

A NEW SPECIES OF TARANTULA SPIDER
(ARANEAE, MYGALOMORPHAE, THERAPHOSIDAE)
FROM THE CAYO DISTRICT OF BELIZE

STEVEN B. REICHLING AND RICK C. WEST

Memphis Zoo, 2000 Galloway, Memphis, TN 38112 (SBR)
Natural History Section, Royal British Columbia Museum, 675 Belleville Street, Victoria, British Columbia,
V8V 1X4 Canada (RCW)

ABSTRACT—A new species of theraphosid spider is described. The taxon was collected in the foothills of the Mountain Pine Ridge and the Vaca Plateau, Cayo District, Belize. It is distinguished from congeners by filiform plumose setae on the basoprolateral faces of both trochantera and femora I-II, and the presence of five prominent keels on the apical division of the male embolus.

RESUMEN—Se describe una nueva especie de araña terafósida. La especie se colectó en las faldas norteñas de Mountain Pine Ridge y Vaca Plateau en el Distrito Cayo, Belice. Se distingue de otras especies del género *Citharacanthus* por vellos filiformes plumosos en la superficie basoprolateral de ambos trocánter y fémora I-II, y la presencia de cinco quillas prominentes en la porción apical del bulbo masculino.

Pocock (1901) erected *Citharacanthus* as a monotypic genus to accommodate the theraphosid spider *Eurypelma longipes* F. O. P.-Cambridge which he determined to be incorrectly placed within that now dismembered genus. Pocock (1901:551) defined the new genus by the presence of "a system of stout plumose stridulating-bristles upon the trochanter of the palp and first leg" in combination with "a large number of short, stout, almost conical spines, terminating in a long, filiform, frequently fractured extremity, and rising in the midst of a thick cluster of simple hairs." Petrunkevitch (1939) added a second species by creating the new combination *C. spinicrus* (Latreille). Two Costa Rican tarantulas, *C. crinirufus* Valerio and *C. sclerothrix* Valerio, have since been described. Most recently, Schmidt and Weinmann (1996) described *C. livingstoni* from material collected in Guatemala near the southern border of Belize, completing the species composition of *Citharacanthus* as currently recognized.

In 1997, during the course of a long-term survey of the diversity of theraphosid spiders in Belize, four spiders were found which appear to be the same undescribed taxon collected by Mr. Jan C. Meerman 5 years earlier. The new taxon follows Raven's (1985) descrip-

tion of the genus *Citharacanthus* in his key to the Theraphosidae, with the possible exception of its tapered lower tibial spur, a character state we also noted on *C. livingstoni* and *C. longipes* holotypes, rather than the apically widened spur as described by Raven.

METHODS—Measurements are in mm (+0.01). Leg and pedipalp measurements were taken on the left side. Trochantera and coxae were measured from their ventral aspect and all other leg measurements were taken dorsally. Spination abbreviations and format follow Prentice (1992). Standard abbreviations are used for ocular descriptions. Coloration was recorded in life under full spectrum light using color standards in The Pantone Book of Color (Eisman and Herbert, 1990).

***Citharacanthus meermani*, new species**
(Figs. 1A-1D, and 2)

DIAGNOSIS—*Citharacanthus meermani* can be diagnosed from congeners by the dense field of filiform plumose setae on the basoprolateral aspect of both trochantera and femora I-II. Male *C. meermani* are readily distinguished from other *Citharacanthus* sp. by the presence of five prominent keels on the apical division of the embolus, the ventral keel being especially pronounced.

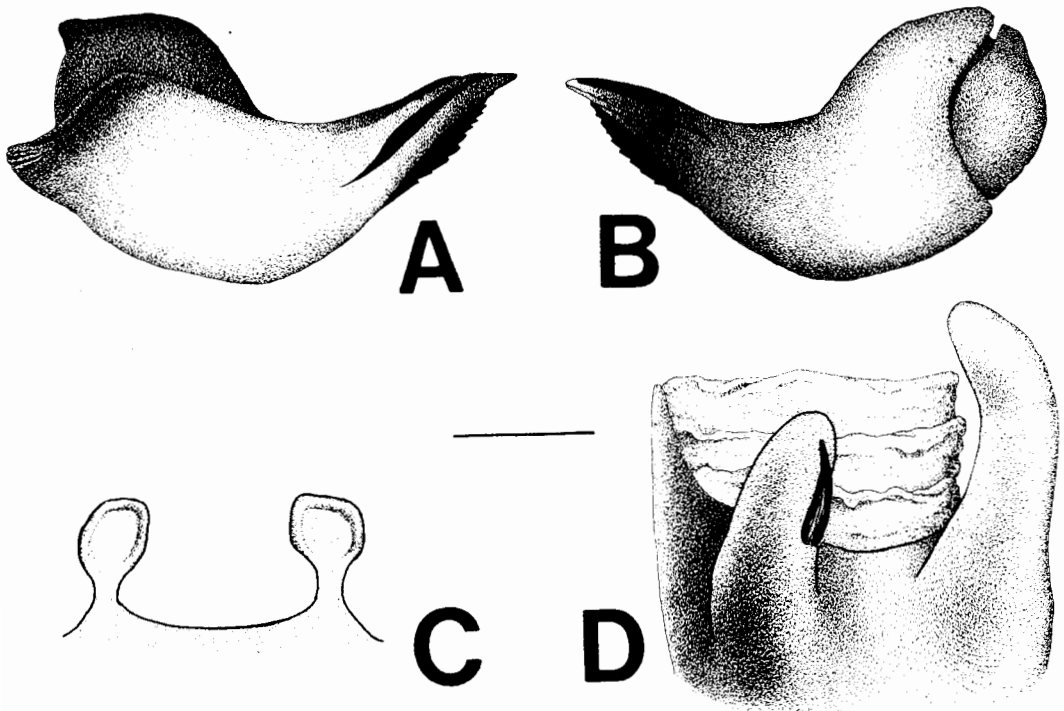


FIG. 1—Morphology of *Citharacanthus meermani*, new species. A) Male holotype, left palpal organ, retrolateral view; B) male holotype, left palpal organ, prolateral view; C) female paratype, spermathecae, dorsal view; D) male holotype, left tibia I, ventroprolateral view, showing spurs and megaspine. Scale bar = 1 mm.

The new taxon most closely resembles *C. livingstoni*, as plumose setae are present on femora I-II in both species. However, *C. livingstoni* exhibits scattered and markedly claviform plumose hairs on trochanter I and II, unlike the dense covering of finer setae found on these podomeres in *C. meermani*, and lacks prominent keels on the embolus (Schmidt and Weimann, 1996). The other congener recorded from sites adjacent to Belize, *C. longipes*, lacks plumose femoral setae and pronounced embolus keels.

DESCRIPTION OF MALE HOLOTYPE—Length 36.4. Carapace length 14.2, width 13.7, carapace width/length 0.96; chelicerae, width 6.1; fang furrow macroteeth (left, right) 14, 13; sternum length 4.8, width 4.0; sigilla not visible. Labial cuspules 70; maxillary cuspules 178, 172. Leg span, measured from apex of left tarsus I to apex of left tarsus IV, 130.7. Leg formula IV, I, II, III. Leg and palp segment lengths in Table 1.

Chelicerae metallic copper (Pantone 16-1325). Carapace clothed in woolly, metallic copper pubescence. Sternum flint gray (Pantone 16-5803) with scattered black setae. Posterior $\frac{3}{4}$ of dorsal abdomen clothed in jet black (Pantone 19-0303) pubescence with long, peach bloom orange (Pantone 15-1327) setae and Type I (Cooke et al., 1972) urticating hairs; anterior $\frac{1}{4}$ covered with long, jet black setae without underlying pubescence. Ventral abdomen entirely jet black. Coxae and trochantera metallic copper dorsally, flint gray ventrally. Dorsal and lateral surfaces of femora, patellae, tibiae, metatarsi, and tarsi seal brown (Pantone 19-1314) interspersed with metallic copper pubescence. Dorsal surface of all legs showing violaceous iridescence under bright light. Ventral surface of all femora, patellae, tibiae, and metatarsi iron brown (Pantone 18-1306).

Fovea weakly procurved. AME round, diameter 0.2, separated by 0.2; ALE nearly round, 0.4 by 0.4. PME ovoid, 0.2 by 0.3; PLE ovoid, 0.3 by 0.5, separated by 1.3. Eye turret length 1.5, width 2.0, width divided by length 1.3.

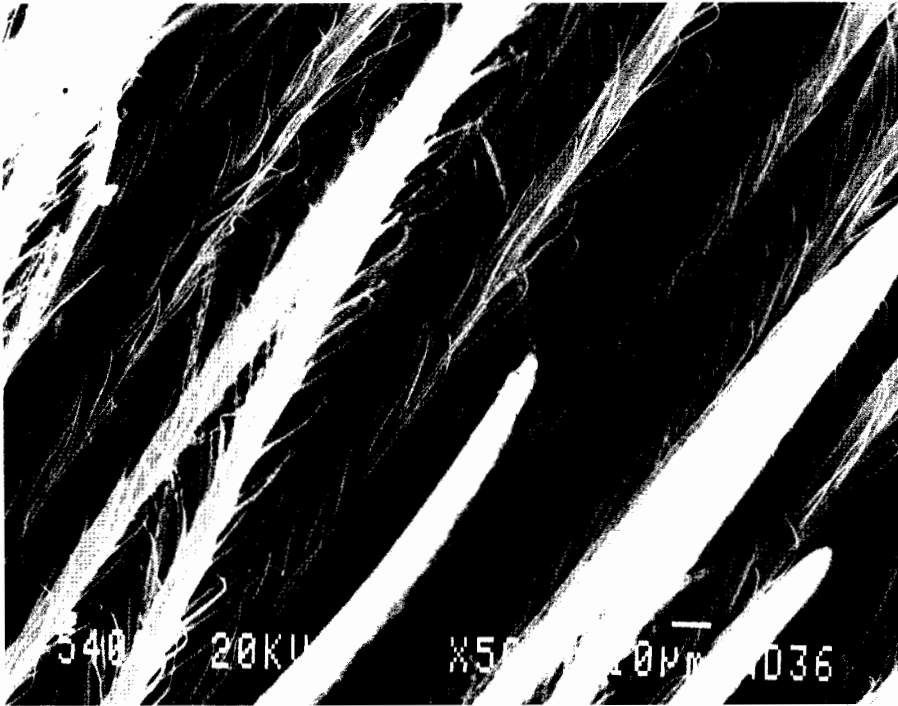


FIG. 2.—*Citharacanthus meermanni*, new species, male holotype. Scanning electron micrograph of femur I, prolateral view, showing filiform plumose setae. Scale bar = 10 μ m.

Clypeus 0.2. Tibia I spur bipartite; lower process length 1.4, with single preapical megaspine; upper process length 1.9, aspinose (Fig. 1D). Trochantera and femora I and II with filiform plumose setae on basoprolateral surface (Fig. 2). Short, thorn-like setae on prolateral face of coxae I. All tarsi fully scopulate. Tarsi IV weakly divided by long, dark setae; tarsi I-III with long, soft setae scattered sparsely throughout. Extent of metatarsal scopulae: I and II,

complete; III, 0.49; IV, longitudinal patches of scopulate setae near apex.

Palpal bulb length 3.6; width at basal portion of middle division 1.7; middle division gently curved and tapering toward apex; apical division with five black keels, ventral keel strongly serrated (Fig. 1A-B).

Spination—Leg I, metatarsus 2v(1ma 1m0.32), tibia 6v(1m0.80 1m0.70 1m0.60 1m0.50 1mb 1rb); leg II, metatarsus 5v(2ma 1p0.48 1m0.30 1m0.14), tibia 9v(3ma 1m0.82 1m0.64 1m0.59 1m0.26 2mb); leg III, metatarsus 5d(1me 1pe 1r0.20 1p0.20 1p0.13) 9v(2ma 1ra 1pa 1m0.55 1m0.40 1m0.36 1mb 1pb), tibia 4d(1p0.84 1r0.62 1p0.53 1p0.22) 12v(3ma 1pa 1m0.73 1p0.69 2m0.49 1p0.31 3mb); leg IV, metatarsus 2d(ma) 17v(3ma 2ra 1me 1m0.89 2m0.78 1m0.62 2m0.53 1m0.36 1p0.32 1m0.27 1m0.20 1mb), tibia 14v(3ma 1pa 2m0.86 4m0.64 2m0.34 2mb); palp, tibia 9v(1ma 2pe 1p0.63 1p0.53 1r0.48 1p0.42 2pb).

TABLE 1—Leg measurements for the holotype male of *Citharacanthus meermanni*, n. sp. Measurements are in mm.

Leg	I	II	III	IV	Palp
Coxa	6.8	6.1	5.5	5.7	4.1
Trochanter	2.5	2.5	2.4	2.5	2.3
Femur	14.3	13.2	11.3	15.4	9.0
Patella	7.3	6.5	5.7	6.7	4.9
Tibia	12.5	10.9	10.1	13.1	7.5
Metatarsus	10.5	10.9	11.7	17.2	—
Tarsus	8.5	7.4	7.4	8.2	2.3
Total	62.4	57.5	54.1	68.8	30.1

DESCRIPTION OF ALLOTYPIC PARATYPE FEMALE—Length 46.0. Carapace length 16.6, width 14.6, carapace width/length 0.88; chelic-

TABLE 2.—Leg measurements for allotypic paratype female of *Citharaacanthus meermani*, n. sp. Measurements are in mm.

Leg	I	II	III	IV	Palp
Coxa	7.7	6.6	5.8	6.6	6.7
Trochanter	3.2	3.1	1.8	2.8	2.5
Femur	12.7	11.6	10.5	13.5	9.5
Patella	8.0	7.4	6.3	7.1	6.3
Tibia	10.0	9.4	8.6	10.3	7.1
Metatarsus	7.6	8.3	9.3	13.9	—
Tarsus	5.7	5.8	5.5	6.5	6.4
Total	54.9	52.2	47.8	60.7	38.5

erae, width 9.2; fang furrow macroteeth 12,14; sternum length 7.3, width 6.6; sigilla at base of coxae I-III, posterior pair largest. Labial cuspsules 113; maxillary cuspsules 187, 210. Leg span, 110.4. Leg formula IV, I, II, III. Leg and palp segment lengths in Table 2.

Chelicerae antler gray (Pantone 17-1510). Carapace madder brown (Pantone 19-1331), clothed in clove brown (Pantone 18-1320) pubescence, closely appressed. Sternum with mustang brown (Pantone 19-1217) pubescence and longer, seal brown setae. Dorsal surface of abdomen clothed in dense, mustang brown pubescence with scattered, long ginger orange (Pantone 17-1444) setae anteriorly grading to paler cadmium orange (Pantone 15-1340) posteriorly, and Type I (Cooke et al., 1972) urticating hairs posteriorly; ventral pubescence mustang brown. Dark brown (Pantone 19-1012) pubescence on legs, with long, caramel brown (Pantone 16-1439) setae.

Fovea recurved. AME round, diameter 0.4, separated by 0.4; ALE ovoid, 0.3 by 0.4. PME nearly round, diameter 0.2; PLE ovoid, 0.2 by 0.3, separated by 1.5. Eye turret length 1.9, width 2.4, width/length 1.26. Clypeus 0.3. Plumose setae on trochantera and femora I and II as in holotype. Short, thorn-like setae on prolateral face of coxae I and II. All tarsi fully scopulate. Tarsi IV divided by setae as in holotype. Tarsi I-III with scattered setae. Extent of metatarsal scopulae: I and II, complete; III, 0.32; IV, few sparse scopulate setae near apex.

Spermathecae width 2.0; seminal receptacles discrete and parallel, separated by 1.0, width of receptacle separation/width of anterior lobe 2.0. Each receptacle extending 0.9 from base

and capitated by a broadened anterior lobe, width 0.5 (Fig. 1C).

Spination—Leg I, metatarsus 2v(1ma 1mb), tibia 6v(3ma 1p0.80 1m0.40 1p0.40); leg II, metatarsus 1d(m0.37) 4v(3ma 1m0.14), tibia 5v(3ma 1m0.63 1m0.48); leg III, metatarsus 7d(2me 1p0.70 1r0.69 1p0.45 1r0.43 1p0.15) 14v(3ma 1pa 1ra 1me 1p0.68 1r0.50 1m0.55 1p0.43 1m0.22 1m0.19 1m0.16 1p0.15), tibia 2d(1r0.65 1r0.19) 6v(2ma 1pa 1m0.67 1m0.40 1m0.37), femur 1d(re); leg IV, metatarsus 3d(1m0.66 1m0.53 1m0.44) 19v(3ma 1pa 1me 1m0.68 1r0.68 1p0.67 2m0.50 1m0.49 1m0.40 1m0.35 1r0.34 1p0.32 1m0.18 1p0.15 1r0.12 1pb), tibia 3d(1re 1r0.66 1r0.19) 9v(4ma 1m0.74 1p0.74 1m0.54 1m0.47 1p0.40); palp, tibia 8v(3ma 1ra 1p0.63 1m0.62 1m0.21 1m0.14).

HOLOTYPE—Mature male from 2 km SE San Ignacio Town, Cayo District, Belize, 30 August 1997 (leg. S. B. Reichling). Deposited in the American Museum of Natural History (AMNH), New York.

PARATYPES—One adult female (allotypic paratype) and two subadult females, same locality and collector as holotype, 31 August–1 September 1997 (AMNH). One adult male, Caracol Maya ruins, Cayo District, Belize, February 1992 (leg. J. C. Meerman—AMNH), and one adult male, Slate Creek Preserve near Mountain Equestrian Trails Lodge, Cayo District, Belize, 30 October 1994 (leg. J. C. Meerman—AMNH).

ETYMOLOGY—The specific epithet is a patronym in honor of Jan C. Meerman, the first biologist to collect the new taxon.

VARIATION—*Males*—Measurements for two mature male paratypes: length 40.3, 33.9; carapace length 16.5, 14.1; carapace width 15.4, 12.8; carapace width/length 0.93, 0.91; legspan 156.7, 117.8. Extent of metatarsal scopulation: I and II, complete; III, 0.57, 0.54; IV, 0.22, 0.30. Palpal embolus morphology as in holotype.

Females—Two juvenile female paratypes showed more pronounced division of tarsal scopulae IV than the allotypic paratype or holotype, possibly attributable to ontogenetic effects (Perez-Miles, 1994). Extent of metatarsal scopulation: I and II, complete; III, 0.48, 0.55; IV, 0.15, 0.14. No variation in spermathecal morphology except in the relative width sepa-

rating the receptacles, width of separation/width of lobe 0.8, 1.3, possibly also due to the immaturity of the specimens.

NATURAL HISTORY—Four specimens were collected at the base of a steep, densely wooded hillside. Dominant vegetation consisted of an overstory of mahogany (*Swietenia* sp.) with an understory of bullhorn acacia (*Acacia corny-gira*) and allspice (*Pimenta dioica*). The spiders were living among an array of 14 theraphosid and several lycosid burrows in a small clearing which appeared to be the result of leaf-cutter ant (*Atta* sp.) activity. The burrows were within a 4 by 6 m area directly over the abandoned ant colony. Nighttime observations indicated that only six of the burrows were occupied by theraphosids, one by *Crassicrus lamanai* Reichling and West and the rest by *C. meermani*. Excavation of some burrows revealed that they descended into the extensive tunnel system left behind by the ants, making collection difficult. The ants had altered the site by making the soil more loose and loamy than the surrounding substrate. The loss of several trees, possibly also due to ant activity, provided a warm and sunny patch in the midst of otherwise deeply shaded forest.

COMMENTS—*Citharacanthus meermani* was collected in the foothills of the Mountain Pine Ridge southward into the Vaca Plateau in SW Belize. All collecting sites thus far have been NW of the Maya Mountain divide. Two female *Citharacanthus* sp. collected on the SE side of the divide are assigned to *C. livingstoni* by the presence of filiform plumose setae on femora I-II and claviform plumose setae on trochantera I-II. Consequently, it appears that at least two species of *Citharacanthus* occur in Belize: *C. meermani* to the lee of the Maya Mountains and *C. livingstoni* on the windward slope of the divide south at least as far as the Rio Dulce, Guatemala, near the type locality (Appendix I).

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APPENDIX I

Material Examined—*Citharacanthus livingstoni*: BELIZE: Cayo District: Cockroach Camp, 760 m elev. (leg. J. C. Meerman), 18 January 1995, 1 adult female, AMNH; Toledo District, Columbia River Forest Reserve, Union Camp (leg. J. C. Meerman), 24 February 1992, 1 adult female, AMNH. GUATEMALA: Livingston (D. Weinmann and R. Mack), 13 September 1993, 1 adult male (holotype), FNS. *Citharacanthus longipes*: GUATEMALA: Chicoyito (Sarg), 1897, 1 adult male (holotype), 1 adult female (paratype), NHM.