



A new species of *Cryptocellus* (Arachnida, Ricinulei) from Oriental Amazonia

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Abstract

Cryptocellus tarsilae n. sp. is described from male and female specimens collected in a small cave at Carajás National Forest, Serra Norte, Pará, Brazil. The new species appears to be similar to *C. peckorum* Platnick & Shadab, 1977 by the moderately expanded metatarsus III, bearing a metatarsal process with a flattened tip. Both males and females of the new species are readily recognizable by the carapace having a posterior median bulge covered by tubercles.

Keywords: *Cryptocellus*, Ricinulei, Brazilian Amazon, Neotropics, taxonomy

Introduction

Ricinulei is the smallest order of Arachnida, with 56 living species (Harvey 2003; Bonaldo & Pinto-da-Rocha 2003) in a single family, Ricinoididae. Despite the low diversity of species, they can be relatively abundant at some Amazonian localities. Adis et al. (1989) found densities of up to 36 specimens per square meter for *Cryptocellus becki*, and up to 10 specimens per square meter for *C. adisi* at Adolfo Ducke Forest Reservation, Manaus, Amazonas State, while Barreiros et al. (2005) founded an average density of 0.7 specimens per square meter for *C. simonis* at Rodrigues Alves Park, Belém, Pará State.

In the present paper we describe a new species of *Cryptocellus* from the Carajás National Forest, which harbors the largest iron ore mine in the world. This is the 57th known species of the Order, the 18th known to occur in South America, and the second recorded in Brazilian Oriental Amazonia. The few specimens available were collected in a small cave located in a transition area between Amazonian Forest vegetation and the “Canga” (R. Andrade, pers. comm.), on the slopes of a plateau. However, they do not show any troglomorphy and their relationship with the cave is uncertain. The Canga is a landscape of open vegetation that occurs around water-filled depressions in outcrops of iron ore (Morellato & Rosa 1991).

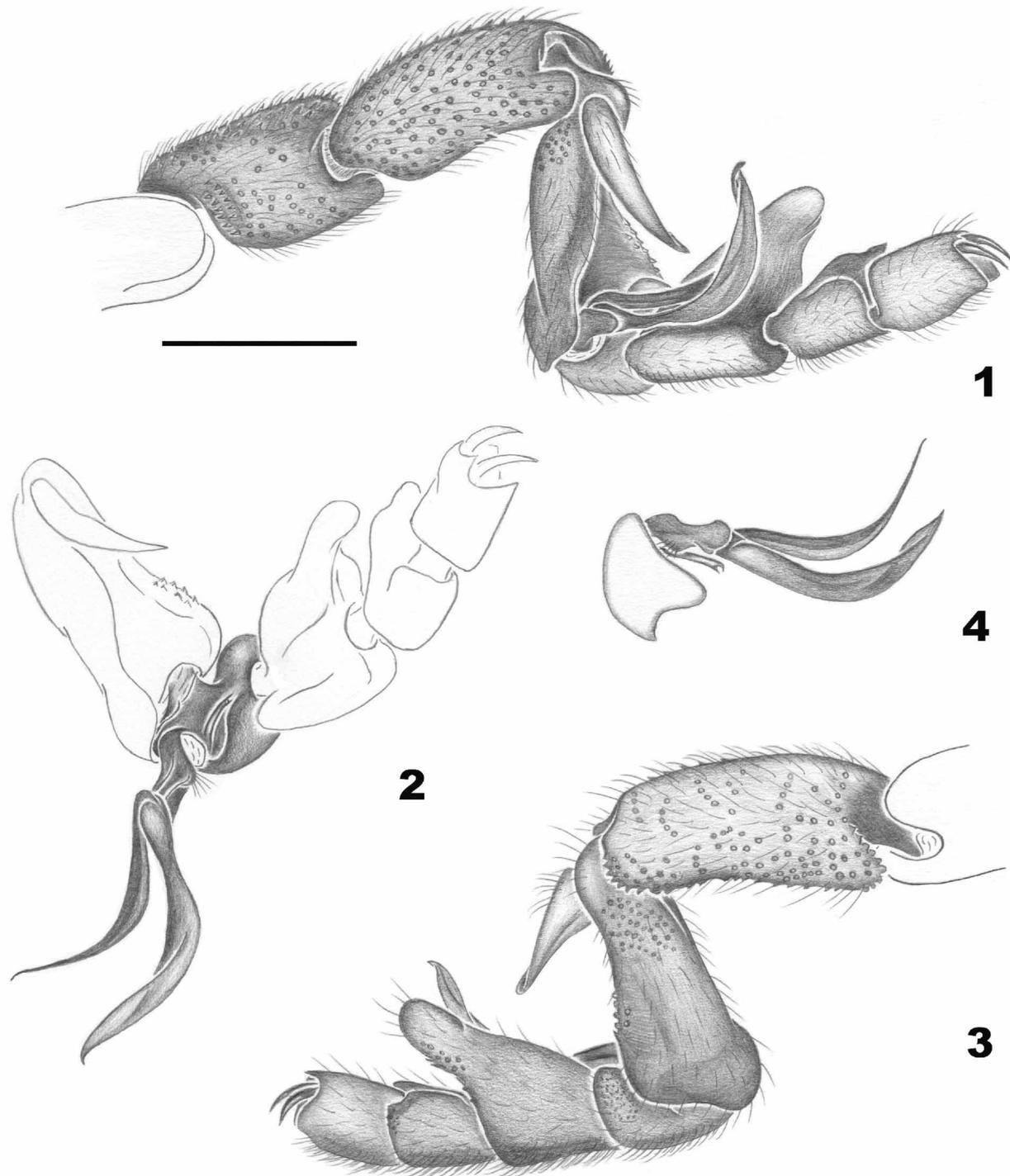
Material and methods

The general terminology follows Platnick & Shadab (1977), while that of male leg III follows Cokendolpher (2000). Measurements were taken according to Cooke & Shadab (1973) and are given in millimeters. The specimens were covered in clay, and some setae had clay on the apex, giving them the false appearance of being clavate. They were partially cleaned by immersion in 1% pyrophosphate of sodium and exposed to an ultrasound cleaner for about 15 minutes. The type material is deposited in the Museu Paraense Emílio Goeldi, Belém (MPEG, curator: A. B. Bonaldo) and the Museu de Zoologia da Universidade de São Paulo (MZSP, curator: R. Pinto-da-Rocha).

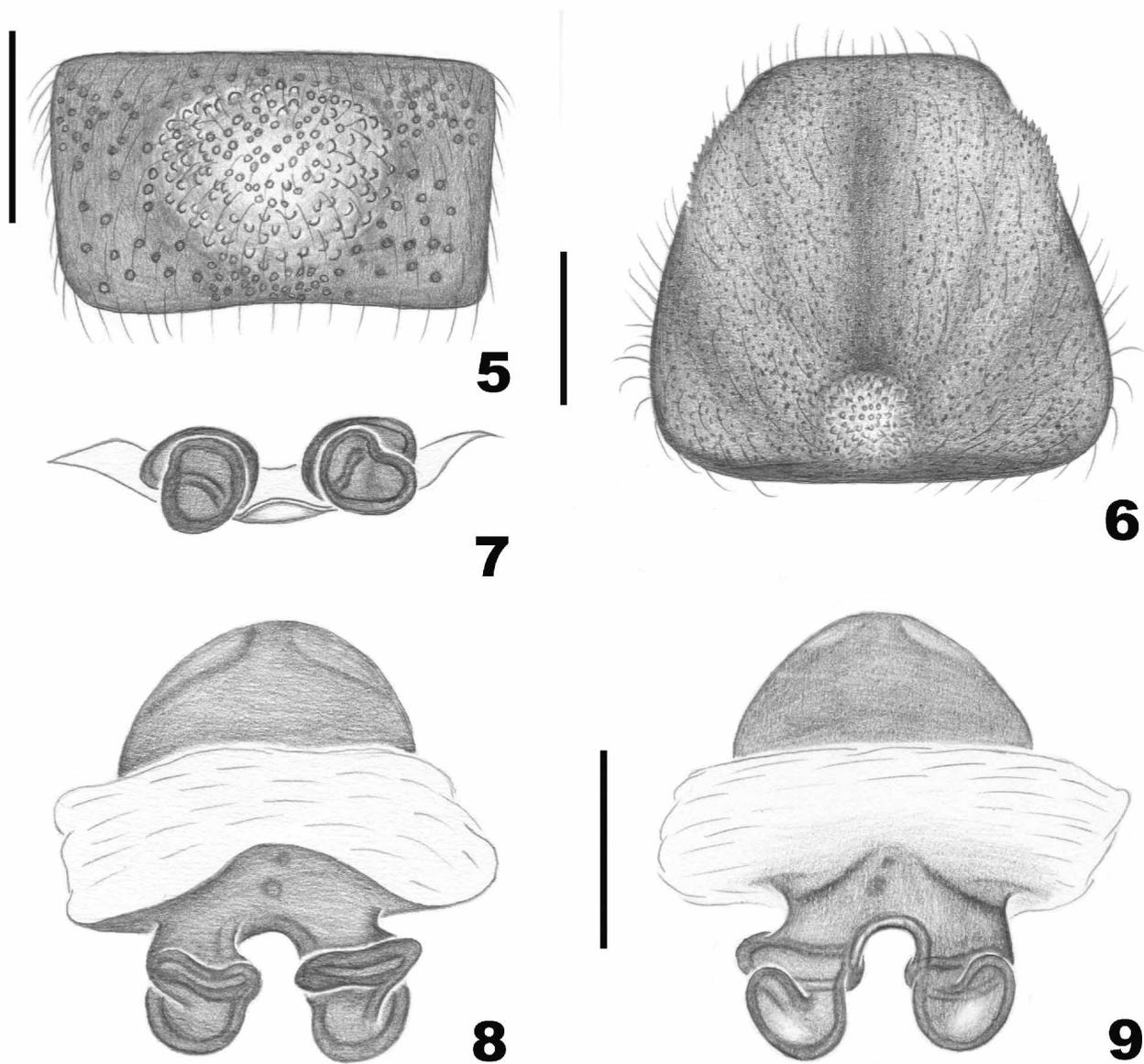
***Cryptocellus tarsilae* n. sp.**

(Figs. 1–9, Table 1)

Types. Male holotype (MZSP 27805) and female paratype (MZSP 27806), Gruta N5S-07 (horizontal cave, 50 m deep; 06°06'20"S, 44°07'59"W), Flona Carajás, Pará, Brazil, 3-13.V.2005, R. Andrade & Y. Arnoni leg.; female paratype, same data as holotype (MPEG 041).



FIGURES 1–4. *Cryptocellus tarsilae* n. sp. Male leg III. 1, anterior view; 2, dorsal view; 3, posterior view; 4, posterior view of movable process of tarsal process. Scale bar 0.5 mm (figs 1–4).



FIGURES 5–9. *Cryptocellus tarsilae* n. sp. 5, Male tergite XI. 6–9, Female: 6, carapace; 7 spermathecae, dorsal view; 8 spermathecae, anterior view; 9, spermathecae, posterior view. Scale bars: 0.5 mm (figs 5–6); 0.2 mm (figs 7–9).

Etymology. Patronym dedicated to the Brazilian painter Tarsila do Amaral, who inaugurated modernism in Brazil in 1922, during the event called “Semana de 22”.

Distribution. Known only from type locality.

Diagnosis. *Cryptocellus tarsilae* n. sp. appears to be similar to *C. peckorum* Platnick & Shadab, 1977 by the moderately expanded metatarsus III, bearing a metatarsal process with a flattened tip. Both males and females of the new species are readily recognizable by the carapace having a posterior median bulge covered by tubercles.

Description. *Male* (Figs. 1–5). Total length 3.25. Carapace 1.37 long, 1.32 wide at leg III; general color dark brownish-red, darker on margins with small, short, white setae; without deep pits or translucent areas; anterior margin without a U-shaped notch; with deep depression along longitudinal midline; with rounded eminence near posterior margin; tubercles uniformly distributed, except near anterior margin, where rare. Abdomen 1.87 long, 1.92 wide at tergite XII; color lighter than carapace; without deep pits; tergites with small, short, white setae densely covering dorsum; concentration of tubercles decreasing from tergite XI to

XIII; median plate of tergite XI with darker area near margins; median plate of tergite XI–XIII with darker, median eminence decreasing in size posteriad; median plate of tergite XI–XII slightly wider than long; XIII slightly longer than wide; lateral plates of tergites lighter. Venter: sternal region with coxae I not meeting tritosternum; coxae II meeting along their entire length, their suture line about one-third longer than that of coxae III; coxae IV meeting anteriorly; sternites densely covered by tubercles and with small, short, white setae, except medially where more scattered; III–IV with large black zone. Pygidium with shallow notch on dorsal margin of basal segment. Cucullus 0.65 long, 0.82 wide; dark red zone on anterior half, red on posterior half, uniformly tuberculate, without proximal depression; with small, short, white setae, longer setae more sparse. Chelicera: fixed finger with 3 teeth (distal longer than others); movable finger with 5 equal-sized teeth. Pedipalp: covered with small, short, white setae; coxa, femur and tibia yellow, trochanter darker, posterior margin reddish; femur with ventrobasal and retrolateral tubercles on basal third. Leg formula II-IV-III-I; legs dark red, basitarsus and telotarsus lighter, densely covered with short, white setae; basitarsus I densely covered by tubercles on venter; II with few tubercles; tarsal claws thin, evenly curved; copulatory apparatus as in figures 1–4. Legs with following sexual modifications: second leg not noticeably widened; femur I 1.8 times as long as wide; II 2.75 times long as wide; tibia I with rounded knob on middle of prolateral side of venter; trochanter II with ventral depressed apophysis; trochanter IV without knob on retrolateral side.

Female (MZSP 27806) (Figs 6–9). Similar to male, except as follows. Total length 3.2. Carapace (Fig. 6) 1.37 long, 1.35 wide at end of leg II; general color dark red; anterior margin slightly concave; tubercles uniformly distributed, except on anterior margin and on longitudinal median line. Abdomen 1.82 long, 2.05 wide; median plate of tergites XI–XIII wider than long; median dorsal plate I–III with lower eminence than male; venter with larger black zone on sternites III–IV. Pygidium with V-shaped notch on dorsal margin of basal segment. Cucullus 0.72 long, 0.85 wide; dark red, orange distally; uniformly tuberculate. Chelicera: fixed finger with 4 teeth (distal longer than others); movable finger with 4 teeth similar in size. Leg formula II- III-IV-I; femur I 2.2 times longer than wide; II 3.6 times longer than wide. Spermathecae as in Figs. 7–9.

TABLE 1. *Cryptocellus tarsilae* n. sp. Measurements of male holotype followed by those of female paratype (MZSP 27806) in parentheses.

	I	II	III	IV	Palp
Coxa	0.45 (0.52)	0.77 (0.75)	0.62 (0.67)	0.52 (0.62)	0.25(0.25)
Trochanter	0.25 (0.17)	0.30 (0.25)	0.30 (0.22)	0.35 (0.22)	0.32 (0.37)
Basifemur	–	–	0.25 (0.27)	0.35 (0.32)	0.22 (0.25)
Femur	0.62 (0.67)	1.10 (1.17)	0.90 (0.77)	0.90 (0.87)	0.65 (0.80)
Patella	0.35 (0.42)	0.62 (0.67)	0.50 (0.47)	0.52 (0.50)	–
Tibia	0.50 (0.55)	0.92 (0.87)	0.57 (0.50)	0.50 (0.60)	0.97 (1.1)
Basitarsus	0.70 (0.80)	1.05 (1.12)	0.82 (0.72)	0.77 (0.67)	–
Telotarsus	0.35 (0.35)	1.00 (0.92)	1.07 (0.50)	0.62 (0.65)	–
TOTAL	3.22 (3.48)	6.53 (5.75)	5.03 (4.12)	4.03 (4.45)	2.41 (2.77)

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