Two hoverfly species (Diptera, Syrphidae) new to the province of Barcelona

Dos especies de sírfidos (Diptera, Syrphidae) nuevas para la provincia de Barcelona

The first records of *Callicera aurata* (Rossi, 1790) and *Syrphus torvus* Osten-Sacken, 1875 from the province of Barcelona (Spain) are provided. A female of *C. aurata* and 11 specimens of *S. torvus* (7♂♂, 4♀♀) were collected in Santa Fe, El Montseny Biosphere Reserve, Fogars de Montclús, with cross traps (Econex® model) to sample saproxylic beetles (Coleoptera), by Eduard Piera i Pallàs. *Callicera aurata* was collected between 14/07/2018 and 01/08/2018, while *S. torvus* between 01/06/2018 and 13/07/2018. DMS coordinates and altitude (m asl) of sampling localities are as follows: for *Callicera aurata*, 1) 41° 46' 41.9" N, 02° 27' 24.3" E, 1171; for *Syrphus torvus*: 2) 41° 46' 41.7" N, 02° 27' 23.9" E, 1170; 3) 41° 46' 42.2" N, 02° 27' 25.0" E, 1170; 4) 41° 46' 46.7" N, 02° 27' 25.5" E, 1176; 5) 41° 46' 42.8" N, 02° 27' 23.9" E, 1170; 6) 41° 46' 45.8" N, 02° 27' 25.2" E, 1178; 7) 41° 46' 41.9" N, 02° 27' 24.3" E, 1171.

Other hoverfly species collected in El Montseny, between June-August 2018, in the same sampling as *C. aurata* and *S. torvus* are: *Episyrphus balteatus* (de Geer, 1776) (1♂: 41° 46' 43.7" N, 02° 27' 30.1" E, 1161), *Eristalis tenax* (Linnaeus, 1758) (1♂: 41° 46' 43.7" N, 02° 27' 30.1" E, 1161), *Myathropa florea* (Linnaeus, 1758) (3♀♀: 41° 46' 43.2" N, 02° 27' 30.8" E, 1159; locality 4), *Syrphus ribesii* (Linnaeus, 1758) (1♂: 41° 46' 40.7" N, 02° 27' 28.6" E, 1163), *Xanthandrus comtus* (Harris, 1776) (1♀: locality 7), and *Xylota segnis* (Linnaeus, 1758) (1♀: locality 2). All specimens belong to the 'Colección Entomológica de la Universidad de Alicante, CEUA' deposited at CIBIO.

SPEIGHT (1991) reports *C. aurata* for the first time from Spain with a male collected in the province of Cádiz. Later on, DIRICKX (1994) represents on a map the range of this species in the Mediterranean region including the records provided by SPEIGHT (1991). RICARTE & MARCOS-GARCÍA (2008) collected this species in scrublands, riparian formations of *Fraxinus angustifolia* Vahl. and woodlands of *Quercus faginea* Lam.

from Cabañeros National Park, Ciudad Real, Spain. QUINTO *et al.* (2014) reported again *C. aurata* in mixed woodlands of *Quercus pyrenaica* Willd. and *Q. faginea* at the same locality of Ciudad Real. The species is not recorded from Portugal (VAN ECK, 2011, 2016). *Callicera aurata* together with *Callicera fagesii* Guérin-Méneville, 1844, which is only known from Cádiz too (SPEIGHT, 1991), are the two most poorly recorded species of *Callicera* in Spain (RICARTE & MARCOS-GARCÍA, 2017). Our record of *C. aurata* is the first from the northern half of the Iberian Peninsula. This *Callicera* species might be separated from the other European species of the genus by the following combination of characters: length of second antennal segment at least three quarters the length of first antennal segment; third antennal segment about as long as first plus second; femora extensively black (females); thoracic scutum with two vittae of pollinosity medially; pile on scutellum nowhere as long as the scutellum; tarsomeres 3-5 of all legs black or nearly so (SPEIGHT, 1991).

Syrphus torvus is recorded from Andorra and from 11 of the 50 Spanish provinces. After *Syrphus nitidifrons* Becker, 1921, which is recorded only from Lleida, *S. torvus* is the *Syrphus* species present in the lowest number of Spanish provinces (RICARTE & MARCOS-GARCÍA, 2017). Furthermore, *S. torvus* is not recorded from Portugal so far (VAN ECK, 2011, 2016). This species can be readily separated from the other European species of *Syrphus* by the second basal cell of its wing being entirely microtrichose and its distinctly pilose eyes, which, however, have shorter hairs in females than in males (SPEIGHT & SARTHOU, 2017).

The province of Barcelona had 107 hoverfly species recorded (RICARTE & MARCOS-GARCÍA, 2017) and now the number increases to 109. *Callicera aurata* is a species with larvae living in rot holes of trees such as beech (*Fagus* sp) in ancient forest (ROTHERAY, 1991), while *S. torvus* has larvae preying mainly on aphids (Hemiptera: Aphididae) feeding on many plant species such as *Rubus idaeus* L., in Poland, and *Abies sachalinaensis* (F.Schmidt) Mast., in Japan (ROJO *et al.*, 2003). The vegetation in our study area is an acidophilus beech forest (*Fagus sylvatica* L.) mixed with *Abies alba* Mill. and other trees, and some clearings dominated by plants such as *Rubus* sp. (SÁEZ *et al.*, 2017). The presence of the saproxylic *C. aurata* indicates ancient beech forest or at least old *Fagus* trees in the surveyed area of El Montseny, and the larvae of *S. torvus* may be feeding on aphids of *Abies* and *Rubus*. A good knowledge of the species requirements enhances both species and habitat conservation.

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