REVISTA IBÉRICA de Aracnología

ARTÍCULO:

On a new species of *Cryptocellus* from Brazilian Amazon (Arachnida, Ricinulei)

Alexandre B. Bonaldo
Museu Paraense Emílio Goeldi, Depto de Zoologia, Campus de Pesquisa, Av. Perimetral, s/n, 66040-170, Belém PA, Brazil.
bonaldo@museu-goeldi.br

Ricardo Pinto-da-Rocha
Departamento de Zoologia, Instituto de Biociências, Universidade de São Paulo, Caixa Postal 11461, 05422-970 São Paulo SP, Brazil
ricrocha@usp.br

Revista Ibérica de Aracnología
ISSN: 1576 - 9518.
Dep. Legal: Z-2656-2000.
Vol. **7**, 30-VI-2003
Sección: Artículos y Notas.
Pp: 103–108

Edita:
Grupo Ibérico de Aracnología (GIA)
Grupo de trabajo en Aracnología de la Sociedad Entomológica Aragonesa (SEA)
Avda. Radio Juventud, 37
50012 Zaragoza (ESPAÑA)
Tef. 976 324415
Fax. 976 535697
C-elect.: amelic@telefonica.net
Director: A. Melic

Información sobre suscripción, índices, resúmenes de artículos *on line*, normas de publicación, etc. en:

Página web GIA:
http://entomologia.rediris.es/gia

Página web SEA:
http://entomologia.rediris.es/sea

ON A NEW SPECIES OF *CRYPTOCELLUS* FROM THE BRAZILIAN AMAZON (ARACHNIDA, RICINULEI)

Alexandre B. Bonaldo & Ricardo Pinto-da-Rocha

Abstract

Cryptocellus abaporu sp. n. is described based on material of both sexes from Jí-Paraná, southwest Rondônia, Brazil, which represents the southernmost record of the genus. The new species appears to be similar to both *C. simonis* and *C. foedus* based on the high concentration of tubercles on the carapace and tergites.

Key words. Ricinulei, *Cryptocellus*, Taxonomy, Brazilian Amazon.
Taxonomy: *Cryptocellus abaporu* sp. n.

Una nueva especie de *Cryptocellus* de la Amazonas brasileño (Arachnida, Ricinulei)

Resumen

Se describe *Cryptocellus abaporu* sp. n. sobre material de ambos sexos procedente de Jí-Paraná, Rondônia suroccidental, Brasil, lo que representa la cita más meridional del género. La nueva especie parece similar a *C. simonis* y *C. foedus*, por la alta concentración de tubérculos en el carapacho y los terguitos.

Palabras clave: Ricinulei, *Cryptocellus*, Taxonomía, Amazonía brasileña.
Taxonomía: *Cryptocellus abaporu* sp. n.

Neotropical ricinuleids are litter and soil inhabitants of dryland forests in Central Amazonia (Adis *et al.*, 1989). They had been considered very rare and each specimen found was considered a zoological triumph by Savory (1977). However, studies in the rain-forest of Amazon region had revealed that they are much more common than imagined earlier and could be quite abundant in certain areas (Platnick, 1988; Adis *et al.,*1989; J.A. Barreiros person. com.). With their extremely thick cuticle, slow locomotors habits and tergites divided in three plates, these animals look and act like the armored tanks of the arachnid world (Platnick, 2002). However, one of the most striking features shown by ricinuleids is the system of sperm transfer, which is achieved by an elaborate copulatory apparatus in the male third leg (Harvey, 2002). Like the spider pedipalp, the ricinuleid third leg offers numerous species-specific features that are very important in the recognition of individual species (Harvey, 2002).

Living ricinuleids comprise only around 55 species (Adis & Harvey, 2000), just one family (Ricinoididae) and three genera: one African (*Ricinoides*), one exclusively Neotropical (*Cryptocellus*) and another Neotropical and Neartic (*Pseudocellus*) (Platnick, 2002). Platnick (2002) provided a key for 16 South American *Cryptocellus*, which together with the other 9 Central American species (see Platnick & Shadab, 1981) makes a total of 25 named species.

In this paper we describe another species of *Cryptocellus* from South America, which represents the southernmost record of Ricinulei in Neotropical region. The general terminology follows Platnick & Shadab (1977), and that of male leg III, Cokendolpher (2000). Measurements follow Cooke & Shadab (1973) and are in millimeters. The type material is deposited in the Museu Paraense Emilio Goeldi, Belém (MPEG, curator: A. B. Bonaldo) and Museu de Zoologia da Universidade de São Paulo (MZSP, curator: R. Pinto-da-Rocha).

Cryptocellus abaporu sp. n.

Figs. 1-15.

TYPES. Types. Male holotype and female paratype from Sítio Linha 94, Jí-Paraná, Rondônia, Brazil, 31.August.1986. W.L. Overall leg. (MPEG); idem, paratype male (MZSP-21353); Fazenda Sinueiro, Jí-Paraná, Rondônia, Brazil, 01.September.1986, W.L. Overall leg., male and tritonymph paratypes (MPEG), idem, female paratype (MZSP-21354).

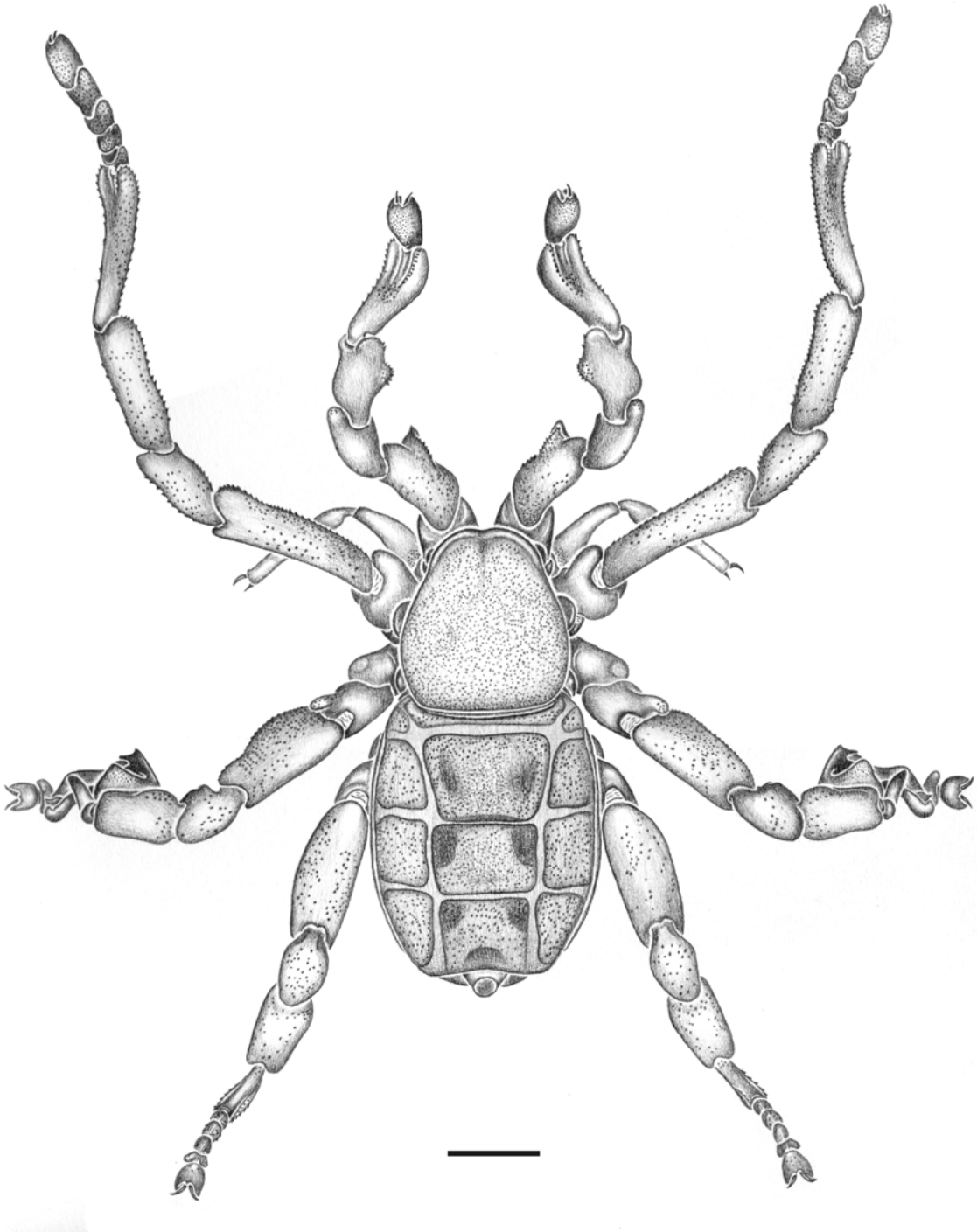

Fig. 1. *Cryptocellus abaporu* sp. n. Male. Scale bar = 1mm.

ETYMOLOGY. A noun in apposition, Abaporu is the name of an important and beautiful painting by Tarsila do Amaral which inaugurated the modernism in Brazil in the 20´s; the word came from Tupi language, meaning those who eat human flesh, which of course have no relation with ricinuleids.

DIAGNOSIS. The new species appears to be most similar to both *C. simonis* (known from both sexes) or *C. foedus* (only known from the female holotype). Males resemble those of *C. simonis* by the high concentration of tubercles on the carapace and tergites (Fig. 1) and by the shape of tarsal process of the third leg (Figs. 4-5); males differ from it by the deeper furrow on the cucullus, the absence of knobs on metatarsus I and on the prolateroventral surface of femur II, the presence of a wide tubercle on the base of the prolatero-apical rounded knob of basitarsus III and the absence of tubercles on telotarsus III. Females resembles those of *C. foedus* by the highly tuberculate carapace and tergites (Fig. 10,

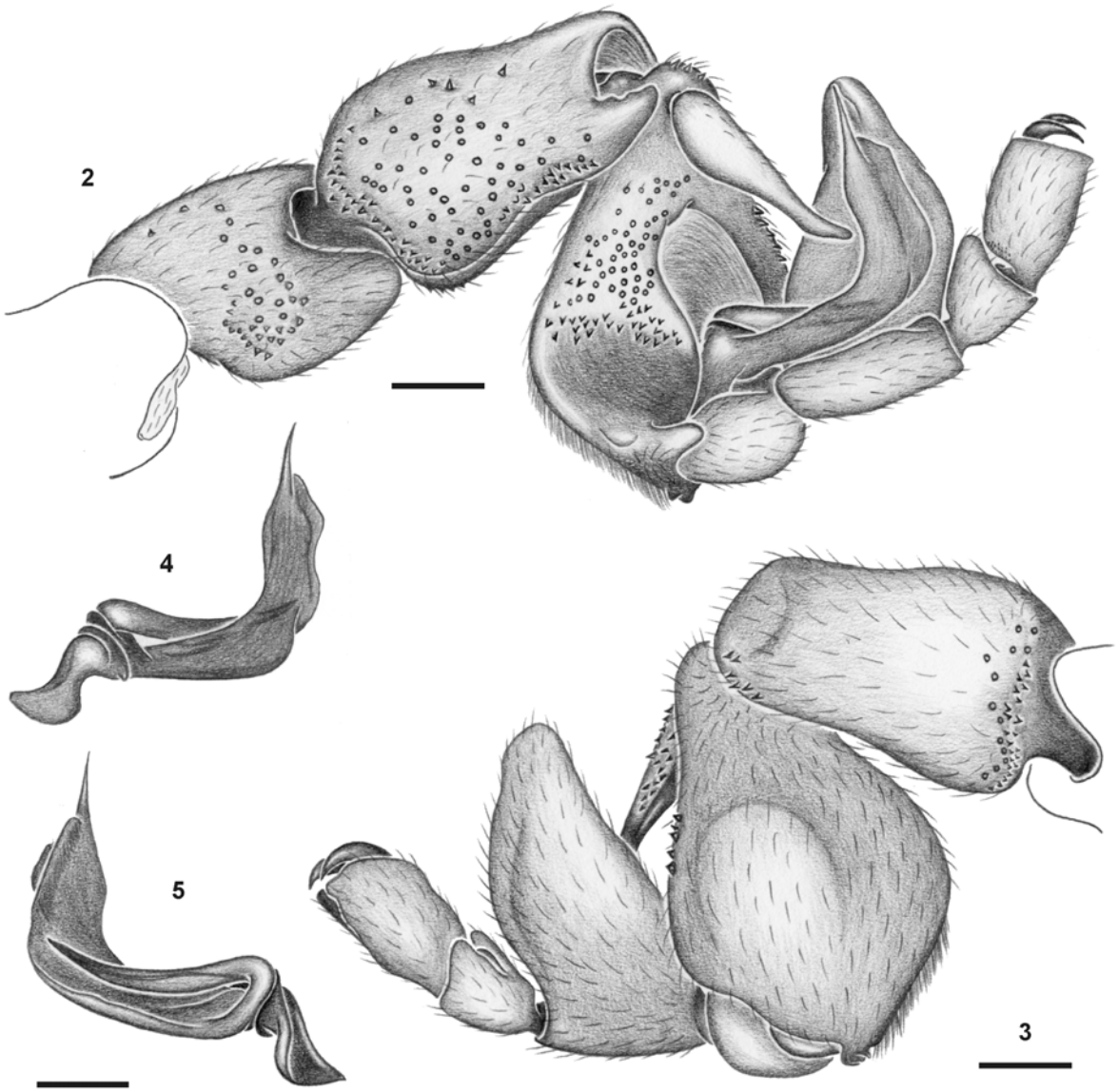

Fig. 2-5. *Cryptocellus abaporu* sp. n. Male. **2:** anterior view of leg III; **3:** posterior view; **4:** anterior view of movable process of tarsal process; **5:** posterior view. Scale bar: 2-5=0.25 mm.

this feature is rare in *Cryptocellus* females) and by the shape of spermathecae (Fig. 15); they differ by the lightly ventrally expanded femur I (fig. 14), which is strongly expanded in *C. foedus*. The actual relationships amongst these three species will be revealed only when males of *C. foedus* are discovered.

DESCRIPTION.

Male (Figs. 1-9). Total length 5.05. Carapace 1.85 long, 1.85 wide at middle of leg II; general color dark red, darker on margins, with small translucent yellow margin between leg I and posterior margin; with small short white setae; anterior margin with a "U" notch; tubercles uniformly distributed, except near anterior margin where they are rare. Abdomen (Fig. 1) 2.95 long, 2.42 wide at tergite XII; color lighter than carapace; tergites with small short white setae scattered; concentration of tubercles decreasing in number from tergite XI to XIII; median plate of tergite XI with darker area near lateral margin; median plate of tergite XII-XIII with darker, depressed areas from anterior angle to middle; median plate of tergite XI-XII slightly wider than long; XIII slightly longer than wide; lateral of lateral plates of tergites darker. Venter: sternal region with coxa I not meeting tritosternum; coxa II meeting along their entire length, their suture line about one-third longer than that of coxa III; coxa IV meeting anteriorly; sternites densely covered by tubercles and with small short white setae, except medially where they are more scattered. Pygidium with shallow notch on dorsal margin of basal segment. Cucullus (Fig. 8) 0.7 long, 1.15 wide; dark red close to anterior margin, red on middle, orange distally; with deep depressed and tuberculate furrow close to anterior margin; tuberculate medially on posterior margin; with small short white setae, longer on distal border. Chelicera: fixed finger with 4 teeth (distal longer than others); movable finger with 7 teeth (distal longer, basal almost vestigial),

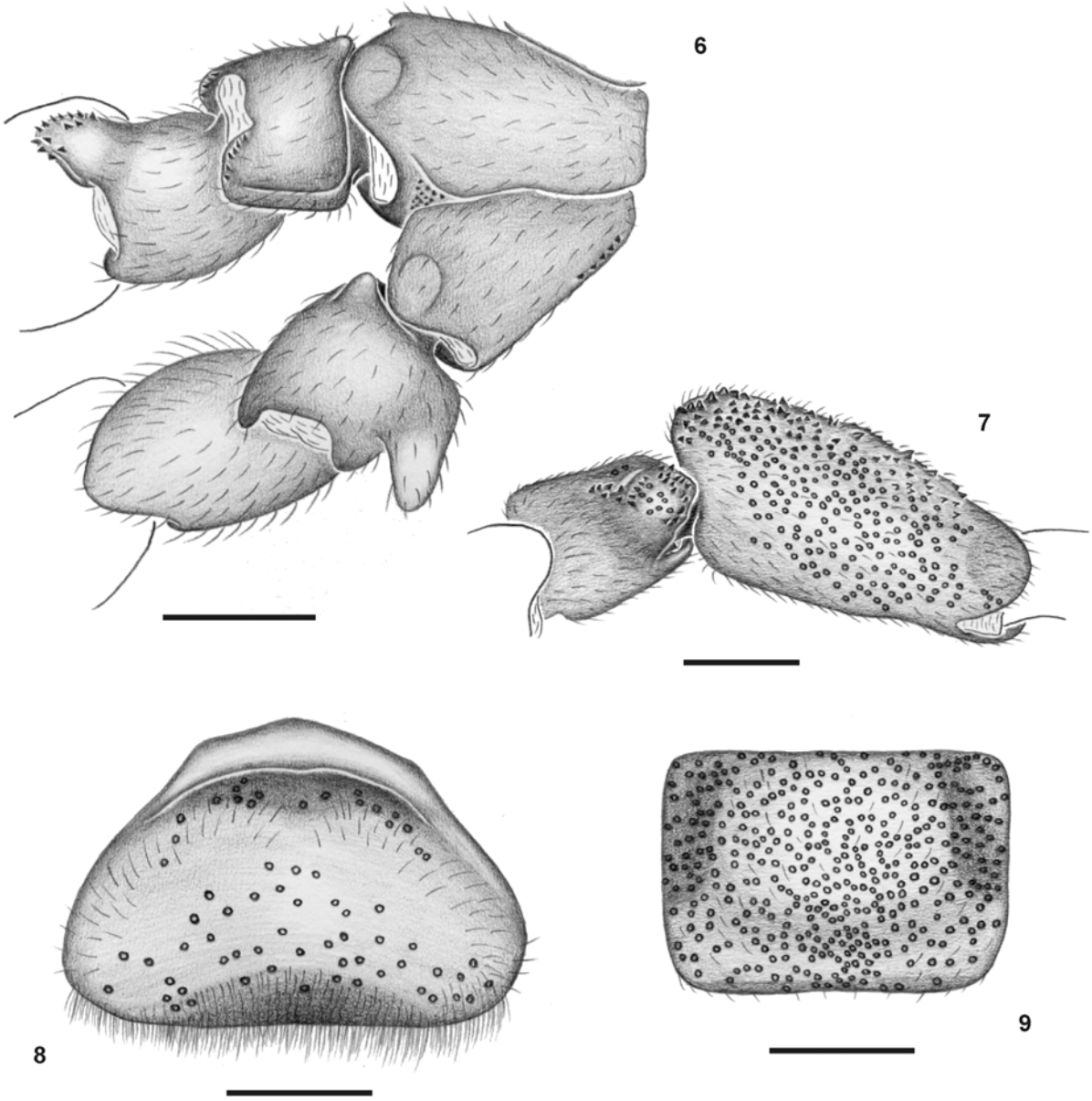

Fig. 6-9. *Cryptocellus abaporu* sp. n. Male. **6:** ventral view of trochanter III and IV; **7:** prolateral view of femur III; **8:** frontal view of cucullus; **9:** tergite XI. Scale bar: 6-9= 0.5 mm.

tremendous widened at distal third. Pedipalp: covered with small short white setae; coxa orange, posterior margin reddish, other segment yellow, tibia brownish on distal third; trochanter and basifemur with two ventral tubercles. 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 on figures 2-5. Legs with numerous sexual modifications: second leg not noticeable widened; basifemur III with a prolateral knob; femur I twice as long as wide, with basal and distal depressed apophysis on venter; II 3.5 times long as wide; tibia I with rounded knob on middle of prolateral side of venter; trochanter II with ventral depressed apophysis; trochanter IV with a strong knob on retrolateral side; leg III as in figures 2-5.

Female. Similar to male, except as follows. Total length 5.15. Carapace (Fig. 10) 1.85 long, 1.85 wide at end of leg II; general color dark red, posterior half of carapace darker; anterior margin slightly concave; tubercles uniformly distributed, except on anterior margin and on longitudinal median line. Abdomen 2.95 long, 2.42 wide; median plate of tergites XI-XIII wider than long. Pygidium (fig. 13) with "V" notch on dorsal margin of basal segment. Cucullus (Fig. 11) 0.7 long, 1.15 wide; dark red, orange distally; without deep depressed region; uniformly tuberculate. Chelicera: fixed finger with four teeth (distal longer than others);

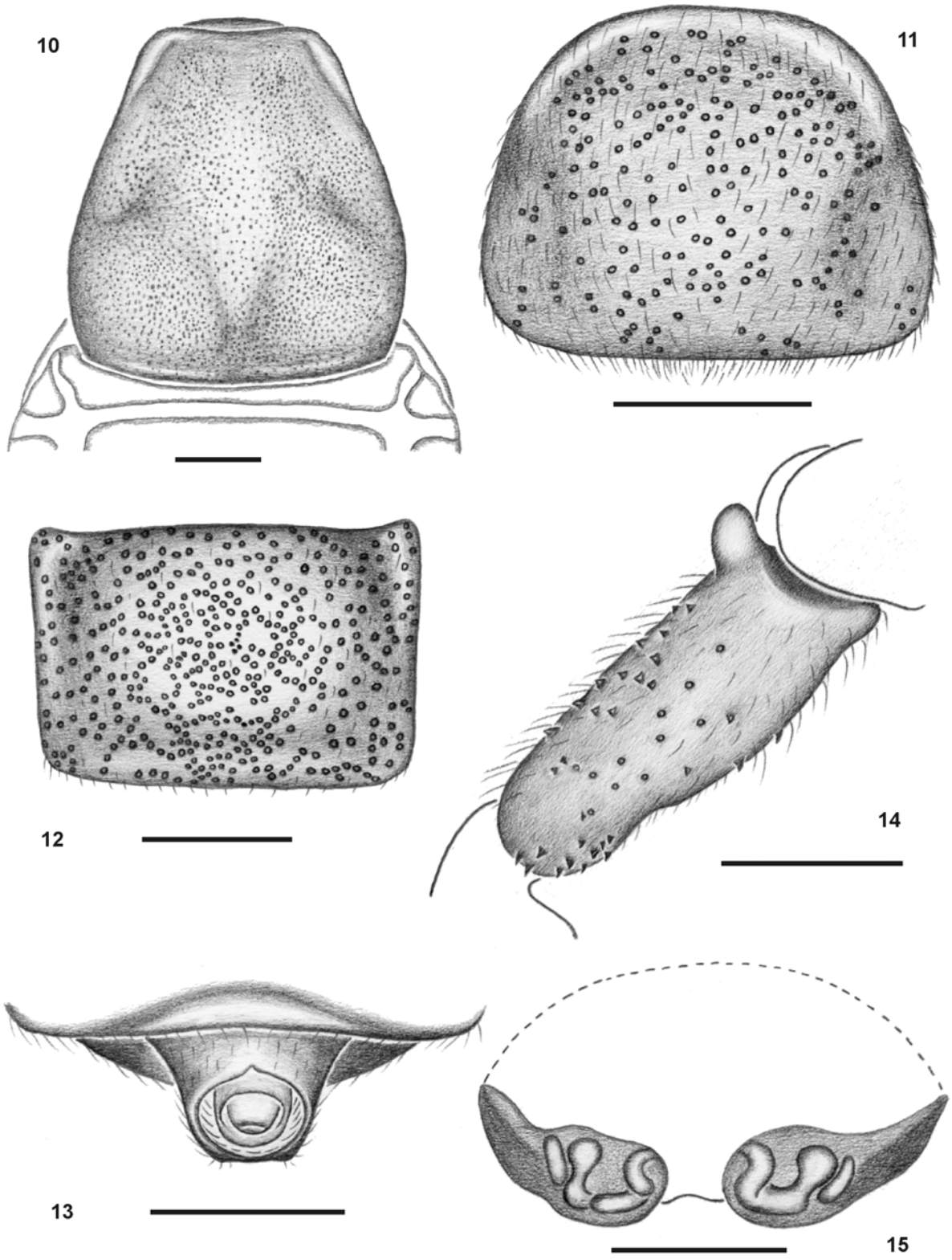

Fig. 10-15. *Cryptocellus abaporu* sp. n. Female. **10:** carapace; **11:** cucullus; **12:** tergite XI; **13:** pygidium; **14:** prolateral view of femur I; **15:** spermathecae. Scale bars: 10-14 = 0.5 mm; 15= 0.5 mm.

Table I

***Cryptocellus abaporu* sp. n. Measurements of male holotype (and female paratype) (MPEG, Sítio Linha 94)**

	I	II	III	IV	Palp
Coxa	0.75 (0.55)	1.05 (0.97)	1.02 (0.92)	0.90 (0.80)	0.45 (0.37)
Trochanter	0.45 (0.25)	0.47 (1.16)	0.42 (0.37)	0.55 (0.52)	0.32 (0.35)
Basifemur	---	---	0.42 (0.45)	0.57 (0.50)	0.30 (0.27)
Femur	1.32 (0.95)	1.30 (1.37)	1.02 (0.92)	1.37 (1.12)	0.92 (0.95)
Patella	0.37 (0.40)	0.82 (0.70)	0.57 (0.50)	0.55 (0.60)	---
Tibia	0.82 (0.87)	1.10 (1.25)	0.57 (0.70)	0.75 (0.75)	1.25 (1.40)
Basitarsus	1.20 (1.05)	1.70 (1.42)	1.02 (0.77)	0.87 (0.45)	---
Telotarsus	0.55 (0.35)	1.50 (1.20)	1.40 (0.80)	1.02 (0.81)	0.17 (1.12)
TOTAL	5.46 (4.42)	7.94 (8.07)	6.42 (5.43)	6.58 (4.55)	3.41 (4.46)

movable finger with 6 teeth similar in size, slightly widened at third distal. Leg formula II- III-IV- I; femur I 1.5 times longer than wide; II 3 times longer than wide. Spermathecae as in Fig. 15.

Measurements. Table I.

DISTRIBUTION. Know only from Ji-Paraná, Rondônia, Brazil, which represent the southernmost record of the genus.

NOTE. The type specimens were collected under logs in Terra Firme (dryland) forest (W.L. Overall, personal communication). One male is covered by clay.

Acknowledgments

We are grateful to Joachim Adis (Max Plank Institut, Plön) for had advised us on the ricinuleids, to Willian L. Overal (MPEG) who inform us on the specimen's available natural history data and to an anonymous referee for helpful comments on the manuscript. RPR is grateful for FAPESP (Fundação de Amparo a Pesquisa do Estado de São Paulo) for grants #00/05729-9 and 99/05446-8.

References

ADIS, J.U. & M. HARVEY 2000. How many Arachnida and Myriapoda are there world-wide and in amazonia? *Stud. Neotrop. Fauna & Environm*., **35**, 2000: 139-141.

ADIS, J. U., N. PLATNICK, J.W. MORAIS & J.M.G. RODRIGUES 1989. On the abundance and ecology of Ricinulei (Arachnida) from central Amazonia, Brazil. *Journal of the New York Entomological society*, **97**(2): 133-140.

COKENDOLPHER, J.C. 2000. First Cryptocellus from Suriname (Ricinulei). *Mem. Soc. Entomol. Ital.*., **78**(2): 515-520.

COOKE, J.A L. & M.U. SHADAB 1973. New and little known ricinuleids of the genus *Cryptocellus* (Arachnida, Ricinulei). *American Museum Novitates*, **2530**: 1-25.

HARVEY, M.S. 2002. The neglected cousins: what do we know about the smaller arachnid orders? *Journal of Arachnology*, **30**(2): 257-372.

PLATNICK, N. I. 1988. A new Cryptocellus (Arachnida: Ricinulei) from Brazil. *Journal of the New York Entomological society*, **96**(3): 363-366.

PLATNICK, N. I. 2002. Ricinulei. *In*: J. Adis (ed.) *Amazonian Arachnida and Myriapoda. Identification Keys for all classes, orders, families, some genera, and list of know terrestrial species*. Pensoft Ed., Sofia-Moscow, P. 381-386.

PLATNICK, N. I. & M. U. SHADAB 1977. On Amazonian *Cryptocellus* (Arachndia, Ricinulei). *American Museum Novitates*, **2633**: 1-17.

PLATNICK, N. I. & M.U. SHADAB 1981. On Central American *Cryptocellus* (Arachndia, Ricinulei). *American Museum Novitates*, **2711**: 1-21.

SAVORY, T. H. 1977. *Arachnida*. Academic Press. London. 340 p.