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A new Mexican species of *Megarthritis* Curtis (Coleoptera, Staphylinidae, Proteininae)

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The genus *Megarthritis* Curtis with about 140 species described, is the largest of the subfamily Proteininae (Coleoptera: Staphylinidae) (Cuccodoro 2011; López-García *et al.* 2011). It is distributed worldwide (Cuccodoro 1999) and has an amphipolar distribution, being more diverse in Holarctic region (Newton 1985). In the tropics, the ecological requirements of *Megarthritis* species restrict their presence to mountain areas, showing high levels of endemism, making a taxon potentially informative for biogeographic analysis (Cuccodoro 1998). In Mexico there was only one described species: *Megarthritis altivagans* Bernhauer, 1929, but it is known that there are several undescribed species (Navarrete-Heredia *et al.* 2002). Cuccodoro (2011), recognised “eleven species from Mexico, eleven species from Costa Rica, Guatemala, Honduras, Nicaragua and Panama, and fifteen species from Bolivia, southern Brazil, Colombia, Ecuador, Peru and Venezuela”. In this paper we describe a new species of Mexican *Megarthritis* from the State of Jalisco.

Measurements are in millimeters (mm) and were abbreviated as follows: PL—length of pronotum at midline; EL—length of elytra at midline. Terms for morphological characters and definitions mainly follow Cuccodoro (2011).

Specimens examined are deposited in the following collections: Colección Entomológica, Centro de Estudios en Zoología, Universidad de Guadalajara, Jalisco, México (CZUG), Colección Nacional de Insectos, Instituto de Biología Universidad Nacional Autónoma de México, México (CNIN), Colección Entomológica, Universidad Distrital Francisco José de Caldas, Bogotá, Colombia (MUD) and Muséum d'histoire naturelle, Geneva, Switzerland (MHNG).

Megarthritis alatorreorum sp. nov.

Holotype ♂. MÉXICO, JAL: Teocuitatlán de Corona, Cerro de García, NTP-12. Calamar. 7. VI- 2.VII.2014, 20°10'8.16" N 103°20'51.78"W, 2775 msnm. Col. William D. Rodríguez, (CZUG). **Paratypes (28)** MÉXICO, JAL: Teocuitatlán de Corona, Cerro de García, NTP-12. Calamar. 7. VI–2.VII.2014, 20°10'8.16" N 103°20'51.78"W, 2775 msnm. Col. William D. Rodríguez (1♂ 3♀: CZUG); MÉXICO, JAL: Teocuitatlán de Corona, Cerro de García, NTP-12. Calamar. 7. VI–2.VII.2014, 20°10'8.16" N 103°20'51.78"W, 2775 msnm. Col. William D. Rodríguez (1♂ CZUG); MÉXICO, JAL: Teocuitatlán de Corona, Cerro de García, NTP-11. Calamar. 2. VII- 3 VIII. 2014, 20°10'8.94" N 103°20'53.76"W, 2776 msnm. Col. William D. Rodríguez (1♀: CZUG); MÉXICO, JAL: Teocuitatlán de Corona, Cerro de García, NTP-80-10. Calamar. 2-VII al 3-VIII de 2014, 20°10'9.54" N 103°20'51.72"W, 2774 msnm. Col. William D. Rodríguez. (1♀: CZUG); MÉXICO, JAL: Teocuitatlán de Corona, Cerro de García, NTP-80-12. Calamar. 7-VI al 2-VII de 2014, 20°10'8.16" N 103°20'51.78"W, 2775 msnm. Col. William D. Rodríguez. (1♀: CZUG); MÉXICO: JAL, Teocuitatlán de Corona, Cerro de García, NTP-80-09-Calamar. 28-IX/31-X de 2013, 20°10'7.5" N 103°20'22.2"W, 2623 msnm. Col. William D. Rodríguez. (1♂ CNIN); MÉXICO: JAL, Teocuitatlán de Corona, Cerro de García, NTP-80-07. Calamar. 7-VI al 2-VII de 2014, 20°10'3.78" N 103°20'27.12"W, 2623 msnm. Col. William D. Rodríguez. (1♀ CNIN); MÉXICO: JAL, Teocuitatlán de Corona, Cerro de García, NTP-80-12. Calamar. 4 - V al 7 - VI de 2014, 20°10'8.16" N 103°20'51.78"W, 2775 msnm. Col. William D. Rodríguez. (1♀ CNIN); MÉXICO: JAL, Teocuitatlán de Corona, Cerro de García, NTP-80-09. Calamar. 2-VII al 3-VIII de 2014, 20°10'7.5" N 103°20'22.2"W, 2623 msnm. Col. William D. Rodríguez. (2♀ CNIN); MÉXICO: JAL, Teocuitatlán de Corona, Cerro de García, NTP-80-09. Calamar. 3-VIII al 3 IX de 2014, 20°10'7.5" N 103°20'22.2"W, 2623 msnm. Col. William D. Rodríguez. (1♀ CNIN); MÉXICO: JAL, Teocuitatlán de Corona, Cerro de García, NTP-80-09. Calamar. 2-VII al 3-VIII de 2014, 20°10'7.5" N 103°20'22.2"W, 2623 msnm. Col. William D. Rodríguez. (1♂ MUD); MÉXICO: JAL, Teocuitatlán de Corona, Cerro de García, NTP-80-12. Calamar. 4 - V al 7 - VI de 2014, 20°10'8.16" N 103°20'51.78"W, 2775 msnm. Col. William D. Rodríguez. (1♂

Lamiaceae (*Salvia gesneriflora*, *Salvia iodantha* and *Salvia elegans*), Primulaceae (*Anagallis arvensis*), Fagaceae (*Quercus crassipes*), Verbenaceae (*Lippia* spp.), Amaranthaceae (*Iresine* spp.), Onagraceae (*Lopezia* spp. and *Fuchsia* spp.) and Asteraceae (*Verbesina* spp.).

Specimens were collected between 2400–2800 masl with carrion traps baited with squid. Although the species has been collected only with carrion traps we assume that it is not a carrion feeder but a saprophagous species, as other species in this genus. Mushrooms, fruits and other organic matter at decomposing stages might attract more specimens. The minimum temperature of the habitat was 12°C, mean 19.93 °C and a maximum of 29.5 °C, the minimum relative humidity was 24%, mean 68.5% and a maximum of 89%. The mean rainfall was 6.7 mm/month.

Remarks. *Megarthus alatorreorum*, *M. altivagans* and *M. ashei* Cuccodoro & Löbl, 1996 (from Arizona and New Mexico) are the only New World members of the genus to possess an asymmetrical aedeagal valve in combination with prohypomera lacking discal ridge. Among these species *M. alatorreorum* and *M. altivagans* uniquely share a modified frons in the male, but *M. altivagans* lacks a medio-apical projection on abdominal tergite VIII in the female. The aedeagal shape is also diagnostic.

Acknowledgments

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Literature cited

- Bernhauer, M. (1929) Neue Staphyliniden aus Mittelamerika. *Wiener Entomologische Zeitung*, 46, 186–208.
- Cuccodoro, G. (1998) Revision and phylogeny of *Megarthus* Curtis 1829 from New Guinea, New Caledonia and Fiji (Coleoptera Staphylinidae Proteininae). *Tropical Zoology*, 11, 103–137.
- Cuccodoro, G. (1999) Four new species of *Megarthus* Curtis, 1829 (Coleoptera, Staphylinidae, Proteininae) from the Bale Mountains, southern Ethiopia. *Bulletin de la Société entomologique suisse*, 72, 373–386.
- Cuccodoro, G. (2011) Revision of the Neotropical types of *Megarthus* Curtis, 1829 and description of two new species from Costa Rica and Peru (Coleoptera, Staphylinidae, Proteininae). *Revue Suisse de Zoologie*, 118 (1), 107–147.
- Cuccodoro, G. & Löbl, I. (1996) Revision of the rove beetles of the genus *Megarthus* of America north of Mexico (Coleoptera: Staphylinidae: Proteininae). *Mitteilungen der Münchner Entomologischen Gesellschaft*, 86, 145–188.
- Curtis, J. (1829) *A guide to an arrangement of British Insects: being a catalogue of all the named species hitherto discovered in Great Britain and Ireland*. Westley & Davis, London, 332 pp.
- López-García, M.M., Méndez-Rojas, D.M. & Navarrete-Heredia, J.L. (2011) First record and a new species of *Megarthus* Curtis (Coleoptera, Staphylinidae, Proteininae) from the Colombian Central Andes. *Zootaxa*, 2916 (1), 62–64.
- Navarrete-Heredia, J.L., Newton, A.F., Thayer, M.K., Ashe, J.S. & Chandler, D.S. (2002) *Guía ilustrada para los géneros de Staphylinidae (Coleoptera) de México. Illustrated guide to the genera of Staphylinidae (Coleoptera) of México*. Universidad de Guadalajara y Conabio, México, 401 pp.
- Newton, A.F. Jr. (1985) South temperate Staphylinoida (Coleoptera): their potential for biogeographic analysis of austral disjunctions. In: Ball, G.E. (Ed.), *Taxonomy, Phylogeny and Zoogeography of Beetles and Ants. Series Entomologica* 33. W. Junk, Dordrecht, pp. 179–220.