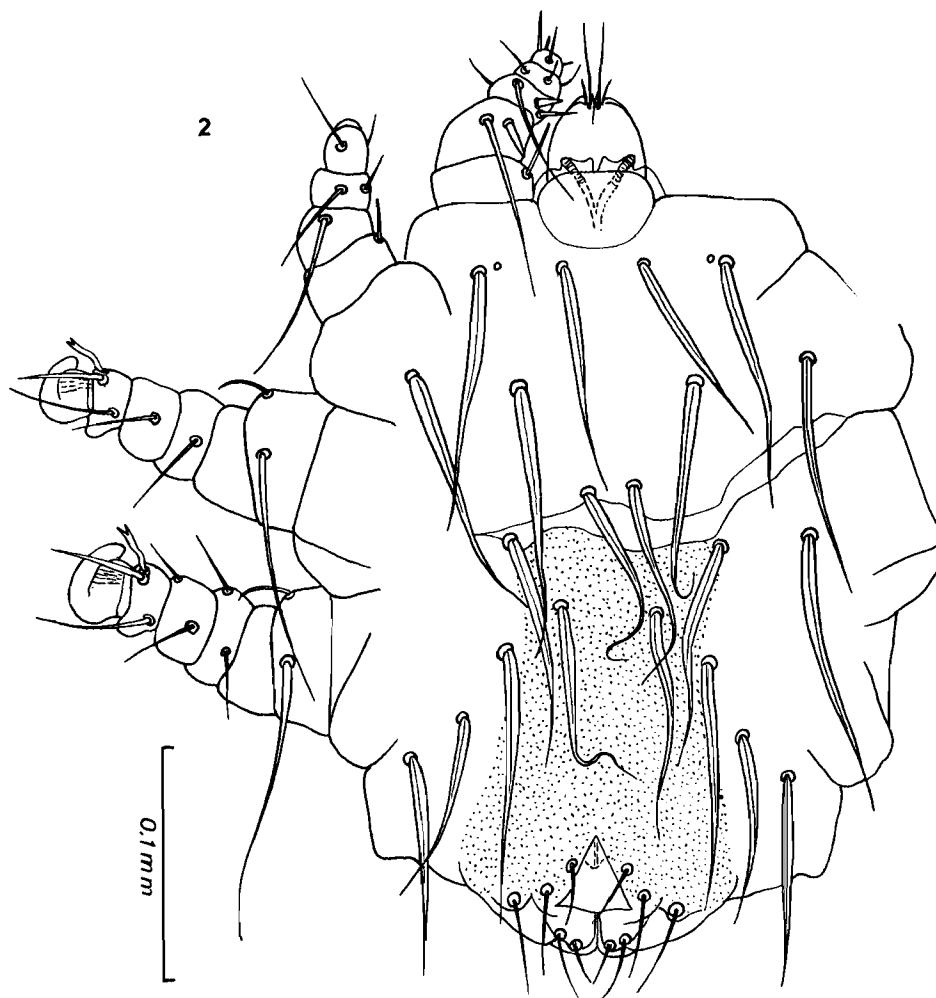
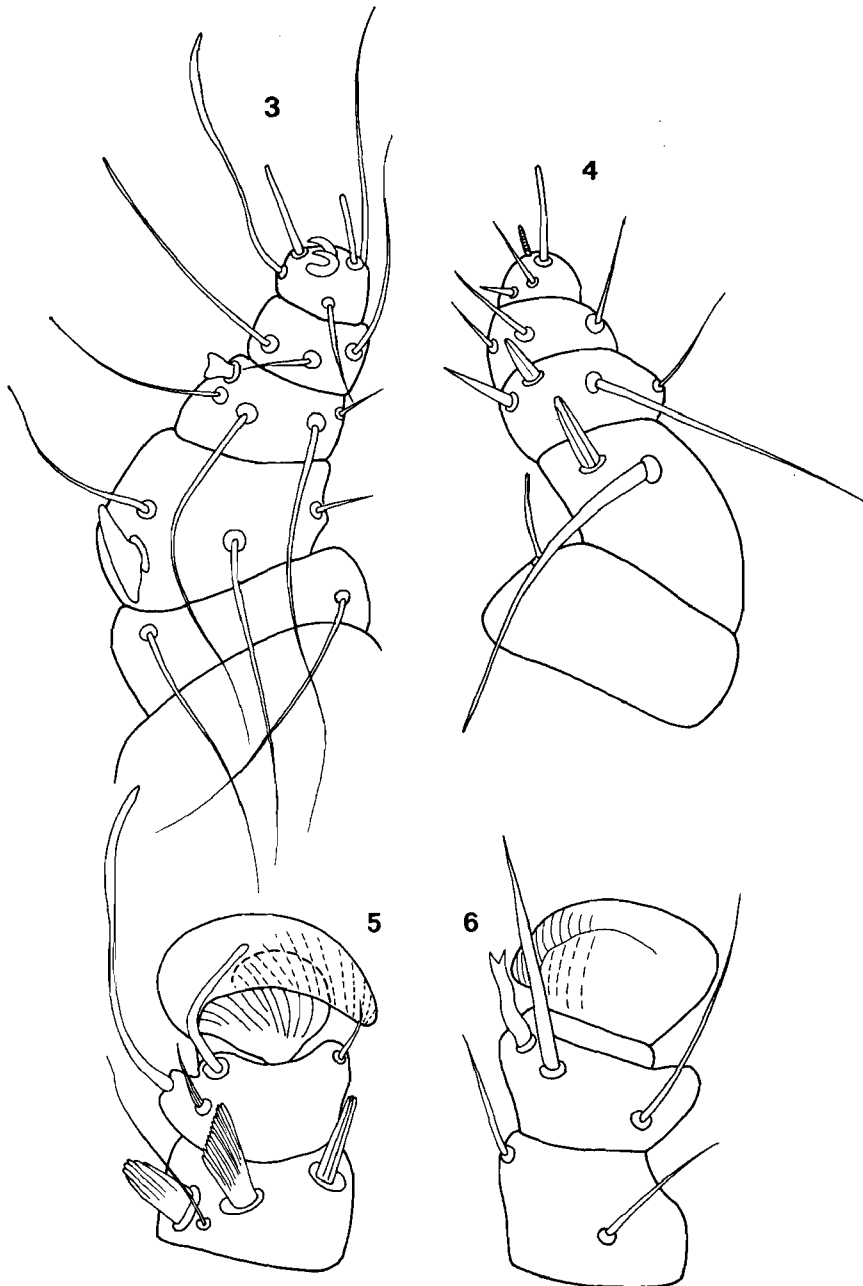


FIG. 2 : *Xenomyobia hirsuta* sp. n. Holotype female, in dorsal view.

*Chaetotaxy* : Setae *ve*, *sci* and *sc e* subequal, subcylindrical in their basal two thirds and finely attenuated apically. The *vi* is slightly smaller. The *d 1* to *d 4* and *l 1* to *l 3* are similar to the anterior setae or a little inflated medially. The *l 1* is missing at one side. Coxa I to IV hypertrichous, with 15 (18) — 28 (27) — 4 (5) — 4 (4) setae respectively. The area situated between the coxa I bears 9 pairs of setae. Number of setae on legs I to IV : Trochanters 3-3-3-3. Femora 6-5-3-3. Genua 9-6-6-6. Tibiae 6-6-6-6. Tarsi 7-7-7-7. Some of these setae are strongly modified. The genu and femur I bear ventrally each a thick bifid seta. Tibiae III and IV carrying ventrally 3 thick and short striated spines which are probably utilized for clasping the hair of the host. This hair could be pressed between these spines and the striated process of the tarsal claw. The femora IV bear ventrally two strong spines finely attenuated at their apices. The anterior surface of tarsi III and IV bears a thick and short sinuous and bifid seta.



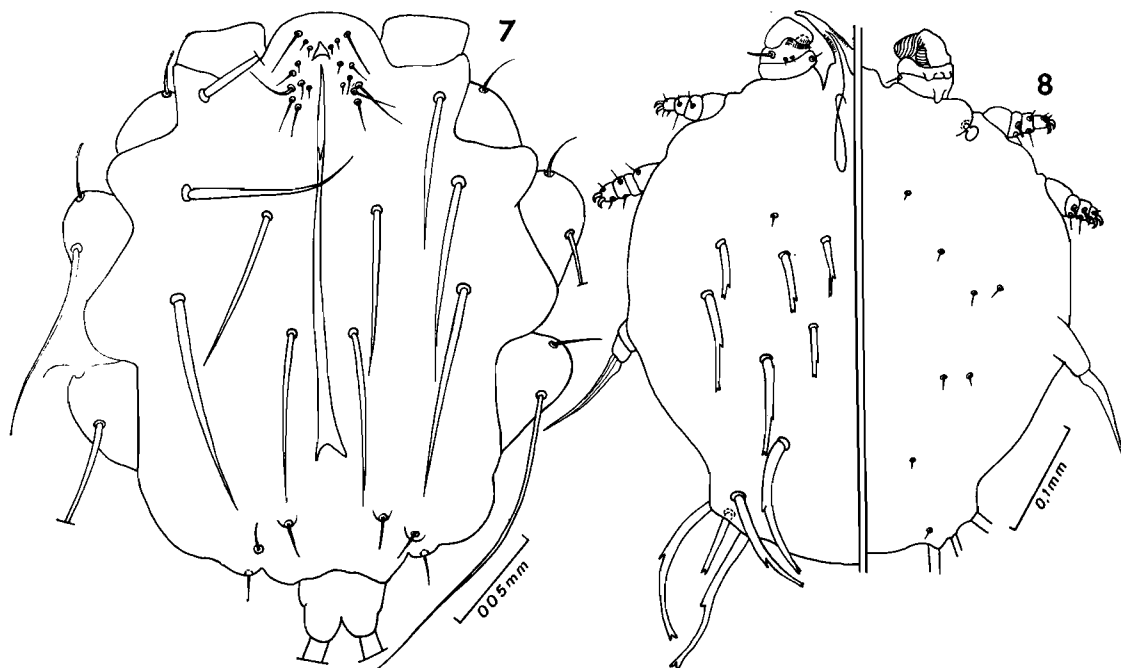
FIGS. 3-6 : *Xenomyobia hirsuta* sp. n. — Holotype female : 3-4) Leg I in ventral and dorsal view ; 5-6) Tibia and tarsus IV in ventral and dorsal view.

MALE (fig. 7) : Allotype 295  $\mu$  long and 207  $\mu$  wide.

*Dorsal surface* : the base of the gnathosoma is covered by a rounded prolongation of the idiosoma. The male orifice is situated at 20  $\mu$  behind the anterior border of this prolongation and at the level of the trochanters I. There are 10 pairs of thin setae in the genital area. Penis straight. 166  $\mu$  long. The *ve*, *sc e*, *sc i* and *l r* are thick.

*Ventral surface* : as in the female but the scaly area is much smaller and is absent in the posterior half of the body. Legs as in the female but the chaetotaxy is generally stronger. On the trochanters I the antero ventral seta is a very strong hair finely attenuated apically and 40  $\mu$  long.

FEMALE TRITONYMPH (fig. 8) : One specimen containing a female, is 420  $\mu$  long (idiosoma) and 345  $\mu$  wide. Legs I short, symmetrical, without claws but with two clasping striated plates and one recurved striated process. The hair of the host is tight by means of the plates and the process of only one leg. Legs II-III formed of 4 free articles and ending into two small curved and equal claws. Legs IV short, of one article ending in an apical strong seta finely attenuated apically and 85-90  $\mu$  long. Idiosoma with 11 pairs of strong toothed unequal setae, most of them being dorsal and three pairs terminal or ventroterminal. In some specimens there are 9 spines at one side and 10 spines at the other side. In other specimens there are 10-11 spines. Ventrally the *ic 1* to *ic 4* are present but very thin and short. Coxa I with one lateral short and globulous hair. Coxae II to IV with 0-1-1 setae. The *ve* setae are short and thin.



FIGS. 7-8 : *Xenomyobia hirsuta* sp. n. — 7) Allotype male in dorsal view ;  
8) Tritonymph containing a female, in dorsal (left) and ventral (right) view.

MALE TRITONYMPH : One specimen containing a male is 342  $\mu$  long and 306  $\mu$  wide (idiosoma). Same aspect as for the female tritonymph but the dorsal spines are a little smaller and the coxals III-IV are missing.

DEUTONYMPH : Idiosoma 195  $\mu$  long, 206  $\mu$  wide. Idiosoma with only 8 pairs of strong toothed spines. Legs I to III as in the tritonymph. Leg IV lacking.

PROTONYMPH : Idiosoma 150  $\mu$  long and 160  $\mu$  wide. Legs I to III as in the deutonymph. Idiosoma with only 6 pairs of strong toothed spines.

LARVA = unknown.

#### HOST AND LOCALITY

All the specimens were collected from 4 *Lestoros inca* on a total of 18 animals examined. These animal had been collected in Torontoy, Machu Picchu Valley, Peru, by E. Heller, April 1915 (rats n<sup>o</sup> 194935, 194936, 194937 and 194941) (holotype and 14 paratypes females ; allotype and 3 paratypes male ; 1 protonymph ; 3 deutonymphs ; 14 female tritonymphs and 5 male tritonymphs). *Types* and paratypes in the U. S. National Museum. Paratypes in the collections of the authors.

#### ACKNOWLEDGEMENTS

We thank very much Dr P. HURD who kindly allowed one of us to collect the mites which are studied in this paper.

#### BIBLIOGRAPHY

- FAIN (A.), 1973 a. — Nouveaux taxa dans la famille Myobiidae (Acarina : Trombidiformes). — Rev. Zool. Bot. Afr., **87** (3) : 614-621.
- FAIN (A.), 1973 b. — Notes sur la nomenclature des poils idiosomaux chez les Myobiidae, avec description de taxa nouveaux (Acarina : Trombidiformes). — Acarologia XV (2) : 279-309.

*Paru en Février 1977.*

---