

A NEW SPECIES OF SUCKING LOUSE (INSECTA, ANOPLURA) PARASITIC ON *AULISCOMYS* (MAMMALIA, RODENTIA) IN ARGENTINA

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ABSTRACT: *Hoplopleura auliscomydis* n. sp. is described based on specimens collected from *Auliscomys micropus* (Waterhouse 1837), from Collón Curá, Neuquén Province, Argentina. Descriptions are provided for the holotype male, female, first nymphal instar, external architecture of eggs (by scanning electron microscopy), and sites of oviposition, providing differences from its close relative *Hoplopleura neotomydis* Castro, González, and Cicchino, 1995. The geographical ranges of these 2 species are restricted to the Neuquén Province in Argentina. A key to the 9 species of the *Hoplopleura travassosi* species-group recorded in Argentina is also given.

In this contribution, we describe the new species *Hoplopleura auliscomydis* based on specimens collected from *Auliscomys micropus* (Waterhouse, 1837) from Collón Curá, Neuquén Province, Argentina. This new species resembles its close relative *Hoplopleura neotomydis* Castro et al., 1995, in the *travassosi* species-group within the *Hoplopleura* Enderlein, 1904 (Johnson, 1972), which includes 9 species from Argentina (Castro et al., 1995, 1996). We provide detailed descriptions of both sexes, the first nymphal instar, and the external chorionic architecture of the egg, illustrated with scanning electronic microscopy, of this new species, and compare it with the other species of the *travassosi* species-group. Oviposition sites on the host are also described, and an identification key is presented for the 9 species, with their respective geographical ranges in Argentina.

MATERIALS AND METHODS

Study specimens were obtained directly from their host. They were cleared and mounted on conventional microscope slides following the procedure described by Castro and Cicchino (1978). For an accurate study of the external chorionic features, the eggs were submerged in 10% glutaraldehyde, sonicated for 2 min, then mounted on metallic stubs, coated with gold, and observed by scanning electron microscopy (SEM). Nomenclature of the different structures of the egg follows Castro et al. (1991). Body measurements, given in millimeters, were taken directly from mounted specimens using a calibrated eyepiece and are identified in the text by the following abbreviations: HL, length of head; HW, maximum width of head; THL, length of thorax; THW, maximum width of thorax; AL, length of abdomen; AW, maximum width of abdomen, and TL, total length of body. Magnifications for SEM pictures were obtained directly from the automated scale. Scales of the figures are represented in micrometers.

Cephalic chaetotaxy follows Kim and Ludwig (1978). References concerning the rodent hosts follow Musser and Carleton (1992). Illustrations were drawn with the aid of a camera lucida. All study material is deposited in the collections of the Museo de La Plata, Buenos Aires, Argentina (MLP).

DESCRIPTION

Hoplopleura auliscomydis n. sp. (Figs. 1–12)

Male holotype: General aspect as in Figure 1. Head longer than wide, with anterior border rectilinear and lateral borders strongly convex; postantennal angles rounded. Cephalic chaetotaxy: dorsal principal seta, long and robust; accessory, small and thin; dorsal central posterior, 1, very small and thin; marginal, 5 thin; sutural, 2 thin; preantennal, 2 short; apical, 2 thin; ventral principal, thin and long, ventral preantennal,

long and thin. Thorax wider than long, thoracic sternal seta long and thin, sternal plate longer than wide, with its posterior margin in contact with coxa III (Fig. 2). Abdomen with sternal plates well developed and with remarkably uniform setae on each. Tergal plates well developed starting with tergite IV. Number of setae on tergite I: 4, very thin and of same length; tergite II: 6, external ones much longer than central ones; tergite III: 11–13, external ones longer than central; tergites IV–VII: 8–13, long and thick. Paratergal plates with the following characteristics: II with 2 unequal acute lobes, ventral being longer than dorsal, and with 2 different sized setae; III with 2 small subequal lobes, both with scaly appearance terminally, with 2 medium length setae; IV–VI with 2 lobes, ventral being wider, markedly scaly, and having 2 setae, one of them tiny; VII, barely insinuated ventrally, with 2 macrochaetae; VIII without lobes, with 2 macrochaetae (Fig. 6). Genitalia: well developed, long and narrow basal plate, parameres normally developed and rounded apically; pseudopenis well developed, with marked denticle in medial third and tip arrow-shaped, sagittiform (Figs. 3, 4).

Female: General characteristics of head and thorax similar to those of male, differing in paratergal plates VI–VII (Fig. 5) and by presence of a larger number of tergites and sternites (16–17).

First nymphal instar (Fig. 7): Dorsal principal, accessory, and ventral principal cephalic setae well developed, abdomen with marked and forked anal lobe, with 2 macrochaetae on each side.

Measurements given are the range, followed in parentheses by mean and standard deviation, respectively. Males ($n = 4$) HL = 0.181–0.190 (0.187 \pm 0.005); HW = 0.159–0.183 (0.168 \pm 0.013); THL = 0.080–0.089 (0.085 \pm 0.005); THW = 0.250–0.267 (0.259 \pm 0.008); AL = 0.750–0.820 (0.785 \pm 0.035); AW = 0.600–0.633 (0.618 \pm 0.017); TL = 1.011–1.099 (1.047 \pm 0.046). Females ($n = 3$) HL = 0.200–0.251 (0.232 \pm 0.028); HW = 0.167–0.183 (0.175 \pm 0.008); THL = 0.105–0.132 (0.119 \pm 0.014); THW = 0.225–0.283 (0.252 \pm 0.029); AL = 0.895–0.900 (0.898 \pm 0.003); AW = 0.666–0.725 (0.697 \pm 0.030); TL = 1.200–1.283 (1.246 \pm 0.042). Nymphs I ($n = 3$) HL = 0.120–0.122 (0.121 \pm 0.001); HW = 0.110–0.118 (0.114 \pm 0.040); THL = 0.100–0.102 (0.110 \pm 0.001); THW = 0.075–0.096 (0.086 \pm 0.011); AL = 0.302–0.306 (0.304 \pm 0.002); AW = 0.550–0.583 (0.563 \pm 0.017); TL = 0.522–0.530 (0.527 \pm 0.004).

Egg: Silhouette ellipsoidal (Fig. 8), type of ornamentation of amphora: scaly, strongly patterned; type of aerial chamber: ampullacea, relationship among aerial chambers: isolated. Total length: 505 μ m; height of operculum: 50 μ m; maximum width: 122.5 μ m; length of amphora: 475 μ m; width of aerial chamber: 12.9 μ m.

Taxonomic summary

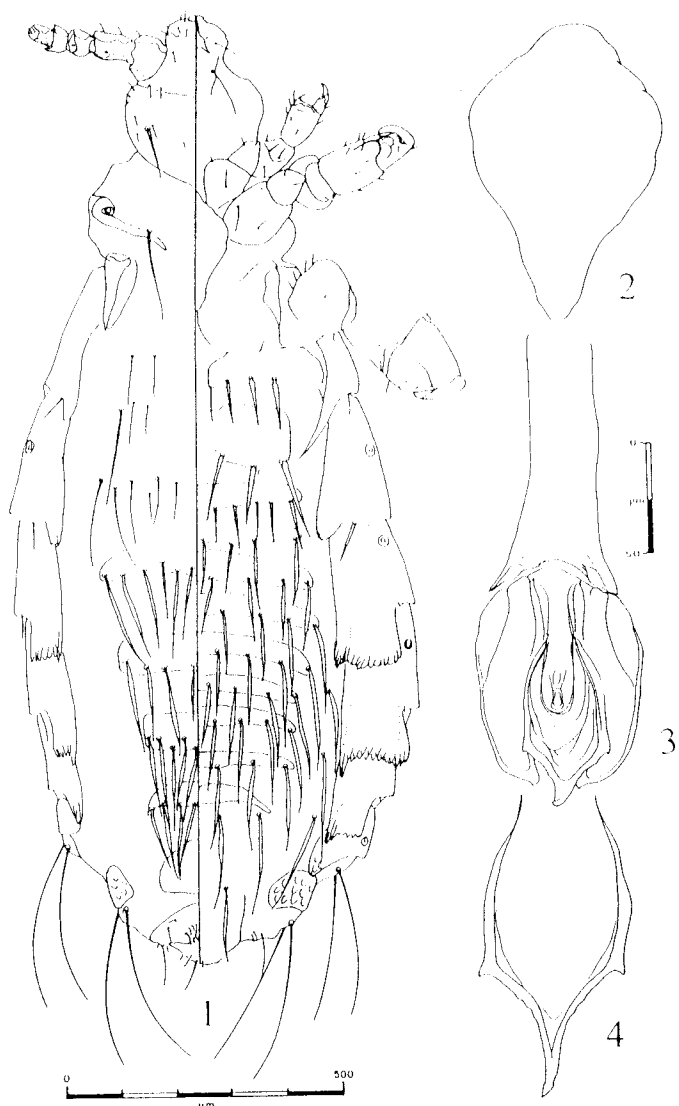
Type host: *Auliscomys micropus* (Waterhouse, 1837) (Rodentia: Muridae: Sigmodontinae).

Type locality: Collón Curá, Neuquén Province, Argentina.

Type specimens: Male holotype, 3 males; 3 females and 3 nymph I paratypes, host as above, 9-IV-1998, Castro Coll. Deposited in collections of the Museo de La Plata, Universidad Nacional de La Plata, Argentina (MLP no. 2650).

Sites of oviposition on the host: We examined 5 host individuals belonging to a single population, all of them parasitized, although in low density, by *H. auliscomydis* n. sp. Three individuals carrying a small number of lice showed a similar infestation pattern, always on

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FIGURES 1-4. *Hoplopleura auliscomydis* n. sp. 1. Male dorsal and ventral view. 2. Thoracic sternal plate. 3. Male genitalia. 4. Detail of pseudopenis.

the flanks of the thorax and abdomen, extending toward the caudal region (Fig. 12a-c).

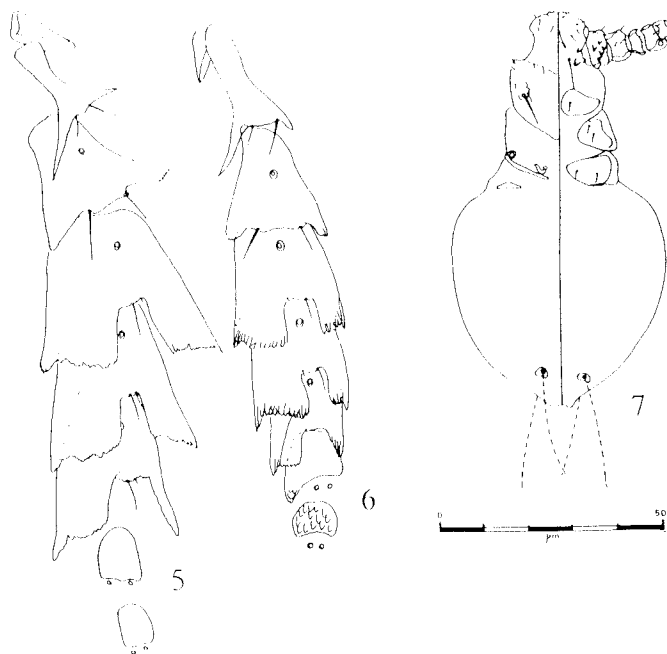
Host: *Auliscomys micropus* (Waterhouse, 1837). The geographical distribution includes Chile and Argentina. In Chile, it ranges along the foothills of the Andes from Talca to Magallanes provinces. In Argentina, it ranges along the Andes, reaching Tucumán Province in the north. *Auliscomys* is represented in Argentina by 2 species, *A. micropus* and *A. sublimis* Thomas, 1900, the latter ranging from the highlands of southern Peru to northwestern Argentina.

Remarks

Hoplopleura auliscomydis n. sp. is morphologically close to *H. neotomydis* (a parasite of the Sigmodontine rodent *Neotomys ebriosus* in Argentina), differing in the shape and dimensions of the thoracic plate, structure of the paratergal plates, and male external genitalia.

DISCUSSION

In Argentina, the *Hoplopleura* Enderlein, 1904 includes 29 species (with *H. auliscomydis* n. sp.) parasitic on rodents. This



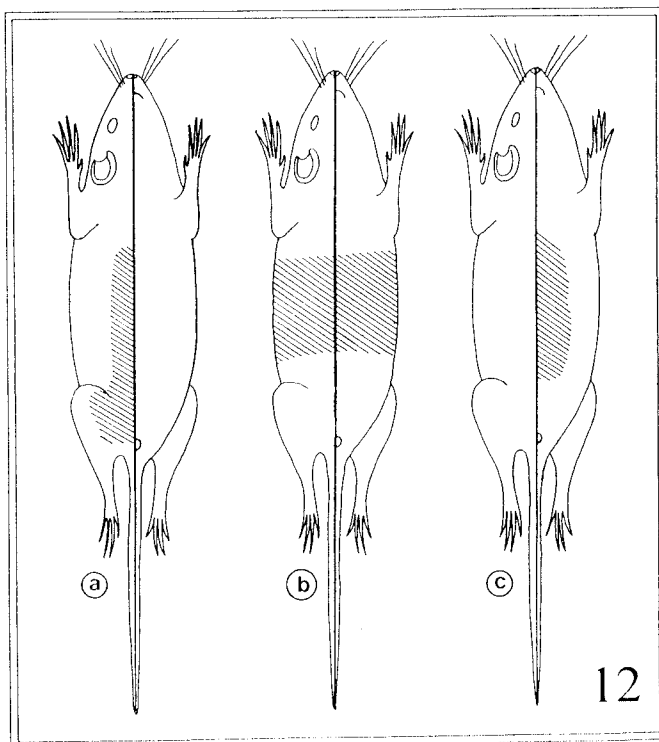
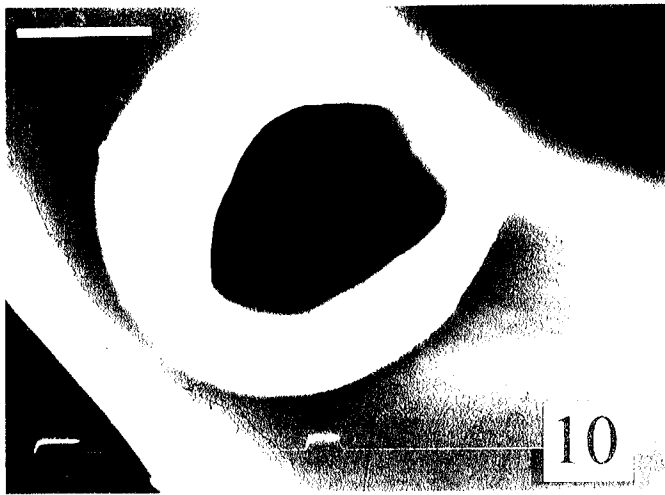
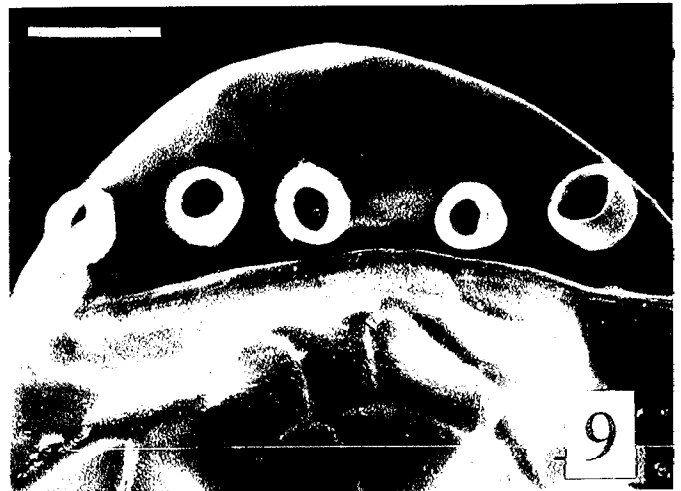
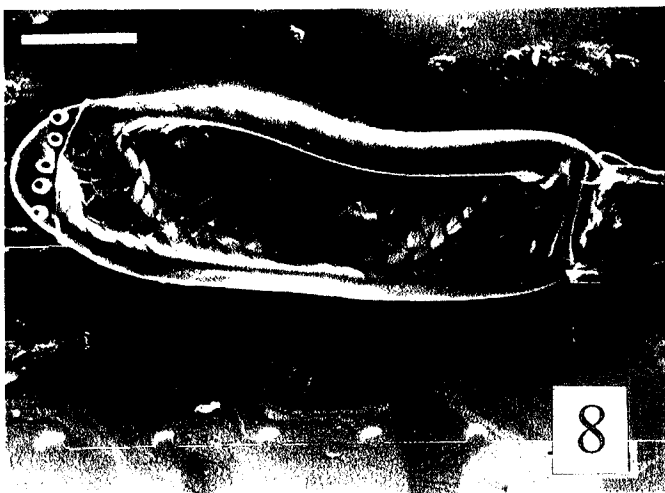
FIGURES 5-7. *Hoplopleura auliscomydis* n. sp. 5. Paratergal plates of female. 6. Paratergal plates of male. 7. Nymph I.

new species shares a number of features with members of the *H. travassosi* species-group, i.e., structure of the thoracic sternal plates (anteriorly widely produced and caudally truncated) and the lobulation pattern of the paratergal plates. Another species cited by Ferris (1921) as occurring on the same host species, is *Hoplopleura reducta* Ferris, 1921, in Lago Blanco Valley, Chubut Province, Argentina. However, this species belongs to the *Hoplopleura erratica* species-group, and the record is considered as questionable by Castro et al. (1990), suggesting *Eligmodontia typus morgani* J. A. Allen, 1901 as the probable true host.

The hosts of *H. neotomydis* and *H. auliscomydis* n. sp. are not phylogenetically closely related, being allopatric in their distributions and belonging to 2 genera with exclusively Neotropical ranges. The *Hoplopleura travassosi* species-group includes 9 species in Argentina, all parasitizing sigmodontine rodents.

Key to the 9 species of the *Hoplopleura travassosi* species-group recorded for Argentina

- | | |
|---|------------------------------|
| 1. Paratergal plate II with dorsal and ventral lobes of similar lengths | 2 |
| 1'. Paratergal plate II with dorsal and ventral lobes of distinctly unequal lengths | 5 |
| 2. Paratergal plate VII with 2 lobes, plate VIII with or without lobes | 3 |
| 2'. Paratergal plate VII with single dorsal lobe, plate VIII lacking lobes | 4 |
| 3. Paratergal plate IV with single seta | <i>H. cooki</i> Kim |
| 3'. Paratergal plate IV with 2 unequal setae | <i>H. similis</i> Kim |
| 4. Paratergal plates II and III with 2 subequal setae | <i>H. andina</i> Castro |
| 4'. Paratergal plate I with 2 distinctly unequal seta and plate III generally with single setae and, if 2 present, 1 of them tiny | <i>H. travassosi</i> Werneck |
| 5. Pseudopenis slightly longer than paramera and apex arrow-shaped | 6 |



FIGURES 8–11. Scanning electron micrograph of the egg of *Hoplopleura auliscomydis* n. sp. **8**. Lateral view (scale 100 μ m). **9**. Operculum, showing air chambers and adjacent region of amphora (scale 25 μ m). **10**. Detail of air chambers showing the location of the micropyles (scale 5 μ m). **11**. Detail of ornamentation of amphora (scale 10 μ m).

FIGURE 12. a–c. Sites of oviposition for *H. auliscomydis* n. sp. in 3 individuals of *Auliscomys micropus* showing different infestation intensities.

- 5'. Pseudopenis almost 2 times length of paramera and apex sharply pointed 7
6. Distal end of pseudopenis with 2–3 denticles *H. delticola* Castro
- 6'. Distal end of pseudopenis with single denticle *H. auliscomydis* n. sp.
7. Distal end of pseudopenis with several denticulations *H. neotomydis* Castro
- 7'. Distal end of pseudopenis with single denticle 8
8. Paratergal plate VII with strong ventral lobe *H. ingens* Castro
- 8'. Paratergal plate VII lacking denticles *H. chelemydis* Castro

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