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Description of a new *Tityus* species (Scorpiones: Buthidae) from Sierra de Portuguesa, western Venezuela, based on morphological and mitochondrial DNA evidence

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Abstract

A new scorpion species, *Tityus imei* sp. nov., is described, representing the first record of the genus for the southern foothills of Sierra de Portuguesa in the western Venezuelan state of Portuguesa. The species is morphologically related to *T. sanarensis*, from the state of Lara, and *T. boconoensis*, from state of Trujillo. *Tityus imei* sp. nov. can be distinguished by the array of dorsal trichobothria in the pedipalp femur (d_3, d_4, d_5) and by the following combination of female metasomal segment II characters: (i) ventral keels double and parallel up to two thirds of the segment, whereupon they converge into a single keel and separate again in the base; (ii) full, parallel ventral keels, including a well defined central keel in the second half of the segment. A molecular approach was undertaken to estimate the genetic relationship between the new species, *T. sanarensis*, *T. boconoensis*, and *T. discrepans*. Sequencing of a 562 bp-segment encoding sectors M6 to M11 of the cytochrome oxidase subunit I revealed that *T. imei* sp. nov. diverges from *T. sanarensis* and *T. boconoensis*, particularly in the polymorphic sector I4, sharing more overall sequence similarity with the northcentral Venezuelan species, *T. discrepans*. The new species is of potential medical importance given the presence of venom components whose mass resembles that of scorpion neurotoxins affecting voltage-sensitive sodium channels, as indicated by MALDI-TOF MS analyses.

Key words: *Tityus*, Scorpiones, Buthidae, cytochrome oxidase subunit I, Portuguesa Range, new species, mass spectrometry, Venezuela.

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