

## NOTA / NOTE

More records of *Vespa orientalis* Linnaeus, 1771 in the south of the Iberian Peninsula (Hymenoptera: Vespidae: Vespinae)<sup>1</sup>

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**Abstract:** New occurrence records in the Iberian Peninsula of *Vespa orientalis* Linnaeus, 1771 (Hymenoptera: Vespidae: Vespinae) are given based on photographed material posted on the iNaturalist website. The first record from Gibraltar is reported, whilst the occurrence of an established population in Cádiz and Málaga provinces is confirmed.

**Key words:** Hymenoptera, Vespidae, Vespinae, *Vespa orientalis*, oriental hornet, invasive species, distribution, Gibraltar, southern Andalusia, Spain.

**Resumen:** Más registros de *Vespa orientalis* Linnaeus, 1771 en el sur de la Península Ibérica (Hymenoptera: Vespidae: Vespinae). Se aportan nuevas citas del avispon oriental *Vespa orientalis* Linnaeus, 1771 (Hymenoptera: Vespidae: Vespinae) en la Península Ibérica a partir de material fotográfico obtenido en la plataforma online iNaturalist. La especie se registra por primera vez en Gibraltar, mientras se confirma una población aclimatada en las provincias de Cádiz y de Málaga.

**Palabras clave:** Hymenoptera, Vespidae, Vespinae, *Vespa orientalis*, avispon oriental, especie invasora, distribución, Gibraltar, sur de Andalucía, España.

**Recibido:** 1 de noviembre de 2021

**Publicado on-line:** 28 de noviembre de 2021

**Aceptado:** 19 de noviembre de 2021

## Introduction

The genus *Vespa* Linnaeus, 1758 includes large, predatory, eusocial wasps native to Europe and Asia (Archer, 2012; Smith-Pardo *et al.*, 2020) and consists of 22 species (Carpenter & Kojima, 1997; Archer, 2012). In the Iberian Peninsula, the genus includes only *Vespa crabro* Linnaeus, 1758 as native species (Archer, 2012), but recently three additional species have been recorded: *Vespa velutina* Lepelletier, 1836, recorded for the first time in 2010 (López *et al.*, 2011), *Vespa orientalis* Linnaeus, 1771, recorded for the first time in 2012 (Hernández *et al.*, 2013), and *Vespa bicolor* Fabricius, 1787, recorded for the first time in 2013 (Castro, 2019).

The oriental hornet *Vespa orientalis* Linnaeus, 1771 is a eusocial wasp with nesting sites usually in an enclosed space, subterranean or aerial (Archer, 2012). Its natural distribution comprises southern Europe and northern Africa (as far as the Horn of Africa) across the Middle East to India, Nepal, and western China (Carpenter & Kojima, 1997; Četković, 2003; Archer, 2012), but it has been introduced in several new countries, although it has not always become established: the species has been found in Brazil and French Guiana (Buysson, 1905), Madagascar (Bequaert, 1918), Belgium (Delmotte & Leclercq, 1980), the U.K. (Edwards, 1982), Mexico (Dvořák, 2006), Spain (Hernández *et al.*, 2013), Czech Republic (Rafi *et al.*, 2017), Kazakhstan (Temreshev, 2018), Chile (Ríos *et al.*, 2020), Romania (Zachi & Ruicănescu, 2021), and France (Gereys *et al.*, 2021); Zachi & Ruicănescu (2021) reported in a distribution map of the

<sup>1</sup> Editors' Note: Some of the original contents of this note have been inevitably modified because its reviewer has published an article on the same topic and geographical area along his evaluation process (see: Castro & Del Pico, 2021).

species also localities in Ukraine, Bulgaria, and Germany. Indeed, *V. orientalis* can be transported by humans, as a consequence of the transport of goods (Fajardo & Sánchez, 2020).

In Europe, *V. orientalis* is spreading, especially in Italy, where the species was present only in the southern part of the country until recent years (see Bressi *et al.*, 2019; Graziani & Cianferoni, 2021), and Spain, where the species was found for the first time few years ago. In particular, Hernández *et al.* (2013) reported the presence of this hornet in Valencia (at Jardines del Real), found in the autumn of 2012, but subsequently there are no additional records for this city in the literature (Fajardo & Sánchez, 2020). Anyway, at Agencia EFE's website (<https://www.lasprovincias.es/valencia-ciudad/caza-vespa-orientalis-20201024120955-nt.html>) news of further specimens are reported for the city of Valencia from 2020; thus, likely through a new introduction, a population seems to be established there.

A second population was recorded in Cádiz province, where some 2018 records were reported from the city of Algeciras by Sánchez *et al.* (2019), whilst Fajardo & Sánchez (2020) and Castro & Del Pico (2021) confirmed the occurrence of *V. orientalis* in this city, adding some nearby localities in which this wasp was found. Castro & Del Pico (2021) reported also new records from Málaga.

This note provides some new records in the southern Iberian Peninsula of this hornet, confirming the well established population in Cádiz and Málaga provinces and adding also Gibraltar as new territory in which this alien species is present in the area.

## Material and methods

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The examined material comes from photographed specimens retrieved on the web platform iNaturalist ([www.inaturalist.org](http://www.inaturalist.org)). *Vespa orientalis* can be easily differentiated by photographs because it is entirely reddish with the front and a band on its abdomen yellow (Archer, 2012; Smith-Pardo *et al.*, 2020).

For each site, the following information is given: locality, geographical coordinates, date, number of specimens, author of the photo. The geographical coordinates are in decimal degrees (datum WGS84). The number of decimals varies according to the accuracy of the data. Uncertainty (abbreviated as un.) of the data (in metres) was indicated according to the point-radius method (Wieczorek *et al.*, 2004). Each record was identified or confirmed by the author.

## Results

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### GIBRALTAR:

- Town area, 36.125351° N -5.350959° E (un.=65 m), 7.IX.2021, 1 ex. (photo by "sdhimages") (Fig. 1).

### SPAIN:

- **Cádiz:** Algeciras: Calle Baluarte, 36.133° N -5.44617° E (un.=8 m), 27.IX.2019, 1 ex. (photo by "angeljv"); Av. Virgen del Carmen, 36.131691° N -5.445198° E (un.=64 m), 23.XI.2019, 1 ex. (photo by Matteo Marcandella); near Calle Las Alondras, 36.193777° N -5.429983° E (un.=31 m), 17.VII.2021, 2 ex. (photo by "sergiolc\_2077--el\_avistador"); Zona Línea Marítima, 36.160057° N -5.4424° E (un.=68 m), 24.VIII.2021, 1 ex. (photo by Codrin Bucur); near Calle Rafael Alberti, 36.138007° N -5.462009° E (un.=175 m), 10.X.2021, 1 ex. (photo by "whodden").
- **Málaga:** Estepona: near Avenida México, 36.403069° N -5.19039° E (un.=65 m), 30.VIII.2021, 2 ex. (photo by Codrin Bucur).

## Discussion

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To date, the only documented populations of *Vespa orientalis* in the Iberian Peninsula were located in the provinces of Cádiz and Málaga (Sánchez *et al.*, 2019; Fajardo & Sánchez, 2020; Castro & Del Pico,

2021) and in Valencia city (<https://www.lasprovincias.es/valencia-ciudad/caza-vespa-orientalis-20201024120955-nt.html>). The aforementioned records from Algeciras and Estepona confirm the occurrence of a well established population of this wasp. The nearby record from Gibraltar suggests a further expansion of the area's population. Moreover, this record is the first for the territory of Gibraltar and the first in the Iberian Peninsula outside Spain.

Further research will be needed to ascertain the dynamics of the populations of *Vespa orientalis* in Spain. The importance of monitoring and eventually eradicating the species in the Iberian Peninsula is also linked to the serious threat for beekeepers, since this hornet kills many bee and wasp workers (Glaiim, 2009); moreover it may also serve as a transmitter of disease following consumption of infected plants and its sting can be painful and sometimes dangerous to humans (Abdel-Ghany *et al.*, 2009).

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Fig. 1. - The specimen of *Vespa orientalis* from Gibraltar. (Photo by "sdhimages").

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