

Predation by the scorpion *Rhopalurus junceus* (Scorpiones: Buthidae) on the centipede *Scolopocryptops ferrugineus* (Scolopendromorpha: Scolopocryptopidae)

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Abstract: A second case of predation on centipedes (Chilopoda) by the Cuban endemic scorpion *Rhopalurus junceus* (Herbst, 1800) (Buthidae) is recorded here, in this case on *Scolopocryptops ferrugineus* (Linnaeus, 1767) (Scolopocryptopidae), in north Matanzas province, western Cuba.

Key words: Scorpiones, *Rhopalurus*, Chilopoda, *Scolopocryptops*, predation, Cuba.

Depredación por el escorpión *Rhopalurus junceus* (Scorpiones: Buthidae) sobre el ciempiés *Scolopocryptops ferrugineus* (Scolopendromorpha: Scolopocryptopidae)

Resumen: Se reporta un segundo caso de depredación de ciempiés (Chilopoda) por el escorpión endémico cubano *Rhopalurus junceus* (Herbst, 1800) (Buthidae), en esta ocasión sobre *Scolopocryptops ferrugineus* (Linnaeus, 1767) (Scolopocryptopidae), en el norte de la provincia de Matanzas, Cuba occidental.

Palabras clave: Scorpiones, *Rhopalurus*, Chilopoda, *Scolopocryptops*, depredación, Cuba.

The Cuban endemic scorpion *Rhopalurus junceus* (Herbst, 1800) (Buthidae) is widespread all over the main island, Isla de la Juventud and many adjacent keys (Teruel & Armas, 2012; Teruel & Kovafik, 2012). This species predaes on various arthropods such as ants, crickets, cockroaches, centipedes, spiders, amblypygids, other scorpions (Teruel, 1996, 1997; Teruel & Armas, 2012; Barro & Cherva, 2013; Teruel & Toledo, 2014), and even on small vertebrates such as geckos of the genus *Sphaerodactylus* Wagler, 1830 (Armas, 2001; Teruel & Armas, 2012). However, predation by this scorpion on centipedes has been recorded only once: on *Scolopendra alternans* Leach, 1815 by Barro & Cherva (2013).

Following Martínez-Muñoz (2014), the genus *Scolopocryptops* Newport, 1844 contains two species in Cuba: *S. ferrugineus* (Linnaeus, 1767) and *S. rubiginosus* L. Koch, 1878. Moreover, after Chagas-Júnior (2003), the former is widespread across the Antilles (Bahamas, Cuba, Jamaica, Haiti, Guadalupe, Dominica, Martinique, Saint Vincent, and Grenada), Central America (Mexico, Guatemala, Honduras, and El Salvador), and South America (Venezuela, Colombia, Ecuador, and Peru). Inside Cuba, it is widespread as well and inhabits a great variety of landscapes and vegetation types, from sea level to the highest mountains, where it shelters in the soil, in bat guano inside caves, under rocks, in leaf litter, and under bark of both rotten and living trees (C. Martínez-Muñoz, per. obs.). No scorpion predators have been reported so far for this centipede, despite it overlaps in niche with many species along the Cuban archipelago. Herein we report the first such a case, which also represents the second centipede species observed as prey of *R. junceus*.

On 12 January 2015, at 21:07 hrs, we found a subadult male *R. junceus* (67 mm total length, 8.0 mm carapace length) eating a specimen of *S. ferrugineus*, in secondary vegetation 3 km southeast of the small town named Carbonera (23°04'17"N - 81°24'52"W; datum WGS 84; altitude 30 m above sea level), Cárdenas municipality, Matanzas province. The scorpion was located 0.65 m above the ground, hanging upside down on an oblique lateral twig of an *Erythroxylum* sp. shrub (Erythroxilaceae, fig. 1a). The scorpion had started eating the centipede from the head backwards and only about the posterior half of the body (11 segments, 17 mm) remained intact when found (figs. 1b-c). Both specimens are deposited in the personal collection of the third author (RTO).

Centipedes have been recorded as prey of scorpions repeatedly (see McCormick & Polis, 1990, for a review), but records in Cuba are rare (Barro & Cherva, 2013). This is probably due to the lack of intensive studies on the ecology of Cuban scorpions. With a total length frequently in excess of 100 mm, *R. junceus* is a large species capable of exploiting a great variety of prey types and sizes (Teruel, 1996, 1997; Armas, 2001; Teruel & Armas, 2012; Teruel & Toledo, 2014), including large centipedes of the genus *Scolopendra* Linnaeus, 1758 (Barro & Cherva, 2013). Therefore, it is not surprising that it can prey as well on smaller centipede genera such as *Scolopocryptops*. Furthermore, genera *Rhopalurus* Thorell, 1876, *Scolopendra*, and *Scolopocryptops* are sympatric throughout Cuba and future samplings are necessary to confirm new cases of this predator-prey interaction.

Last, according to the personal observations of one of us (RT), another similarly large, widespread, and common scorpion in Cuba, *Centruroides gracilis* (Latreille, 1805), is a habitual predator of centipedes of the genera *Rhysida* Wood, 1862, *Scolopendra* and *Scolopocryptops* across anthropic sites of the country, mostly cities and towns.

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References

- ARMAS, L. F. DE. 2001. Frogs and lizards as prey of some Greater Antillean arachnids. *Revista Ibérica de Aracnología*, 3: 87-88. Accesible en: http://www.sea-entomologia.org/PDF/RIA_3/R03-011-087.pdf
- BARRO, A., & T. CHERVA 2013. Depredación de *Scolopendra alternans* (Chilopoda: Scolopendromorpha) por *Rhopalurus junceus* (Scorpiones: Buthidae). *Revista Cubana de Ciencias Biológicas*, 2(2): 77-78.
- CHAGAS-JÚNIOR, A. 2003. *Revisão das espécies neotropicais de Scolopocryptopinae (Chilopoda: Scolopendromorpha: Scolopocryptopidae)*. M.Sc. Thesis, Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brasil. xii + 79 pp. [unpublished].



MARTÍNEZ-MUÑOZ, C. A. 2014. El despertar de los gigantes: revisión taxonómica preliminar de los ciempiés escolopendromorfos (Chilopoda: Scolopendromorpha) de la República de Cuba. *Boletín de la Sociedad Entomológica Aragonesa*, **55**: 185-192.

MCCORMICK, S. J. & G. A. POLIS 1990. Prey, predators, and parasites. Pp. 145-157, in *The biology of scorpions* (G. A. Polis, ed.). Stanford University Press, Stanford, California, 587 pp.

TERUEL, R. 1996. Presas naturales de los escorpiones cubanos. I. *Garciana*, **24-25**: 14-15.

TERUEL, R. 1997. *El orden Scorpiones en el tramo Cabo Cruz-Punta de Maisí, Cuba (Arthropoda: Arachnida)*. B.Sc. Thesis, Universidad de Oriente, Santiago de Cuba, 55 pp. [unpublished].

TERUEL, R. & A. TOLEDO 2014. Yet another case of scorpions preying upon amblypygids in nature (Scorpiones, Amblypygi). *Revista Ibérica de Aracnología*, **24**: 111-112.

TERUEL, R. & L. F. DE ARMAS 2012. Redescrición de *Rhopalurus junceus* (Herbst, 1800) (Scorpiones: Buthidae). *Boletín de la Sociedad Entomológica Aragonesa (S.E.A.)*, **50**: 153-174. Accesible en: http://www.sea-entomologia.org/Publicaciones/PDF/BOLN_50/153174BSEA50Rhopalurusjunceus.pdf

TERUEL, R. & F. KOVÁŘIK 2012. *Scorpions of Cuba*. Clairon Productions, Prague, 232 pp.

Fig. 1. Photographic sequence that shows the predation event of *Rhopalurus junceus* on *Scolopocryptops ferrugineus* recorded herein.