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BRIEF COMMUNICATION

First record of the invasive bee *Anthidium manicatum* (Hymenoptera: Megachilidae) in Chile

José Montalva¹, Mauro Ríos², & Felipe Vivallo³

Abstract. The Palearctic wool carder bee *Anthidium manicatum* (Linnaeus) is recorded for the first time in Chile based on eight specimens collected on *Lavandula* sp. (Lamiaceae) in San Bernardo, Metropolitan Region. This new record expands the invasive range of this species in South America, confirming previous predictions based on an ecological niche model.

INTRODUCTION

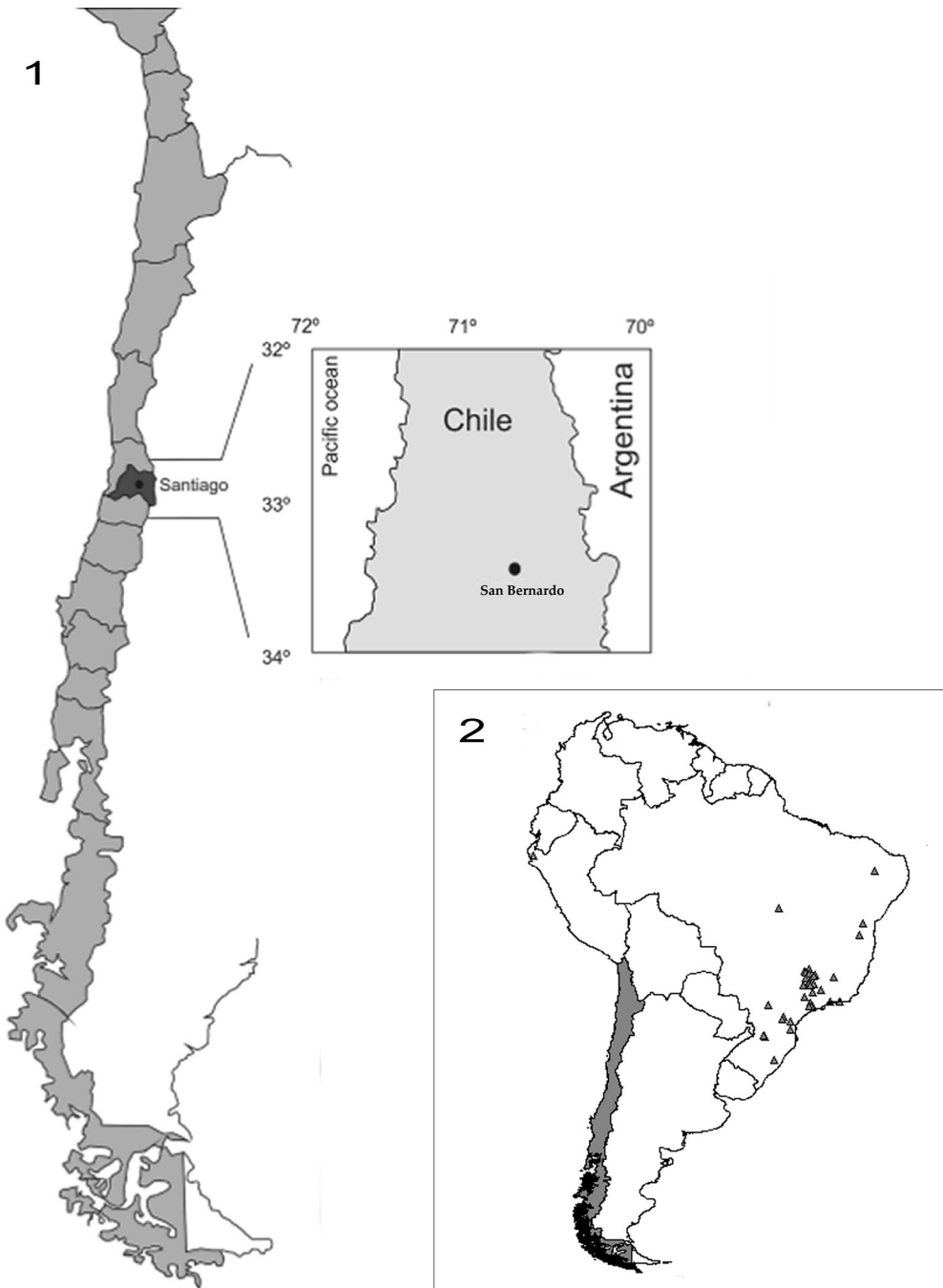
The Palearctic wool carder bee, *Anthidium manicatum* (Linnaeus, 1758), is the most widely distributed unmanaged bee in the world (Gibbs & Sheffield, 2009; Strange *et al.*, 2011). This species, originally occurring in Europe, North Africa, and western Asia (Strange *et al.*, 2011; Gonzalez & Griswold, 2013), was first recorded in North America in 1963 (Jaycox, 1967). Recently, it was recorded from Siberia (Proshchalykin, 2007) and New Zealand (Soper & Beggs, 2013), increasing dramatically its distributional range in different zoogeographical regions of the world (Gibbs & Sheffield, 2009; Strange *et al.*, 2011). In South America this species was recorded for the first time in 1964 in several localities in northwestern, southwestern, and southern regions of Brazil (Moure & Urban, 1964 *apud* Urban, 2002). Later, it was recorded from Argentina, Paraguay, Peru, Suriname, and Uruguay (Silveira *et al.*, 2002; Urban, 2002; Michener, 2007; Urban & Moure, 2007; Strange *et al.*, 2011; Gonzalez & Griswold, 2013) (Fig. 1). The record from Argentina is dubious and needs to be confirmed (Roig-Alsina, 2006; Gonzalez & Griswold, 2013).

¹ 712 Terril Road, Menomonie, Wisconsin 54751, USA (montalva.jose@yahoo.es).

² La Herradura Oriente, 18934 Condominio Los Sauces 84, San Bernardo, Santiago, Chile (mauro.riosv@gmail.com).

³ HYMN Laboratório de Hymenoptera, Departamento de Entomologia, Museu Nacional, Universidade Federal do Rio de Janeiro, Quinta da Boa Vista-São Cristóvão 20940-040, Rio de Janeiro, RJ, Brazil (fvivallo@yahoo.com).

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Figures 1–2. Distribution records of *Anthidium manicatum* (Linnaeus) in South America. 1. New record in central Chile (San Bernardo, Metropolitan Region of Santiago). 2. Currently known distribution in South America based on museum records (grey triangles) (see text for references).

In January 2015 we collected six males and two females of *A. manicatum* in San Bernardo, an urbanized area of the Metropolitan Region in central Chile, foraging on an undetermined species of *Lavandula* L. (Lamiaceae). These specimens constitute the

first record of this species for this country (see new records below). In March and April 2015 additional male specimens of *A. manicatum* were observed in the same area attacking workers of *Apis mellifera* Linnaeus, 1758 (Apidae) that were foraging on a patch of flowers of *Lavandula*. Such aggressive and territorial behavior against other bees is typical of males of *A. manicatum* (Pechuman, 1967; Wirtz *et al.*, 1988), and may represent a potential risk to the native bees. However, at least in New Zealand, it appears that this is not the case because *A. manicatum* forages on exotic plants and interacts with other introduced bee species (Soper & Beggs, 2013).

Anthidium manicatum is the eighth bee species reported as adventive in Chile. *Apis mellifera*, *Bombus ruderatus* (Fabricius, 1775), *B. terrestris* (Linnaeus, 1758) (Apidae), and *Megachile rotundata* (Fabricius, 1787) (Megachilidae) were deliberately introduced to the country, whereas *Chilicola rostrata* (Friese, 1906) (Colletidae), *Hylaeus punctatus* (Brullé, 1833) (Colletidae), *Xylocopa augusti* Lepeletier de Saint Fargeau, 1841 (Apidae), and *A. manicatum* (Montalva & Vidal, 2015) were probably the result of accidental anthropogenic introductions. The source of introduction of *A. manicatum* is unknown, but it is possible that the species arrived from undetected nests inside of packaging structures in commercial imports. Based on a bioclimatic model, Strange *et al.* (2011) indicated that the Mediterranean area of Chile (Central Chile) has a high habitat suitability for the establishment of *A. manicatum*, thus a wider distribution of the species in the country is expected. *Anthidium manicatum* appears to have a close relationship with humans, inhabiting mainly urbanized areas, a factor that could facilitate its invasion and dispersion (Strange *et al.*, 2011; Soper & Beggs, 2013). Further study is needed to monitor this species and evaluate its impact on the native bees of Chile.

Anthidium manicatum (Linnaeus)

NEW RECORDS: CHILE: 3♂♂ and 1♀: (Metropolitan Region), San Bernardo, Santiago (33°26'31.33"S, 70°40'54.16"W, 580 m.a.s.l), 15 Jan 2015, M. Rios (foraging on *Lavandula* sp). 3♂♂ and 1♀: (Metropolitan Region), San Bernardo, Santiago (33°26'31.33"S, 70°40'54.16"W, 580 m.a.s.l), 21 Jan 2015, M. Rios (foraging on *Lavandula* sp). Specimens are deposited in the following Chilean institutions: Museo Nacional de Historia Natural (MNHN), Santiago [2♂♂]; Instituto de Entomología, Universidad Metropolitana de Ciencias de la Educación (UMCE), Santiago [1♂ and 1♀]; and Pontificia Universidad Católica de Valparaíso (PUCV), Valparaíso [2♂♂].

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