**Avicularia rickwesti** sp. nov., a remarkable new species of *Avicularia* (Theraphosidae: Aviculariinae) from Dominican Republic

Rogério Bertani1,3 & Jeremy Huff2

1 Laboratório Especial de Ecologia e Evolução, Instituto Butantan. Avenida Vital Brazil 1500, 05503-900 São Paulo, SP, Brazil.
2 43 South Main St, Cranbury, NJ 08512, USA. E-mail: jeremyhuff@hotmail.com
3 Corresponding author. E-mail: rbert@butantan.gov.br, rogerio.bertani@uol.com.br

ABSTRACT. A remarkable new species of *Avicularia* Lamarck, 1818, *Avicularia rickwesti* sp. nov., is described from Dominican Republic. Female specimens of the new species are unusual by having two very short and broad spermathecae with distal half strongly sclerotized, a feature not found in any other avicularine. Additionally, it has the leg coxae with spiniform setae, smaller on leg I and prolateral leg II, larger, black on retrolateral leg II, prolateral and retrolateral leg III and prolateral leg IV. Males are unknown. The new species is known only from two localities, in southwestern Dominican Republic. This is the first record for the subfamily on Hispañola which is close to the northern boundary for the Aviculariinae distribution.

**KEY WORDS.** Caribbean; tarantula; taxonomy.

**TAXONOMY**

*Avicularia rickwesti* sp. nov.

Figs 2-19

Diagnosis. The female is distinguished from those of all other *Avicularia* species (Fig. 1) by the two very short and broad spermathecae, twice wider than longer, with distal half strongly sclerotized (Fig. 2). Additionally, it can be distinguished by the leg coxae with spiniform setae; small on leg I and prolateral leg II (Figs 3 and 4), large, black on retrolateral leg II, prolateral and retrolateral leg III and prolateral leg IV (Figs 5 and 6). Males are unknown.

Type material. Female holotype: **DOMINICAN REPUBLIC, Pedernales Province**: Parque Nacional Jaragua, track into park (unmarked) between Manuell Goa and Oviedo (17°48′41.5″N, 71°26′35.9″W, 83.3 m a.s.l.), 09 July 2004, J. Huff & E.S. Volschenk leg. (AMNH), collecting permit # 01496; Female

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paratype: DOMINICAN REPUBLIC, Independencia Province: (Parque Nacional Sierra de Baoruco, Rabo de Gato, 18°18’39.1”N, 71°34’54.4”W, 408 m a.s.l.), 10 July 2004, J. Huff & E.S. Volschenk leg. (AMNH), collection permit # 01496.

Additional material examined. DOMINICAN REPUBLIC, Independencia Province: Puerto Escondido (Rabo de Gato, 18°18’6.83”N, 71°34’8.81”W, 417 m a.s.l.), 1 female, 24 February 2012, J. Huff & R. West leg. (AMNH). Pedernales Province: (Jaragua National Park, Los Tres Charcos, road to Fondo Paradi, 17°48’7.45”N, 71°26’5.41”W, 74 m a.s.l.), 4 females, 20 February 2012, J. Huff & R. West leg. (AMNH).

Description. Female holotype. Measurements: carapace 14.8 long, 11.9 wide, chelicerae 5.6. Legs (femur, patella, tibia, metatarsus, tarsus, total): I = 9.7, 6.4, 7.1, 7.3, 4.5, 35.0. II: 9.4, 6.4, 6.5, 7.5, 4.0, 33.8. III: 8.3, 5.6, 6.1, 6.6, 3.5, 30.1. IV: 10.1, 6.3, 8.4, 8.1, 3.4, 36.3. Palp: 7.3, 4.5, 4.6, ~ 4.7, 21.1. Midwidths (lateral): femora I-IV = 2.5, 2.5, 3.2, 2.9, palp = 2.0; patellae I-IV = 2.7, 2.5, 2.7, 2.9, palp = 2.3; tibiae I-IV = 2.4, 2.2, 2.4, 2.9, palp = 2.3; metatarsi I-IV = 1.9, 1.8, 1.7, 1.8; tarsi I-IV = 1.9, 1.8, 1.7, 1.8, palp = 2.0. Abdomen 14.3 long, 11.3 wide. Spinnerets: PMS, = 2.3; metatarsi I-IV = 1.9, 1.8, 1.7, 1.8; tarsi I-IV = 1.9, 1.8, 1.7, 1.8, palp = 2.0. Abdomen 14.3 long, 11.3 wide. Spinnerets: PMS, 1.4 long, 0.7 wide, 0.1 apart; PLS, 2.3 basal, 1.4 middle, 2.4 distal; midwidths 1.4, 1.1, 1.0, respectively (Fig. 9). Carapace: length to width 1.24. Fovea: 3.0 wide. Covered by abundant slender soft setae and a line of long bristles from behind the eye to the fovea (Fig. 7). Eyes: tubercle 0.9 high, 2.1 long, 2.9 wide. Clypeus absent. Anterior eye row recurved, posterior slightly recurved. Eye sizes and inter-distances: AME 0.72, ALE 0.62, PGE 0.27, PLE 0.65, AME-AME 0.63, AME-ALE 0.43, AME-PME 0.30, ALE-AME 1.97, ALE-PME 0.71, PME-PME 1.85, PME-PLE 0.05, PLE-PLE 2.38, ALE-PLE 0.52, AME-PLE 0.47. Ratio of eye group width to length 1.38 (Fig. 9). Maxillae: length to width: 1.55. Cusuples: between 100-200 spread over ventral inner heel. Labium: 1.6 long, 2.4 wide, with 85 cusuples spaced by one diameter from each other on the anterior half. Labial groove shallow, flat, sigilla not evident (Fig. 8).

Chelicerae: basal segments with fourteen teeth, third, fourth and fifth the larger; a parallel basal row of four tiny on the retromargin. Sternum: 6.6 long, 4.8 wide. Posterior angle rounded, not separating coxae IV. Sigilla: anterior pair not visible, the other ellipsoidal, less than half diameter from margin; posterior more than two times the diameter of the middle (Fig. 8).

Legs: leg formula: I = IV II III. Leg coxae with spiniform setae; small on leg I and lateral prolateral leg II (Figs 3 and 4), large, black on retrolateral leg I, prolateral and retrolateral leg III and prolateral leg IV (Figs 5 and 6). Scopula: tarsi I-IV fully scopulate. Metatarsi I-II fully scopulate; III 4/5, IV 1/2 distal scopulate. IV divided by a three wide row of setae. Clavate trichobothria: on the distal 2/3 of tarsi I-IV. Spines absent on all legs and palps. Urticating hairs: type II (0.69 long, 0.015 wide) on the abdomen dorsum (Figs 10 and 11). Genitalia: paired very short and broad spermathecae with distal half strongly sclerotized (Fig. 2). Color pattern: carapace black covered with abundant pinkish setae. Coxae and trochanter dorsally cream. Femora dor-sally black with abundant pinkish setae, patellae, tibiae, metatarsi and tarsi grayish. Patellae with two dorsal longitudinal white stripes. White rings on distal femora, tibiae and metatarsi. Chelicerae black with whitish hairs. Abdomen dorsally black with a light pattern. Coxae, labium, sternum, maxilla, abdomen and legs ventrally black (Figs 12-14).

Variation. The paratype, a smaller specimen, has a straight fovea and less developed spiniform setae on the coxae.

Remarks: A significant variation in the size of the female was observed (n = 7), carapaces varying in length from 7.1 to 14.8 (median = 10.0, standard deviation = 2.63), and width from 6.1 to 11.9 (median = 7.94, standard deviation = 2.30).

Distribution. Only known from type localities (Fig. 15).

Etymology. The specific name is a patronym in recognition of the contribution to taxonomy and biology of theraphosids done by Rick C. West.

Natural history. The holotype was found in a sparse deciduous forest of Acacia sp. and thorny scrub, with many limestone boulders (Figs 16 and 19). It was collected in a narrow tree hole in a small tree with approximately a 10 cm diameter trunk. A silken tube extended about 15 cm outside of the tree hole (Figs 17 and 18). Spiderlings were found with the female and were approximately 2-3 months old (Fig. 13). The paratype was collected in a very different habitat. It was a broad-leafed forest with no little under story. The trees were very tall and it appears that A. rickwesti sp. nov. is found high in the canopy. The specimen was found on a recently fallen tree. A small female (carapace 8.1 long, 6.1 wide) from Jaragua National Park, Los Tres Charcos, collected in 20 February 2012, had egg sac 8.8 in diameter, with 15 eggs probably infertile and one spiderling.

DISCUSSION

Avicularia rickwesti sp. nov. is remarkable for its highly modified genitalia, a paired spermathecae twice wider than long and strongly sclerotized at their distal half (Fig. 2). All other aviculariine species have paired spermathecae longer than wider and weakly sclerotized (Fig. 1) (West et al. 2008, Bertani 2012). The new species also has some spiniform setae on posterior leg coxae not found or weakly developed in other aviculariines (Figs 4 and 5). The abdomen has an oak leaf pattern (Figs 17 and 14) with resemblance in aviculariines only with Ephebopus foliatus West, Marshall, Fukushima & Bertani, 2008. All these apomorphic characteristics make A. rickwesti sp. nov. very dis-tinct from other Avicularia species and its inclusion into this genus could be seen as inadequate at first glance. However, its inclusion in other aviculariine genera has no support, as the conjuret of characters completely aspinose legs, procurve first eye row (Fig. 7), digitiform distal article of the posterior lateral spinnerets (Fig. 9) and the presence of urticating hairs type II on abdomen dorsum (Figs 10 and 11) indicate the species should be included either into Avicularia or Iridopelma Pocock, 1901 genera. The inclusion in Iridopelma would be dubious since
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Figures 1-14. (1-2) Spermathecae: (1) Avicularia sp., from Brazil, state of Pará, Rio Trombetas (IBSP 8579); (2) Avicularia rickwesti sp. nov. holotype; (3-14) Avicularia rickwesti sp. nov.: (3-6) holotype: (3) leg coxa I, retrolateral; (4) leg coxa II, prolateral; (5) leg coxa III, retrolateral; (6) leg coxa IV, prolateral, showing area with spiniform setae; (7) paratype: cephalothorax, dorsal; (8-11) holotype: (8) maxillae, labium and sternum; (9) spinnerets; (10-11) type II urticating hair: (10) with stalk; (11) released from stalk. (12-14) habitus: (12) female unusual dark form; (13) early antepenultimate immature; (14) female usual brown form "in situ". Photos: 12-13 Jeremy Huff, 14 Rick West. Scale bars: 1-9 = 1 mm, 10-11 = 0.1 mm.
Figures 15-19. *Avicularia rickwesti* sp. nov.: (15) records in Dominican Republic; (16-19) habitats in Dominican Republic: (16, 19) dry deciduous forest in Baoruco, s. Manuel Golla; (17) retreat, female; (18) retreat, Baoruco, s. Manuel Golla. Photos: 16, 18, Jeremy Huff; 17, 19, Rick West.
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**Iridopelma** is endemic to Brazil (BERTANI 2012). Furthermore, some biological features indicate a close relationship with other *Avicularia* species. *Avicularia rickwesti* sp. nov. builds a similar retreat as other *Avicularia* species in tree trunks instead of retreats made of leaves connected with silk made by *Iridopelma* specimens (BERTANI 2012). The discovery of a male would aid in giving support or rejecting the inclusion of the species in *Avicularia*, but the male remains unknown after three trips to the topotypical region. Therefore, we prefer to describe the species with females only and wait for the discovery of a male to confirm the present classification.

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