

New species of the genus *Phtheiropoios* (Phthiraptera: Gyropidae), parasitic on *Ctenomys* (Rodentia: Octodontidae)

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Abstract—The species *Phtheiropoios centralis* sp.nov. is described and illustrated from specimens collected on an undescribed species of *Ctenomys* from Rio Quinto, central Córdoba Province, Argentina. Diagnostic features for the new species include proportion of the male forficula, male external genitalia, and counts of setae and body measurements in both sexes. Its morphological affinities with other species and a key to males of all species of the genus *Phtheiropoios* known to parasitize rodents of the genus *Ctenomys* are included.

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Résumé—On trouvera ici la description illustrée de *Phtheiropoios centralis* sp.nov. Les spécimens de cette espèce ont été récoltés sur *Ctenomys* sp. de la localité de Rio Quinto, Córdoba, en Argentine. Les caractéristiques diagnostiques de cette espèce, ainsi que sa position par rapport aux autres espèces de *Phtheiropoios* sont discutés. Une clé permettra l'identification des mâles de toutes les espèces de *Phtheiropoios* qui parasitent les rongeurs du genre *Ctenomys*.

Introduction

The genus *Phtheiropoios* Eichler includes 12 species, 10 of which are parasitic on mammalian rodents of the genus *Ctenomys* Blainville (Rodentia: Octodontidae: Ctenomyinae) (nine are recorded from Argentina). The remaining two species (also recorded from Argentina) parasitize species of *Chinchilla* Bennet (Rodentia: Chinchillidae) (Cicchino and Castro 1998) and, thus, may not belong to the genus *Phtheiropoios*. The genus *Ctenomys* includes more than 60 species exclusively distributed in southern South America (Contreras and Bidau 1999; Contreras *et al.* 1999).

We describe and illustrate a new species belonging to this amblyceran genus from specimens collected on an unidentified species of *Ctenomys* (probably a new species belonging to the “*C. mendocinus* complex” of Contreras and Bidau (1999)) from General Roca Department, Córdoba Province, Argentina. Brief comments on its morphological affinities with its closest relative and a key to males of all *Phtheiropoios* species known to parasitize *Ctenomys* hosts are also given.

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Materials and methods

Specimens were collected from freshly trapped hosts and mounted on slides following the procedures of Castro and Cicchino (1978). All specimens are housed in the collections of the Museo de La Plata, La Plata, Buenos Aires Province, Argentina.

Body measurements are in millimetres, and include maximum head length and width, maximum abdominal width, and total length of the body. Terminology, including counts and notation of abdominal setae, follows that of Cicchino and Castro (1998). The key presented below is based on the examination of 550 male specimens belonging to all known species of *Ctenomys* from Argentina, Brazil, and Uruguay (Cicchino *et al.* 2000). The specimens used for the development of this key were obtained from the skin of *Ctenomys* species belonging to the collections of the Museum La Plata, Museum Bernardino Rivadavia, and Museum Lorenzo Scaglia from Argentina (Table 1).

***Phtheiropoios centralis* sp.nov.**

(Figs. 1–6)

Type material

Holotype male: Río Quinto, central Córdoba Province, Argentina, 9-X-1994, Museum La Plata (MLP No 2647), J. Baldo Collection. **Paratypes:** four males and nine females, host as above, 9-X-1994, J. Baldo Collection.

Etymology

Phtheiropoios centralis is named after the region in which it was collected: the central Córdoba Province, Argentina.

Diagnosis

This species is morphologically close to *P. tucumanus* Cicchino, but differs in shape of male forficulae, basal plate, pseudopenis, paramera, and ventral sclerite of male genitalia, as well as in elongated shape and some counts of tergal and sternal abdominal setae in females.

Description

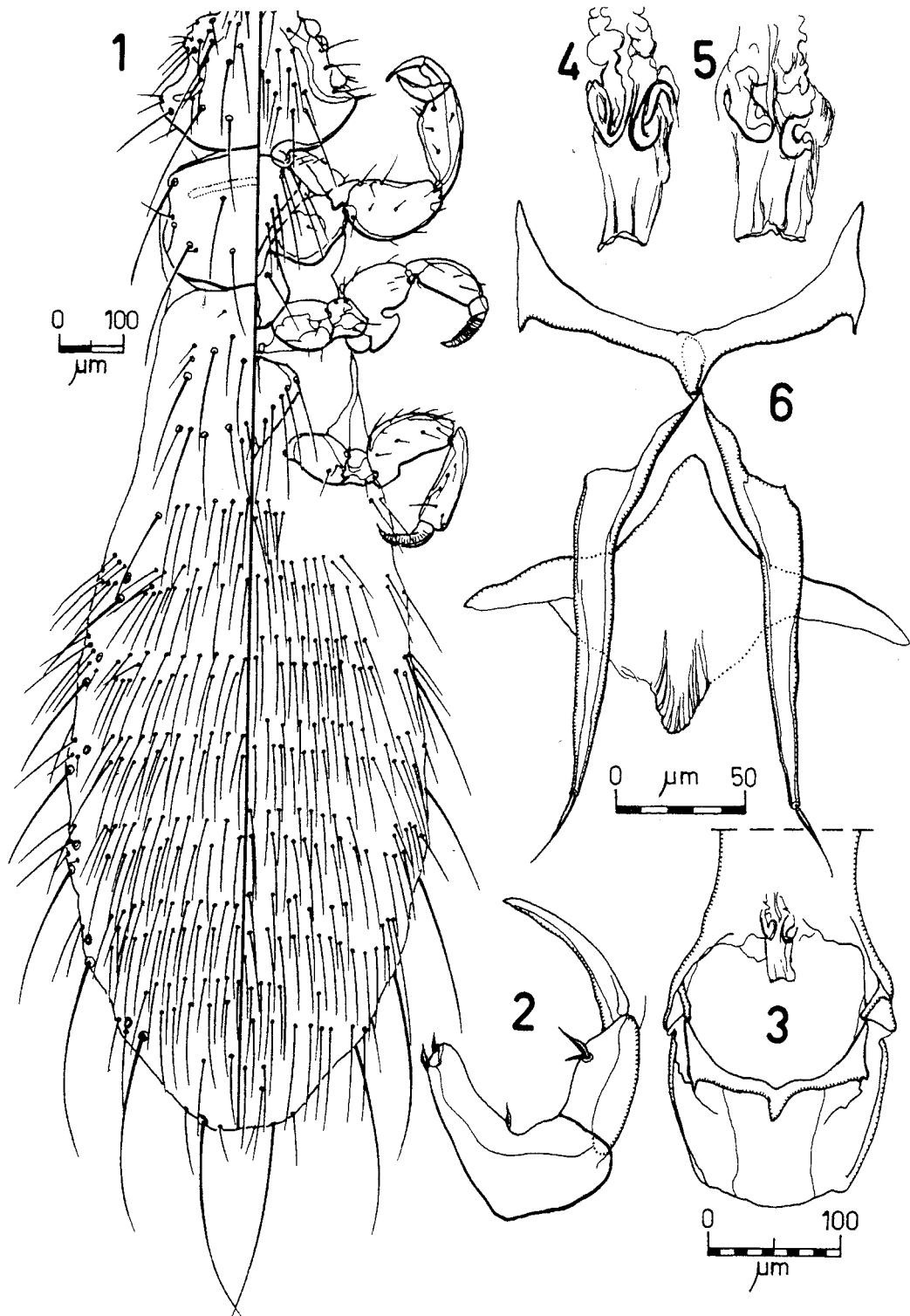
Male (Fig. 1). Body shape elongated, reminiscent of *P. mendocinus* Cicchino and Castro. **Measurements.** Head length: 0.269–0.277; head width: 0.285–0.308; maximum abdominal width: 0.565–0.581; total body length: 1.673–1.792. Forficulae with “toe” not projected beyond level of second tarsomere (Fig. 2). **Abdominal chaetotaxy.** Tergal setae: I, 4–6/10–11; II, 12–16/15–17; III, 17–20/17–22; IV, 23–25/19–23; V, 24–29/19–25; VI, 21–27/18–21; VII, 15–17/9–11; VIII, 4–5/2; sternal setae: I, 3–4/8; II, 18–22/19–25; III, 19–24/23–25; IV, 19–29/20–25; V, 18–24/20–23; VI, 16–18/16–19; VII, 10–13/11–14; VIII, 4–5/2. **External genitalia.** Basal plate narrow (Fig. 3), shape of pseudopenis and ventral sclerite characteristic (Fig. 6); no obvious genital sclerite, but slight differentiation of apex of genital sac in poorly defined and partially contorted tube (Figs. 4 and 5).

Female. Similar to male, except for larger size and counts of abdominal setae. **Measurements.** Head length: 0.286–0.296; head width: 0.308–0.331; maximum abdominal width: 0.600–0.665; total body length: 1.846–1.892. **Abdominal chaetotaxy.** Tergal setae: I, 4–7/8–11; II, 15–17/14–17; III, 23–27/19–23; IV, 25–28/22–24; V, 25–30/19–23; VI, 23–27/19–22; VII, 12–17/6–11; VIII, 4–6/1–2.; sternal setae: I, 3–4/8; II, 17–27/18–23; III, 23–29/22–24; IV, 22–27/21–26; V, 21–27/19–24; VI, 16–18/18–20; VII, 9–12/10–14. **External genitalia.** Vulvar margin not differing from that of *P. mendocinus* (see Cicchino and Castro 1998).

TABLE 1. List of *Ctenomys* spp. associated with each species of *Phtheiropoios*, together with information on collection sites and depository.

<i>Phtheiropoios</i> sp.	<i>Ctenomys</i> sp.	Collection site	Depository*
<i>P. tucumanus</i>	<i>C. tucumanus</i>	Planta Coca Cola, San Miguel de Tucumán, Tucumán Province, Argentina	MLP
<i>P. centralis</i> sp.nov.	<i>Ctenomys</i> sp.	Ruta 35 and Río Quinto, Córdoba Province, Argentina	MBR
<i>P. rionegrensis</i>	<i>C. australis</i>	Faro Monte Hermoso; Necochea, Buenos Aires Province, Argentina	MLP
	<i>C. haigi</i>	El Maitén, Chubut Province, Argentina	MBR
	<i>C. mendocinus</i>	El Chihuido, Malargüe, Mendoza Province, Argentina	MBR
<i>P. forficulatus</i>	<i>C. talarum</i>	Lavalle, Buenos Aires Province, Argentina	MLS
	<i>C. chasiquensis</i>	Paranacito, Entre Ríos Province, Argentina	MBR
	<i>C. rionegrensis</i>	Las Cañas, Río Negro Maldonado Dpto., Uruguay	MBR
	<i>C. porteousi</i>	Bonifacio, Buenos Aires Province, Argentina	MBR
	<i>C. australis</i>	Necochea, Buenos Aires Province, Argentina	MLP
	<i>C. scagliai</i>	Los Cardones, Tucumán Province, Argentina	MBR
	<i>C. latro</i>	Tapia, Tucumán Province, Argentina	MLS
	<i>C. pearsoni</i>	San José, Uruguay	MBR
	<i>C. mendocinus</i>	Santa Rosa, Mendoza Province, Argentina	MBR
<i>P. mendocinus</i>	<i>C. mendocinus</i>	Las Heras, Mendoza Province, Argentina	MBR
<i>P. latipollcaris</i>	<i>C. magellanicus</i>	Río Grande, Tierra del Fuego Province, Argentina	MBR; MLP
<i>P. policaris</i>	<i>C. magellanicus</i>	Río Grande, Tierra del Fuego Province, Argentina	MBR
<i>P. gracilipes</i>	<i>C. chasiquensis</i>	Chasicó, Buenos Aires Province, Argentina	MBR
	<i>C. haigi</i>	El Maitén, Chubut Province, Argentina	MBR
	<i>C. mendocinus</i>	Villarino, Buenos Aires Province, Argentina	MBR
	<i>C. colburni</i>	Hanuluán, Río Negro Province, Argentina	MLS
	<i>C. porteousi</i>	Bonifacio, Buenos Aires Province, Argentina	MBR
	<i>C. australis</i>	Necochea, Buenos Aires Province, Argentina	MLP
	<i>C. mendocinus</i>	Las Heras, Mendoza Province, Argentina	MBR
	<i>C. sp.</i>	Villa Mercedes, San Luis Province, Argentina	MBR
<i>P. wetmorei</i>	<i>C. mendocinus</i>	Villa Mercedes, San Luis Province, Argentina	MBR
	<i>C. rionegrensis</i>	Las Cañas, Río Negro, Uruguay	MBR
	<i>C. yolandae</i>	Loteo Santa Ana, Dpto. Capital; Helvecia, Dpto. San Javier, Santa Fé Province, Argentina	MBR
	<i>C. dorbignyi</i>	Verón de Astrada, Corrientes Province, Argentina	MBR
	<i>C. pilarensis</i>	Colonia Venitez, Chaco Province, Argentina	MBR
	<i>C. argentinus</i>	Colonia Benítez, Chaco Province, Argentina	MBR
	<i>C. scagliai</i>	Tapia, Tucumán Province, Argentina	MBR
	<i>C. saltarius</i>	Cafayate, Salta Province, Argentina	MBR
	<i>C. latro</i>	Trancas, Tucumán Province, Argentina	MBR; MLS
	<i>C. sp.</i>	Cafayate, Salta Province, Argentina	MBR
	<i>C. minutus</i>	Río Grande, Brasil	MBR
<i>P. nematophallus</i>	<i>C. luteolus</i>	Tilcara, Jujuy Province, Argentina	MBR
<i>P. ewingi</i>	<i>C. luteolus</i>	Tilcara, Jujuy Province, Argentina	MBR

*MLP, Museo La Plata, Argentina; MBR, Museo Bernardino Rivadavia, Argentina; MLS, Museo Lorenzo Scaglia, Argentina.



FIGURES 1–6. *Phtheiropoios centralis*, male: 1, dorsal and ventral aspect of body; 2, right forficula; 3, apical portion of the basal plate of the external genitalia; 4 and 5, differentiation of the apical portion of the genital sac of two individuals; 6, pseudopenis, parameres, and ventral sclerite of genitalia. Figures 2 and 4–6 are drawn to the same scale.

Host

Ctenomys sp. (probably a new species, now under study), from Ruta 35 and Río Quinto, General Roca, central Córdoba Province, Argentina.

Remarks

Morphological affinities between this new species and *P. tucumanus* seem to be consistent with the currently accepted evolutionary theory of geographic diversification of the different lineages of *Ctenomys* (Contreras and Bidau 1999). The hosts of both species, *Ctenomys* sp.nov.? and *C. tucumanus* Thomas belong to or are southern derivatives of the main stem, which originated in the highland of Bolivia (Reig *et al.* 1990), and belong to the “*C. mendocinus* complex,” which comprises several sublineages (Contreras and Bidau 1999), some of which are associated with one or more *Phtheiropoios* species (Contreras *et al.* 1999).

Key to males of the genus *Phtheiropoios*: parasites of the genus *Ctenomys*

1. Pseudopenis deeply V-shaped, noticeably widened, thickened, and produced backwards in middle. Apical portion of basal plate slightly widened. No traces of sclerite in genital sac *P. tucumanus*
- Pseudopenis otherwise, slightly widened, and produced backward in middle and sometimes also at sides. Apical portion of basal plate noticeably widened. Sclerite, or at least discernible differentiation of apex of genital sac, consistently associated with latter 2
2. Genital sclerite present as unpigmented or slightly pigmented differentiation of apex of genital sac 3
- Genital sclerite always well differentiated and pigmented 8
3. Genital sclerite tubelike and partially contorted, unpigmented. Lateral edges of pseudopenis produced caudally *P. centralis* sp.nov.
- Genital sclerite otherwise, always slightly pigmented. Lateral edges of pseudopenis caudally produced or not 4
4. Genital sclerite pear shaped, caudally round. Pseudopenis greatly thickened and produced medially *P. rionegrensis* Cicchino and Castro
- Genital sclerite V-shaped or U-shaped. Pseudopenis not as above, slightly thickened and caudally produced in middle. 5
5. Genital sclerite V-shaped 6
- Genital sclerite U-shaped 7
6. “Thumb” of forficula long, exceeding level of apex of second tarsomere. Body silhouette stout: maximum width of abdomen 0.73–0.78 mm. *P. forficulatus* (Neumann)
- “Thumb” of forficula shorter, not reaching level of second tarsomere. Body silhouette slender: maximum width of abdomen 0.52–0.58 mm. *P. mendocinus* Cicchino and Castro
7. Tibia almost as wide as profemur. Metafemur almost as wide as mesofemur. Thumb of forficula greatly enlarged and its apical third somewhat curved inwards *P. latipollicaris* (Ewing)
- Tibia I more slender than profemur. Metafemur noticeably more slender than the mesofemur. Thumb of forficula not enlarged or curved inwards *P. gracilipes* (Ewing)
8. Genital sclerite short and stout, composed of two subtriangular and superimposed pieces. Pseudopenis very narrow *P. wetmorei* (Ewing)
- Genital sclerite elongated, composed of single piece 9
9. Genital sclerite short (length 68–75 mm), bacilliform *P. pollicaris* (Ewing)
- Level 1Genital sclerite very long (over 200 mm), with its basal end widened 10
10. Genital sclerite almost straight, with base slightly dilated *P. nematophallus* (Weneck)
- Genital sclerite deflexed, with base widely dilated, spoonlike *P. ewingi* (Werneck)

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