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ARTÍCULO:

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Redescription of the holotypes of *Mygalarachnae* Ausserer 1871 and *Harpaxictis* Simon (1892) (Araneae: Theraphosidae) with rebuttal of their synonymy with *Sericopelma* Ausserer 1875.

Ray Gabriel and Stuart.J. Longhorn

Abstract:

The examination of specimens from various Neotropical tarantula genera (Theraphosidae) indicated the unique nature of monotypic genera *Mygalarachnae* Ausserer 1871 and *Harpaxictis* Simon 1892. Review of the both holotypes leads us to argue that *Mygalarachnae* and *Harpaxictis* should be removed from their current synonymy with *Sericopelma* Ausserer 1875. The presence of type I and III urticating hairs on the holotype specimen of *Mygalarachnae* firmly place it in the subfamily Theraphosinae and we argue should be restored as a valid genus, so that current placement of "*incertae sedis*" is inappropriate. The identity of *Harpaxictis striatus* is less certain, but here removed from synonymy with *Sericopelma*, and due to a lack of other diagnostic features is suggested as *nomen dubium.* Possible affinities of *Mygalarachne* with other valid genera of Theraphosinae are briefly discussed.

Key words: *Sericopelma*, Tarantula. *Mygalarachne brevipes*, *Harpaxictis striatus*,
Taxonomy: *Mygalarachne brevipes comb. rev.*, *Harpaxictis striatus comb. rev.*

Redescripción de los holotipos de *Mygalarachnae* Ausserer 1871 y *Harpaxictis* Simon (1892) rechazando su sinonímia con *Sericopelma* Ausserer 1875.

Resumen:

El estudio de los ejemplares de varios géneros de tarántulas Neotropicales (Theraphosidae) indican la naturaleza única de los géneros monotípicos *Mygalarachnae* Ausserer 1871 y *Harpaxictis* Simon 1892. La revisión de ambos holotipos nos lleva a proponer que *Mygalarachnae* y *Harpaxictis* no son sinonimias de *Sericopelma* Ausserer 1875. La presencia de pelos urticantes tipo I y III en el holotipo de *Mygalarachnae* apoya claramente su adscripción a la subfamilia Theraphhosinae y, por tanto, su actual ubicación como "*incertae sedis*" es inadecuada y debe ser restaurada como género válido. Aunque no es una sinonímia de *Sericopelma,* la identidad de *Harpaxictis striatus* es incierta, y a falta de otras características diagnósticas proponemos considerarla como *nomen dubium*. Se discuten brevemente las posibles afinidades de *Mygalarachne* con otros géneros válidos de Theraphosinae.

Palabras clave: *Sericopelma*, Tarantula. *Mygalarachne brevipes*, *Harpaxictis striatus*,
Taxonomía: : *Mygalarachne brevipes comb. rev.*, *Harpaxictis striatus comb. rev.*

Introduction

The genus *Mygalarachne* was established in 1871 for a new tarantula spider with notably short legs collected in Honduras. Only the female was described, and named *M. brevipes* Ausserer 1871. This species was initially placed as a sub-genus of *Acanthoscurria* Koch 1842, though soon given full generic status by Simon who further distinguished the large robust chelicerae and lack of femoral scopula (Simon 1892). The distinction was supported in subsequent revisions (Pickard-Cambridge 1897, Petrunkevitch 1911). In the same original publication, Ausserer also erected the genus *Harpaxibius* for the Venezuelan species *H. striatus* Ausserer 1871 (supposedly also based on a female or unsexed juvenile as no adult male characters are given), and initially erected as a subgenus of the poorly defined *Crypsidromus*. Full ge-

neric status of *Harpaxibius* was also supported by Simon 1892 under the replacement name *Harpaxictis striatus* (Ausserer 1871), as the preoccupied *Harpaxibius* referred to an unassigned Hymenoptera. Much later, after examining the NHMV holotypes of both *H. striatus* and *M. brevipes* in a seminal revision of mygalomorph spiders, Raven (1985) concluded the genera *Harpaxictis* and *Mygalarachne* were synonymous, as these did not "differ in any characters of generic significance". However, no further discussion of the evaluated character set was given, except the key "clypeus narrow or absent, tibia of males without spur (though this character cannot be determined on holotypes), one broad indistinct spermathecal receptacula" (Raven 1985, p 119).

Previously, Ausserer 1875 had also established the subgenus *Sericopelma* to house the male of new species from Chiriquí province in Panama without tibial apophyses ("*durch die unbewaffnete tibia I des mannes"*), which he named *S. rubronitens*. *Sericopelma* was originally a subgenus of *Eurypelma,* but was later given full generic status (Simon 1891). This initial description was soon followed by Karsch 1880 who described another species from Chiriquí Panama, named *Theraphosa panamana,* also without tibial apophyses *("ohne dornfortsatz"* in Karsh 1880) but without examination of Ausserer's type. Soon after, Simon in 1892 on examining another male specimen from Chiriquí Panama, placed both his un-described specimen and that of Karsch into synonymy with Ausserer's *Sericopelma rubronitens*. Simon 1892 also emphasized the lack of male tibial apophyses to define *Sericopelma* ("*l'absence d'eperons aux tibias antérieurs des males"*). In 1897, Pickard-Cambridge described a second species also from the same location in Panama, he named *Sericopelma commune.* The genus *Sericopelma* expanded with the description of *Sericopelma fallax* Mello-Leitão 1923 from Brazil, based on another single male specimen without tibial apophyses. With the exception of a possible species of *Sericopelma* from Nicaragua (Schiapelli and Gerschman, 1967), the genus remained stable until Valerio 1980 described seven new species from Costa Rica, namely *S. upala, S. dota, S. ferugineum, S. generala, S. immensum, S. melanotarsum,* and *S. sylvicola* Valerio 1980. Here, the genus *Sericopelma* was characterized by the presence of a dense cushion of plumose hair on the inner face of femur IV, and absence of stridulatory setae on trochanter I, nor scopula on leg IV metatarsus, in addition to the absence of apophyses on tibia I of males. Most recently, another Panamanian species, *Eurypelma panamense* Simon 1891 was transferred from *Eurypelma/Avicularia* into *Sericopelma* (Gabriel, 2009).

In the same seminal revision of mygalomorph spiders where *Harpaxictis* was considered a synonymy of *Mygalarachne*, Raven (1985) also considered *Sericopelma* a junior synonym of *Mygalarachne*, as these "share all characters of generic significance with the exception that the scopula on femur IV is not well developed" (Raven 1985, p 158). A few years previously, Lucas 1981 had diagnosed a new genus *Nhandu* from Brazil, with the description of a single species *N. carapoensis*. Like *Sericopelma*, this species also lacks tibial apophyses in mature males, and lacks stridulatory hairs on prolateral coxae I or II (Lucas, 1981). Furthermore females are characterized by the presence of retrolateral scopulae on femur IV (Bertani 2001), another attribute reportedly diagnostic of *Sericopelma*, but actually plesiomorphic for several theraphosinae genera (Bertani 2001, p315). In the revision of Raven (1985), *Mygalarachne* (=*Sericopelm*a) and *Nhandu* were also considered synonymous, "because it [*Nhandu*] differs insufficiently from *Sericopelma* (=*Mygalarachne*) in the conformation of the palpal bulb" (Page 156/157), while the absence of retrolateral femoral scopulae in *Mygalarachne* was considered a reversal.

This proposed synonymy between *Nhandu* and *Sericopelma* was rejected by Schmidt (1989), so that *Mygalarachne* retained status as the senior synonym for *Sericopelma* containing *Harpaxictis* (after Raven 1985; Schmidt 1990a, 1990b). After examining the holotype specimen of *Mygalarachnae,* Lucas *et al* 1991 concluded it was a juvenile female without characteristics that could place it in any genera or species. Consequently, *Mygalarachnae* was declared "*incertae sedis"* thus leaving only *Harpaxictis* as a junior synonym of the restored *Sericopelma*. Schmidt (1993) states that *Mygalarachnae* was retransferred to the "*Ischnocolinae incertae sedis*", although Lucas *et al.* 1991 do not mention any characteristics to suggest *Mygalarachne* should be placed into the poorly defined subfamily *Ischnocolinae*. Currently, *Mygalarachne brevipes* is listed as either *incertae cedis* (Lucas *et al* 1991; Huber, Samm and Schmidt 1996) or as *nomen dubium* without justification (Schmidt 2003, as Platnick 2010). The current status of *H. striatus* is more ambiguous. Huber, Samm and Schmidt (1996) simply list it as *nomen obscurum* without justification, while later catalogues cursorily add that only the prosoma remains (Schmidt 2003). Yet, the species generally remains listed as the valid *Sericopelma striatum* (Ausserer, 1871) (*i.e.* Platnick 2010). Other studies including cladistic analyses have not supported the synonymy of *Nhandu* and *Sericopelma*, with their distinction supported by several characters including the shape of palpal bulb and spermathecae (Pérez-Miles *et al.* 1996; Bertani 2001, and accordingly listed as separate genera in Platnick 2010).

Materials and Methods

Specimens were examined under a Leica M135 binocular microscope. Photographs of male bulbs were made with auto-montage, and drawings made with the assistance of a camera-lucida. All measurements are given in millimeters (mm). Finer measurements (< 2 mm) such as ocular region were taken under the microscope using a graticule lens, measurements > ~ 2 mm were taken with digital callipers (+/- 1 mm).

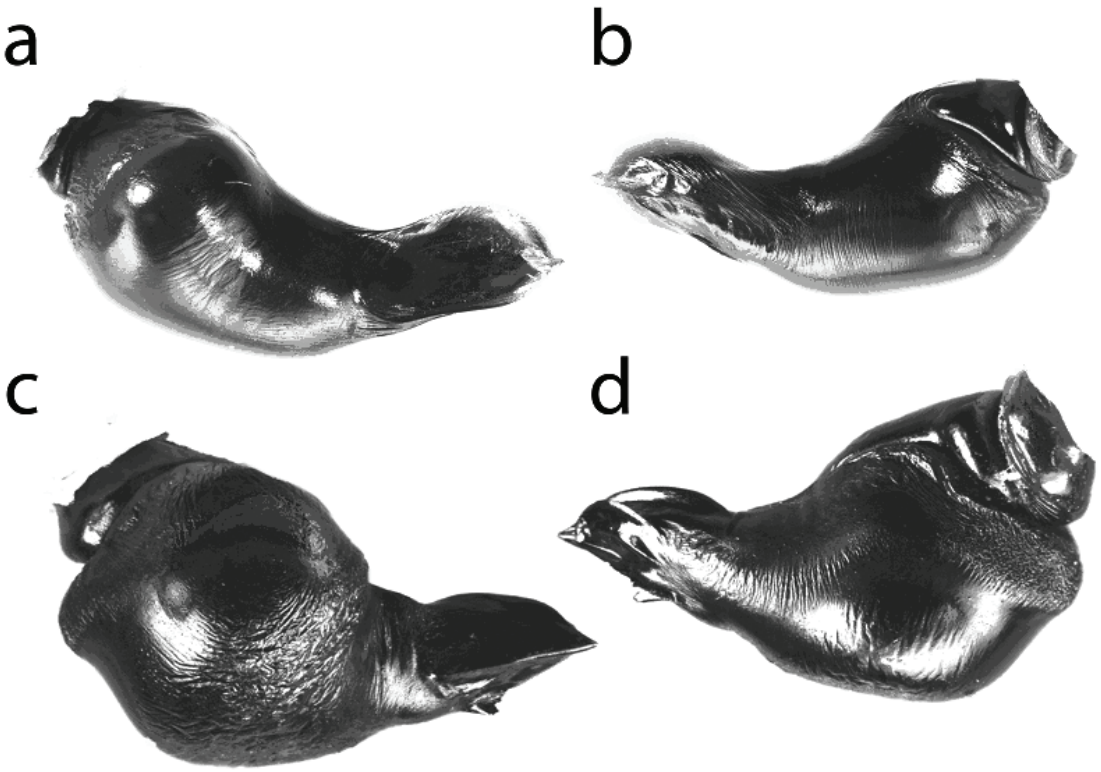

Figure 1 Top (a): Left-side embolus from *Sericopelma sp.* Isla Taboga, Panama (R.Gabriel In Prep.), as retrolateral and **(b)** prolateral face. **Bottom (c):** Left embolus from *Nhandu tripepii* (Dresco 1984), captive bred of stock from Pará Brazil, as retrolateral and **(d)** prolateral face.

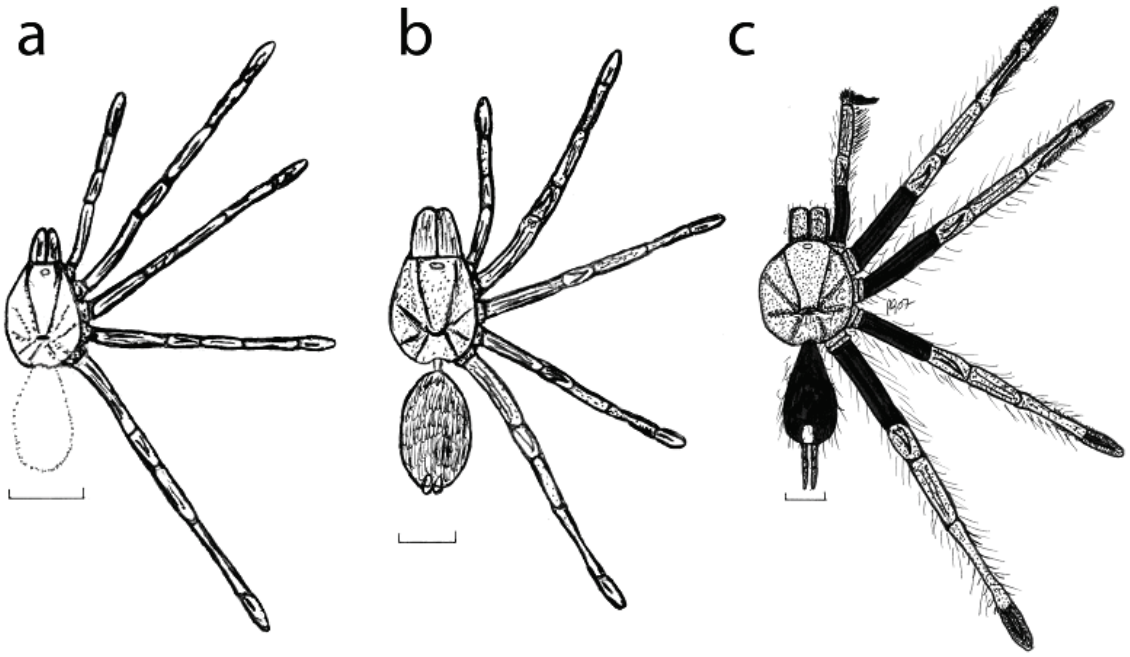

Figure 2, left (a): The reconstructed holotype of *Harpaxictis striatis* from Venezuela in NHMV. **Middle (b):** Holotype of *Mygalarachne brevipes* from Honduras in NHMV, and **Right (c):** Wild caught specimen of *Sericopelma sp.* from Chiriquí, Panama. Male, deposited in OUMNH. Scale in each = 10 mm / 1 cm.

Material examined:

We examined specimens in the following museum collections: LONDON: The Natural History Museum (British Museum of Natural History) = BMNH (NHM), London, UK. WIEN: The Natural History Museum Vienna (Naturhistorisches Museum Wien) = NMV, Austria. PARIS: Museum National d'Histoire Naturelle = MNHN, Paris, France. SAO PAULO: Museum of Zoology, University of Sao Paulo = MZSP, Brazil. OXFORD: Oxford University Museum of Natural History = OUMNH, Oxford, UK. BERLIN: Museum für Naturkunde = ZMB., Berlin, Germany.

TYPE MATERIAL EXAMINED: Holotype of *Mygalarachnae brevipes* (comb. rev.) Ausserer 1871. Female, Leg. Schmarda. Loc. Honduras. WEIN, NMV Nr.1874.III.1. Holotype of *Harpaxictis striatus* (comb. rev.) (Ausserer 1871). Sex unknown. Loc. Venezuela. WEIN, NMV Nr.1896.VIII.570. Holotype and paratype of *Sericopelma commune* Pickard-Cambridge 1897. Two male specimens. Loc. Panama. LONDON, BMNH (NHM) 1898. 12. 24 19-21. Holotype of *Sericopelma panamanum* (Karsch 1880). Male. Loc. Panama. BERLIN, ZMB 2394. This was considered Junior synonym of S. *rubronitens* by Simon (1892). Holotype of *Sericopelma panamense* (Simon 1891). Female. Loc. Panama. PARIS, MNHN, 4850. (Gabriel 2009 transferred this from *Eurypelma/Avicularia*). Holotype of *Sericopelma rubronitens* Ausserer 1875. Male. Loc. Panama. WIEN, NMV Nr.1874.III.1 Holotype of *Sericopelma fallax* Mello-Leitão 1923. Male. Loc. Brazil. MZSP No.124 [also No. 531] (Examined by Dr. F. Pérez-Miles in 2009).

ADDITIONAL MATERIAL EXAMINED: *Sericopelma rubronitens* Ausserer 1875. (Simon det.). Male. Loc. Panama. PARIS, MNHN AR4803. *Sericopelma commune* Pickard-Cambridge 1897, fourth male discussed in description, in OXFORD, OUMNH. Various *Sericopelma* spp. from Costa Rica and Panama from the author's collection, including *S. melanotarum*, S. *immensum* and S. *generala* Valerio 1980, deposited in the OXFORD, OUMNH.

Results and Discussion.

Re-description of types for the Neotropical genera *Mygalarachnae* (plus Table 1) and *Harpaxictis* (plus Table 2) is given below. Specific differences between them and from S*ericopelma* are listed in Table 3.

Mygalarachnae brevipes. Holotype, NHMV Wien. Complete specimen. Total length including chelicerae: 47.1mm. Carapace: length 17.8, width 15.3. Caput; high. Ocular tubercle high, length 1.6, width 2.3. Anterior row pro-curved, posterior row recurved. Eyes ALE > AME, AME > PLE, PLE > PME. Clypeus; nil, clypeal fringe long. Fovea; deep and procurved. Chelicerae: length 10, width 9.5, Maxillae; with 150-200 cuspules, covering approximately 70% of proximal edge. Labium: length 1.8, width 2.8, with 100-150 cuspules most separated by 0.5-1 times the width of a single cuspule. Labio-sternal mounds joined along the entire base of the labium, lower than the sternum causing a ridge where they meet the sternum. Sternum elongate: length 7.4, width 6.3 with three pairs of sigilla. Tarsi I–IV densely scopulate, tarsus I-IV and palpal tarsus entire (not divided by setae). Metatarsal scopulae: I, 85%, II 79%, III 56%, of the length of the segment IV either lacking scopulae or scopulae degraded/erased. Lengths of leg and palpal segments (See Table 1). Spination: femurs d I, II, IV and palp – 0-0-1, femur III –0-0-2, patella d I–III -0-1-0, IV 0-0-0 tibia 1 d 1-0-1, v 0-1-3, tibia II d 1-1-1, v 0-1-3 (apical), tibia III d 2-3-2, v 1-2-3 (apical), tibia IV d 1-2-1, v 1-2-2, palpal tibia d 0-2-0 (apical), v 1-1-3 (apical), metatarsus 1 d 0, v 0-0-1 (apical), metatarsus II d 0, v 1-0-2 (apical), metatarsus III d 1-3-3, v 4-3-4 (3 apical), metatarsus IV d 1-3-2 (apical), v 4-6-5 (3 apical). Spinnerets: Posterior lateral spinnerets with three segments: basal 3, medial 1.9, digitiform apical 3. Lateral median spinnerets with one segment. Spermatheca: Dissected and initially missing from type jar, but reported by Lucas *et al.* (1991) as a simple undivided structure. Subsequently found by Dr. C. Viquez, and from photograph is simple an undivided, though with distinct central depression, *Colour*: alcohol preserved brown / light tan. *Sex:* Female. *Distribution*: Only known from Honduras.

Harpaxictis striatus. Holotype, NHMV Wien. Fragmented specimen, but carapace, chelicerae and all legs present. Total length including chelicerae: unknown. Carapace: length 13.3, width 11.4. Caput; high. Ocular tubercle medium, length 1.2, width 2.2. Anterior row pro-curved, posterior row recurved. Eyes ALE > AME, AME > PLE, PLE > PME. Clypeus; nil, clypeal fringe long. Fovea; carapace damaged. Chelicerae: length 7.5, width 7, Maxillae; with 60–80 cuspules, covering approximately 60% of proximal edge. Labium: length 1.8, width 2.6, with 100-150 cuspules most separated by 0.5 times the width of a single cuspule. Labio-sternal mounds joined along the centralised base of the labium, with no labial sternum ridge. Sternum elongate: length 6.5, width 5.3 with three pairs of sigilla. Tarsi I–IV densely scopulate, tarsus I-III undivided by setae, IV divided by wide band of 30+ bristles. Metatarsal scopulae: I 80%, II 70%, III 49%, IV 0% of the length of the segment. Lengths of leg and palpal segments (See Table 2). Spination: femurs d I, II, 0-0-1, femur III, IV and palp 0, patella I–IV and palp d+v 0, tibia 1 d 0-0-3, v 0, tibia II d 0-0-2, v 0, tibia III d 0-2-2, v 0, tibia IV d 0-5-3 (apical), v 0, palpal tibia d+v 0, metatarsus 1 d 0-0-3, v 0, metatarsus II d 0-0-1, metatarsus III d 2-2-6 (2 long apical spines), v 0, metatarsus IV d 5-7-6 (4 apical), v 0-2-2 (apical), metatarsus of palp 0-2-6. Abdomen and spinnerets missing. *Colour*: alcohol preserved brown, from the name and the original description there was striping on the legs. *Sex*: unknown. *Distribution*: Only known from Venezuela.

Prior to Valerio (1982), it appears common that museum specimens of various Central and South American thera-

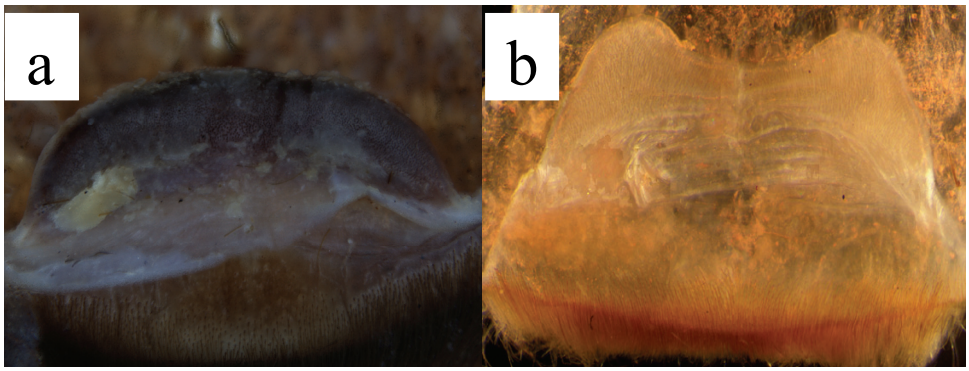

Figure 3: Left **(a)**, spermathecae of female *Sericopelma sp.* Bocas del Toro province, Panama. Others from Chiriquí province are identical. Right **(b)**, spermathecae of *Mygalarachne brevipes* (Courtesy of C. Viquez).

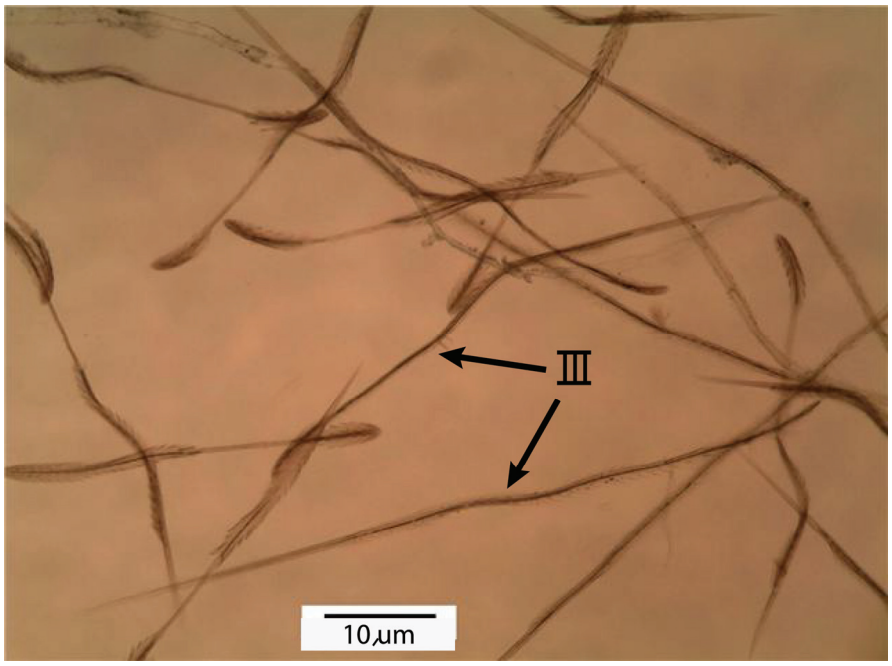

Figure 4: Urticating hairs of *Mygalarachne brevipes*, mostly type I, but also type III are present, indicated by arrows and III in photograph. (Courtesy of J.-P. Rudloff).

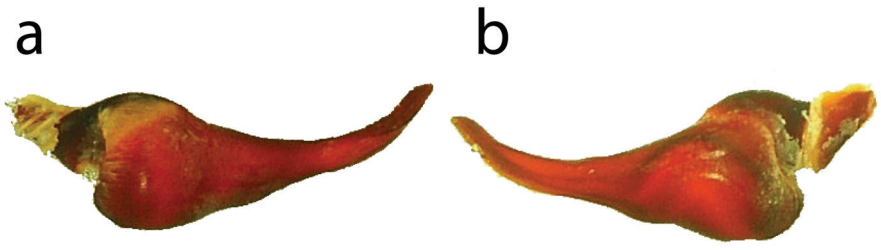

Figure 5: Left-side embolus of holotype male of *Sericopelma fallax* Mello-Leitão 1923, with **(a)** prolateral and **(b)** retrolateral face. Prov. Rio Juruá, Amazonas, Brazil. (Courtesy of F. Pérez-Miles).

phosids were misidentified as *Sericopelma spp.* if medium sized males without tibial apophyses and plus retrolateral scopulae on femur IV. These characteristics define *Sericopelma*, but also typify *Nhandu carapoensis* from Brazil. The reason Raven regarded *Nhandu* and *Sericopelma* as synonymous essentially appears to have been due to "the conformation of the palpal bulb" (Raven 1985). This remarkable similarity may have resulted from comparison of non-type specimens in the AMNH collection. We suspect that Raven (1985) examined mislabeled *Nhandu carapoensis* instead of *Sericopelma*, as the palpal bulbs of the two genera are quite distinct (Figure 1, also Schmidt 1989; Lucas *et al.* 1991; Bertani, 2000; Bertani 2001). *Nhandu* and *Sericopelma* are also readily distinguished by other characters such as female spermathecae shape (Pérez-Miles *et al.* 1996; Bertani 2001), plus widely separate geographic locations in Brazil (*Nhandu*) and Central America (*Sericopelma*), and are hereafter both treated as valid genera.

Mygalarachnae Ausserer 1871 is currently only known from the holotype specimen *M. brevipes* from Honduras

(Figure 2b). Here, we confirm that *M. brevipes* has entire scopulae on all tarsi, indicating maturity and separating this from juvenile *Sericopelma*, amongst others. Juveniles of several Neotropical theraphosid genera (including *Sericopelma*) display posterior tarsal scopula division, which become entire during ontogeny (after Pérez-Miles, 1994). This disagrees with Lucas *et al.* (1991) who suggest this *M. brevipes* type specimen to be sub-adult. The spermatheca was also examined by Lucas *et al.* (1991) who determined that it has an "undivided" structure (*mit ungeteilter spermatek*), without further discussion, perhaps as *Sericopelma* also have simple undivided spermathecae. However, the spermathecae of *Sericopelma* spp. are very simple undivided domes (Figure 3a) without the central depression or lateral lobes present in spermathecae of *Mygalarachne* (Figure 3b), so these structural differences may be useful to separate them. More robustly, the *M. brevipes* holotype can be distinguished from those of *Sericopelma* and *Harpaxictis* by several other features, such as the slightly recurved fovea and leg IV being less than 3 times the length of the carapace (given in Table 3). Further, the male *S. rubronitens* generic type (and other examined congeners in the revised *Sericopelma*, Figure 2c) can be distinguished from types of both female *M. brevipes* and unsexed *H. striatus* by its narrow clypeus, low caput and only 60-80 labial cuspules, with the distance between each cuspule almost the width of a single cuspule (See Table 3). Adult females of *Sericopelma cf. rubronitens* collected in the type location of Chiriquí Panama (by RG in 2005 under permit) have the same attributes as the type male, indicating our observed differences are not influenced by sexual dimorphism.

While Lucas *et al.* 1991 could not find any features to link *M. brevipes* to an existing theraphosid genus, we contend that this does not warrant placing *Mygalarachne* into either "*incertae sedis*" or "*nomen dubium*". To resolve its taxonomic placement, we examined the *M. brevipes* holotype for urticating hairs. We here confirm the presence of type I urticating hairs (Figure 4) with diagnostic reversed barbs. Following Cooke (1972), these have a relatively short internal non-barbed section (area B), about equal to the basal reversed barbs (area C). The presence of type I hairs robustly separates *M. brevipes* from other theraphosids lacking urticating hairs, allowing us to firmly place *Mygalarachne* in the subfamily Theraphosinae (characterized by presence of type I or type III urticating hairs or both hair types). The presence of type I hairs further separates *Mygalarachne* from several genera within this subfamily that lack type I hairs (*e.g. Bonnetina, Cyriocosmius*, *Hapalopus,* etc). (Those with type III hairs alone, following Pérez-Miles *et al.* 1996; Bertani 2001). We largely failed to detect type III urticating hairs on the holotype of *M. brevipes*, but a few possible type III hairs were present, and subsequent independent examination of the holotype by Dr. Carlos Viquez confirmed that type III are indeed present in addition to type I hairs (Dr. C. Viquez, Pers. Comm). Other Mesoamerican Theraphosinae like *Aphonopelma*, *Phormictopus, Sphaerobothria, Citharacanthus, Cyrtopholis* are reported to have type I urticating hairs alone (Cooke *et al.* 1972; Pérez-Miles *et al.* 1996), so the additional presence of type III hairs on *M. brevipes* seems useful to distinguish *Mygalarachne* from these genera. The absence of stridulatory bristles in *M. brevipes* reported by Lucas *et al.* 1991 further rules out potential synonymy with *Citharacanthus* and *Cyrtopholis*, and we similarly found no such structures in *Mygalarachne*. Of the remaining genera of Mesoamerican theraphosinae, *Sericopelma* is also characterized by both type I and III hairs (Cooke *et al.* 1972; Pérez-Miles *et al.* 1996), but other morphological characters presented here (Table 3) robustly distinguish *Sericopelma* from *Mygalarachne*. Various species currently placed in *Aphonopelma* (alleged to only possess type I hairs) or *Brachypelma* (with type I and III hairs) remain possible close allies of *Mygalarachne*, but a thorough re-evaluation of the monophyly of both these genera is needed before their phylogenetic affinities with *M. brevipes* can be established. The antiquity of *Mygalarachne* Ausserer 1871 means that it is possible that more recently described species in such genera should be transferred into the senior *Mygalarachne*, which we make re-available to nomenclature, and here re-establish as a valid genus of the subfamily theraphosinae. Specifically though, it is not yet clear if the types of urticating hairs described from exemplar species (*e.g.* those studied in Cooke *et al.* 1972 or Pérez-Miles *et al.* 1996) are diagnostic of those genera as a whole. Sexual differences can also be important to consider, as cases exist where female theraphosinae have only type I hairs, while males have both types I and III (Bertani 2001), though here we confirm *M. brevipes* as female (possessing both type I and type III hairs). Developmental considerations are also important, as type III hairs may arise later in ontogeny (Pérez-Miles 2002). The young age of the specimen may explain the few type III hairs we found. Yet, while limited to evaluation of the single type specimen, we argue that the existence of a well-preserved holotype specimen of *M. brevipes* and unique combination of features allows us to propose *Mygalarachne* is re-established as a valid Central American theraphosid genus (unequivocally within the subfamily Theraphosinae), and clearly distinct from *Sericopelma*. *Mygalarachne* is hereby re-elected as a monotypic genus, but as the *M. brevipes* type is from an underworked geographic region, there is a high chance for future fieldwork to encounter additional specimens of this and other closely allied species.

Despite our robust definition of the *Sericopelma* genus, *Harpaxictis (?Sericopelma) striatus* Ausserer 1871 remains a difficult specimen to assign status to, as now a fragmented specimen with missing abdomen (Figure 2a). It remains unknown whether this holotype is an immature male or a female, and without examination of the spermatheca (if there was one) it is impossible to give any indication of age, sex, and more importantly to make determination of genera. Despite this, we contend that based on the disjunct type locality for *H. striatus* in Venezuela in South America; alongside differences in

morphological features from holotypes of *Mygalarachne* or from various *Sericopelma*, that nothing can clearly link *Harpaxictis* with the Central American *Sericopelma* (from Costa Rica and Panama) or to *Mygalarachnae* (Honduras). We dispute its current status as either *Sericopelma striatus* or '*nomen obscurum'*, and suggest as the type specimen is badly damaged that '*nomen dubium*' is most suitable. Yet, the fragmented type of *Harpaxictis striatus* can still be distinguished from generic types of *M. brevipes* and *S. rubronitens* by a series of characters presented in Table 3, notably the row of setae (bristles) dividing tarsus IV, though this condition is also a feature of several other Neotropical genera (and more importantly juveniles of other genera including *Sericopelma*). We conclude the strongest aspects to differentiate *Harpaxictus* from *Sericopelma* and *Mygalarachne* is the disjunct geographical location in Venezuela, and morphologically by the patella of the palp and legs I-V lacking any spines. Though spines may have been lost during preservation, the sockets would have remained if present, but were not seen on the *H. striatus* type specimen on close examination.

For the above reasons, the placement of the *Mygalarachnae* Ausserer 1871 as "*incerta sedis*" is reversed and the genus reinstated a valid; while the synonymy of the genera *Harpaxictis* Simon 1892 and *Sericopelma* Ausserer 1875 is reversed, and *Harpaxictis* tentatively placed in *"nomen dubium"* pending further debate. We contend that all confirmed *Sericopelma* species have a natural distribution in Costa Rica and Panama, with one possible addition recorded from Nicaragua, (Schiapelli and Gerschmann 1967). There has been little research into the native theraphosid species in Nicaragua or Honduras, but the presence of *Sericopelma* in these Mesoamerican countries is more plausible than Venezuela (*H. striatus*) or beyond to Brazil (*S. fallax*). A preliminary examination of the holotype of *S. fallax*, also shows it also does not belong to the genus *Sericopelma* (S. Lucas, F. Pérez-Miles & R. Gabriel, In prep), for example the male bulbs are elongate (Figure 5a, 5b) versus the more compact spatulate form in *Sericopelma* (Figure 1a, 1b). Additional revisions are necessary to determine the best taxonomic placement of *S. fallax* outside *Sericopelma*. With a more robust definition of *Sericopelma* restricted to Mesoamerican species alone, it is increasingly possible to clarify relevant affinities among Neotropical tarantula spiders, and place the restored *Mygalarachnae* and possibly *Harpaxictis* into this wider context of robustly defined theraphosid genera.

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Table 1: Dimensions of the *M. brevipes* female holotype, measurements of legs and palp.

	I	II	III	IV	Palp
Femur	13.2	12.2	10.9	12.5	9.6
Patella	7.7	7.2	6.5	6.8	5.3
Tibia	10	8.6	7.3	10	7
Metatarsus	7.9	7.8	8.9	12.6	-
Tarsus	6.6	6	6.4	7.4	7.5
Total	45.4	41.8	40	49.3	29.4

Table 2: Dimensions of the *H striatus* unsexed holotype, measurements of legs and palp.

	I	II	III	IV	Palp
Femur	10.9	8.8	8.6	10.8	8
Patella	6.2	5.5	4.7	5.8	4.5
Tibia	8.6	7.1	5.4	8.4	5.6
Metatarsus	7.2	7.1	6.9	10.8	-
Tarsus	5.7	5.4	4.7	5.2	5.6
Total	38.6	33.9	30.5	41	23.7

Table 3: Non-sexual characters used to distinguish the Neotropical genera *Harpaxictis* (from Venezuela), *Mygalarachne* (Honduras) and *Sericopelma* (Costa Rica and Panama).

Feature	*H. striatus*	*M. brevipes*	*S. rubronitens*
Femoral Scopula	Absent	Absent	Present
Tarsus IV Division†	Setae/Bristles†	None	None
Patella Palp and legs I-IV	Without Apical Spine	With Apical Spine	With Apical Spine
Fovea	Deep transverse	Slightly recurved	Deep transverse
Leg IV to Carapace Ratio	Almost equal to 3 times carapace	Less than 3 times carapace	More than 3 times carapace
Clypeus	None	None	Narrow
Caput	High	High	Low
Labial Cuspules	100 +	100 +	60-80
Inter cuspule Spacing	Less Than 0.5 of 1 cuspule	Less Than 0.5 of 1 cuspule	Slightly Less Than 1 cuspule

† Following the determination of Pérez-Miles 1994 without scopulae (type A) hairs on the medial portion, instead only semi-robust non-scopulae setae/bristles (we assume type B), but not stout rigid spines.

Note: The *H. striatus* type specimen is unsexed and missing its abdomen, *M. brevipes* type is female, and *S. rubronitens* type is a mature male. Accordingly, only features that could be directly compared across all three specimens are presented, and no specific sexual features were included.