

A NEW FUR MITE OF THE GENUS *ARCHEMYOBIA*
PARASITIC ON *PHILANDER OPOSSUM FUSCOGRISEUS*
(ACARINA : MYOBIIDAE)

BY

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ABSTRACT.

Archemyobia pectinata, new species of fur mite from a Panamanian Four-eyed opossum, *Philander opossum fuscogriseus*, is described. Illustrations of the male, female and tritonymph are presented.

In a very important contribution to the knowledge of the family Myobiidae, JAMESON (1955) established the genus *Archemyobia* which he based on a female of the species *A. inexpectatus*, a parasite of *Dipelphis virginiana* Kerr. Two years later, TIBBETTS (1957) described the male of the type-species from material obtained from an opossum at Camp Lejeune, North Carolina. In the same paper, another species, *A. trinidadensis*, obtained from a Trinidad Woolly Opossum, *Philander trinitatis*, (now known as *Caluromys philander trinitatis*) was also described. JAMESON and LUKOSCHUS, in 1969, described a third species, *A. brasiliensis*, from a single female taken on *Monodelphis americana iheringi*.

At present, the genus *Archemyobia* stands out as the least specialized and most primitive group of the family Myobiidae. It is confined to American marsupials. JAMESON suggests (lit. cit.) that this genus may also have representatives parasitizing Australian marsupials.

Recently I have collected an extensive series of an unknown species of *Archemyobia* from a Panamanian Four-eyed Opossum, *Philander opossum fuscogriseus* (J. A. ALLEN), which is herein described. The terminology used largely follows EWING (1938) and JAMESON (1955). All measurements are in microns.

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***Archemyobia pectinata* n. sp.**

(Figs. 1-3).

Diagnosis. — Closely allied to *A. brasiliensis* Jameson and Lukoschus and *A. trinidadensis* Tibbetts. It is easily separated from the female of the first species by the simple, not bifid claws of the front legs and the absence of an sclerotization on the vulvar area. From *A. trinidadensis*

it is separated by the structure of the ventral striate setae and the curved penis and 2 caudal filaments of the male.

FEMALE (Fig. 1). Mite of bizarre anatomy, with body slightly elongate, delicately striated, and lateral margins sinuous. Gnathosoma subangular, showing a pair of short terminal palpal claws and apparently three pairs of simple setae. Length of idiosoma (29 specimens) : mean 524μ (468-572) : maximum width : mean 195μ (161-221).

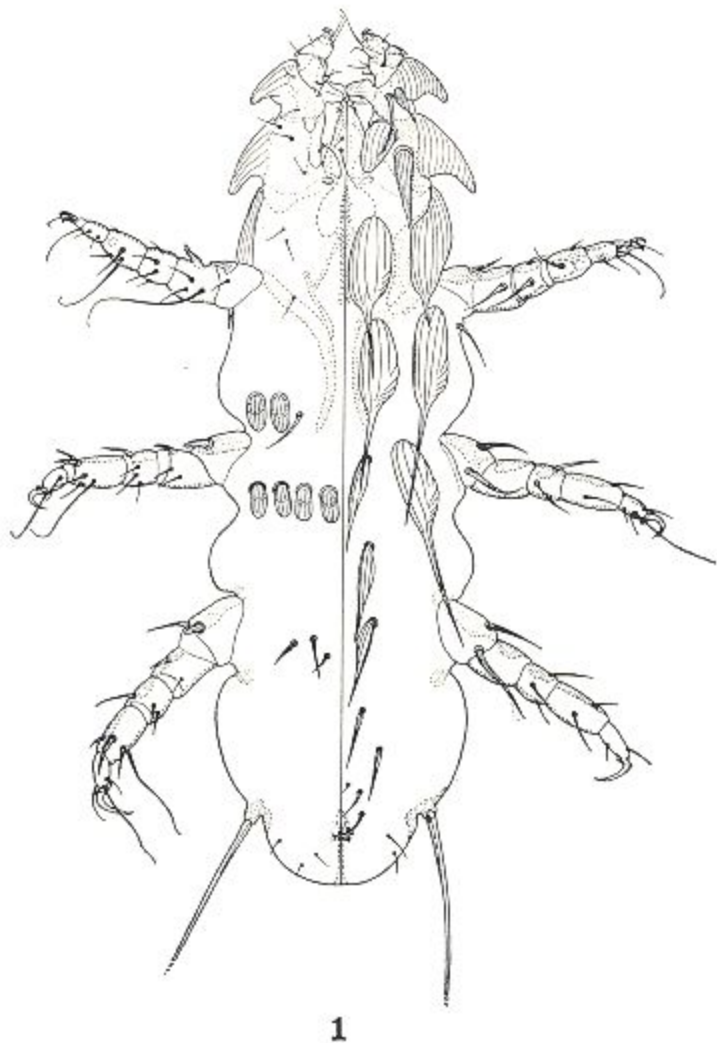


FIG. 1 : Ventral-dorsal view of female.

Dorsum. — A single relatively short submarginal seta is inserted immediately below each coxa II. Lateral and submedian setae stout, striated, of substantial but unequal lengths, arranged in regular rows. Laterals I — III and submedians I — II foliaceous, very broad anteriorly, then becoming abruptly slender distally to end in acuminate tip. Submedians III — VII shorter, slightly expanded, gradually tapered to fine tip. Vulva weakly defined. Genito-anal area with two pairs of minute setae besides several circumanal setae of unequal length. Caudal filaments long, striated, widely separated, each inserted in sclerotized protuberant tubercle. Caudal margin between filaments evenly rounded.

Venter. — Propodosomal region with three simple anterior setae and one posterior row of setae. This row consists of three pairs: innermost filiform, slightly long; outermost short, broad, blunt and striated. Metapodosomal region with one row of eight setae similar to those last mentioned and suggesting a true comb. Between coxae IV there is an irregular row of six filiform and short setae. About three pairs of short setae are present on caudal portion of opisthosoma.

Legs. — Legs I very robust, provided with conspicuous striated setae and simple, delicate setae. These legs end in two small even tarsal claws. Legs II — IV more slender, armed with simple and striated setae of various lengths and thicknesses as illustrated. Legs II terminate in two subequal claws. Legs III with one distinct falciform claw and a short inconspicuous claw. Legs IV slightly larger than preceding ones, with tarsal claws similar to those of legs III but falciform claw larger.



FIG. 2 : Ventral-dorsal view of male.

MALE (Fig. 2). Body shaped as in the female but shorter and more robust. Gnathosoma broader than in the opposite sex, with apparently three pairs of setae. Length of idiosoma, 416 μ ; maximum width, 156 μ .

Dorsum. — Lateral setae similar to those of female but laterals II and III obviously displaced. Submedian setae reduced to only four pairs. Opisthosoma with a pair of very long caudal filaments inserted in prominent tubercles placed near each other (These filaments are missing in the allotype). Penis shallowly curved, projected cephalad, originating at level of coxae IV, gradually tapered from bifid basal portion. This structure terminates in rounded genital opening located

between coxae III and protected by five pairs of striated setae. These are arranged in two rows : upper row consisting of three pairs of spiniforms ; lower of two pairs of slender and longer setae.

Venter. — Propodosomal setae essentially as in female. Metapodosomal setae longer, moderately expanded and more flexible, ending in acuminate tip. In addition to these setae there is a pair of short simple setae between coxae IV.

Legs. — Specialized chaetotaxy of legs I resembling but not matching that of same elements in female. Legs II slightly shorter than legs III and IV which are about equal in size. All legs bear a combination of simple and striated setae of different sizes and thicknesses as figured. Last tarsal segment of legs II — IV terminating in two claws. Those of legs II and IV subequal but the ones on legs III very dissimilar : one extremely developed, the other shorter, similar in shape to remaining tarsal claws.

TRITONYMPH (Fig. 3). More similar to the female in general appearance but containing particular striking details. Gnathosoma with but one pair of ventral setae and fine cheliceral blades which are extended beyond front legs. Opisthosoma bilobate (in two of the four specimens of the series the lobes are not developed, but one specimen shows them incipient). Length of idiosoma (4 specimens) : mean 494 μ (490-572) ; maximum width ; mean, 177 μ (143-221).

Dorsum. — All lateral foliaceous setae present. Submedians I absent or probably represented by inner small pair of setae located at same level with submedian II. Rest of submedians (II-VII) as in female. Opisthosoma showing a pair of isolated short inner setae posterior to last submedians.

Venter. — Propodosomal setae represented by two distinct rows. Anteriormost row has two pairs of fairly expanded, blunt setae : outer ones shorter than inner ones. Posteriormost row reduced to three pairs of short peg-like setae. Metapodosomal setae forming a single row similar to last mentioned row. Opisthosoma showing two anterior pairs of short simple setae and one posterior pair of caudal filaments originating in submarginal bases. (These filaments were lost in mounting the specimens).

Legs. — Legs I with each terminal segment bearing a prominent striated claw-shaped tubercle accompanied by at least two apical fine setae and one broad striated seta ventrally inserted. Other segments of legs I with several broad, spine-like striated setae and apparently no more than two short simple setae. Legs II-IV with chaetotaxy somewhat similar to that of corresponding legs of adults. Trochantersetae present in all legs. Legs II shorter than remaining legs ; its last tarsal segment has two unequal claws. Similar segment of legs III and IV also bears dissimilar claws.

DEUTONYMPH. — Length of idiosoma, 455 μ ; maximum width, 162 μ . No attempt is made to describe this stage in detail, inasmuch as the only specimen available lacks anterior segments of legs I and contains a developing tritonymph. Therefore, the chaetotaxy can not be well studied. Apparently, this stage is similar to the tritonymph but smaller, more robust and with body tip rounded, without lobes. All ventral striated setae seem to have acuminate tips. Legs II and III have trochantersetae but legs IV are devoid of these structures.

Types. — Holotype female, allotype male, 33 paratypes represented by 4 tritonymphs, 1 deutonymph and 28 females, from the lower dorsal region of a male specimen of *Philander opossum fuscogriseus* (J. A. ALLEN), Santa Rita, District of Chorrera, Panama ; 12 November 1968 ; trapped by J. PALACIOS.

Holotype, allotype and one tritonymph paratype will be deposited in the United States

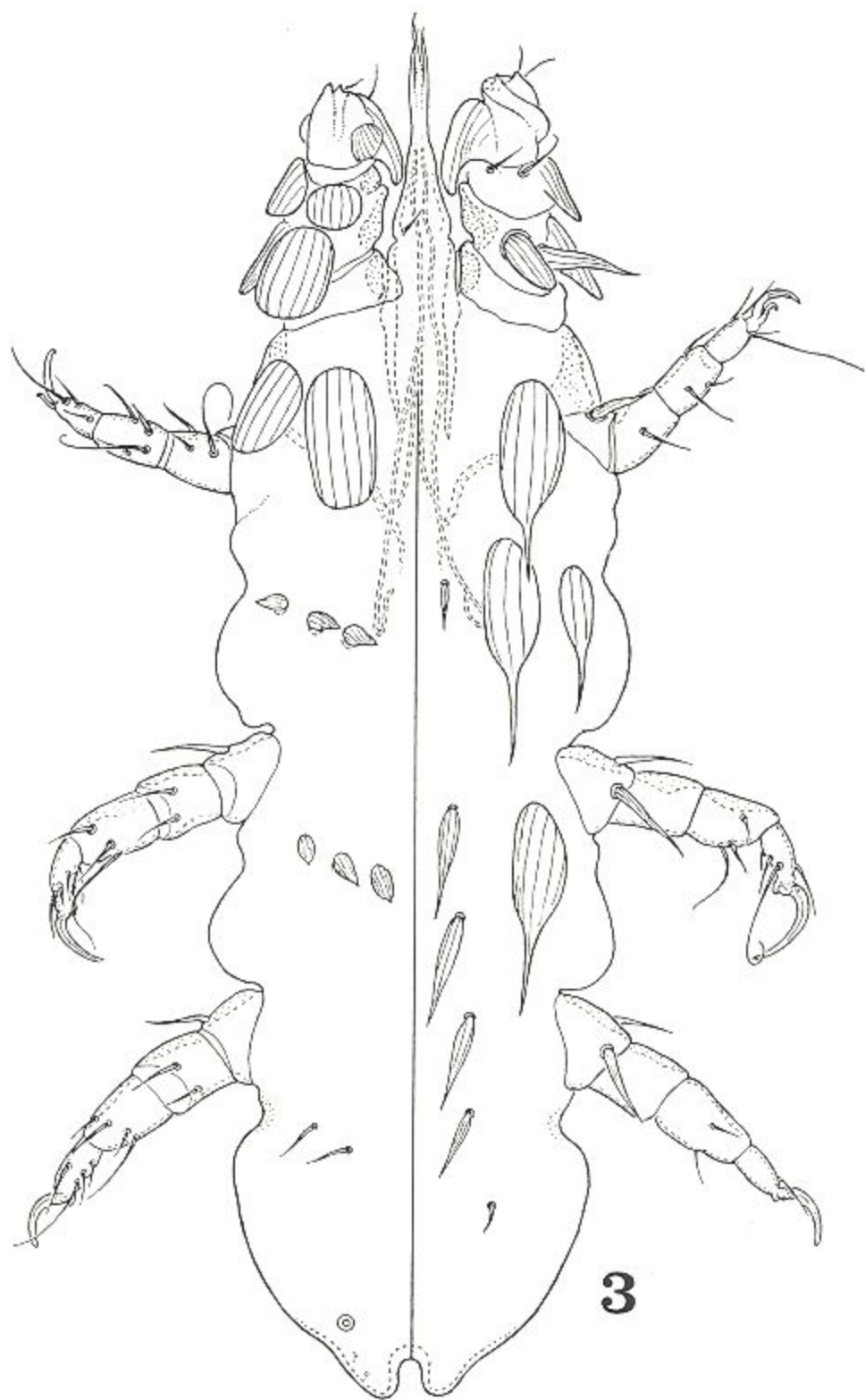


FIG. 3 : Ventral-dorsal view of tritonymph.

National Museum. Female paratypes will be deposited in the following institutions : Institute of Acarology, University of Maryland ; Department of Parasitology, University of California at Berkeley ; Division of Zoology, University of California at Davis ; B. P. Bishop Museum, Honolulu, Hawaii ; Zoologisch Laboratorium der Katholieke Universiteit, Nijmegen, The Netherlands ; Muséum National d'Histoire Naturelle, Paris. The remaining paratypes are housed in the Gorgas Memorial Laboratory collection.

Remarks. — Some of the specimens available for this study (including the holotype and allotype) have been stained in acid fuchsin and mounted in Canada balsam with excellent results since no apparent distortions have been noticed. The technique followed is the conventional one used for mounting lice, which involves treatment with NaOH, neutralization with acetic acid, dehydration, staining and clearing. The rest of the material has been mounted in modified Berlese medium.

Since Myobiid mites are highly host-specific, it may be expected that the distribution of *A. pectinata* n. sp. will be that of the type host, *Philander opossum fuscogriseus* (J. A. ALLEN). This marsupial is found from southern Nicaragua to Panama.

The morphological similarities within *A. pectinata* n. sp., *A. brasiliensis* and *A. trinidadensis*, seem to indicate affinities of their respective hosts species : *Philander opossum*, *Monodelphis americana* and *Caluromys philander*. On the other hand, strong differences between these mites and *A. inexpectatus*, suggest a much wider evolutionary gap separating *Didelphis virginiana* from the above mentioned marsupials. Further knowledge of the Myobiid mites infesting American marsupials might contribute to a better understanding of some aspects of the phylogeny of these mammals.

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