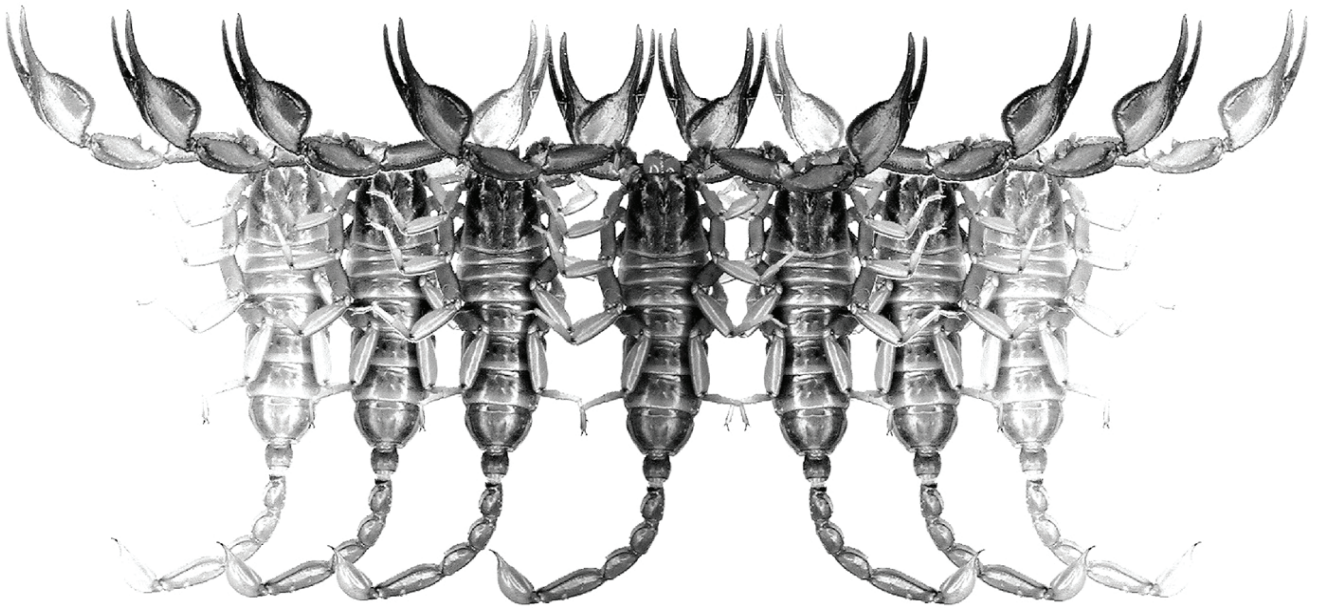


Euscorpium

Occasional Publications in Scorpiology



**Identity of the Central American scorpion
Centruroides mahnerti Lourenço, 1983
(Scorpiones: Buthidae)**

Luis F. de Armas

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EDITOR: Victor Fet, Marshall University, 'fet@marshall.edu'

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Identity of the Central American scorpion *Centruroides mahnerti* Lourenço, 1983 (Scorpiones: Buthidae)

Luis F. de Armas

P. O. Box 4327, San Antonio de los Baños, Artemisa Province, 38100, Cuba. luisdearmas1945@gmail.com

<http://zoobank.org/urn:lsid:zoobank.org:pub:8C174B7F-90A0-4181-850A-B53EB77F7AB7>

Summary

The Central American scorpion *Centruroides mahnerti* Lourenço, 1983, was described on the basis of three female specimens (holotype and paratypes) from Momotombo Volcano, Nicaragua. Almost two decades later, it was synonymized under *Centruroides koesteri* Kraepelin, 1911 by Armas and Maes, without examination of the type specimen; but Teruel and Stockwell posteriorly argued that description and figures given for *C. mahnerti* are also similarly referable to juveniles of *C. edwardsii* (Gervais, 1843). Now, an evaluation of the holotype of *C. mahnerti* has definitively shown that it is a subadult female of *C. koesteri*. For the first time, photographs of the holotype of *C. mahnerti* are presented.

Systematics

Family Buthidae C. L. Koch, 1837
***Centruroides koesteri* Kraepelin, 1911**
(Figures 1–4, 8)

Centruroides koesteri Kraepelin, 1911: 72; Fet & Lowe, 2000: 111 (complete references list); Teruel & Stockwell, 2002: 114.
= *Centruroides mahnerti* Lourenço, 1983: 763 (syn. by Armas & Maes, 2001: 16).

COMMENTS. The Central American scorpion *Centruroides mahnerti* Lourenço, 1983, named in honour of Dr. Volker Mahnert (1943–2018), was described on the basis of a female holotype (not a male as appears in Fet & Lowe, 2000: 112) and two female paratypes from Momotombo Volcano (12°25'N 86°33'W; 80 m a. s. l.), León Department, Nicaragua. This species was downgraded by Armas & Maes (2001) to a junior synonym of *C. koesteri* Kraepelin, 1911; however, Teruel & Stockwell (2002: 114) argued that description and figures given for *C. mahnerti* are also referable to juveniles of *C. edwardsii* (Gervais, 1843). Unfortunately, neither Armas & Maes (2001) nor Teruel & Stockwell (2002) examined the type specimen of *C. mahnerti*; additionally, the habitus of this species was illustrated on the basis of two poorly defined photos (dorsal and ventral aspects) of a paratype (Lourenço, 1983: 764, figs. 1–2). Taking in account such uncertainty, Borges et al. (2012: 131, 132, table 1) preferred retaining *C. mahnerti* as a valid species.

To elucidate this problem, photographs of the type specimen of *C. mahnerti* (Figs. 1–4) were examined and now is possible to confirm that, as stated by Armas & Maes

(2001), this species is really a junior synonym of *C. koesteri*. Juvenile specimens of *C. edwardsii* (Figs. 5–7) clearly differ from those of *C. koesteri*, among other characters, by having a darker general pattern, the pedipalps very densely hirsute and metasomal segments II–IV with stronger spinoid granules on dorsal carinae and having three or four pairs of ventrolateral macrosetae (only two pairs in *C. koesteri*). On the other hand, the holotype of *C. mahnerti* is a subadult female, perhaps of two instars less than the adult female holotype of *C. koesteri*, as inferred from measurements given by Francke & Stockwell (1987: 10); also, its pedipalp chela is slender than the pedipalp patella, whereas in the adults of *C. koesteri* it is other way round (Francke, 1978; Teruel & Stockwell, 2002).

As pointed out by Lourenço (1983: 767) and Francke (1978: 70), *C. koesteri* and *C. edwardsii* (misidentified as *C. margaritatus* by authors previous to Armas et al., 2011) are sympatric species, but the former appears to be arboreal in habits (Francke, 1978: 70), although in the Momotombo Volcano area both species were found inside buildings. From the same area, Lourenço (1983) and Armas (1995) also recorded the diplocentric scorpion *Didymocentrus krausi* Francke, 1978.

According to present-day data (Francke & Stockwell, 1987; Armas & Maes, 2000; Teruel & Stockwell, 2002), *C. koesteri* ranges from the Fonseca Gulf (southern Honduras) to northwestern Costa Rica (Fig. 8), mainly in tropical semiarid environments.

Acknowledgements

The photographs of the holotype of *C. mahnerti* were kindly provided by Peter J. Schwendinger (Curator, Department of Arthropodology and Entomology, Museum of Natural History,

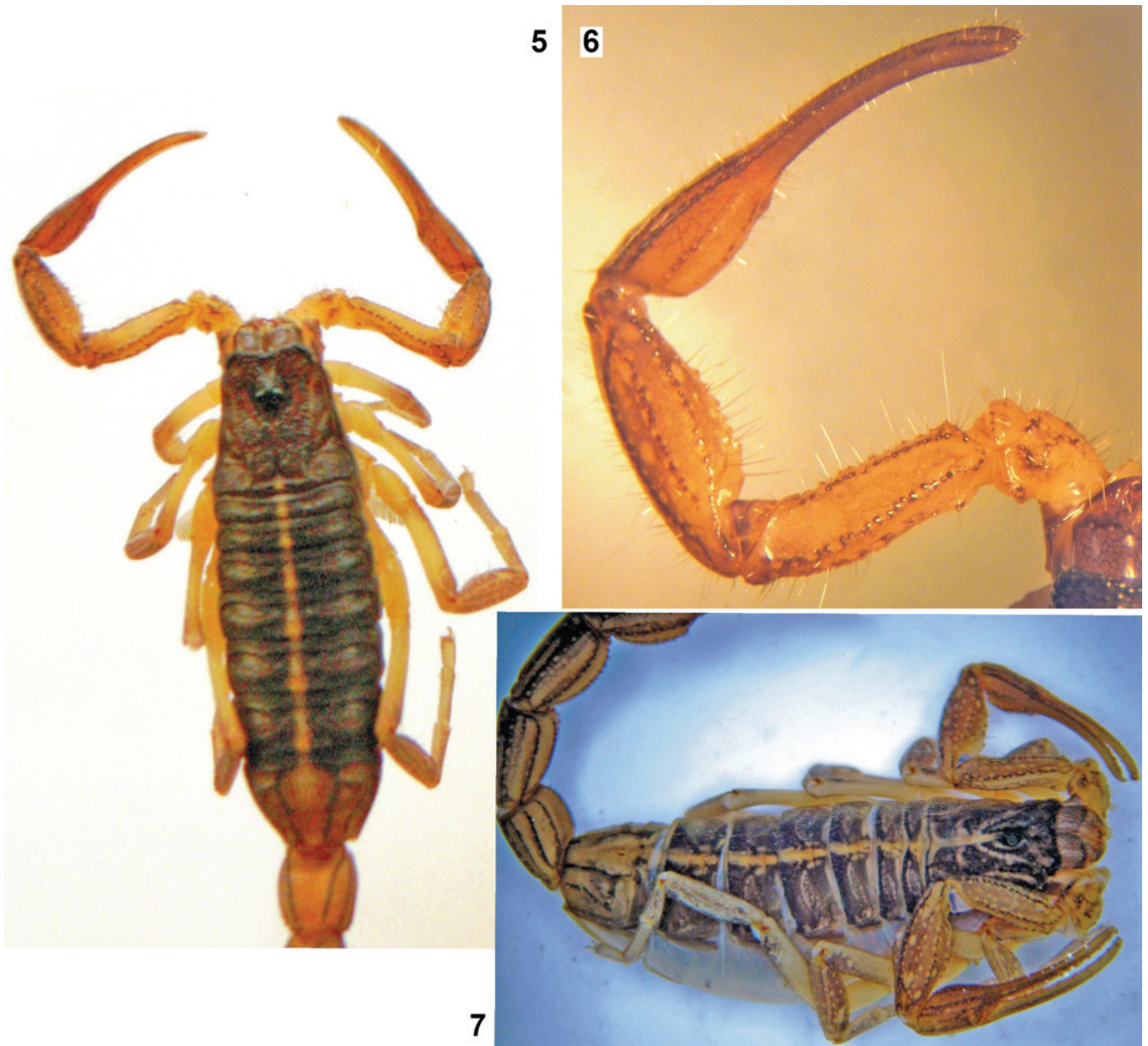


Figures 1–4. *Centruroides koesteri*, subadult female holotype of *C. mahnerti*, dorsal view (1), left pedipalp, dorsal view (2), metasoma III–V and telson, lateral view (3), and labels (4). Photos courtesy of Peter J. Schwendinger.

Geneva, Switzerland), who also authorized their use for this contribution. I am very indebted to Lionel Monod (Geneva, Switzerland) and David Martínez Ortiz (Praha, Czech Republic), for kind help in contacting Dr. P. J. Schwendinger. A previous version of this manuscript was revised by Rony E. Trujillo (Escuela de Biología, Universidad de San Carlos de Guatemala, Ciudad Guatemala, Guatemala). This contribution is part of the project “Colecciones Zoológicas, su conservación y manejo II” (Instituto de Ecología y Sistemática, La Habana).

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Figures 5–7. *Centruroides edwardsii*, juvenile topotype from Colombia, La Guajira Department, Riohacha (5–6) and juvenile from Colombia, Santander Department, Pescadero, Pie de Cuesta (7).

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Figure 8. Geographical distribution of *Centruroides koesteri*. The black circle indicates the type locality of *C. mahnerti*.