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Revision of the orb-weaving spider genus *Verrucosa* McCook, 1888 (Araneae, Araneidae)

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Abstract

The araneid spider genus *Verrucosa* McCook, 1888 is revised. Five of the seven previously known species, *V. arenata* (Walckenaer, 1841), *V. lampra* Soares & Camargo, 1948, *V. meridionalis* (Keyserling, 1892), *V. undecimvariolata* (O. Pickard-Cambridge, 1889) and *V. zebra* (Keyserling, 1892), are redescribed and illustrated. In addition, 37 new species of *Verrucosa* from the Neotropical region are described and illustrated: *V. cachimbo* n. sp., *V. tarapoa* n. sp., *V. scapofracta* n. sp., *V. carara* n. sp., *V. latigastra* n. sp., *V. guatopo* n. sp., *V. cuyuni* n. sp., *V. benavidesae* n. sp., *V. rancho* n. sp., *V. excavata* n. sp., *V. meta* n. sp., *V. levii* n. sp., *V. chanchamayo* n. sp., *V. manauara* n. sp., *V. brachiscapa* n. sp., *V. macarena* n. sp., *V. pedrera* n. sp., *V. lata* n. sp., *V. galianoae* n. sp., *V. suaíta* n. sp., *V. coroico* n. sp., *V. florezi* n. sp., *V. hoferi* n. sp., *V. caninde* n. sp., *V. opon* n. sp., *V. silvae* n. sp., *V. avilesae* n. sp., *V. tuberculata* n. sp., *V. alvarengai* n. sp., *V. apuela* n. sp., *V. bartica* n. sp., *V. cajamarca* n. sp., *V. canje* n. sp., *V. cuyabenoensis* n. sp., *V. sergipana* n. sp., *V. simla* n. sp. and *V. rhea* n. sp. *Mahadiva reticulata* O. P.-Cambridge, 1889 is removed from the synonymy of *Verrucosa arenata* (Walckenaer, 1841) and is recognized as a valid species, *Verrucosa reticulata*. *Araneus cylicophorus* Badcock, 1932 is transferred to *Verrucosa* by Mello-Leitão (1946) removed from the synonymy of *Verrucosa meridionalis* (Keyserling, 1892) and recognized as a valid species. The male of *Verrucosa meridionalis* (Keyserling, 1892) is described for the first time. Distributional maps are provided for all species.

Key words: spiders, Neotropics, new species, taxonomy

Introduction

The spiders of the genus *Verrucosa* McCook, 1888 inhabit the Neotropical and Nearctic regions and comprises seven known species (World Spider Catalog, 2014). Levi (1976) included the type species, *Verrucosa arenata* (Walckenaer, 1841), the only Nearctic representative of the genus, as part of a series of redescrptions of the genera of Araneidae found in north of Mexico.

The first explicitly phylogenetic placement was proposed by Scharff & Coddington (1997: 398, fig. 82). *Verrucosa* was placed within the subfamily Araneinae, as sister to *Eriophora* Simon, 1864 based on the long scape of the epigynum.

The Neotropical orb-web spider *Verrucosa arenata*, was studied by Rao *et al.* (2011), showing the influence of reverse orientation on foraging efficiency and web asymmetry.

Previously the genus was thought to be distributed in the Americas and Queensland (Australia), but after the study of specimens of *Verrucosa furcifera* (Keyserling, 1886) from Queensland, that was transferred to *Carepalxis* L. Koch, 1872, *Verrucosa* is now restricted to the Nearctic and Neotropical regions.

In this work we monograph the genus *Verrucosa*, redescribing the seven known species, and proposing 37 new species, mostly based on females. We also present distribution maps.

Material and methods

Specimens. The examined material is deposited in the following institutions (curators in parenthesis): ACC, Academia de Ciencias de Cuba, La Habana, Cuba (L. F. de Armas); AMNH, American Museum of Natural History, New York, USA (N. Platnick); BMNH, Natural History Museum, London England (J. Beccaloni); CAS, California Academy of Sciences, San Francisco, USA (C. Griswold); CIIF, Centro de Identificação de Insetos Fitófagos, Universidade Federal do Paraná, Curitiba, Brazil (C. Marinoni); DMNH, Divisão do Museu de História Natural, Prefeitura Municipal de Curitiba, Secretaria Municipal do Meio Ambiente, Curitiba, Brazil (M. L. Bittencourt); IBSP, Instituto Butantan, São Paulo, Brazil (A. D. Brescovit); ICN, Instituto de Ciencias Naturales de La Universidad Nacional de Colombia, (E. Flores); INPA, Instituto Nacional de Pesquisas da Amazônia, Manaus, Brazil (C. Magalhães); MACN, Museo Argentino de Ciencias Naturales Bernardino Rivadavia, Buenos Aires, Argentina (C. Scioscia); MCN, Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, Porto Alegre, Brazil (R. Ott); MCTP, Museu de Ciências e Tecnologia da Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre, Brazil (A. A. Lise); MCZ, Museum of Comparative Zoology, Harvard University, Massachusetts, USA (G. Giribet, H. W. Levi); MHCI, Museu de História Natural Capão da Imbuia, Curitiba, Brazil (J. de Moura Leite); MNHN, Museum National d'Histoire Naturelle, Paris, France (C. Rollard); MNRJ, Museu

Note. Volker Framenau (Western Australian Museum) is currently working on the revision of the genus *Carelpaxis*. *Verrucosa furcifera* will be transferred to *Carelpaxis* (Framenau pers. comm.).

Distribution. Queensland.

***Verrucosa septemmammata* Caporiacco, 1954**

Verrucosa septemmammata Caporiacco, 1954: 100, fig. 22, female from French Guiana, Une, Charvein [05°34'N, 53°54'W], Benoist (not located for examination).

Distribution. French Guiana.

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