

ARTÍCULO:

Comments on some schizomids from the Dominican Republic, with description of a new species of *Rowlandius* (Schizomida: Hubbardiidae)

Luis F. de Armas

Instituto de Ecología y Sistemática,  
Apartado Postal 8029,  
La Habana 8, C. P. 10800,  
Cuba.

James C. Cokendolpher

2007 29th Street,  
Lubbock, Texas 79411,  
U.S.A.

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Grupo de trabajo en Aracnología de  
la Sociedad Entomológica  
Aragonesa (SEA)  
Avda. Radio Juventud, 37  
50012 Zaragoza (ESPAÑA)  
Tef. 976 324415  
Fax. 976 535697  
C-elect.: amelic@retemail.es  
Director: A. Melic

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## COMMENTS ON SOME SCHIZOMIDS FROM THE DOMINICAN REPUBLIC, WITH DESCRIPTION OF A NEW SPECIES OF *ROWLANDIUS* (SCHIZOMIDA: HUBBARDIIDAE)

Luis F. de Armas &amp; James C. Cokendolpher

**Abstract**

A new species of the genus *Rowlandius* Reddell and Cokendolpher, 1995 is described from Cuevas El Pomier, San Cristóbal province, Dominican Republic. Also, new localities are recorded for *Stenochrus portoricensis* Chamberlin, 1922 and *Rowlandius casabito* (Armas and Abud, 1990). Comments on other Dominican Republic hubbardiid species are given.

**Key words:** Schizomida, Hubbardiidae, *Rowlandius*, Taxonomy, West Indies, Hispaniola, Dominican Republic.

**Taxonomy:** *Rowlandius jarmillae* new species

**Comentarios sobre los esquizómidos de la República Dominicana y descripción de una nueva especie de *Rowlandius* (Schizomida: Hubbardiidae)**

**Resumen**

Se describe una especie nueva del género *Rowlandius* Reddell & Cokendolpher, 1995, la cual procede de Cuevas El Pomier, provincia de San Cristóbal, República Dominicana. Además, se registran nuevas localidades para *Stenochrus portoricensis* Chamberlin, 1922, y *Rowlandius casabito* (Armas & Abud, 1990). También se ofrecen algunos comentarios sobre varios hubárdidos dominicanos.

**Palabras Clave:** Schizomida, Hubbardiidae, *Rowlandius*, Taxonomía, Indias Occidentales, Española, República Dominicana.

**Taxonomía:** *Rowlandius jarmillae* sp. n.

As presented by Armas & Abud (1990), with names updated by Reddell & Cokendolpher (1995), and Armas & Teruel (1998), the order Schizomida in the Dominican Republic consists of members from only the family Hubbardiidae.

Armas & Abud (1990) recorded the first schizomids from the Dominican Republic. They listed two previously described species and named five new species, all in the genus *Schizomus* Cook, 1899. Reddell & Cokendolpher (1995) accepted all of these taxa, but transferred them to different genera and listed records for two new collections. Armas & Teruel (1998) transferred the Haitian species, *Rowlandius brevipatellatus* (Rowland & Reddell, 1979), and the Dominican *R. subcerdoso* (Armas & Abud, 1989) to *Stenochrus*. The former species was known only from one male and the latter species by an adult female and some juveniles. More recently, Armas & Teruel (unpublished data), assigned these two species to a new genus, and Armas & Abud (unpublished data) described three new species of the genus *Rowlandius*. We are herein describing yet another new species of *Rowlandius*.

The recognized species from the country are placed in four genera: *Stenochrus* Chamberlin, 1922, with *S. portoricensis* Chamberlin 1922, *Rowlandius* Reddell & Cokendolpher, 1995 with *R. anasilviae* (Armas & Abud, 1990), *R. ducoudrayi* (Armas & Abud, 1990), *R. lantiguai* (Armas & Abud, 1990), *R. longipalpus* (Rowland & Reddell, 1979), *R. naranjo* (Armas & Abud, 1990), and four new species (Armas & Abud, unpublished data; this paper), and a new genus (Armas & Teruel, unpublished data), with two known Hispaniolan species ("*R.*" *brevipatellatus* and "*R.*" *subcerdoso*).

A recent study of schizomids collected by Stewart B. Peck and Jarmilla Kulalova-Peck during 1995, and by L. F. de Armas and his collaborators in 1999 from some caves in the Dominican Republic revealed a new species of the genus *Rowlandius* and new records of other species. The examined specimens are deposited at the following institutions: Texas Memorial Museum (TMM), Austin, Texas; California Academy of Sciences (CAS), San Francisco, California; Instituto de Ecología y Sistemática (IES), La Habana; and P. Wagenaar Hummelinck Collection (PWH), Utrecht.

### Genus *Stenochrus* Chamberlin, 1922

The females of *Stenochrus* spp. are easily identified on the basis of the spermathecae which are illustrated by Armas & Abud (1990: figs 7D, 8). Among the materials received from the Pecks are two collections (one new record) for *S. portoricensis* from near Borbón, Provincia de San Cristóbal: Cueva El Pomier No. 3, elevation 200 m, 14 July 1995 and Cueva El Pomier No. 4, 12 July 1995. Both collections are represented by single females now placed at the TMM. Armas & Abud (1990) recorded specimens of *S. portoricensis* from Cueva Ricardo Ramírez, Borbón (= Cueva El Pomier No. 4). These collections are all from the same limestone cave region.

### Genus *Rowlandius* Reddell & Cokendolpher, 1995

*Rowlandius ducoudrayi* and *R. longipalpus* have the trochanter of the male palpus greatly extended distally (Armas & Abud, 1990: figs. 2C, D, 6A-C). The male flagella noticeably differ, making identifications easy. The female spermathecae of *R. longipalpus* (Armas & Abud, 1990: fig. 6D) cannot be confused with those from any other described schizomid from the island. The spermathecae of the new species herein described resemble those of *R. anasilviae*, but the median lobes are large and longer. The remaining *Rowlandius* spp. known from the Dominican Republic are similar in morphology and difficult to identify. The male flagella of these species are all very similar, but the species can be split into two groups based on the length and width of the bulbous portion of the flagellum. The length (minus the length of stalk) of the flagellum is approximately the same as the width in *R. naranjo* and *R. anasilviae*; however the length is a little longer than the width in *R. casabito* and *R. lantiguai* (additionally, in *R. casabito* the leg II-IV's femora are stouter and longer).

*Rowlandius naranjo* and *R. anasilviae* are best distinguished by the diagnoses in the original description. Armas & Abud (1990:21, fig. 9) stated that *R. anasilviae* is known from the Provincia de Peravia, but under the "Localidad tipo" they erroneously listed the locality as being in Provincia de Pedernales. Reddell & Cokendolpher (1995) consequently also listed the type locality as being in the Provincia de Pedernales.

Through the efforts of James Reddell, we were able to examine the female and two juveniles from the PWH. These specimens were reported as undetermined Hubbardiinae by Reddell & Cokendolpher (1995) from Distrito Nacional, near Río Haina, 20 km W of Santo Domingo (3 May 1973, P. Wagenaar Hummelinck). They actually belong to a new species of *Rowlandius* which is being described by Armas & Abud (unpublished data).

Reddell & Cokendolpher (1995) reported the discovery of a second locality of *R. casabito* from Jarabacoa to El Rico, Provincia La Vega, 800-1500 m, shady ravine with loose web on underside of rock (5 Feb. 1975, W. L. and D. E. Brown; deposited at the CAS). These specimens do not show any trace of green

on the cuticle, which is reported for *R. casabito*. Possibly they have been altered by storage. New material should be sought to verify the fresh colors. The spermathecae of this population (Fig. 1) are similar to those of a topotypic female (L. F. Armas, 27 March 1999, deposited at the IES). The two males from Jarabacoa to El Rico are heteromorphic, with rounded posterodorsal abdominal processes (the type specimen of *R. casabito* has a slightly rounded process, not truncate as stated in the original description). Another specimen, a female collected from the underside of a rock near Franco Bido, along the edge of the road to Cerro Prieto (ca. 1300 m), Santiago province (14 March 1999, L. F. Armas, deposited at the IES) is also referred to *R. casabito*.

Among the material collected by Armas and the Pecks, there are three females, one male and some juveniles of an undescribed species from near Borbon, San Cristobal Province, which we propose naming as:

### *Rowlandius jarmillae*, new species

(Figs. 2-6, Table I)

TYPE DATA. Homomorphic male holotype (IES), Cueva El Pomier No. 2, near Borbon, San Cristobal province, 14 July 1995, S. B. Peck & J. Kukalová-Peck (200 m elevation). Two female paratypes (TMM), Cueva El Pomier No. 3, near Borbon, San Cristobal, 14 July 1995, same collectors as holotype, elevation 200 m. Two females, a male preadult, and a female preadult (IES), all paratypes, Cueva El Pomier No. 2, 2 March, 1999, L. F. Armas, D. Abreu, A. Schubert, J. R. Martínez, dark zone, under stones, and in humid soil mixed with bat guano.

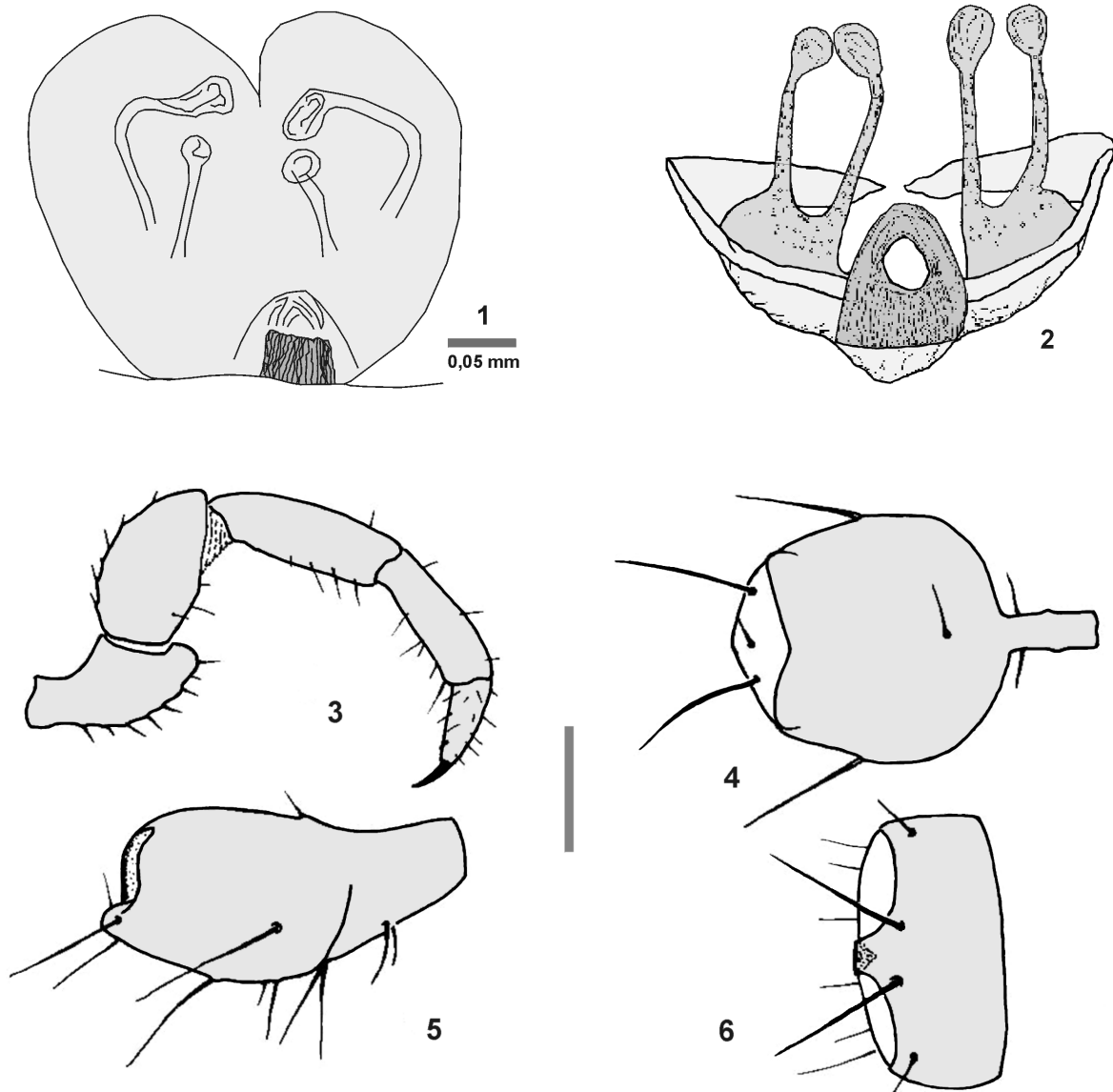
ETYMOLOGY. This species is named for Dra. Jarmilla Kukalová-Peck, in recognition of her contributions to the biospeleology of the West Indies.

DIAGNOSIS. The spermathecae of *R. jarmillae* are distinctive by having the median and lateral lobes of the same length and by the extensive number of duct openings (Fig. 2). The male flagellum is lanceolate and globose, with the apical depression flanked basolaterally and distally by moderate elevations. The length of the flagellum (minus the length of stalk) is the same as the width; flagellum width/height ratio = 1.25.

DESCRIPTION. HOLOTYPE MALE (length from distal edge of propeltidium to base of flagellum, 3.50 mm). Propeltidium, metapeltidium, and tergites greenish-brown. Pedipalps yellowish-brown; chelicerae and flagellum light reddish-brown; legs II-IV light greenish-brown; leg I light yellowish-brown.

**Cephalothorax:** Propeltidium 1.10 mm long, 0.63 mm wide; with two apical setae and three pair dorsal setae. Eyespots distinct, irregular. Mesopeltidia separated by a distance equal to the width of one plate. Metapeltidium undivided. Anterior sternum with ten setae and two long anteriorly directed setae arising from front of sternum; posterior sternum triangular, with six setae.

**Abdomen:** tergites I-VIII each with one pair dorsal



**Figs. 1-2.** Female spermathecae. 1. *Rowlandius casabito*, from Jarabacoa to El Rico, Constanza. 2. *Rowlandius jarmillae* n. sp. (scale as Fig. 1).

**Figs. 3-6.** *Rowlandius jarmillae* n. sp. Male holotype. 3. Right pedipalp, lateral aspect; 4-5. flagellum: 4. lateral; 5. dorsal; 6. abdominal segment XII, dorsal. Scale (in mm): 3: 0,33; 4-6: 0,28.

setae; tergites VIII-IX each with one pair dorsolateral and one pair lateral setae. Segment XII with dorsal median process well developed, truncated; one pair strong dorsal setae (Fig. 6). Flagellum (Figs. 4-5) 0.38 mm long, 0.25 mm wide, 0.20 mm high.

**Pedipalps** (Fig. 3): trochanter short, slightly produced distally, with row of six spinose setae on ventral margin; mesal spur present. Femur short, swollen, with five spinose setae on dorsal margin. Patella, tibia, and tarsus, with scattered setae, more abundant on ventral surface.

**Chelicerae:** Movable jaw without accessory teeth, with guard tooth at end of serrula. Fixed jaw with six teeth.

**Legs:** Length of segments in Table I. Leg I, including coxa, 5.94 mm long. Femur IV, 2.37 as long as deep.

**FEMALE:** Total length, 4.8-5.0 mm; propeltidium length, 1.2-1.3 mm; flagellum length, 0.4 mm. Leg I, including coxa, 5.8-6.0 mm. Leg and pedipalp segments measurements in Table I. Spermathecae (Fig. 1): lateral bulbs slightly smaller than medians.

**NATURAL HISTORY.** Although the animals are from caves, they do not appear to be cave adapted (i.e., they lack long appendages, depigmentation, etc.). Cuevas El Pomier is a subterranean system of limestone caves in the foothills of the Cordillera Central, which goes to the NW, in the same range where Constanza (the type locality of *R. casabito*) is located.

Armas' specimens from Cueva No. 2 were collected under rocks and in wet soil mixed with bat guano, in

Table I

**Measurements (mm) of *Rowlandius jarmillae* n. sp.**1, Male holotype; 2, female paratype from type locality;  
3, female paratype from Cueva 3.

Segments	Male (1)	Female (2)	Female (3)
Pedipalps	2.09	2.90	2.39
Trochanter	0.40	0.60	0.55
Femur	0.50	0.70	0.53
Patella	0.53	0.75	0.58
Tibia	0.43	0.55	0.48
Tarsus	0.23	0.30	0.25
Leg I	5.41	5.80	5.43
Trochanter	0.28	0.30	0.30
Femur	1.25	1.50	1.38
Patella	1.68	1.80	1.60
Tibia	1.28	1.25	1.25
Basitarsus	0.37	0.35	0.35
Telotarsus	0.55	0.60	0.55
Leg IV	3.91	4.75	4.35
Trochanter	0.28	0.30	0.33
Femur	1.25	1.45	1.35
Patella	0.50	0.65	0.58
Tibia	0.77	0.95	0.88
Basitarsus	0.68	0.85	0.73
Telotarsus	0.43	0.55	0.48

darkness. As a result of anthropic activity on this cave, the bat community is now very poor, and the invertebrate fauna has been severely impacted.

COMPARISONS. This species is most closely related to *R. casabito*. The homomorphic males of both species are almost indistinguishable, but the flagellum is more globose and has smaller posterodorsal prominences than in *R. casabito*. The female spermathecae permit its identification. *Rowlandius casabito*, *R. lantiguai*, and *R. anasilviae* all have female spermathecae with smaller median lobes (Fig. 1; Armas & Abud 1990, figs. 4E, 10D) than those of *R. jarmillae* (Fig. 2).

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