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NOTA / NOTE
Three new Hymenoptera species for the Canary Islands (Spain).

Daniel Suárez

Departamento de Biología Animal, Edafología y Geología. Facultad de Ciencias. Universidad de La Laguna.
E-38206 La Laguna (Tenerife, SPAIN). e-mail: danielsura94@gmail.com

Abstract: *Leucospis dorsigera* Fabricius, 1775 (Chalcidoidea, Leucospidae), *Ectemnius hypsae* (De Stefani, 1894) (Apoidea, Crabronidae) and *Colletes perezi* Morice, 1904 (Apoidea, Colletidae) are recorded for the first time from the Canary Islands (Spain). Data about trophic ecology are given and possible hypotheses for their recent discovery are discussed.
Key words: Hymenoptera, Leucospidae, Crabronidae, Colletidae, *Leucospis dorsigera*, *Ectemnius hypsae*, *Colletes perezi*, distribution, new records, Canary Islands, Spain.

Resumen: Tres nuevas especies de Hymenoptera para las Islas Canarias (España). *Leucospis dorsigera* Fabricius, 1775 (Chalcidoidea, Leucospidae), *Ectemnius hypsae* (De Stefani, 1894) (Apoidea, Crabronidae) y *Colletes perezi* Morice, 1904 (Apoidea, Colletidae) son citadas por primera vez para las Islas Canarias (España). Se proporcionan datos sobre ecología trófica y se discuten las posibles hipótesis de su reciente descubrimiento.
Palabras clave: Hymenoptera, Leucospidae, Crabronidae, Colletidae, *Leucospis dorsigera*, *Ectemnius hypsae*, *Colletes perezi*, distribución, nuevas citas, Islas Canarias, España.

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Introduction

The Canary Islands are one of the five archipelagos of volcanic origin that are comprised in the biogeographical region of Macaronesia. Because they were never connected to the continent, faunal composition inhabiting this region is strongly related to its dispersal power. Groups with a limited dispersion are underrepresented while good dispersals are more diverse.

Several contributions have led to the current knowledge of the arthropod biodiversity in the Canary Islands. Regarding order Hymenoptera, the main contributions had been done by Hohmann *et al.* (1993) and Báez & Oromí (2010). However, new species have been recorded since then (e.g. Pérez & Macías-Hernández, 2012; Domingo-Quero *et al.*, 2003; Espadaler & Fernández, 2014; Ortiz-Sánchez *et al.*, 2016; Askew & Nieves-Aldrey, 2017), resulting that there are 1,043 species of the order Hymenoptera reported to date, being 259 of them endemisms (24.8%). In this note three new species are reported for the Canary Islands: *Colletes perezi* Morice, 1904 (Apoidea, Colletidae), *Ectemnius hypsae* (De Stefani, 1894) (Apoidea, Crabronidae) and *Leucospis dorsigera* Fabricius, 1775 (Chalcidoidea, Leucospidae).

Material and methods

All the examined material was collected by the author during the summer of 2017 and it is stored pinned in his personal collection. *Colletes perezi* was identified by Michael Kuhlmann (Zoological

Museum of Kiel University) while *Ectemnius hypsae* and *Leucospis dorsigera* were identified by the author using the dichotomous keys published by Bitsch & Leclercq (1993) and Boucek (1974), respectively.

Results and discussion

Colletes perezi Morice, 1904 (Fig. 1a)

FUERTEVENTURA: Barranco de la Torre (Antigua), 28R 609900 3137142, 3.VIII.2017, 1♀ on *Tamarix canariensis;* Salinas del Carmen (Antigua), 28R 610632 3138487, 4.VIII.2017, 1♀ on *T. canariensis*; Puerto de Morro Jable (Pájara), 28R 563098 3102871, 6.VIII.2017, 1♀ on *Euphorbia balsamifera*.

Global distribution: North Africa and Crete (Frommer & Kuhlmann, 2009).

Two species of the genus *Colletes* Latreille, 1802 are present in the archipelago (Báez & Oromí, 2010). While the endemism *Colletes moricei* Saunders, 1904 is found in low altitudes, *Colletes dimidiatus* Brullé, 1839 can reach 2,400 m a.s.l. None of these species are found on the island of Fuerteventura, where *C. perezi* is newly recorded. Apparently, this species is strongly related to coastal habitats, as it has not been found yet in the interior of the island. On *T. canariensis* it has been observed simultaneously with *Thyreus histrionicus* (Illiger, 1806) (Apoidea, Anthophoridae) and *Rhynchium oculatum* (Fabricius, 1781) (Vespoidea, Eumenidae) while *Osmia cinnabarina* Pérez, 1895 (Apoidea, Megachilidae) and *Amegilla quadrifasciata* (Villers, 1790) (Apoidea, Anthophoridae) were also seen on *E. balsamifera*. None of them established any interaction with *C. perezi*. In North Africa, *C. perezi* is highly active during late spring; however, in Crete it has experienced a phenological shift, being active on autumn (Frommer & Kuhlmann, 2009). Data here presented suggest that in Fuerteventura the species is more active in midsummer.

Ectemnius hypsae (De Stefani, 1894) (Fig. 1b)

GRAN CANARIA: Tenteniguada (Valsequillo), 28R 447984 3094638, 30.VI.2017, 2♀♀ on *Foeniculum vulgare;* 09.VII.2017, 1♀ on *F. vulgare;* 29.VII.2017, 1♂ on *F. vulgare*.

Global distribution: Circum-Mediterranean (Bitsch & Leclercq, 1993).

The endemism *Ectemnius continuus* ssp. *rufitarsis* (Dalla Torre, 1897) was the only species of the genus *Ectemnius* Dahlbom, 1845 found in the Canary Islands up to now. It is distributed in the lower parts of Tenerife and La Gomera and, as *E. hypsae*, it feeds on the pollen of *F. vulgare*. This ruderal species is a feeding resource for a great number of bees and wasps during the summer. In Tenteniguada, a village found at an altitude of 1,010 m a.s.l., *E. hypsae* has been observed simultaneously with *Vespula vulgaris* (Linnaeus, 1758) (Vespoidea, Vespidae) and the endemism *Cerceris concinna* Brullé, 1839. The latter attacked *E. hypsae* several times in order to expel it from the plant.

Leucospis dorsigera Fabricius, 1775 (Fig. 1c)

GRAN CANARIA: Tenteniguada (Valsequillo), 28R 447984 3094638, 09.VII.2017, 1♀ on *Foeniculum vulgare;* 29.VII.2017, 1♂ on *F. vulgare;* 10.VIII.2017, 1♀ and 1♂ on *F. vulgare*.

Global distribution: From Eastern Russia through Western Europe to North Africa (Noyes, 2017).

This species is a known parasitoid of several Megachilinae species (Noyes, 2017). The family Leucospidae had not been reported before for the Canary Islands. It has been observed simultaneously with *Vespula vulgaris* (Linnaeus, 1758), that never interacted with *L. dorsigera*.

With these three new records, the current richness of the assemblage of the Canary Islands Hymenoptera is raised to 1,046 species. Regarding to the species recent discovery, there is no evidence to consider any of them as introduced. The hypothesis that these species had been overlooked along past chorological surveys seems unlikely, especially for *C. perezi* and *E. hypsae*, due to the big sampling effort done in Apoidea species (Hohmann *et al.*, 1993). Instead of that, it should be considered that an early colonization has taken place. Regarding *C. perezi*, presumably it arrived from the northwest coast of Africa, which is 96 km off the coast of Fuerteventura. A possible explanation for this colonization could be the temperature increase experienced in the Canary Islands (Martín *et al.*, 2012; Cropper & Hanna, 2014; Luque *et al.*, 2014) together with the absence of closely related species.

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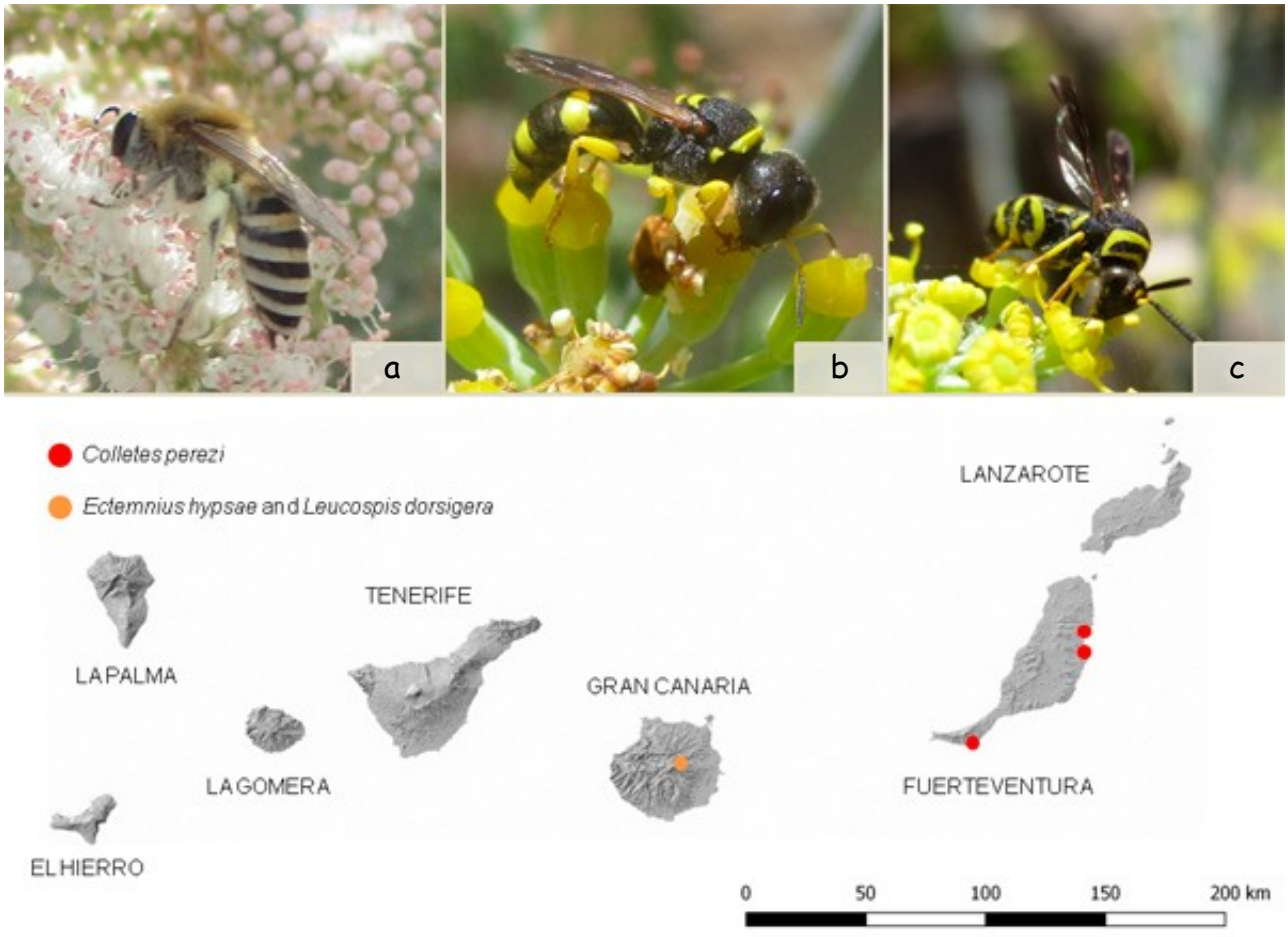

Fig. 1. Distribution of the new records in the Canary Islands. Red dots indicate the localities of *Colletes perezi* while the orange one indicates the locality of *Ectemnius hypsae* and *Leucospis dorsigera*. **a.-** *Colletes perezi* on *Tamarix canariensis*. **b.-** *Ectemnius hypsae* on *Foeniculum vulgare*. **c.-** *Leucospis dorsigera* on *Foeniculum vulgare*.