



<http://dx.doi.org/10.11646/zootaxa.3936.1.8>

<http://zoobank.org/urn:lsid:zoobank.org:pub:13BE5B17-2C1B-42A6-8687-76F733F1FC2E>

A new species of the “*mexicanus*” group of the genus *Vaejovis* C. L. Koch, 1836 from the Mexican state of Aguascalientes (Scorpiones: Vaejovidae)

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Abstract

A new species of *Vaejovis* is described from the Mexican state of Aguascalientes. It is assigned to the “*mexicanus*” group and compared with similar species from Jalisco, Guanajuato, and San Luis Potosí. A map with their known distributions is provided.

Key words: Arachnida, Biodiversity, Endemism, Mexico, Sky islands, *Vaejovis tenamaztlei*

Introduction

Mexico is a biologically rich country (Mittermeier & Goettsch, 1992; Mittermeier *et al.*, 1997), and has more species of scorpion than any other country in the world (258 of the 1913 species; Francke, 2014). Vaejovidae is the most diverse scorpion family in North America, with 176 species currently recognized within 23 genera (Soleglad & Fet, 2008). The genus *Vaejovis* C. L. Koch, 1836 is the largest within the family, and contains 57 species (Soleglad & Fet, 2008). The type species of the genus, by monotypy, is *Vaejovis mexicanus* C. L. Koch, 1836, and the “*mexicanus*” group is distinguished from other *Vaejovis* by six particular characters (Santibáñez-López & Francke, 2010): 1) the spermatophore lacks a sclerotized mating plug, 2) the telotarsus III distal spinule count is three (rarely) or higher, 3) six rows of denticles in the fixed finger of the pedipalp chela, 4) the position of trichobothria *ib–it* at the base of the fixed finger of the pedipalp chela, 5) stocky pedipalps, and 6) dark mottling on a brownish background color on most of the species. The “*mexicanus*” group as currently recognized includes 18 species, generally found in the highlands of Mexico above 1800 m (Santibáñez-López & Francke, 2010; Contreras-Félix & Francke, in prep.).

The Mexican state of Aguascalientes (Fig. 1), despite being the fifth smallest state in Mexico, contains an impressive biotic diversity (Ávila-Villegas, 2008). Several distinct physiographical regions, each with its own evolutionarily distinct biota, intersect within the confines of the state borders (Morrone, 2006; Bryson *et al.*, 2008). However, relatively little is known about the scorpion fauna of Aguascalientes (Escoto-Rocha & Delgado-Saldívar, 2008). Seven genera and eight species are now known to occur in this state (González-Santillán & Prendini, 2013). Conspicuously absent are montane species of the “*mexicanus*” group of *Vaejovis*, which predictably should be present in the Sierra Fría and the Sierra del Laurel, two mesic, high-elevation mountains in Aguascalientes. Several trips were taken to the latter mountain range to search for montane scorpions, and a new species found in the Sierra Laurel is described here and compared to similar species in the “*mexicanus*” group. *Vaejovis tenamaztlei* sp. n. is the first species of this genus in Aguascalientes, increasing the state’s diversity to seven genera and nine species.

References

- Álvarez-Padilla, F. & Hormiga, G. (2008) A protocol for digesting internal soft tissues and mounting spiders for scanning electron microscopy. *Journal of Arachnology*, 35 (3), 538–542.
- Ávila-Villegas, H. (2008) Introducción. In: Comisión Nacional Para el Conocimiento y Uso de la Biodiversidad (Eds.), *La Biodiversidad Biológica en Aguascalientes: Estudio de Estado*. CONABIO, México, pp. 81.
- Bryson, R.W., Mendoza-Quijano, F. & Riddle, B.R. (2008) Aguascalientes: pequeño estado, gran biogeografía. In: Comisión Nacional Para el Conocimiento y Uso de la Biodiversidad (Ed.), *La Biodiversidad Biológica en Aguascalientes: Estudio de Estado*. CONABIO, México, pp. 146.
- Coddington, J.A., Giribet, G., Harvey, M.S., Prendini, L. & Walter, D.E. (2004) Arachnida. In: Cracraft, J. & Donoghue, M. (Eds.), *Assembling the Tree of Life*. Oxford University Press, Oxford, pp. 296–318.
- Escoto-Rocha, J. & Delgado-Saldívar, L. (2008) Insectos y Arácnidos. In: Comisión Nacional Para el Conocimiento y Uso de la Biodiversidad (Ed.) *La Biodiversidad Biológica en Aguascalientes: Estudio de Estado*. CONABIO, México, p 126–128.
- Francke, O.F. (2014) Biodiversidad de Arthropoda (Chelicerata: Arachnida ex Acari) en México. *Revista Mexicana de Biodiversidad*, 85, 408–418.
- González-Santillán, E. & Prendini, L. (2013) Redefinition and generic revision of the North American vaejovoid scorpion subfamily Syntropinae Kraepelin, 1905, with descriptions of six new genera. *Bulletin of the American Museum of Natural History*, 382, 1–71.
<http://dx.doi.org/10.1206/830.1>
- Graham, M.R. & Bryson, R.W. (2010) *Vaejovis montanus* (Scorpiones: Vaejovidae), a new species from the Sierra Madre Occidental of Mexico. *The Journal of Arachnology*, 38, 185–293.
<http://dx.doi.org/10.1636/Ha09-90.1>
- McWest, K. (2009) Tarsal spinules and setae of vaejovoid scorpions (Scorpiones: Vaejovidae). *Zootaxa*, 2001, 1–126.
- Mittermeier, R. & Goettsch, C. (1992) La importancia de la diversidad biológica de México. In: CONABIO (Ed.), *México ante los retos de la biodiversidad*. CONABIO, Mexico, pp. 57–62.
- Mittermeier, R., Goettsch, C. & Robles Gil, P. (1997) *Megadiversidad. Los países biológicamente más ricos del mundo*. CEMEX, México, 501 pp.
- Morrone, J.J. (2006) Biogeographic Areas and Transition Zones of Latin America and the Caribbean Islands Based on Panbiogeographic and Cladistic Analyses of the Entomofauna. *Annual Reviews of Entomology*, 51, 467–494.
<http://dx.doi.org/10.1146/annurev.ento.50.071803.130447>
- Prendini, L. (2003) Revision of the genus *Lisposoma* Lawrence, 1928 (Scorpiones: Bothriuridae). *Insect Systematics and Evolution*, 34, 241–264.
<http://dx.doi.org/10.1163/187631203788964764>
- Prendini, L. & Wheeler, W. (2005) Scorpions higher phylogeny and classification, taxonomic anarchy, and standards for peer review in online publishing. *Cladistics*, 21, 446–494.
<http://dx.doi.org/10.1111/j.1096-0031.2005.00073.x>
- Santibáñez-López, C.E. & Francke, O.F. (2010) New and poorly known species of the mexicanus Group of the genus *Vaejovis* (Scorpiones: Vaejovidae) from Oaxaca, Mexico. *Journal of Arachnology*, 38, 555–571.
<http://dx.doi.org/10.1636/Ha09-64.1>
- Soleglad, M.E. & Fet, V. (2008) Contributions to scorpion systematics. III. Subfamilies Smeringurinae and Syntropinae (Scorpiones: Vaejovidae). *Euscorpius*, 71, 1–115.
- Stahnke, H.L. (1970) Scorpion nomenclature and mensuration. *Entomological News*, 81, 297–316.
- Vachon, M. (1952) *Étude sur les Scorpions*. Institut Pasteur d'Algérie, Alger, 482 pp.
- Vachon, M. (1974) Étude des caracteres utilisés pour classer les familles et les genres de Scorpions (Arachnides) 1. La trichobothriotaxie en Arachnologie, Sigles trichobothriaux et types de trichobothriotaxie chez les Scorpions. *Bulletin du Muséum National d'Histoire Naturelle*, Series 3, 140 (Zool. 104), mai-juin 1973, 857–958. [Paris, Cover date 1973, published in January 31, 1974: See footnote in p. 958]
- Volschenk, E.S. (2005) A new technique for examining surface morphosculture of scorpions. *Journal of Arachnology*, 33, 820–825.
<http://dx.doi.org/10.1636/S03-047.1>