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On the westernmost occurrence of the genus *Microtityus* Kjellesvig-Waering, 1966, in Cuba (Scorpiones: Buthidae)

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Abstract: Herein we record for the first time the occurrence of the genus *Microtityus* Kjellesvig-Waering, 1966 in Cienfuegos province, which also represents its westernmost finding in Cuba. Seven specimens (two pairs of adults and three juveniles) were collected, which are tentatively referred to *Microtityus* (*Parvabsonus*) *trinitensis* Armas, 1974.
Key words: Scorpiones, Buthidae, *Microtityus*, westernmost record, Cuba.

Sobre el hallazgo más occidental del género *Microtityus* Kjellesvig-Waering, 1966 en Cuba (Scorpiones: Buthidae).
Resumen: Se registra aquí por primera vez la presencia del género *Microtityus* Kjellesvig-Waering, 1966 en la provincia de Cienfuegos, la cual representa además su hallazgo más occidental en Cuba. Se capturaron siete especímenes (dos parejas de adultos y tres juveniles), los cuales son referidos tentativamente a *Microtityus* (*Parvabsonus*) *trinitensis* Armas, 1974.
Palabras clave: Scorpiones, Buthidae, *Microtityus*, registro más occidental, Cuba.

The genus *Microtityus* Kjellesvig-Waering, 1996 is remarkable because it includes many of the world tiniest scorpion species, with an adult size usually smaller than 20 mm. It is also very attractive for taxonomists due to its intensive diversification, mostly because its species usually possess extremely restricted distributions which are strictly dependent upon very precise ecological factors such as altitude, vegetation, and soil type (Teruel, 2001; Teruel & Díaz, 2002; Pérez & Teruel, 2004; Teruel & Armas, 2006; Teruel & Infante, 2007, 2009; Armas & Teruel, 2012; Teruel & Kovařík, 2012; Teruel *et al.*, 2014).

According to the most recently published contributions (González-Sponga, 2001; Botero-Trujillo & Noriega, 2008; Botero-Trujillo *et al.*, 2009; Armas & Teruel, 2012; Teruel & Kovařík, 2012; Teruel *et al.*, 2014), the genus currently contains 36 species unequally divided in two well-defined, markedly allopatric subgenera: 13 of them belong to the nominal subgenus and occur in the northern portion of South America (Colombia, Venezuela, Brazil, and Trinidad & Tobago), while the remaining 23 make up the subgenus *Parvabsonus* Armas, 1974 and are restricted to the Greater Antilles (Cuba, Hispaniola, Puerto Rico, and the Virgin Islands).

In Cuba, the genus is represented by nine species, eight of which are known from single or a few nearby localities of the eastern provinces of Granma, Holguín, Santiago de Cuba, and Guantánamo (Armas, 1974, 1984, 1988, 2001; Teruel, 2000, 2001; Teruel & Armas, 2006; Teruel & Infante, 2007; Teruel & Kovařík, 2012). The only species that apparently exhibits a wide distribution is *Microtityus* (*Parvabsonus*) *trinitensis* Armas, 1974, which occurs discontinuously from the southern premontane belt of Sancti Spíritus through the northern coast of Holguín (Teruel, 2000; Teruel & Infante, 2007; Teruel & Kovařík, 2013).

During a recent field trip to the southern coast of Cienfuegos, several specimens of *Microtityus* were suddenly collected at the western point of the Cienfuegos bay entrance (fig. 1–2). This finding represents both the westernmost record of this genus in Cuba and its first one from Cienfuegos province. The complete collecting data are as follows: Cienfuegos province, Cienfuegos municipality, 500–600 m south of Castillo de Jagua; 10 m a.s.l.; November 16th, 2013; T. M. Rodríguez-Cabrera, R. Marrero, R. López-Silvero; 2♂♂, 2♀♀, 3 juveniles; all specimens are preserved in 80% ethanol and deposited in the first author's personal collection. Precise coordinates of the locality are available only upon direct request to the authors, in order to protect this unique scorpion population from illegal collecting (a new but increasing threat to the Cuban arachnid fauna).

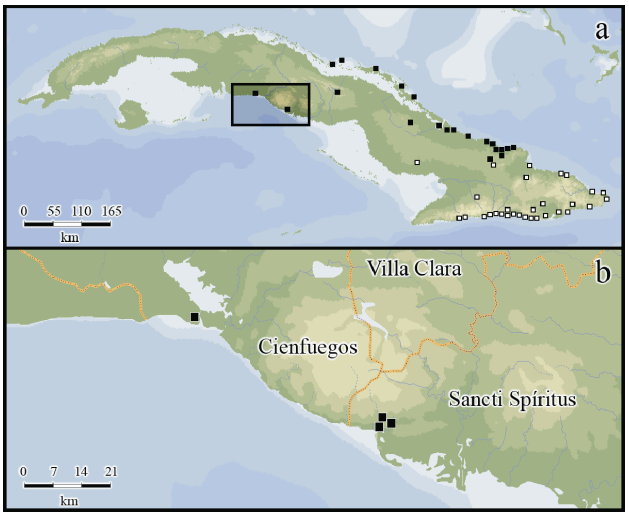


Fig. 1: Distribution in Cuba of the genus *Microtityus*: **a)** *M. trinitensis* (black squares), other species (white squares); **b)** close-up of the darkened inset from (**a**), with details of the westernmost records of *M. trinitensis*.

As usual for members of this genus, a large and homogeneous area was thoroughly sampled but all scorpions were found together inside a very small spot. All were detected hanging in the underside of rocks semi-buried in the ground, in places were a thin layer (< 5 cm) of leaf litter that had accumulated underneath trees and bushes. The vegetation is an open coastal semicaducifolious forest with a floristic composition that has been severely affected by human activities: it is now composed mostly by the tree *Lysilomma bahamense*, with an understory of the shrub *Erythroxylum havanense* (Fig. 2d). Other scorpion species found in the same place are the scorpionid *Heteronebo bermudezi morenoi* (Armas, 1973), and the buthids *Centruroides guanensis* Franganillo, 1930 and *Rhopalurus*

junceus (Herbst, 1800). The collection was made during the dry season and the entire area showed marked signs of drought: the trees had lost part of the foliage, the leaf litter was dry, and the soil under the rocks was dusty. The locality is currently under great anthropic pressure because of its proximity to the Cienfuegos city and the increasing touristic activity that leads to clearance of the vegetation cover, which includes urbanization, creation of dumping sites and construction of paths.

The specimens are tentatively referred herein to *M. trinitensis*, whose westernmost occurrence is represented by the type locality and its surroundings: around Trinidad city, in southern Sancti Spíritus province, about 55 km to the southeast of Castillo de Jagua (fig. 1). Specimens from both populations match each other in almost all diagnostic characters traditionally useful for the taxonomy of the genus, with the single noteworthy exception of size: the four adults from Cienfuegos are about 15% smaller than all other specimens we have examined from the entire range of *M. trinitensis*. This difference is unprecedented among members of this genus (adult size is a fairly constant character in every species according to our personal observations), but for the moment we refrain from giving it any taxonomical significance, because the sample available from Cienfuegos is still small and the area between these two populations has not been sampled adequately enough to demonstrate that a genetic isolation actually exists.

On the other hand, what has been traditionally recognized as *M. trinitensis* actually represents a complex of cryptic species which is currently being revised (R. Teruel, unpublished data), and it is more prudent to keep the *status quo* until the taxonomic identity of all populations is satisfactorily established.

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Fig. 2: Live specimens of *Microtityus trinitensis* from Cienfuegos, in their natural habitat: **a)** adult male; **b)** adult female; **c)** juvenile; **d)** view of the exact collecting site. Note the cryptic color pattern of this scorpions, a common feature to all members of the genus. Photos a–c courtesy Raimundo López-Silvero.