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A new species of *Androlaelaps* Berlese, 1903 (Acari: Parasitiformes) parasitising an akodontine rodent (Cricetidae: Sigmodontinae) in northeastern Argentina

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Abstract *Androlaelaps misionalis*, a new species of laelapine mite, is described on the basis of specimens collected from the pelage of the akodontine rodent *Akodon montensis* Thomas at Salto El Paraíso, Misiones Province, in northeastern Argentina. The formal taxonomic description, illustrations and SEM photographs are derived from female specimens; the male and nymph are unknown. *Androlaelaps misionalis* n. sp. resembles *A. maurii* Lareschi & Gettinger, 2009 in general appearance, and both species are close to *A. rotundus* Fonseca, 1936. The former two differ from *A. rotundus* in their smaller size, by having the distance between the *j6* setae similar to the distance between the *z5* setae, and by having an opisthogaster with a pair of setae closer to the epigynal shield. *A. misionalis* differs from *A. maurii* mainly in its: larger dorsal shield (length >500 μm); sternal setae *S1*, *S2* and *S3* with tips not extending beyond the following setal base; sternal shield width >1.5 times its length; and shorter epigynal seta *S5*. This mite appears to be host-specific to *Akodon montensis*.

Introduction

Androlaelaps Berlese, 1903 is cosmopolitan and includes species with a variety of feeding modes, ranging from parasitism, feeding on the blood of their vertebrate hosts, to predation on arthropods from the nests of their bird and mammal hosts (Radovsky, 1985). Only five species of this genus have been reported from Argentina, and of these, two new species close to *A. rotundus* Fonseca, 1936 (*A. abrothrix* Gettinger & Lareschi, 2009 and *A. maurii* Gettinger & Lareschi, 2009) were recently described. Previously, these species were erroneously identified (Lareschi, pers. obs.; Lareschi & Mauri, 1998) as *A. rotundus,* which is known to be a species complex (Furman, 1972; Gettinger & Owen, 2000). Recently, the type-series of *A. rotundus* was studied, resulting in lectotype and paralectotype series being designated, the species redescribed and akodontine rodents belonging to the genus *Necromys* Ameghino suggested as the probable type-host (Lareschi & Barros-Battesti, 2010). The latter study contributed to the recognition of *A. rotundus* (*sensu stricto*) and, hence, will be useful for differentiating this mite from other similar species. Here, another new species close to *A. rotundus,* and infesting the akodontine *Akodon montensis* Thomas in northeastern Argentina, is formally described.

Materials and methods

Mites were collected in the field by brushing rodents and stored in 96% ethyl alcohol. In the laboratory, mites were mounted individually in Hoyer's medium and measured with a stage-calibrated ocular

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micrometer. The main taxonomic characters were measured from the holotype and paratype specimens and are presented in micrometres. These characters represent different parts of the laelapid body, i.e. dorsal shield, dorsal chaetotaxy, gnathosoma, sternal shield, epigynial shield, anal shield and legs. Measurements are presented in the text as the value from the holotype, followed by the mean ± standard deviation and range values in parentheses. Width measurements were taken at coxae II level for the dorsal shield, at seatae *S2* level for the sternal shield, and at the widest point for the epigynial and anal shields. Figures were drawn with the aid of a camera lucida. Specimens were examined using a Jeol 6360 LV scanning electron microscope (SEM) and photographed. Evans (1992) was followed for setal nomenclature, and Wilson & Reeder (2005) for host taxonomy.

Androlaelaps misionalis n. sp.

Type-host: *Akodon montensis* Thomas (Sigmodontinae: Akodontini), CNP1925. This voucher specimen is a breeding male captured on April 25, 2007, and housed in the Colección de Mamíferos del Centro Nacional Patagónico (CNP), Puerto Madryn, Chubut, Argentina.

Type-locality: Salto El Paraíso, Misiones Province, Argentina (27°13′S; 54°02′W).

Type-material: The type-series was deposited in the following collections: Collection of the División de Entomología, Museo de La Plata (MLP), La Plata, Argentina (holotype MLP-CNP1925-10, and 7 paratypes MLP-CNP1925-1/7); Acari Collection of the Butantan Institute (IBSP), Sao Paulo, Brazil (2 paratypes).

Etymology: The specific name is derived from the Argentinean province, Misiones, where the host was collected.

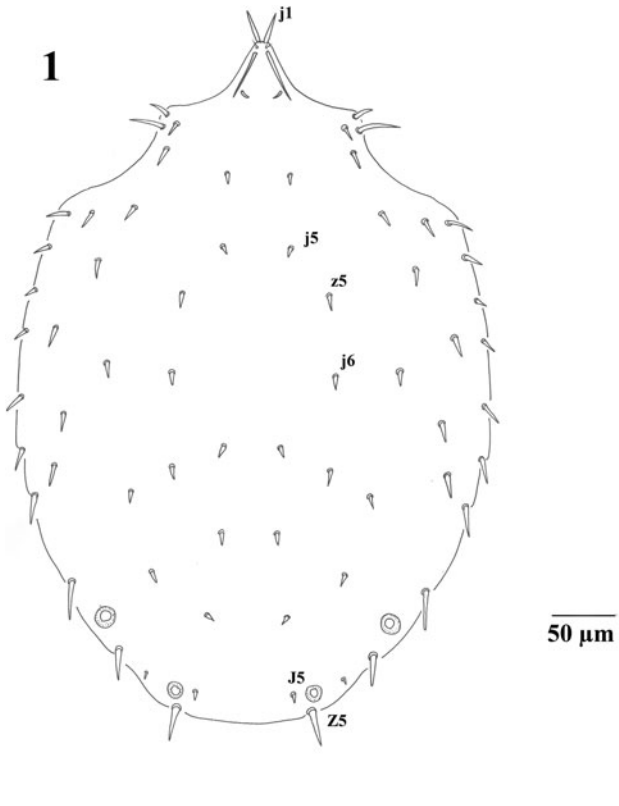
Biology: The type-series of 10 female mites comprised 4 reproductive individuals, each carrying a single larva. Eggs were not observed in the slide preparations. Male unknown.

Description (Figs. 1–8)

Measurements (10 female specimens). Dorsal shield length, 518, 524 ± 7 (518–538); dorsal shield width, 413, 422 ± 8.9 (408–432); length of *j5*, 15, 17 ± 2.2 (15–22); length of *z5*, 17, 18 ± 1.1 (17–19); length of *J5*, 12, 12 ± 0.6 (10–12); length of *Z5*, 94, 88 ± 4.5 (81–94); distance between *j5* setae, 60, 60 ± 1.1 (58–62); distance between *z5* setae, 125, 123 ± 2.2 (120–125); distance between *j6* setae, 122, 122 ± 3.7 (113–125); distance between *J5* setae, 84, 82 ± 2.3 (77–86); distance between *Z5* setae, 122, 121 ± 5.9 (111–132); length of gnathosomal seta, 14, 12 ± 2 (10–14); distance between gnathosomal setae, 58, 53 ± 3.2 (49–58); length of inner hypostomal seta, 24, 24 ± 1.9 (22–28); distance between gnathosomal and inner hypostomal setae, 36, 35 ± 1.7 (32–36); sternal shield length, 106, 106 ± 6.2 (98–115); sternal shield width, 166, 162 ± 4.9 (154–168); length of sternal seta *S1*, 46, 44 ± 2.3 (41–46); length of sternal seta *S3*, 65, 63 ± 2.3 (60–67); distance between sternal setae *S1*, 84, 84 ± 3.5 (77–91); distance between sternal setae *S3*, 166, 163 ± 4.8 (156–168); length of metasternal seta *S4*, 62, 60 ± 3.2 (55–65); epigynal shield length, 125, 122 ± 5 (115–130); greatest width of epigynal shield, 127, 128 ± 2.8 (125–132); epigynal seta *S5*, 41, 45 ± 7.3 (41–65); distance between epigynal setae *S5*, 101, 99 ± 2.7 (96–103); greatest width anal shield, 96, 95 ± 2.6 (91–98); distance from postanal seta to anterior midline of anal shield, 65, 66 ± 1.6 (65–70); paranal seta, 43, 42 ± 1 (41–43); postanal seta, 72, 71 ± 2.7 (67–77); distance between paranal setae, 34, 35 ± 0.9 (34–36); proximal seta coxa I, 51, 48 ± 1.9 (46–51); distal seta coxa I, 24, 22 ± 2.1 (19–22); posterior seta coxa II, 31, 32 ± 2.7 (29–38); posterior seta coxa III, 28, 27 ± 2.2 (24–29); seta coxa IV, 12, 13 ± 3 (10–19); length longest dorsal seta femur I, 43, 45 ± 2.8 (39–48); length longest dorsal seta genu I, 28, 29 ± 1.3 (28–31).

Dorsum (Figs. 1, 3). Idiosoma ovoid, about 1.4 as long as wide. Dorsal shield entire, about 20% longer than wide, almost covering terminal opisthosoma. With 37 consistent pairs of simple setae; *j/J* and *z/Z* series complete; *j1* and *z1* present; central setae very short (between 13–22), except for 4 pairs along posterolateral margin, each progressively longer and stronger posteriorly, with *Z5* longest; gland pores as illustrated (Fig. 1). Margin of opisthosoma with single series of strong, simple setae, progressively longer and stronger posteriorly.

Gnathosoma (Figs. 4, 5). Subcapitular groove with 6 files of teeth; strong tritosternum with unornamented



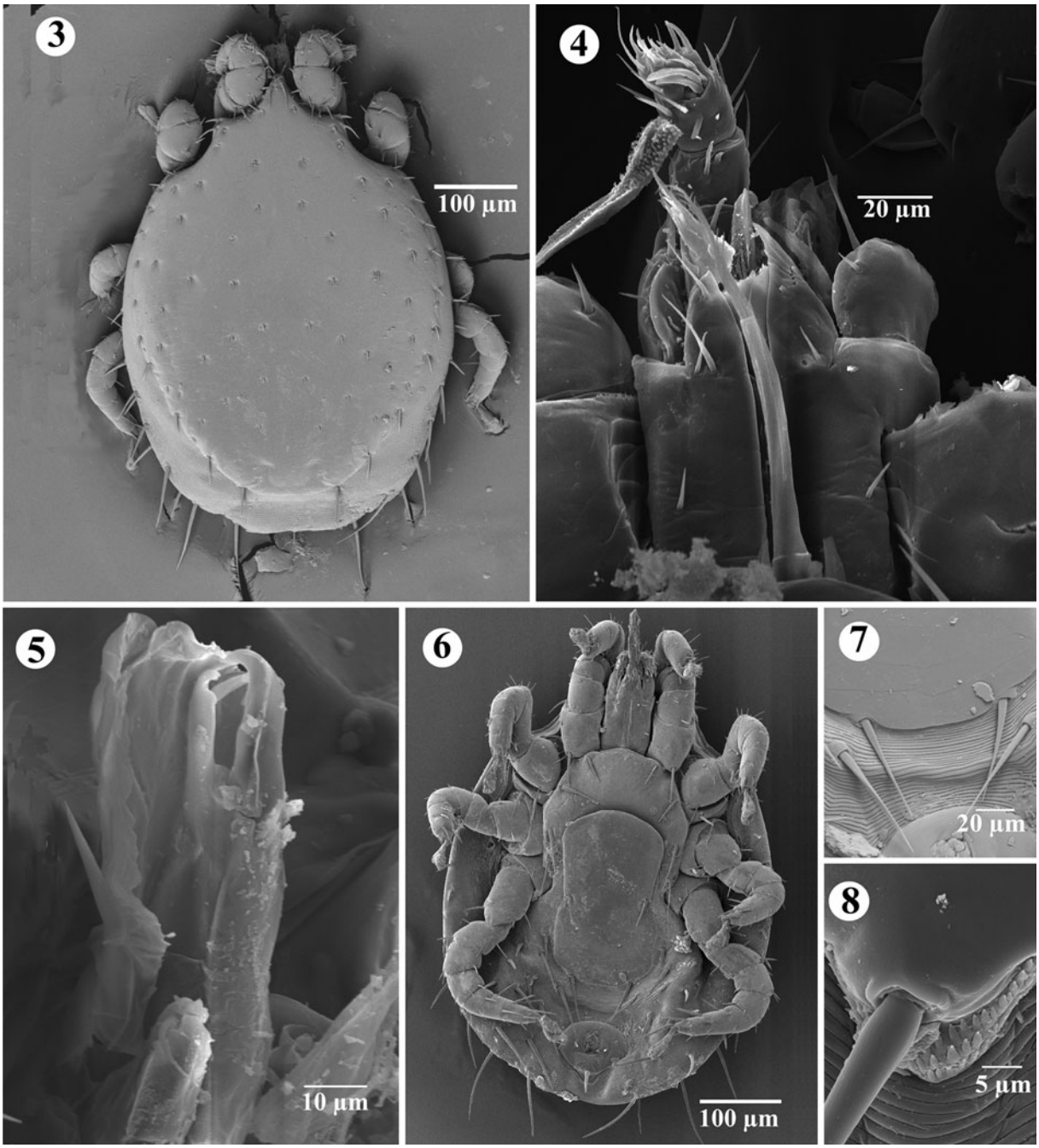
Figs. 1–2 *Androlaelaps misionalis* n sp. 1. Dorsum; 2. Venter

base and thick laciniae; gnathosomatic setae minute. Chelicerae (Fig. 5) chelate-dentate; movable chela with hooked tip and 1 tooth in distal third, fixed chela with no teeth and short setiform pilus dentilis.

Venter (Figs. 2, 6–8). Presternal area sculptured with horizontal striae; sternal shield equal or greater than 1.5 times broader than long; broadest at lateral angles between coxae II and III; anterior margin slightly expanded at level of first sternal seta; posterior margin strongly concave; sternal seta *S1* 30% shorter than *S3*; sternal setae *S1*, *S2* and *S3* short, with tips not extending beyond following setal base (Figs. 2, 6); 2 pairs of elongate-lyriform pores on shield (Fig. 2); metasternal seta *S4* subequal in length with *S3*. Epigynal shield broad, linguiform, with slight lateral expansion posterior to seta; anterior margin strongly convex, with short anterior flap of radiating lines. Epigynal seta *S5* subequal to sternal seta *S1*, but shorter than *S2*, *S3* and metasternal *S4*. Peritrematic shield well sclerotised, extending distance of 18 posterior to stigma. Metapodal shields weakly sclerotised, 35% longer than width. Opisthogaster with 13 pairs of strong setae; 2 pairs close to border of epigynal shield (Fig. 7). Anal shield triangular, with greatest width at level of mid-anus; paranal seta setiform, inserted immediately posterior to level of mid-anus, reaching to insertion of longer, stronger postanal seta; cribrum well developed, composed of 3 rows of teeth (Fig. 8). All legs thick and subequal in length; proximal seta of coxa I strong and setiform, extending posteriorly to near insertion of second sternal seta; distal seta minute; posterior seta of coxa II and III strong; seta of coxa IV minute (Fig. 6).

Diagnosis

Androlaelaps misionalis n. sp resembles *A. maurii* in general appearance. Both species are close to *A. rotundus,* but differ: in their smaller size (<540 µm, *vs* 650 µm in *A. rotundus*); in having the distance between *j6* setae similar to the distance between the *z5* setae, whereas in *A. rotundus* the *j6–j6* distance is similar to that of *j5–j5* (<64 µm); and an



Figs. 3–8 Scanning electron micrographs of *Androlaelaps misionalis* n. sp. 3. Dorsum; 4. Gnathosoma; 5. Chelicera; 6. Venter; 7. Detail of opisthogaster seta close to epigynal shield; 8. Detail of anal shield and cribrum with three rows of teeth

opisthogaster with a pair of setae closer to the epigynal shield than in *A. rotundus*. However, *A. misionalis* n. sp differs from *A. maurii* in having: a larger dorsal shield (length >500 µm, *vs* <500 µm in *A. maurii*); sternal setae *S1*, *S2* and *S3* with tips not extending beyond the following setal base (extending beyond the following setal base in *A. maurii)*; a sternal shield width >1.5 times its length (<1.4 in *A. maurii)*; a sternal shield with a strongly convex posterior border and small projections between coxae

I and II (border slightly convex and projections larger in *A. maurii*); an epigynal shield with a slightly concave posterior border (strongly concave in *A. maurii*); and short epigynal seta *S5* (length <35% of total epigynal shield length, *vs* 50% in *A. maurii*).

Discussion

Androlaelaps misionalis n. sp. appears to be host-specific to *Akodon montensis,* since it has not been collected from any other sympatric rodent in Misiones Province. However, in Argentina, this rodent also inhabits the provinces of Corrientes, Chaco and Formosa (Pardiñas et al., 2006), as well as in eastern Paraguay and southeastern Brazil (Wilson & Reeder, 2005). Further studies are necessary in order to verify whether *Androlaelaps misionalis* follows its host's distribution.

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