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A New Laelapine Mite (Acari: Mesostigmata: Laelapidae) Associated with the Spiny Rodent, *Scolomys melanops*, in Amazonian Peru

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ABSTRACT: *Gigantolaelaps scolomys* Gettinger and Gardner n. sp., an ectoparasitic mite (Acari: Laelapidae) associated with the rodent *Scolomys melanops* in Amazonian forests of Peru, is described and illustrated.

KEY WORDS: Ectoparasite, Acari, Parasitiformes, Laelapidae, *Gigantolaelaps scolomys*, host, Rodentia, Cricetidae, Sigmodontinae, *Scolomys melanops*, Peru, Loreto.

Mites of the genus *Gigantolaelaps* Fonseca are common ectoparasites associated exclusively with rodents of the sigmodontine tribe Oryzomyini (see Gettinger, 1987). They are often abundant in the dorsal pelage and are easily collected by brushing the host at capture. The laelapine populations sampled are female dominant; males and immatures are assumed to live within the nest of the host (Martins-Hatano et al., 2011). A new species was encountered in a small collection of specimens of *Gigantolaelaps* brushed from 2 individuals of the spiny rodent, *Scolomys melanops*, in the Peruvian Amazon near Iquitos (Hice, 2001; Hice and Velazco, 2012). Of all the known species of *Gigantolaelaps* with the holotrichous condition for tibia IV and a gnathosome with deutosternal groove bearing only 6 rows of denticles (Furman, 1972), the new species is similar to species infecting a complex of arboreal rodents (*Oecomys* spp.) but is clearly separated by the morphological characters detailed below.

MATERIALS AND METHODS

Mite specimens, originally mounted individually in “Hoyer’s,” a water-based medium, were remounted in the same medium in 2011, ringed with Glyptal, and measured with a stage-calibrated ocular micrometer. All measurements are in micrometers (µm). Measurements in the text are of the holotype specimen followed in parentheses by the mean and range of 8–10 measured paratypes. The postanal seta and inner hypostomal setae, missing in the holotype, are represented in the text as mean and range from paratypes only. We use the system of Lindquist and Evans (1965) for dorsal chaetotaxy and, for mammalian nomenclature, follow Wilson and Reeder (2005).

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RESULTS

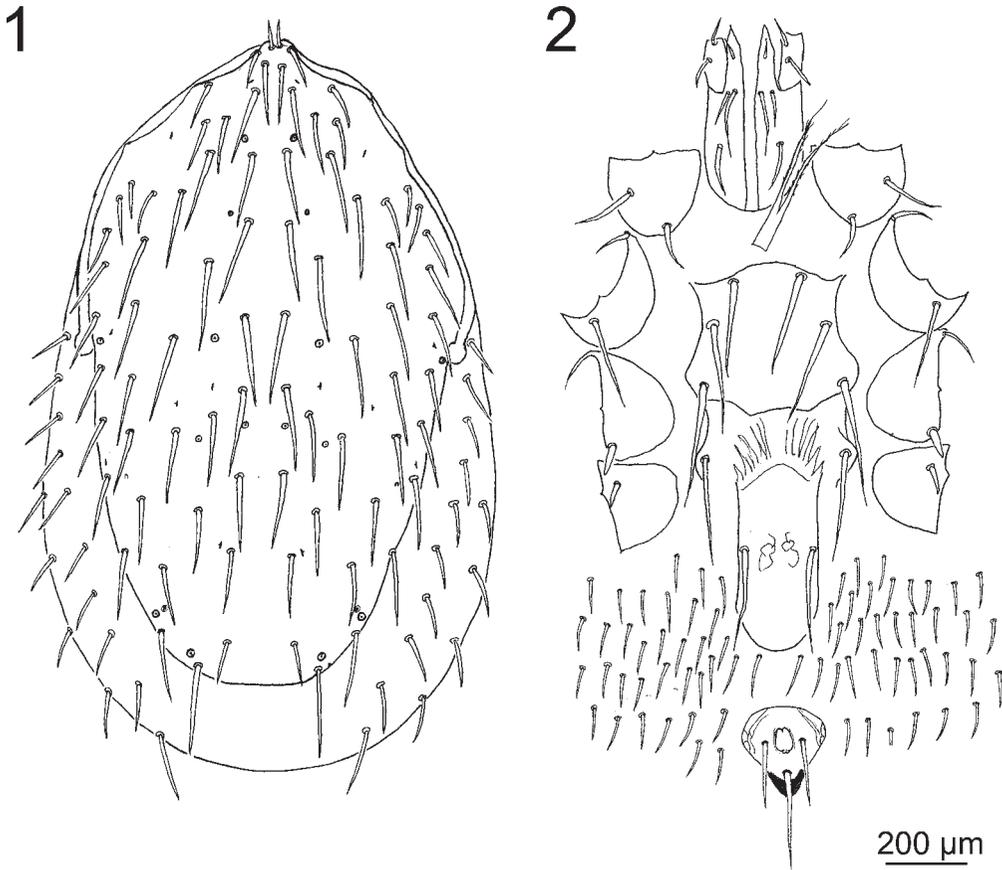
Gigantolaelaps scolomys n. sp. (Figs. 1–2)

Diagnosis

Gigantolaelaps scolomys is similar in general facies to females of *Gigantolaelaps barrerae* Fonseca, 1960; *Gigantolaelaps canestrinii* Fonseca, 1959; and *Gigantolaelaps amazonae* Furman, 1972; 3 mite species associated with arboreal rodents of the genus *Oecomys*. All 3 species are large laelapid mites with a relatively undeveloped anteromedial projection of the sternal shield and short posterior seta of coxa II (less than 250). Femur I of tibia IV with 11 setae, and 2 most apical dorsal setae of femur I strongly unequal in length. *Gigantolaelaps scolomys* clearly diagnosed by consistent holotrichy of primary dorsal and ventral shields (no hypertrichy or accessory setae), distinctive long sternal shield (as long as wide), and undeveloped condition of tarsus II. All of the above species are distinguished by the degree of development of spiniform armature at the apical position of tarsus II (very strong in *barrerae*), but there is no enlargement of apical tarsal setae on leg II of *G. scolomys*.

Description

Dorsum (Fig. 1): Dorsal shield entire, 1,600 long (1,566; 1,528–1,609) and 900 wide (875; 855–900), ovoid-oblong, tapered cephalad from chitinous anterolateral edges over coxae II (“shoulders”) to narrow extended apex that is fused ventrally with anterior terminus of peritrematic plates; opisthonotum rounded posteriorly from shoulders to a flattened posterior margin; surface reticulate. Chaetotaxy of the shield normal, with 39 pairs of simple setae; 22 podonotal, 17 opisthonotal. Central setae longer and



Figures 1–2. *Gigantolaelaps scolomys*, n. sp., female. 1. Dorsum. 2. Venter.

stronger than marginal setae, those of unarmed cuticula all under 100 μm . The j_2 setae longest on shield (>180); j_5 168 long (180; 168–190), reaching well beyond the level of insertion of z_5 ; J_5 short, 90 (99; 85–105); Z_5 longer, 182 (190; 182–200). Circular glands and lyrifissures as illustrated.

Venter (Fig. 3): Tritosternal base rectangular, unornamented; seated in thickened cuticle anterior to sternal shield; bearing pair of pilose laciniae. Sternal shield width at level of setae II subequal with length at midline, 350 wide (337; 322–355), 345 long (338; 319–362); anteromedial projection present, but weak, extending only slightly beyond level of first setae; first sternal setae 273 long, (255; 244–264), not extending to the posterior margin of the shield; third sternal setae longer, 300 (304; 296–320); first 2 pairs of pores elongate lyriform, with first pair horizontal, second pair inclined medially; third pair pores small, placed vertically on unarmed integument midway between sternal shield and endopodal shields at

medial junction of coxae III and IV, which bear metasternal setae 300 long (289; 282–314). Epigynial shield linguiform, very slightly expanded posterior to setae; epigynial setae 230 long (224; 215–240), extending beyond the posterior margin. Metapodal shields small, irregular elongate. Unarmed opisthogaster moderately setose, with about 40 setae on each side (excluding the marginal setae). Peritremes extend to point of attachment of peritremal shield with anterior end of dorsal shield. Anal shield pyriform, longer than wide; postanal seta long (245; 228–257) and much longer than paranal setae (163; 157–172).

Legs: All of moderate length and thickness, with legs I and IV subequal in length, longer than legs II and III; legs III shortest, (in descending order, I, IV, II, III). Chaetotaxy (from coxa to tarsus I): I = 2, 6, 13, 13, 13, –; II = 2, 5, 11, 11, 10, 18; III = 2, 5, 6, 9, 8, 18; IV = 1, 5, 6, 10, 11, 18. Coxa I with proximal setae 92 long (98; 91–104) and distal setae 127 long

(133; 121–149), both strong setiforms; distal setae longer; posterior seta coxa II relatively short for the genus, 222 long (218; 200–237); posterior setae of coxae III and IV spiniform, similar in size. Femur I with one long, apical dorsal seta 290 long (295; 290–301), second apical dorsal seta shorter, 128 long (126; 123–130); genu I with one proximal dorsal seta 280 long (280; 275–290). Tarsus II with only simple setae apically (no clearly spiniform setae).

Gnathosoma: (Fig 2.) Deutosternal groove with 6 rows of teeth (2–4 teeth per row); chaetotaxy of venter normal; gnathosomal setae 112 long (111; 105–116), slightly shorter than the inner hypostomal setae, (135; 131–140); inner hypostomal setae are longest; outer hypostomals shortest. Chelicera chelate dentate, fixed digit bifid at tip, with pilus dentilis long (ca. 24), setiform, tended by 2 blunt teeth; dorsal seta minute, acuminate; moveable digit with hooked tip and 2 small teeth in anterior part of chela; basal arthrodium with coronet of thin spines. Palps with 5 free segments; basal medial margin of palptarsus with 2-tined apotele.

Taxonomic summary

Type host: *Scolomys melanops*, (Mammalia: Rodentia: Cricetidae: Sigmodontinae), specimen TTU85488 (CLH-1832), is designated as holosymbiotype. Repository: The Museum of Texas Tech University (TTU); Collector: Christine L. Hice (CLH).

Type locality: Peru; Loreto Department; 25 km S of Iquitos; Allpahuayo Reserve; elevation 110–180 m, 3°28'S, 73°25'W.

Specimens deposited: The type series was deposited in the following collections: Harold W. Manter Laboratory of Parasitology, University of Nebraska–Lincoln, U.S.A. (holotype, 2 paratypes); Field Museum of Natural History, Chicago, Illinois (5 paratypes).

Specimens examined: The type series contains all specimens known to the authors.

Etymology: The species epithet is descriptive, in reference to the host genus *Scolomys* Anthony, 1924.

Remarks

Furman's (1972) taxonomic key to the *Gigantolaelaps* of Venezuela continues to serve as an excellent survey tool for sorting specimens into morphological species groups in other parts of the neotropics. The holotrichous, or unideficient condi-

tion of tibia IV (couplet 2) is an important synapomorphy that allows the separation of known species into 2 groups, those associated, respectively, with clade B, and clade C, D of Weksler's phylogenetic analysis of the Oryzomyini (Weksler, 2006). In the Manter Laboratory of Parasitology, we have species of holotrichous *Gigantolaelaps* from vouchered oryzomyines of the genera *Euryoryzomys*, *Handleyomys*, *Hylaeamys*, *Nephelomys*, *Oecomys*, and *Transandinomys* (clade B); unideficient *Gigantolaelaps* from *Microryzomys*, *Neacomys*, and *Oligoryzomys* (clade C) and *Aegialomys*, *Cerradomys*, *Holochilus*, *Nectomys*, *Melanomys*, *Oryzomys*, *Pseudoryzomys*, and *Sooretamys* (clade D). *Scolomys*, the host genus for the new species described here, is placed in a basal position in these phylogenetic trees. *Gigantolaelaps scolomys* has 11 setae on tibia IV, the holotrichous condition, and is morphologically similar to species infesting *Oecomys* spp. These characteristics and host association patterns align *Scolomys* with Weksler's clade B, and further support earlier evidence (Gettinger and Owen, 2000; Gettinger et al., 2011) that laelapine mite relationships are reflective of host phylogeny.

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