

Notes on *Acanthoscurria chacoana* Brèthes, 1909 (Araneae: Theraphosidae) in Brazil, and its synonymy with *Acanthoscurria altmanni* Schmidt, 2003

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Abstract

The types of *Acanthoscurria chacoana*, a species described from Argentina, Bolivia and Paraguay were studied and compared with Brazilian material. Spermathecal and palpal bulb morphology was found to exhibit a high degree of variability, both within and between populations. *A. chacoana* can be distinguished by male having a short, thickened embolus with a very long, narrow prolateral inferior keel, and female having fused spermathecae that are typically longer than wide, with their terminal receptacles close together. Its geographical distribution is extended into Brazil within and around the ‘Pantanal Matogrossense’ region. The species *Acanthoscurria altmanni* Schmidt, 2003 is considered a junior synonym of *A. chacoana*.

Key words: Theraphosidae, *Acanthoscurria chacoana*, *Acanthoscurria altmanni*, *Acanthoscurria musculosa*, spider taxonomy, geographic distribution, junior synonym

Introduction

Acanthoscurria Ausserer, 1871 is a speciose Theraphosidae genus, with 37 described species (Platnick 2004). It is distributed in most areas of South America, mainly Brazil, Argentina, Uruguay, Paraguay and Bolivia. Identification of *Acanthoscurria* species is difficult due to the lack of a taxonomic revision of the genus, and only a few species can be identified accurately. Moreover, little is known of intraspecific morphological variation or specific geographical distributions.

During examination of specimens from the states of Mato Grosso and Mato Grosso do Sul, Brazil, deposited in the mygalomorph collection of the Instituto Butantan, specimens resembling *Acanthoscurria chacoana* Brèthes, 1909 were discovered. To date this species was only known from Bolívia, Paraguay and Argentina (Schiapelli & Gerschman de Pike-lin 1964).

The aim of this paper is to compare the Brazilian specimens with types of *Acanthoscurria chacoana*, confirming the presence of this species in Brazil.

Material and Methods

Specimens are deposited in the following institutions: Instituto Butantan São Paulo (IBSP, Rogério Bertani); Museo Argentino de Ciencias Naturales “Bernardino Rivadavia” (MACN-Ar, Cristina Scioscia); Muséum National d'Histoire Naturelle Paris (MNHN, Christine Rollard); Museu de Zoologia da Universidade de São Paulo (MZSP, Ricardo Pinto-da-Rocha); Naturhistorisches Museum Wien (NMW, Jürgen Gruber).

A Wild M8 dissecting microscope was used for illustrations (with a camera lucida attachment).

The terminology used for male palpal bulb keels follows Bertani (2000).

Acanthoscurria chacoana Brèthes, 1909

Acanthoscurria chacoana Brèthes, 1909:45 (holotype female from Tucuman, Argentina, MACN-Ar 5659, examined). — Schiapelli & Gerschman de Pikelin, 1964:402 (male, first description, MACN-Ar 2025, examined).

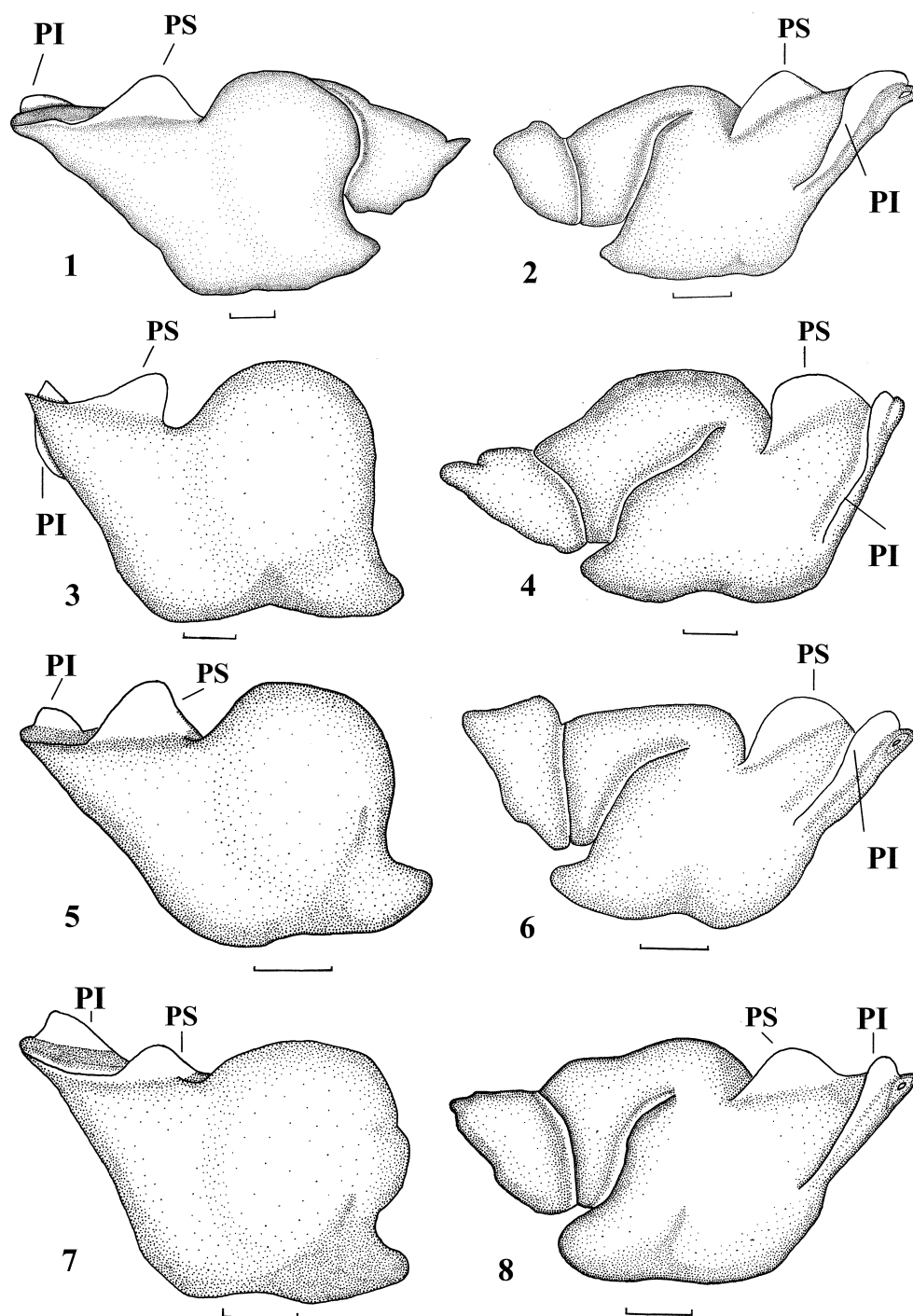
Acanthoscurria musculosa Simon, 1892:281 (holotype male from S. Mateo, Bolivia, MNHN 15131, examined), Mello-Leitão, 1923:302 (described male, MZSP 145, examined; misidentification); Stewien, 1969:79 (described female, IBSP 3756, examined; misidentification).

Acanthoscurria altmanni Schmidt, 2003a:7 (holotype female from Cuiabá, Mato Grosso, Brazil, in NMW, not examined). — Schmidt, 2003b:3 (described male). Syn. n.

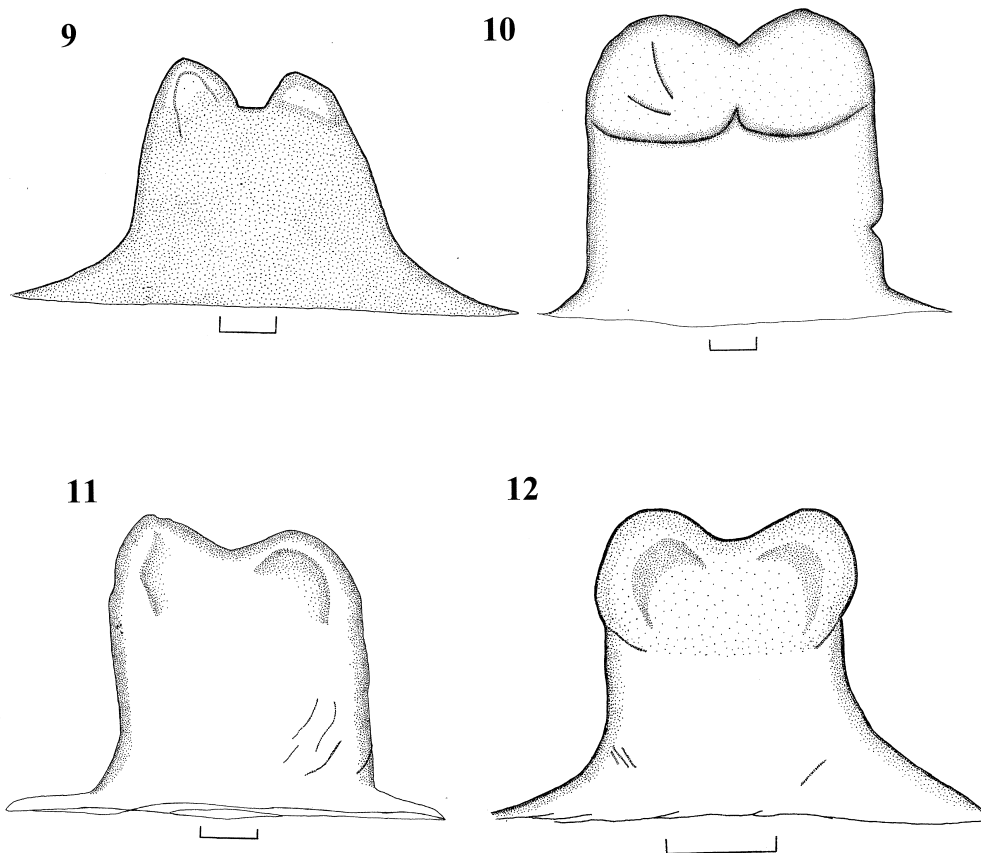
Diagnosis: *Acanthoscurria chacoana* resembles *A. atrox* Vellard, *A. geniculata* (C. L. Koch) and *A. juruenicola* Mello-Leitão by its large size and its genital morphology. The female clusters with these species by the presence of fused spermathecae with a weakly sclerotized base with two rounded apical receptacles. It can be distinguished by the fact that the spermathecae base is typically longer than wide (or square) and the close proximity of the terminal receptacles to one another (Figs 9–12). The male clusters with *A. atrox*, *A. geniculata* and *A. juruenicola* by the presence of a palpal bulb with a short, thickened embolus with well-developed prolateral keels, and is distinguished by the presence of a narrow, very long prolateral inferior keel (Figs 1, 2) (see Bertani [2000] for figures of palpal bulbs of *A. atrox* and *A. juruenicola*).

Natural history: In Brazil *A. chacoana* is found particularly within the ‘Pantanal Matogrossense’ region where it is very common. It is an area of savanna-like vegetation with seasonal inundation. The spiders are typically fossorial, but can also be found beneath, and sometimes within fallen Acuri palm tree (*Attalea phalerata*) trunks (Fig. 14).

The senior author found adult males and females in November and a female with egg-sac in February.



FIGURES 1–8. *Acanthoscurria chacoana*. Male. Variation in male palpal bulbs. 1–2 — (MACN-Ar 2025), Argentina, La Rioja, retrolateral (1), prolateral (2). 3–4 — (IBSP 7559), Brazil, Mato Grosso, Cáceres, retrolateral (3), prolateral (4). 5–6 — (IBSP 4727A), Brazil, Mato Grosso, Santo Antonio de Leverger, retrolateral (5), prolateral (6), 7–8 — (IBSP 7633A) Brazil, Mato Grosso, Poconé, retrolateral (7), prolateral (8). Scale bar = 1mm.



FIGURES 9–12. *Acanthoscurria chacoana*. Female. Variation in spermathecae, dorsal view. 9 — holotype (MACN-Ar 5659), Argentina, Tucumán. 10 — (IBSP 3834), Brazil, Mato Grosso, Cáceres. 11 — (IBSP 3567), Brazil, Mato Grosso do Sul, Corumbá. 12 — (IBSP 10383), Brazil, Mato Grosso, Cuiabá. Scale bar = 1mm.

Material examined: Brazil, State of Mato Grosso: Cuiabá River, J. Correa leg., 06 August 1948, 1 male (IBSP 1584); 10 December 1948, 1 male (IBSP 1227); 11 October 1957 1 male (IBSP 1297A); October 1959, 1 male (IBSP 2368); Cuiabá, B.E. Chst leg., 04 July 1983, 1 female (IBSP 7072); W. Alves leg., 22 May 1989, 1 female (IBSP 7649); R. Silva leg., 07 July 1983, 1 female (IBSP 10383); Cáceres, 24 January 1966, 1 female (IBSP 3757); V. Vzir leg., 05 April 1966, 3 females (IBSP 3762A, IBSP 3762B, IBSP 3762C); Instituto Santa Maria leg., 24 January 1964, 2 females (IBSP 3871A, IBSP 3871B); 29 July 1964, 1 female (IBSP 3846); 20 December 1967, 1 female (IBSP 3821); 21 December 1967, 1 female (IBSP 3834); M. Calleffo leg., December 1997, 1 female (IBSP 7559); 11 males (IBSP 7560, IBSP 7561, IBSP 7562, IBSP 7563, IBSP 7564, IBSP 7565, IBSP 7566, IBSP 7567, IBSP 7568, IBSP 7569, IBSP 7570); Nobres, I. Marques leg., 27 October 1976, 1 male (IBSP 4221); Santo Antônio de Leverger, C. Roloff leg., February 1982, 2 males (IBSP 4727A, IBSP 4727B); Poconé, R. Bertani leg., 21 Decem-

ber 1989, 5 females (IBSP 7168, IBSP 7779A, IBSP 7779B, IBSP 10384, IBSP 10385), 4 males (IBSP 7497, IBSP 7633A, IBSP 7633B, IBSP 10387); R. Bertani, P.I. da Silva Jr. & S.M. Lucas leg., February 1991, 1 female (IBSP 8028); Barão de Melgaço, P. Ulix leg., 08 November 1982, 1 male (IBSP 7279); São José dos Quatro Marcos, C. Dall'Aglia leg., 22 September 1986, 2 males (IBSP 7659, IBSP 7660); Jaurú, D.M.P. Moreira leg., 16 December 1987, 1 male (IBSP 7693); Juína, M.L. Mancini leg., 06 July 1998, 1 male (IBSP 10386).

State of Mato Grosso do Sul: Pantanal do Rio Piquerí, M. Morganti leg., October 1970, 1 female (IBSP 79); Taunay, L. Pires Filho leg., 22 February 1949, 1 female (IBSP 1861); Miranda, E. Affini leg., 08 November 1978, 1 male, 1 female (IBSP 2032A), 2 males (IBSP 2032B, IBSP 2032C); Agachi, J. Ailhano leg., 30 July 1952, 1 female (IBSP 2988); C. Moraes leg., 10 September 1952, 2 females (IBSP 3011, IBSP 3014), 15 September 1952, 1 female (IBSP 3015), 21 September 1952, 1 female (IBSP 3025), 03 November 1952, 1 female (IBSP 3079), 19 November 1952, 1 female (IBSP 3088), 2 males (IBSP 3089, IBSP 3090), 19 December 1952, 1 male (IBSP 3098); Salobra, 02 March 1949, 1 female (IBSP 3495); 1 Corumbá, A.G. Silva leg., 17 May 1961 male (IBSP 3560); A.P. Arruda leg., 05 September 1961, 1 female (IBSP 3567); 07 February 1968, 1 female (IBSP 3841); Aquidauana, A. Leite leg., June 1968, 1 female (IBSP 3866); C. Roloff leg., 08 December 1981, 1 male (IBSP 7460); Pantanal, L.M. Vasconcelos leg., 27 January 1987, 2 males (IBSP 7350, IBSP 7462); Campo Grande, I.J.G. Ferro leg., 24 January 1989, 1 female (IBSP 7345); Anastácio, P.P. Oliveira leg., 28 December 1998, 1 female (IBSP 8807); Passo do Lontra, J. Rayzer leg., 27 October 1993, 1 male (IBSP 10388).

Bolívia, Santa Cruz de la Sierra, M.E. Montañó leg., 20 November 1989, 1 female (IBSP 10390); J. Peñaranda leg., 30 September 1991, 1 female (IBSP 10389).

Distribution: Brazil: States of Mato Grosso and Mato Grosso do Sul, within and around the 'Pantanal Matogrossense' region. Bolivia: Santa Cruz. Argentina: Jujuy, Salta, Formosa, Tucuman and La Rioja. Paraguay: Puerto Casado (Fig. 13).

Along the distribution of the species, the vegetation consists of open formations, 'Chaco' in Argentina, Paraguay and Bolivia, and 'Pantanal Matogrossense' (Fig. 14), in Brazil. Although suffering seasonal inundation, the 'Pantanal Matogrossense' is considered a mosaic of distinct formations, with the predominance of 'Cerrado', a savanna-like environment. The existence of a belt of open vegetation connecting the 'Caatinga' in the northeastern Brazil through the 'Cerrado' and 'Pantanal Matogrossense' to the 'Chaco' in Argentina and reaching as far as the Patagonia is well-known (Ab'Saber 1977; Vanzolini 1988). Several animal groups which are represented in the 'Chaco' can reach the Brazilian 'Cerrado' and sometimes the 'Caatinga'. For example, Vanzolini (1988) found that of 16 lizard species, 3 extend both north and south of the 'Chaco'; 4 extend to the south; and, 9 extend to the north, some entering deep into the 'Cerrado'. One species even reaches the 'Caatinga'. Thus, *Acanthoscurria chacoana* can be considered one more species showing the characteristic pattern of distribution Chaco / Cerrado / Pantanal Matogrossense.

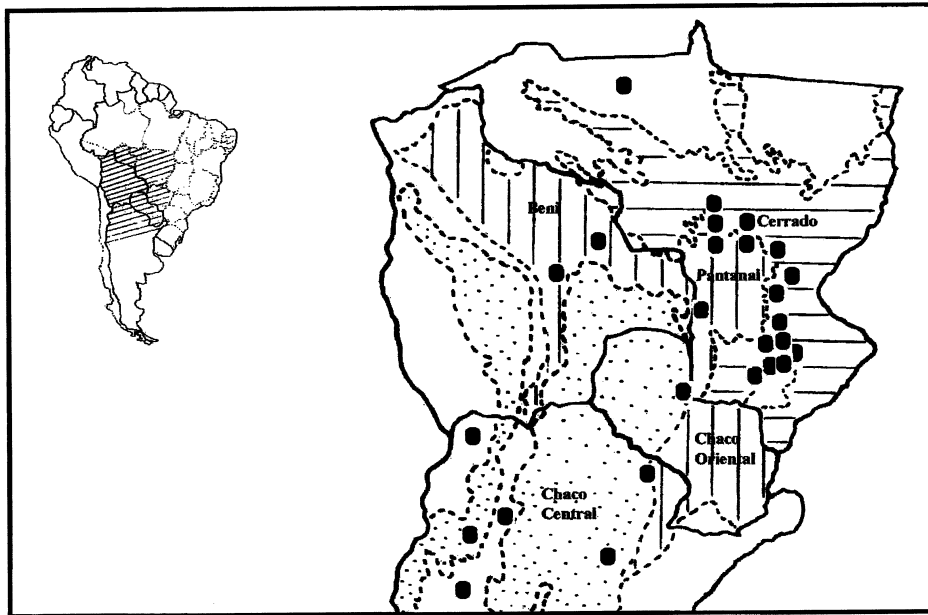


FIGURE 13. Distribution of *Acanthoscurria chacoana* in South America.

Discussion. Morphological variation was found in male palpal bulbs (Figs 1–8) and spermathecae (Figs 9–12). In males, palpal bulbs ranged from those with a very short, thickened embolus (Figs 3–4) to those with a more slender embolus (Figs 1–2). The prolateral inferior keel can be slightly salient in the upper region (Figs 1–2, 5–8) or narrow along all its length (Figs 3–4).

In females the spermathecae exhibit a high degree of variation. The bases are normally whitish, and weakly sclerotized (Figs 10–12). However, in the holotype it is dark and heavily sclerotized, indicating that the specimen was close to moulting (Fig. 9). The bases are slightly longer than wide (Figs 10–12) to square shaped (Fig. 9) in almost all examined specimens, and the variation found in the holotype seems to be due to the high sclerotization of the spermathecae. This spermathecal variation was found within and between populations of this species.

In males, the most reliable character for species identification is the presence of a narrow, very long prolateral inferior keel on the embolus. In females, it is the presence of fused spermathecae with a narrow base and receptacles close to each other.

Concerning *Acanthoscurria altmanni* Schmidt, 2003 described based on a female from Cuiabá, Mato Grosso, Brazil, examination of topotypic material and specimens from the wider vicinity indicates it can be included within the morphological variation exhibited by *A. chacoana*. Though very imprecise, the spermathecal drawings of Schmidt (2003a) for *A. altmanni* exhibit the characteristic shape seen in *A. chacoana* (Figs 9–12). Additionally, the pictures of a living specimen of *A. altmanni* (Schmidt, 2003a) also matches *A. chacoana* (Fig. 15). No other *Acanthoscurria* species from the type locality of *A. altmanni* is

known to share the characteristic colour pattern and spermathecae shape. Thus, *Acanthoscurria altmanni* Schmidt, 2003 is considered a junior synonym of *Acanthoscurria chacoana* Brèthes, 1909.



FIGURE 14. *Acanthoscurria chacoana* habitat in Poconé, State of Mato Grosso, Brazil. Photo: Rogério Bertani



FIGURE 15. *Acanthoscurria chacoana*, female. Photo: Rogério Bertani

The examination of specimens identified by Stewien (1969) and described as females of *A. musculosa* Simon, 1892 showed that they are misidentified females of *A. chacoana*.

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