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NOTES ON THE SPECIES *ANTILLOLPIUM CUBANUM* (PSEUDOSCORPIONES, OLPIIDAE) FROM CUBA, WITH THE DESCRIPTION OF THE FEMALE

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Abstract: New morphometric data of the males of the Cuban endemic species *Antillolpium cubanum*, together with the drawings of the male genitalia, are presented and the female of the species is described for the first time. An emended diagnosis of the species is provided, as well as new records of geographic distribution and natural history.
Key words: Pseudoscorpions, Olpiidae, *Antillolpium*, *Antillolpium cubanum*, Cuba

Notas sobre la especie *Antillolpium cubanum* (Pseudoscorpiones, Olpiidae) de Cuba, con la descripción de la hembra
Resumen: Se presentan nuevos datos morfométricos de los machos de la especie endémica cubana *Antillolpium cubanum*, incluidos los dibujos de los genitales masculinos y se describe la hembra de la especie por primera vez. Se provee una diagnosis enmendada de la especie, así como nuevos registros de distribución geográfica e historia natural.
Palabras clave: Pseudoscorpiones, Olpiidae, *Antillolpium*, *Antillolpium cubanum*, Cuba.

Taxonomy / Taxonomía: *Antillolpium cubanum* Muchmore, 1991, description ♀

Introduction

The genus *Antillolpium* Muchmore, 1991 is an endemic genus from West Indies, with two described species: *A. hummelincki* Muchmore, 1991, from Cayman Islands and *A. cubanum* Muchmore, 1991, from Cuba (Harvey, 2013). *A. cubanum* was described only based on two males from eastern Cuba. In the present contribution new morphometric data of the males, together with the drawings of the male genitalia are presented. The female of the species is described for the first time, and an emended diagnosis of the species is provided, as well as new records of geographic distribution and natural history of this Cuban endemic species.

Materials and Methods

For the present work, 14 specimens belonging to *Antillolpium cubanum* were studied, five males and nine females, all from the Arachnological Collection of the Institute of Ecology and Systematics, Havana, Cuba. Besides, the type specimens of Muchmore (1991) also were examined. The specimens studied herein were dissected and examined as temporary glycerine mounts in cavity slides. After examination, specimens were preserved in 70% in glass vials, with the dissected appendages separated in glass microvials. Microscopic examinations were carried out with a Zeiss Axiolab light microscope, which was also used to take measurements of the appendages; illustrations were prepared through the photographed structures taken with a digital camera connected to the microscope, and later digitally traced using the computer software Corel Draw X6. The measurements follow Chamberlin's (1931) reference points and are given in millimetres. The ratios given are the length/width index of an article, except for legs that are the length/depth index. The terminology, in general, follows Chamberlin (1931), with modifications to the nomenclature of the segments of pedipalps and legs (Harvey, 1992), and to the faces of appendages and the cheliceral rallum (Judson, 2007). The map was produced with the computer program MapInfo Professional Version 10.5 after the locality data were stored in an Excel database.

Abbreviations. CZACC: Zoological Collections of the Institute of Ecology and Systematics, Havana, Cuba; L: length.

Taxonomy

Antillolpium Muchmore, 1991

Antillolpium cubanum Muchmore, 1991
Figs. 1-7
Antillolpium cubanum Muchmore, 1991: 26-27, figs 7-8.

DIAGNOSIS (emended): Species very similar to *Antillolpium hummelincki*, but smaller: L. pedipalpal femur 0.27-0.28 (♂), 0.30-0.38 (♀); L. chela (without pedicel) 0.42-0.47 (♂), 0.51-0.62 (♀) and L. hand (without pedicel) 0.21-0.25 (♂), 0.24-0.30 (♀), rather than 0.33-0.36 (♂) 0.38-0.41 (♀), 0.56-0.59 (♂) 0.62-0.68 (♀) and 0.28-0.30 (♂) 0.33-0.36 (♀). Male genitalia with the atrium of the dorsal posterior gland rounded.

MATERIAL EXAMINED: CUBA: Santiago de Cuba province: Versalles, 19° 59' 42.3" N; 75° 50' 23.6" W, III-1975, P. Alayo, under bark. WM4243.01001 (CZACC), ♂ **paratype**. El Chorrito, km 7 1/2 of the road to the Gran Piedra, 20° 00' 6.6" N; 75° 40' 42" W, 14-III-2008, R. Barba and A. Alegre legs, under stones, secondary forest, 500 m.a.s.l. 1 ♀, 2 ♂♂ (**new record**). Antonio Montané school, La Punta, 19° 56' 30" N; 75° 38' 11" W, 5-III- 2008, under stones, R. Barba and N. Hernández legs, 1 ♀, 2 ♂♂ (**new record**). Verraco, 19° 54' 32" N; 75° 34' 40" W, 6-III- 2008, under stones, R. Barba leg., 2 ♀♀, 1 ♂ (**new record**). Siboney, 19° 57' 35" N; 75° 42' 38" W, V-2010, litter, A. Pérez leg., 1 ♀ (**new record**). Guantánamo province: Tortuguilla, 19° 58' 37" N; 74° 55' 54" W, 11-VIII-1975, L. R. Hernández, under bark, WM4522.03001 (CZACC), ♂ **holotype**. Yumurí del Sur, Imías, 20° 11' 0.49" N; 74° 29' 38" W, 21-I-2009, A. Alegre

leg., litter, 400 m.a.s.l., 1 ♀ (**new record**). Same data as before, except 26-IX-2009, in pine forest, 1 ♀. Same data as before, except in secondary forest, 1 ♀. Finca de Máximo, Majana, Baracoa, 20° 20' 41.6" N; 74° 27' 59.4" W, 25-V-2012, under stones, R. Barba leg., 1 ♀ (**new record**).

DESCRIPTION: **Males:** Carapace 1.27-1.44 longer than broad, with 17-18 setae, three or four in the anterior margin and two in the posterior one.

Chelicera with serrula exterior with 16 blades, galea long, trifid in the tip and subapical lobe subdivided (Fig. 1). Pedipalpal coxa with 4-7 setae, including one long apical seta in the apex. Pedal coxa I: 2-3, II: 2-3, III: 3-4, IV: 4-7. Pedipalps (Fig. 2) with femur 0.71-0.75 and chela (with pedicel) 1.24-1.33 times longer than carapace; trochanter 1.55-1.70, femur 2.45-2.67, patella 2.25-2.42, chela (with pedicel) 3.36-3.50 (Fig. 3), chela (without pedicel) 3.00-3.14 times longer than broad, hand (without pedicel) 1.50-1.62 times longer than deep, movable finger 1.09-1.14 times longer than hand (without pedicel). Trichobothria as in Fig. 3; fixed finger with trichobothrium *it* and *est* near the middle of the finger, *et* more close to the fingertip than to *it* and *est*; *isb*, *ib*, *esb* and *eb* near the base of the finger. Movable finger only with three trichobothria, *sb* missing, *t* almost in the middle of finger, *b* and *st* in the basal third of the finger. With 22-27 teeth in the fixed finger of chela and 24-28 teeth in the movable finger. Tergal chaetotaxy: 2:3-4:3-4:4:4:4:4:4:T2T:T1TT1T:1T1 T1T:2. Sternal chaetotaxy: 5-6:[2-2]:(0)5(0):(0)3-4(0):4-5:4:4:3-4:5-6:T1TT1T:T1T1-2T1T1:2. Genitalia as in Fig. 4. Femur + patella of leg IV 2.23-2.55, tibia 2.83-3.33, metatarsus 1.25-1.50, tarsus 2.29-2.57 times longer than deep (Fig. 5), metatarsal formula T1-1-2-1.

Measurements**: (**5 males, excluding holotype and paratype): Body 1.42-1.52. Carapace 0.36-0.38/0.25-0.30. Chelicera 0.12-0.125/0.07. Pedipalp: trochanter 0.17/0.10-0.11, femur 0.27-0.28/0.11, patella 0.27-0.29/0.12, chela (with pedicel) 0.47-0.49/0.14, chela (without pedicel) 0.42-0.44/0.14, hand (without pedicel) 0.21-0.22/0.13-0.14, movable finger 0.21-0.24. Leg I: trochanter 0.07/0.06, femur 0.09/0.07, patella 0.09-0.10/0.06-0.07, tibia 0.10-0.12/0.04-0.05, metatarsus 0.04-0.05/0.04, tarsus 0.06-0.03. Leg IV: trochanter 0.10-0.11/0.06-0.07, femur+patella 0.28-0.29/0.11-0.13, tibia 0.17-0.20/0.06, metatarsus 0.05-0.06/0.04; tarsus 0.08-0.09/0.04.

Females: Similar to the males, but generally larger. Carapace 1.23-1.37 longer than broad, with 18 setae, generally with four in the anterior margin and two in the posterior one. With some lyrifissures and numerous small pores on the entire surface of carapace.

Chelicera with serrula exterior with 16-18 blades, galea long, trifid in the tip and subapical lobe subdivided. Pedipalpal coxa with 8-9 setae, including one long apical seta in the apex. Pedal coxa I: 3-4, II: 4-7, III: 5-6, IV: 8-10. Pedipalps with femur 0.73-0.88 and chela (with pedicel) 1.34-1.49 times longer than carapace; trochanter 1.38-1.92, femur 2.27-2.71, patella 1.67-2.40, chela (with pedicel) 2.89-3.35, chela (without pedicel) 2.68-3.10 times longer than broad, hand (without pedicel) 1.41-1.61 times longer than deep, movable finger 0.93-1.13 times longer than hand (without pedicel). Trichobothria as in male. With 23-30 teeth in the fixed finger of chela and 23-27 teeth in the movable finger. Tergal chaetotaxy: 2:2-4:4:4:4:2-4:4:4-5:T1T1:T1TT1T:T1T(1-3)T:2. Sternal chaetotaxy: 4-6:(0)3-4(0):(0)4-5(0):5:4:4:4:4-5:T1TT1T:1T1T1T1T:2. Genitalia with two lateral cribriform plates and a set of various median plates (Fig. 6). Femur + patella of leg IV 2.36-2.60, tibia 2.75-3.13, metatarsus 1.40-1.80, tarsus 2.25-2.75 times longer than deep, metatarsal formula T1-1-2-1.

Measurements: (5 females): Body 1.65-2.12. Carapace 0.41-0.46/0.30-0.36. Chelicera 0.15/0.08-0.09. Pedipalp: trochanter 0.18-0.23/0.11-0.13, femur 0.30-0.38/0.13-0.15, patella 0.25-0.37/0.14-0.16, chela (with pedicel) 0.55-0.67/0.18-0.21, chela (without pedicel) 0.51-0.62/0.18-0.21, hand (without pedicel) 0.24-0.30/0.17-0.21, movable finger 0.27-0.32. Leg I: trochanter 0.07-0.09/0.06-0.07, femur 0.10-0.12/0.08-0.09, patella 0.11-0.13/0.08, tibia 0.13-0.16/0.04-0.06, metatarsus 0.05-0.06/0.04, tarsus 0.07-0.08/0.03-0.04. Leg IV: trochanter 0.13-0.15/0.07-0.10, femur+patella 0.33-0.39/0.14-0.15, tibia 0.22-0.25/0.08, metatarsus 0.07-0.09/0.05-0.06, tarsus 0.09-0.11/0.04-0.05.

REMARKS: The measurements of the chela (without pedicel) and the hand (without pedicel) of the new males examined are very similar to those in the type specimens. Muchmore (1991) noted that the male genitalia of *Antillolpium cubanum* is similar to those of *A. hummelincki*, from Cayman Islands, but he did not draw them at that time. The present study shows the differences between the two species, where the shape of the atrium of the posterior dorsal gland is more rounded in the case of the Cuban species. Until present, *A. cubanum* is endemic from eastern Cuba (Fig. 7) and it has been collected under bark (Muchmore, 1991) and in the soil, under stones and in litter.

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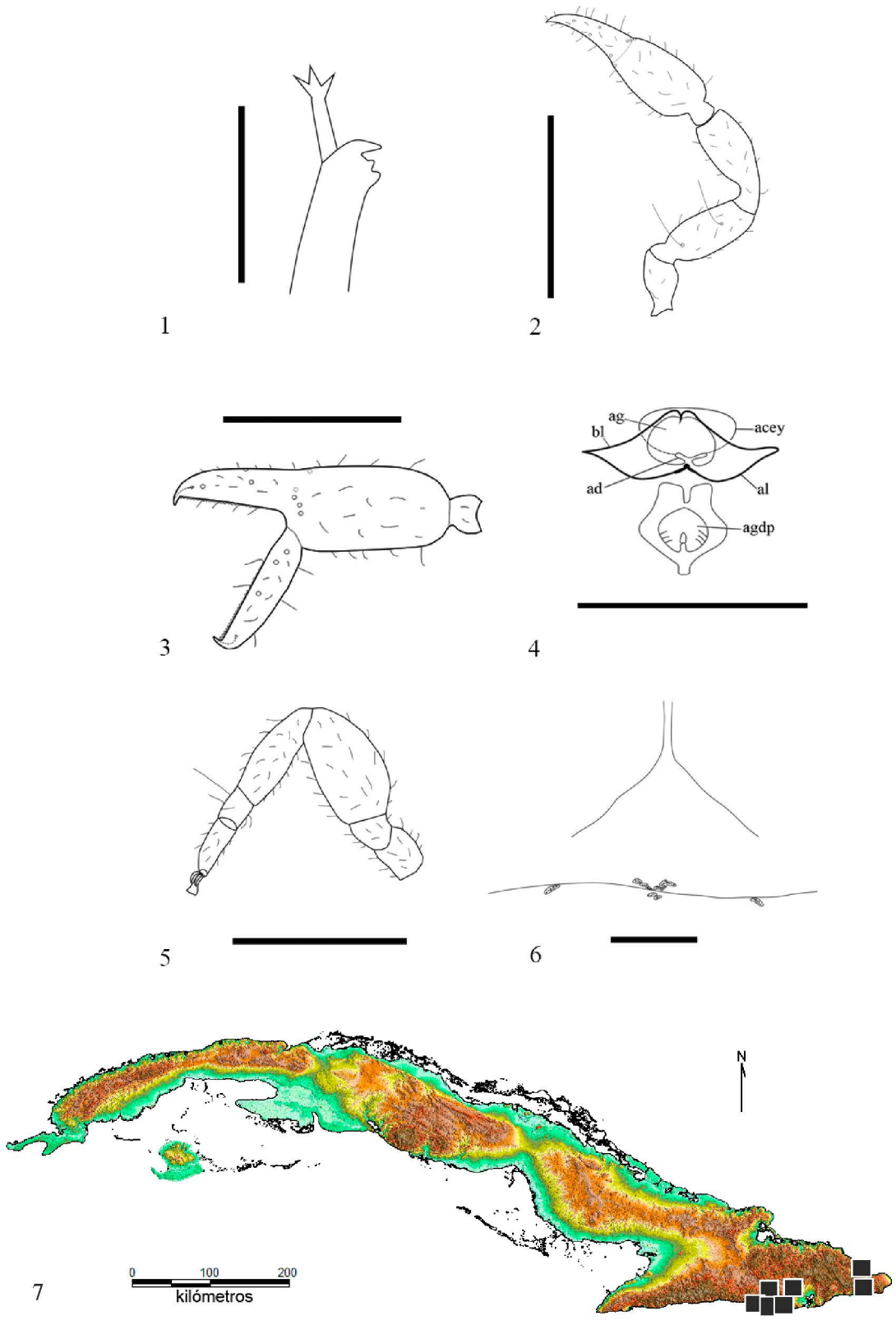
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Figs. 1-6. *Antillolpium cubanum*, male: **1**, distal apex of movable cheliceral finger, detail of the galea with the subdivided subapical lobe; **2**, right pedipalp, dorsal view, setae omitted; **3**, left chela, lateral view, setae omitted; **4**, holotype male genitalia, ventral view; **5**, leg IV, lateral view; **6**, female genitalia, ventral view. Abbrevations: apdg, atrium of the posterior dorsal gland; da, dorsal apodeme; ejca, ejaculatory canal atrium; ga, genital atrium; la, lateral apodeme; lr, lateral rod. Scale lines: 0.5 mm (Fig. 2), 0.3 mm (Figs. 3, 5), 0.1 mm (Figs. 1, 4, 6). **Fig. 7.** Geographic distribution of *Antillolpium cubanum* in Cuba.