

## New records of hoverflies (Diptera, Syrphidae) from La Palma, Canary Islands, Spain

### Nuevos registros de moscas de las flores (Diptera, Syrphidae) en La Palma, Islas Canarias, España

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#### ABSTRACT

Records for the hoverflies (Diptera, Syrphidae) of La Palma (Canary Islands) are here reviewed and updated. In October and November of 2017, syrphid flies were collected on La Palma and the collection records from this excursion with new information on seasonal activity and new records for the Island are given, together with all the literature records published for La Palma. The species *Eumerus obliquus* (Fabricius) is reported for the first time from La Palma, totaling 25 species of hoverflies documented from this Island.

**Key words:** Syrphidae, flower flies, hoverflies, checklist, La Palma, Canary Islands, new account, new records.

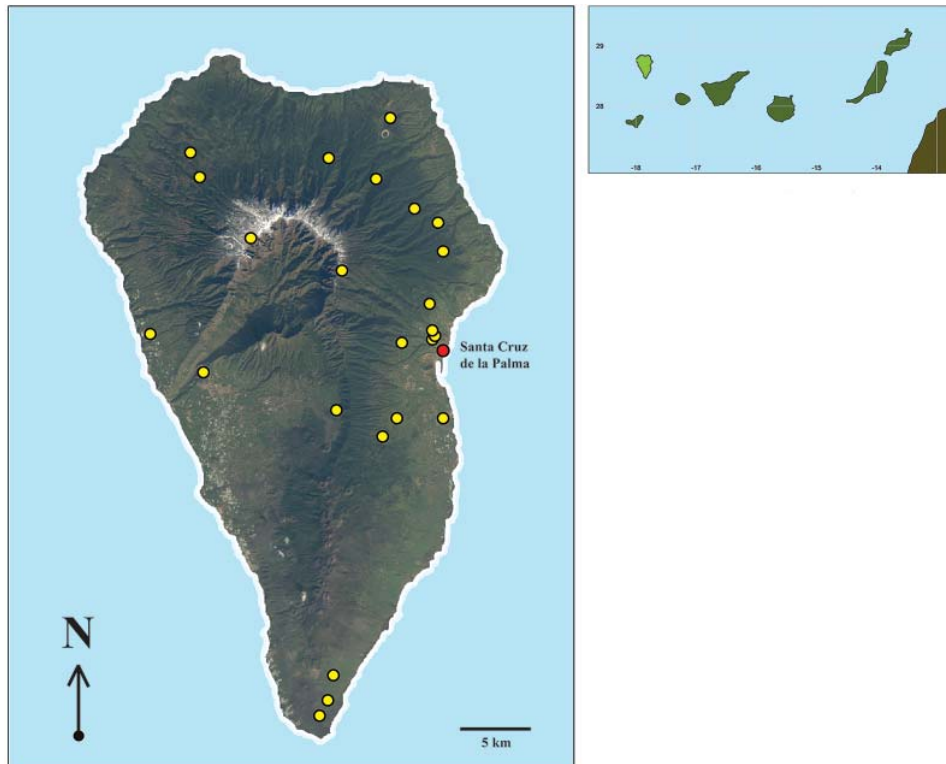
#### RESUMEN

Se revisaron y actualizaron los registros de las moscas de las flores (Diptera, Syrphidae) de La Palma (Islas Canarias). En octubre y noviembre de 2017 se recolectaron sírfidos en La Palma, y en este trabajo se presenta la nueva información sobre la actividad estacional. Se cita por primera vez *Eumerus obliquus* (Fabricius) para La Palma, lo que eleva el total de especies de sírfidos documentadas en esta isla a 25 especies.

**Palabras clave:** Syrphidae, flower flies, hoverflies, listado, La Palma, Islas Canarias, nueva cita, nuevos registros.

## INTRODUCTION

In the Atlantic Ocean, about 100 km west of the African coast are the Canary Islands (Fig. 1), a Spanish Archipelago comprising a small collection of volcanic outcroppings. These picturesque islands are home to a recorded 41 species of hoverflies (Diptera, Syrphidae) with eleven species thought to be endemic (PITA *et al.*, 2009; BÁEZ & OROMÍ, 2010; REEMER, 2015; RICARTE & MARCOS-GARCÍA, 2017). This paper pays particular focus to the Syrphidae fauna of La Palma, the most north-westerly island of the archipelago, with an area of 708.32 km<sup>2</sup> and a recorded peak elevation of 2,426 meters of Roque de los Muchachos, the second highest point in the archipelago.



**Fig. 1.** Topographical map of La Palma, Spain; 2017 collection sites are marked with yellow (●).

**Fig. 1.** Mapa topográfico de La Palma, España; los sitios de muestreo en 2017 están marcados en amarillo (●).

With a worldwide distribution, hoverflies are a highly variable, species-rich family of true flies with about 6,100 described species grouped in more than 350 genera and subgenera (THOMPSON, 2013). They are well-known critical pollinators of wild flowering plants and crops (SSYMANK & KEARNS, 2009; INOUE *et al.*, 2015), have been used as bioindicators (SOMMAGGIO, 1999; SOMMAGGIO & BURGIO, 2014), and their larvae are important biological control agents of pests (SCHMIDT *et al.*, 2004; BERGH & SHORT, 2008; BUGG *et al.*, 2008; NELSON *et al.*, 2012) and decomposers of organic matter (LARDÉ, 1989; MARTÍNEZ-FALCÓN *et al.*, 2012). On the other hand, some species with phytophagous larvae may become plant pests under certain circumstances (EDWARDS & BEVAN, 1951; STUCKENBERG, 1956; TOMPSETT, 2002).

The hoverflies of the Canary Islands have been the target group of several studies and publications. MACQUART (1839) was the first author who described new species from Canaries, although he did not mention any details of the sampling localities. In this work, Macquart described *Chrysotoxum triarquatium* Macquart, 1839, *Eumerus latitarsis* Macquart, 1839, *Eumerus purpureus* Macquart, 1839, and *Ascia analis* Macquart, 1839 [a junior synonym of *Paragus tibialis* (Fallén, 1817)], but also mentioned another eleven species recorded in the archipelago. Subsequent authors mentioned or described more species from the archipelago, i.e. WALKER (1849, 1852) and RÖDER (1883), but again without indicating the sampling locality. BIGOT (1891) listed a few species collected in Gran Canaria and Tenerife during the journey of M. Ch. Alluaud between 1889 and 1890, but until then, no syrphid species was recorded from La Palma. The first citation of a hoverfly from La Palma was done by BECKER (1908), who reported *Scaeva albomaculata* (Macquart, 1842) as *Catabomba albomaculata*.

The very first significant work on the syrphid fauna of the Canaries was done by Santos Abreu, who lived in Santa Cruz de La Palma and collected abundantly on this island. SANTOS ABREU (1924) reported 35 species of hoverflies for the Canary Islands, including ten new species, and 36 varieties. Most of his varieties and new species were synonymized later by subsequent authors, but he provided full species descriptions and detailed information about species distribution in the archipelago. In the revisionary work of the dipteran fauna of the Canaries, FREY (1937) gave new records from La Palma for seven species and mentioned the species described by SANTOS ABREU (1924). Years later, FREY (1958) reported a few more new records from La Palma.

In 1977, Báez published his monograph on the hoverflies of the Canary Islands (BÁEZ, 1977). This revisionary work marked a watershed in the knowledge of

syrphids from the archipelago, as it is the first time that this fauna is treated as a whole, with identification keys and information about sampling localities. BÁEZ (1977) summarized his new findings and also provided sampling details for the material collected by previous collectors, such as Santos Abreu, Santos Rodríguez or Frey. In the years to follow, Báez revised some genera for the archipelago, i.e., *Paragus* Latreille, 1804 (BÁEZ, 1978), *Eumerus* Meigen, 1822 (BÁEZ, 1982), and *Chamaesyrphus* Mik, 1895 (BÁEZ, 1986).

After the works of Báez other authors documented hoverflies from La Palma. It is worth to mention the works of CHANDLER (1979), with a short detailed introduction to the orography and flora of La Palma; BÁEZ (2000), with the first records of the introduced Neotropical species *Copestylum melleum* (Jaenicke, 1867); ROMIG & HAUSER (2004), with more records of the established neozoon *C. melleum*; and AISTLEITNER & BARKEMEYER (2018), with new records for three syrphid species.

Here we reported the results of a collection excursion in late October to early November of 2017. Late fall seasonal collecting has yielding some interesting fly activity patterns for some species, as well as a previously unrecorded hoverfly species for the Island. Seasonal records are given for all known species for La Palma.

## MATERIALS AND METHODS

The fieldwork was carried out between October 27th and November 5th of 2017. Hand nets were used to collect syrphid adults during the survey, from 8:30 am to 6:30 pm (Western European summer time, WEST). Several localities and types of habitats were sampled and geographical coordinates recorded, and then, compared and rectified with Google Earth Pro®, version 7.3.2.5491 (Google LLC.) (see Fig. 1). The majority of specimens were pinned, while a select few were placed in 96% ethanol and stored in a -40 °C freezer for molecular studies.

Specimens were identified to species using a varied collection of keys and descriptions for the Canary Islands and La Palma in particular, mostly provided by BÁEZ (1977, 1982, 1986) and several others (STACKELBERG, 1961; VAN VEEN, 2004; SMIT *et al.*, 2004, SPEIGHT, 2017). All species were checked against material from the Zoologisches Forschungsmuseum Alexander Koenig (ZFMK) collection.

Figure 1 was generated using SimpleMappr (SHORTHOUSE, 2010) and edited using Adobe Photoshop and Illustrator CS6 software (Adobe Systems Incorporated, San José, California, United States of America).

We compiled all the Syrphidae records from La Palma, listed under Examined material, and arranged them into two groups, i.e. records from the literature and records from our fieldwork. For the literature records, we listed the localities and the original reference. Published catalogues (KERTÉSZ, 1910; PECK, 1988; DIRICKX, 1994; MARCOS-GARCÍA *et al.*, 2002; RICARTE & MARCOS-GARCÍA, 2017) were of little interest to document the species of La Palma as they list records for whole islands or the entire archipelago without indicating the sampling localities besides the type-locality.

At the end of each record, between square brackets ([ ]) and separated by a comma, the number of specimens and sex and the unique identifier or number are given. All examined specimens are housed at the ZFMK, Bonn, Germany. For literature records, the original reference is also given for each record.

## RESULTS

A total of 327 syrphid specimens were collected belonging to 15 genera and 19 species. They are listed in the 'Examined material' with dates from 2017. All species are here listed alphabetically, including sampling localities and vegetation if noted. Table I gives a summary of the phenological records of the hoverfly species in La Palma.

### *Chrysotoxum triarquatatum* Macquart, 1839

**Literature records.** La Palma (SANTOS ABREU, 1924); Dehesa; Barranco Espinosa; La Galga (BÁEZ, 1977); Cumbre Vieja, near El Charco; Montaña del Arco (CHANDLER, 1979).

**Examined material.** Breña Alta, along LP-301, Ctra San Isidro, 28°38'54.91" N 17°47'18.64" W, 382 m, 27.x.2017, on *Foeniculum vulgare*, T.O. Burt [1♂ 1♀, ZFMK-DIP-00052266, ...00052267]; Breña Alta, along LP-301, Ctra San Isidro, 28°38'54.91" N 17°47'18.64" W, 382 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [2♂ 1♀, ZFMK-DIP-00052268, ...00052269, ...00040483]; Breña Baja, along LP-301, Ctra San Isidro, 28°38'17.95" N 17°47'53.87" W, 603 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [1♂ 3♀, ZFMK-DIP-00050207, ...00050208, ...00050209, ...00050210]; El Paso, water reservoir, 28°38'14" N 17°49'50.73" W, 1058 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [2♂, ZFMK-DIP-00050166, ...00040482]; Puntallana, along LP-1, 28°45'48.65" N 17°45'56. 82" W, 453 m, 30.x.2017, on *Foeniculum vulgare*, X. Mengual [1♂, ZFMK DIP 00052334]; along LP-4, near Hoya Grande, 28°47'24.89" N

17°55'06.33" W, 1200 m, 31.x.2017., on *Foeniculum vulgare*, X. Mengual [2♂, ZFMK-DIP-00052221, ...00052222]; along LP-4, Ctra Los Álamos, 28°42'57" N 17°46'04.25" W, 515 m, 31.x.2017, on *Foeniculum vulgare*, X. Mengual [4♂ 3♀, ZFMK-DIP-00052236, ...00052237, ...00052238, ..00040487, ...00052233, ...00052234, ...00052235]; Santa Cruz de La Palma, Barranco de la Madera, 28°41'51.32" N 17°45'56.62" W, 265 m, 03.xi.2017, X. Mengual [2♂, ZFMK-DIP-00050099, ...00050100].

**Flight period in La Palma.** January to November.

**Table I.** Table of historical syrphid collection records (—) compared with 2017 collection results (■) for La Palma.

**Tabla I.** Listado de registros históricos (—) en comparación con los resultados del muestreo de 2017 (■) para La Palma.

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<i>Chrysotoxum triarcatum</i>	—									■	■	
<i>Copestylum melleum</i>			—							■		
<i>Episyrphus balteatus</i>	—									■		
<i>Eristalinus aeneus</i>										■		
<i>Eristalinus taeniops</i>	—									■	■	
<i>Eristalis tenax</i>		—								■	■	
<i>Eumerus amoenus</i>								—				
<i>Eumerus latitarsis</i>	—									■	■	
<i>Eumerus obliquus</i>											■	
<i>Eumerus purpureus</i>	—									■	■	
<i>Eumerus santosabreui</i>								—				
<i>Eupeodes corollae</i>		—								■	■	
<i>Heringia adpropinquans</i>				—								
<i>Ischiodon aegyptius</i>	—									■	■	—
<i>Melanostoma incompletum</i>	—									■	■	—
<i>Meliscaeva auricollis</i>		—								■	■	
<i>Myathropa florea</i>		—								■	■	
<i>Paragus</i> sp.					—							
<i>Pelecocera (Chamaesyrrhus) nigricornis</i>	—										■	
<i>Scaeva albomaculata</i>		—								■		
<i>Scaeva pyrastris</i>		—								■		
<i>Sphaerophoria rueppellii</i>			—									
<i>Sphaerophoria scripta</i>	—									■	■	
<i>Syrirta pipiens</i>		—								■	■	
<i>Xylota segnis</i>						—						

***Copestylum melleum* (Jaennicke, 1867)**

**Literature records.** El Paso (BÁEZ, 2000); Llano Negro; 2 km E from El Paso; Laguna de Barlovento; 4 km NE San Nicolas, 9 km SE Los Llanos; bei Tijarafe, NW-Kueste; Las Nieves, 3 km NW Santa Cruz de la Palma; Barranco de la Lava, ca. 13 km S of Santa Cruz de La Palma (ROMIG & HAUSER, 2004).

**Examined material.** Breña Alta, along LP-301, Ctra San Isidro, 28°38'54.91" N 17°47'18.64" W, 382 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [2♂, ZFMK-DIP-00052256, ...00052257].

**Flight period in La Palma.** March to May and October.

***Episyrphus balteatus* (De Geer, 1776)**

**Literature records.** Los Llanos; Dehesa de la Encarnación; localidades del litoral (SANTOS ABREU, 1924); Santa Cruz de La Palma; La Caldera (FREY, 1937); Dehesa; La Caldera; Los Tilos; Barranco del Río; Barranco del Carmen (BÁEZ, 1977); La Galga; Cumbre Vieja, near El Charco; Barranco de las Angustias (CHANDLER, 1979).

**Examined material.** Breña Baja, along LP-301, Ctra San Isidro, 28°38'17.95" N 17°47'53.87" W, 603 m, 27.x.2017, on *Foeniculum vulgare*, T.O. Burt [2♀, ZFMK-DIP-00050203, ...00050204]; Breña Baja, along LP-301, Ctra San Isidro, 28°38'17.95" N 17°47'53.87" W, 603 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [1♀, ZFMK-DIP-00050202]; Breña Baja, Camino Payos, 28°39'55.56" N 17°47'43.26" W, 484 m, 27.x.2017, on *Foeniculum vulgare*, T.O. Burt [1♂, ZFMK-DIP-00050110]; El Paso, water reservoir, 28°38'14" N 17°49'50.73" W, 1058 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [2♀, ZFMK-DIP-00050167, ...00050168]; Puntallana (La Galga), Calle Fuente Pino, 28°45'48.65" N 17°45'56.82" W, 453 m, 28.x.2017, X. Mengual [1♀, ZFMK-DIP-00050061]; Puntallana, hilltop, 28°44'47.93" N 17°45'33.23" W, 709 m, 28.x.2017, X. Mengual [1♂, ZFMK-DIP-00052281]; km 5 of LP-109, Barranco Gallegos, 28°48'03" N 17°50'00.92" W, 760 m, 28.x.2017, X. Mengual [2♀, ZFMK-DIP-00052302, ...00052303]; near Tijarafe, Fuente del Toro, 28°41'56.15" N 17°57'01.22" W, 610 m, 31.x.2017, X. Mengual [1♂, ZFMK-DIP-00052323]; along LP-4, Ctra Los Álamos, 28°42'57" N 17°46'04.25" W, 515 m, 31.x.2017, on *Foeniculum vulgare*, X. Mengual [1♀, ZFMK-DIP-00052239].

**Flight period in La Palma.** January to October.

**Remarks.** First records for the month of October in La Palma.

***Eristalinus aeneus* (Scopoli, 1763)**

**Literature records.** La Palma (SANTOS ABREU, 1924).

**Examined material.** Breña Baja, Los Cancajos, near Paseo del Litoral, 28°39'0.44" N 17°45'31.81" W, 20 m, 27.x.2017, on *Schizogyne sericea*, T.O. Burt [1♀, ZFMK-DIP-00052293]; Breña Baja, Los Cancajos, near Paseo del Litoral, 28°39'0.44" N 17°45'31.81" W, 20 m, 27.x.2017, on *Schizogyne sericea*, X. Mengual [2♂ 1♀, ZFMK-DIP-00052291, ...00040493, ...00052292]; Breña Baja, Los Cancajos, near Paseo del Litoral, 28°39'0.44" N 17°45'31.81" W, 20 m, 28.x.2017, X. Mengual [3♂ 4♀, ZFMK-DIP-00050083, ...00050084, ...00040495, ...00050085, ...00050086, ...00050087, ...00050088].

**Flight period in La Palma.** October.

**Remarks.** First records from October in La Palma.

***Eristalinus taeniops* (Wiedemann, 1818)**

**Literature records.** Barranco del Quintero; Dehesa de la Encarnación (SANTOS ABREU, 1924); Santa Cruz de La Palma; Dehesa; Los Sauces (BÁEZ, 1977); vic. Jedey (AISTLEITNER & BARKEMEYER, 2018).

**Examined material.** Breña Baja, Los Cancajos, near Paseo del Litoral, 28°39'0.44" N 17°45'31.81" W, 20 m, 27.x.2017, on *Schizogyne sericea*, T.O. Burt [1♂ 3♀, ZFMK-DIP-00052294, ...00052288, ...00052289, ...00052290]; Breña Baja, Los Cancajos, near Paseo del Litoral, 28°39'0.44" N 17°45'31.81" W, 20 m, 27.x.2017, on *Schizogyne sericea*, X. Mengual [1♂ 1♀, ZFMK-DIP-00052295, ...00055221]; Breña Baja, along LP-301, Ctra San Isidro, 28°38'17.95" N 17°47'53.87" W, 603 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [2♀, ZFMK-DIP-00050205, ...00050206]; Santa Cruz de La Palma, Barranco de la Madera, 28°41'51.32" N 17°45'56.62" W, 265 m, 02.xi.2017, X. Mengual [1♀, ZFMK-DIP-00050082]; Los Volcanes de Teneguía, along LP-207, 28°28'23.48" N 17°50'20.24" W, 276 m, 04.xi.2017, on *Schizogyne sericea*, X. Mengual [2♂, ZFMK-DIP-00050067, 0000050068].

**Flight period in La Palma.** January to November.

**Remarks.** First records from October and November in La Palma.

Becker (1908) described a new variety for *E. taeniops* and called it *E. taeniops* var. *canariensis*. Báez (1977) considered this taxon a subspecies and stated the main differences, mostly the coloration of the legs and little changes in the abdominal pattern, between the typical subspecies and this subspecies endemic to the Canaries. We have not taken into consideration any subspecies as the coloration of our individuals is very variable, and listed all our sampled specimens as *E. taeniops*.



***Eristalis tenax* (Linnaeus, 1758)**

**Literature records.** La Palma (SANTOS ABREU, 1924); Los Llanos (FREY, 1937; FREY, 1958); Dehesa; Garafía; Santa Cruz de La Palma; El Paso; Los Tilos (BÁEZ, 1977); La Galga; Cubo de la Galga; Volcán de San Antonio; Cumbre Vieja, near El Charco; La Cumbrecita (CHANDLER, 1979).

**Examined material.** Breña Baja, Los Cancajos, near Paseo del Litoral, 28°39'0.44" N 17°45'31.81" W, 20 m, 27.x.2017, on *Schizogyne sericea*, X. Mengual [1♂, ZFMK-DIP-00052285]; Breña Baja, Camino Payos, 28°39'55.56" N 17°47'43.26" W, 484 m, 27.x.2017, on *Foeniculum vulgare*, T.O. Burt [1♂, ZFMK-DIP-00050112]; El Paso, water reservoir, 28°38'14" N 17°49'50.73" W, 1058 m, 27.x.2017, on *Foeniculum vulgare*, T.O. Burt [1♂, ZFMK-DIP-00050161]; El Paso, water reservoir, 28°38'14" N 17°49'50.73" W, 1058 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [1♂, ZFMK-DIP-00050162]; Puntallana (La Galga), Calle Fuente Pino, 28°45'48.65" N 17°45'56.82" W, 453 m, 28.x.2017, X. Mengual [1♀, ZFMK-DIP-00050060]; Puntallana, hilltop, 28°44'47.93" N 17°45'33.23" W, 709 m, 28.x.2017, X. Mengual [3♂, ZFMK-DIP-00052282, ...00052283, ...00055220]; Barranco de la Fuente, along the path to Cubo de la Galga, 28°46'11.75" N 17°46'38.86" W, 420 m, 30.x.2017, X. Mengual [1♀, ZFMK-DIP-00052339]; Llano Negro, 28°48'19.64" N 17°55'26.57" W, 927 m, on *Foeniculum vulgare*, 31.x.2017, X. Mengual [1♀, ZFMK-DIP-00052229]; along LP-4, Ctra Los Álamos, 28°42'57" N 17°46'04.25" W, 515 m, 31.x.2017, on *Foeniculum vulgare*, X. Mengual [1♀, ZFMK-DIP-00052246]; P.N. Caldera de Taburiente, Roque de los Muchachos, 28°45'15.89" N 17°53'06.24" W, 2425 m, 31.x.2017, X. Mengual [2♂, ZFMK-DIP-00052249, ...00052250]; Santa Cruz de La Palma, Barranco de la Madera, 28°41'51.32" N 17°45'56.62" W, 265 m, 03.xi.2017, X. Mengual [1♂, ZFMK-DIP-00050098]; Barranco de las Angustias, Calle La Viña, 28°40'37.66" N 17°54'55.96" W, 468 m, 05.xi.2017, X. Mengual [1♀, ZFMK-DIP-00050076].

**Flight period in La Palma.** February to August and October to November.

**Remarks.** First records from October and November in La Palma.

***Eumerus amoenus* Loew, 1848**

**Literature records.** Dehesa de la Encarnación (SANTOS ABREU, 1924).

**Flight period in La Palma.** August.

**Remarks.** BÁEZ & BARKEMEYER (2003) synonymized *E. terminalis* Santos Abreu, 1924 under *E. amoenus*. BÁEZ & OROMÍ (2010) listed this taxon as *E. terminalis*. RICARTE & MARCOS-GARCÍA (2017) listed *E. amoenus* from Tenerife, but they listed *E. terminalis* from Gran Canaria, La Palma and Tenerife.

### *Eumerus latitarsis* Macquart, 1839

**Literature records.** La Palma, on the litoral coast, most part of the year, Santos Abreu [SANTOS ABREU (1924) as *Eumerus latitarsis* var. *latitarsis* and *E. latitarsis* var. *maculicornis*; BÁEZ (1977) listed 7♂ 7♀ collected by Santos Abreu without data]; Breña Baja, viii.1919, on *Euphorbia*, Santos Abreu [SANTOS ABREU (1924) as *Eumerus latitarsis* var. *luteifrons*; BÁEZ (1977) listed 1♂ 1♀]; Puntallana, viii.1919, Santos Abreu [SANTOS ABREU (1924) as *Eumerus latitarsis* var. *luteifrons*]; Los Llanos, 8.viii.1931, Storå [1 ex., FREY (1937) as *E. latitarsis*; BÁEZ (1977) mentioned the same data]; Dehesa, i.1934, Santos Rodríguez [1♀, BÁEZ (1977) as *E. latitarsis*]; Barranco de las Angustias, 28.v.1976, P.J. Chandler [CHANDLER (1979) as *E. latitarsis*]; below Hoyo de Mazo, 31.v.1976, P.J. Chandler [CHANDLER (1979) as *E. latitarsis*].

**Examined material.** Garafia, 18.iv.2000, C. Saure [1♂, ZFMK-DIP-00040461]; Fuencaliente, Las Caletas, along LP-207, 28°29'51.16" N 17°49'49.53" W, 546 m, 05.xi.2017, on *Euphorbia lamarckii*, X. Mengual [1♂ 1♀, ZFMK-DIP-00040472, ...00040473]; Barranco de las Angustias, Calle La Viña, 28°40'37.66" N 17°54'55.96" W, 468 m, 05.xi.2017, X. Mengual [1♀, ZFMK-DIP-00040478].

**Flight period in La Palma.** January to November.

**Remarks.** First records from October and November in La Palma.

### *Eumerus obliquus* (Fabricius, 1805)

**Examined material.** Santa Cruz de La Palma, Barranco de la Madera, 28°41'51.32" N 17°45'56.62" W, 265 m, 03.xi.2017, X. Mengual [8♂ 1♀, ZFMK-DIP-00040460, ...00040502, ...00040503, ...00040466, ...00040467, ...00040468, ...00040469, ...00040470, ...00040471].

**Flight period in La Palma.** November.

**Remarks.** This taxon is reported for La Palma for the first time. *Eumerus obliquus* is known from many Afrotropical countries, north of Africa and the Mediterranean Basin (SMITH & VOCKEROTH, 1980; DIRICKX, 1998; SPEIGHT, 2017). In Spain this species has been documented from Gran Canaria (Canary Islands) and Mallorca (Balearic Islands) (HAESLER *et al.*, 2003; RICARTE *et al.*, 2008). HAESLER *et al.* (2003) documented the first two specimens of this species from Canary Islands collected in Gran Canaria, and the new account from La Palma represents the confirmation that the species may be present in other islands in the archipelago.

*Eumerus obliquus* cannot be keyed out using the identification key from BÁEZ (1982), as it keys to couplet 8, but it can be easily identified by

metabasotarsomeres greatly compressed anteroposteriorly and laterally expanded, with long black bristle-like pile arranged very densely. To corroborate the identification, we used the identification key from STACKELBERG (1961), checked the male genitalia with the drawing from MOOR (1973), and compared the individuals with material at the ZFMK collection.

### ***Eumerus purpureus* Macquart, 1839**

**Literature records.** La Palma (SANTOS ABREU, 1924); Dehesa; Los Tilos (BÁEZ, 1977); Barranco de las Angustias (CHANDLER, 1979).

**Examined material.** Santa Cruz de La Palma, Barranco de la Madera, 28°41'51.32" N 17°45'56.62" W, 265 m, 03.xi.2017, X. Mengual [1♀, ZFMK-DIP-00040479].

**Flight period in La Palma.** January to November.

**Remarks.** First records from November in La Palma.

### ***Eumerus santosabreui* Báez, 1982**

**Literature records.** La Palma (SANTOS ABREU, 1924); Dehesa (BÁEZ, 1977).

**Flight period in La Palma.** August.

**Remarks.** La Palma is the type locality of this species.

### ***Eupeodes corollae* (Fabricius, 1794)**

**Literature records.** Dehesa de la Encarnación (SANTOS ABREU, 1924); Dehesa; La Caldera (BÁEZ, 1977); Montaña del Fuego, east slopes; near Garafía; junction of Las Tricias and Garafía roads; Cumbre Nueva, western slopes (CHANDLER, 1979).

**Examined material.** Breña Baja, Los Cancajos, near Paseo del Litoral, 28°39'0.44" N 17°45'31.81" W, 20 m, 27.x.2017, on *Schizogyne sericea*, X. Mengual [1♀, ZFMK-DIP-00052287]; Llano Negro, 28°48'19.64" N 17°55'26.57" W, 927 m, on *Foeniculum vulgare*, 31.x.2017, X. Mengual [1♂, ZFMK-DIP-00052230]; along LP-4, Ctra Los Álamos, 28°42'57" N 17°46'04.25" W, 515 m, 31.x.2017, on *Foeniculum vulgare*, X. Mengual [1♂, ZFMK-DIP-00052244].

**Flight period in La Palma.** February to November.

**Remarks.** First records from October and November in La Palma.

***Heringia adpropinquans* (Becker, 1908)**

**Literature records.** Los Tilos (BÁEZ, 1977); Cumbre Nueva, eastern slopes above Breña Alta (CHANDLER, 1979).

**Flight period in La Palma.** May to July.

***Ischiodon aegyptius* (Wiedemann, 1830)**

**Literature records.** La Palma (SANTOS ABREU, 1924); Barranco del Río (FREY, 1937); El Paso (FREY, 1958); Santa Cruz de La Palma; Las Nieves; El Paso; Puerto Naos; Barranco del Río; La Caldera (BÁEZ, 1977); Barranco de las Angustias (CHANDLER, 1979).

**Examined material.** Breña Baja, along LP-301, Ctra San Isidro, 28°38'17.95" N 17°47'53.87" W, 603 m, 27.x.2017, on *Foeniculum vulgare*, T.O. Burt [1♀, ZFMK-DIP-00050201]; Breña Baja, along LP-301, Ctra San Isidro, 28°38'17.95" N 17°47'53.87" W, 603 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [1♀, ZFMK-DIP-00055225]; Breña Alta, along LP-301, Ctra San Isidro, 28°38'54.91" N 17°47'18.64" W, 382 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [5♂ 2♀, ZFMK-DIP-00052262, ...00052263, ...00052264, ...00052265, ...00052266, ...00052261]; Breña Baja, Camino Payos, 28°39'55.56" N 17°47'43.26" W, 484 m, 27.x.2017, on *Foeniculum vulgare*, T.O. Burt [1♂, ZFMK-DIP-00050111]; along LP-4, Ctra Los Álamos, 28°42'57" N 17°46'04.25" W, 515 m, 31.x.2017, on *Foeniculum vulgare*, X. Mengual [1♂, ZFMK-DIP-00052240]; Santa Cruz de La Palma, Barranco de la Madera, 28°41'51.32" N 17°45'56.62" W, 265 m, 03.xi.2017, X. Mengual [4♂ 2♀, ZFMK-DIP-00050092, ...00050093, ...00050094, ...00055224, ...00050095, ...00050097]; Barranco de las Angustias, Calle La Viña, 28°40'37.66" N 17°54'55.96" W, 468 m, 05.xi.2017, X. Mengual [1♂, ZFMK-DIP-00050077].

**Flight period in La Palma.** January to December.

***Melanostoma incompletum* Becker, 1908**

**Literature records.** La Palma; Dehesa de la Encarnación; Barrancos de la Región Oriental; Bosques de Marta; Bosques de El Loral (SANTOS ABREU, 1924); Bosques de Ericas; Dehesa; Buenavista; Barranco Espinosa; La Galga; Los Tilos (BÁEZ, 1977); La Galga; near Garafía; Barranco de las Nieves; Cubo de la Galga (CHANDLER, 1979).

**Examined material.** Breña Baja, along LP-301, Ctra San Isidro, 28°38'17.95" N 17°47'53.87" W, 603 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [1♂ 1♀, ZFMK-DIP-00050211, ...00050212]; El Paso, water reservoir, 28°38'14" N 17°49'50.73" W, 1058 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [1♂ 10♀, ZFMK-DIP-00040484, ...00040489, ...00050188, ...00050189, ...00050190,

...00050191, ...00050192, ...00050193, ...00050194, ...00050195, ...00050127, ...00050128]; El Paso, water reservoir, 28°38'14" N 17°49'50.73" W, 1058 m, 27.x.2017, on *Foeniculum vulgare*, T.O. Burt [2♂ 4♀, ZFMK-DIP-00050182, ...00050183, ...00050184, ...00050185, ...00050186, ...00050187]; km 5 of LP-109, Barranco Gallegos, 28°48'03" N 17°50'00.92" W, 760 m, 28.x.2017, X. Mengual [3♂ 7♀, ZFMK-DIP-00052304, ...00040485, ...00052305, ...00052306, ...00052307, ...00052308, ...00052309, ...00052310, ...00052311, ...00052312]; Centro de Visitantes Los Tilos, Barranco del Agua, 28°47'22.18" N 17°48'09.29" W, 455 m, 28.x.2017, X. Mengual [1♀, ZFMK-DIP-00052315]; Puntallana (La Galga), Calle Fuente Pino, 28°45'48.65" N 17°45'56.82" W, 453 m, 28.x.2017, X. Mengual [2♀, ZFMK-DIP-00050062, ...00050063]; Puntallana, along LP-1, 28°45'48.65" N 17°45'56.82" W, 453 m, 30.x.2017, on *Foeniculum vulgare*, X. Mengual [1♀, ZFMK-DIP-00052337]; Barranco de la Fuente, along the path to Cubo de la Galga, 28°46'11.75" N 17°46'38.86" W, 420 m, 30.x.2017, X. Mengual [1♂ 3♀, ZFMK-DIP-00052328, ...00052329, ...00052330, ...00052331]; along LP-4, near Hoya Grande, 28°47'24.89" N 17°55'06.33" W, 1200 m, 31.x.2017., on *Foeniculum vulgare*, X. Mengual [3♀, ZFMK-DIP-00052226, ...00052227, ...00052228]; along LP-4, Ctra Los Álamos, 28°42'57" N 17°46'04.25" W, 515 m, 31.x.2017, on *Foeniculum vulgare*, X. Mengual [2♀, ZFMK-DIP-00052243, ...00040488]; Santa Cruz de La Palma, Barranco del Quintero, 28°41'34.75" N 17°47'07" W, 242 m, 02.xi.2017, X. Mengual [1♀, ZFMK-DIP-00050074].

**Flight period in La Palma.** January to December.

**Remarks.** SANTOS ABREU (1924) cited *Melanostoma mellinum* (Linnaeus, 1758) from La Palma, but BÁEZ (1977) concluded after his study that the specimens belonged to *M. incompletum*. Earlier, FREY (1937) commented that *Melanostoma eximium* Santos Abreu, 1924 is an immature female of *M. incompletum*. SMIT *et al.* (2004) mentioned that *M. mellinum* has been recorded from the Canaries, but we agree with BÁEZ (1977) and *M. mellinum* should not be listed from this archipelago.

### ***Meliscaeva auricollis* (Meigen, 1822)**

**Literature records.** Dehesa de la Encarnación (SANTOS ABREU, 1924); Dehesa; Barranco de Aduares (BÁEZ, 1977); La Galga; Fuente de Los Roques, Montaña del Fuego; near Garafía; Cumbre Vieja, near El Charco; junction of Las Tricias and Garafía roads (CHANDLER, 1979).

**Examined material.** Breña Baja, along LP-301, Ctra San Isidro, 28°38'17.95" N 17°47'53.87" W, 603 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [4♀, ZFMK-DIP-00050213, ...00050214, ...00050215, ...00050216]; Breña Alta, along LP-301, Ctra San Isidro, 28°38'54.91" N 17°47'18.64" W, 382 m, 27.x.2017, on *Foeniculum vulgare*, T.O. Burt [1♀, ZFMK-DIP-00052258]; El Paso, water reservoir, 28°38'14" N 17°49'50.73" W, 1058 m, 27.x.2017, on *Foeniculum vulgare*,

X. Mengual [8♀, ZFMK-DIP-00050169, ...00050170, ...00050171, ...00050172, ...00050173, ...00050174, ...00050175, ...00050176]; km 5 of LP-109, Barranco Gallegos, 28°48'03" N 17°50'00.92" W, 760 m, 28.x.2017, X. Mengual [1♂, ZFMK-DIP-00052301]; along LP-4, Ctra Los Álamos, 28°42'57" N 17°46'04.25" W, 515 m, 31.x.2017, on *Foeniculum vulgare*, X. Mengual [2♀, ZFMK-DIP-00052241, ...00052242]; along LP-4, near Hoya Grande, 28°47'24.89" N 17°55'06.33" W, 1200 m, 31.x.2017, on *Foeniculum vulgare*, X. Mengual [2♀, ZFMK-DIP-00052224, ...00052225]; Santa Cruz de La Palma, Barranco del Quintero, 28°41'34.75" N 17°47'07" W, 242 m, 02.xi.2017, X. Mengual [5♀, ZFMK-DIP-0050071, ...0050072, ...0050073, ...0050075, ...00040494].

**Flight period in La Palma.** February to November.

### ***Myathropa florea* (Linnaeus, 1758)**

**Literature records.** La Palma; Barranco del Río (SANTOS ABREU, 1924); Barranco del Río; Los Llanos; Santa Cruz de La Palma (FREY, 1937); Dehesa; Puerto Naos; El Paso; Los Tilos (BÁEZ, 1977); Barranco de las Angustias; Cubo de la Galga (CHANDLER, 1979); vic. Jedey (AISTLEITNER & BARKEMEYER, 2018).

**Examined material.** Breña Alta, along LP-301, Ctra San Isidro, 28°38'54.91" N 17°47'18.64" W, 382 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [1♂ 2♀, ZFMK-DIP-00052253, ...00052254, ...00052255]; Breña Baja, along LP-301, Ctra San Isidro, 28°38'17.95" N 17°47'53.87" W, 603 m, 27.x.2017, on *Foeniculum vulgare*, T.O. Burt [2♂ 1♀, ZFMK-DIP-00050196, ...00022590, ...00022591]; Breña Baja, along LP-301, Ctra San Isidro, 28°38'17.95" N 17°47'53.87" W, 603 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [3♂ 1♀, ZFMK-DIP-00050197, ...00050198, ...00055222, ...00050199]; Breña Baja, Los Cancajos, near Paseo del Litoral, 28°39'0.44" N 17°45'31.81" W, 20 m, 27.x.2017, on *Schizogyne sericea*, X. Mengual [1♀, ZFMK-DIP-00052284]; Breña Baja, Camino Payos, 28°39'55.56" N 17°47'43.26" W, 484 m, 27.x.2017, on *Foeniculum vulgare*, T.O. Burt [1♂ 1♀, ZFMK-DIP-00050104, ...00050103]; El Paso, water reservoir, 28°38'14" N 17°49'50.73" W, 1058 m, 27.x.2017, on *Foeniculum vulgare*, T.O. Burt, [2♀, ZFMK-DIP-00050159, ...00050160]; Breña Baja, Camino Payos, 28°39'55.56" N 17°47'43.26" W, 484 m, 27.x.2017, on *Foeniculum vulgare*, m,X. Mengual [1♀, ZFMK-DIP-00050102]; Barlovento (Las Paredes), along LP-1, 28°49'38.27" N 17°47'35.83" W, 432 m, 28.x.2017, on *Foeniculum vulgare*, X. Mengual [1♂, ZFMK-DIP-00052296]; km 5 of LP-109, Barranco Gallegos, 28°48'03" N 17°50'00.92" W, 760 m, 28.x.2017, X. Mengual [1♂ 1♀, ZFMK-DIP-00052299, ...00052300]; Centro de Visitantes Los Tilos, Barranco del Agua, 28°47'22.18" N 17°48'09.29" W, 455 m, 28.x.2017, X. Mengual [2♀, ZFMK-DIP-00052313, ...00052314]; Barranco de la Fuente, along the path to Cubo de la Galga, 28°46'11.75" N 17°46'38.86" W, 420 m, 30.x.2017, X. Mengual [1♀, ZFMK-DIP-00052338]; along LP-4, near Hoya Grande, 28°47'24.89" N 17°55'06.33" W, 1200 m, 31.x.2017., on *Foeniculum vulgare*, X. Mengual [1♀,

ZFMK-DIP-00052220]; along LP-4, Ctra Los Álamos, 28°42'57" N 17°46'04.25" W, 515 m, 31.x.2017, on *Foeniculum vulgare*, X. Mengual [1♀, ZFMK-DIP-00052245]; along LP-4, pine forest, 28°44'07.37" N 17°49'31.25" W, 1900 m, 31.x.2017, on *Foeniculum vulgare*, X. Mengual [1♀, ZFMK-DIP-00050158]; Santa Cruz de La Palma, Barranco de la Madera, 28°41'51.32" N 17°45'56.62" W, 265 m, 03.xi.2017, X. Mengual [1♂, ZFMK-DIP-00050101]; Fuencaliente, along LP-207, 28°28'54.45" N 17°50'01.44" W, 360 m, 04.xi.2017, on *Euphorbia laarckii*, X. Mengual [1♂, ZFMK-DIP-00050066]; Fuencaliente, Las Caletas, along LP-207, 28°29'51.16" N 17°49'49.53" W, 546 m, 04.xi.2017, on *Euphorbia laarckii*, X. Mengual [1♀, ZFMK-DIP-00050080].

**Flight period in La Palma.** February to November.

**Remarks.** First records from November in La Palma.

### ***Paragus (Pandasyophthalmus) tibialis* (Fallén, 1817)**

**Literature records.** La Palma (SANTOS ABREU, 1924); Los Llanos (FREY, 1937); below Hoyo de Mazo (CHANDLER, 1979).

**Flight period in La Palma.** May to August.

**Remarks.** The history of this genus in the Canaries is controversial, at least. MACQUART (1839) described *Ascia analis* Macquart, 1839 from the archipelago and mentioned that it resemble *Ascia nitidula* Meigen, 1822. The second species is a junior synonym of *Neosasia (Neosciella) meticulosa* (Scopoli, 1763), and *A. analis* is a junior synonym of *Paragus (Pandasyophthalmus) tibialis* (Fallén, 1817), a fact already pointed out by FREY (1937). This fact made that SANTOS ABREU (1924) listed *Neosasia analis* (Macquart) in his revisionary work explaining that he could not collect the species. But SANTOS ABREU (1924) listed *Paragus tibialis* var. *aeneus* Meigen, 1822 from all the islands of the Canary Archipelago for the large part of the year, being common on *Euphorbia* flowers. The genus *Neosasia* Williston, 1887 does not occur in Canaries.

Earlier, BECKER (1908) cited *P. tibialis* from Tenerife and Lanzarote, and later, FREY (1937) listed *P. tibialis* from Gran Canaria, Lanzarote, Tenerife, and La Palma. BÁEZ (1977) repeated the record from FREY (1937) for La Palma and gave records for Tenerife, Gran Canaria, Fuerteventura, and Lanzarote, some of them were merely repetitions of literature records. The same author clarified the identity of the *Paragus* species in the Canaries (BÁEZ, 1978), and concluded that *P. tibialis* was present in the oriental islands (Fuerteventura, Lanzarote, and Gran Canaria), but *Paragus (Pandasyophthalmus) coadunatus* (Rondani, 1847) is the species found in Tenerife. As the females of both species are very difficult to tell apart, BÁEZ (1978)

guessed that the female specimens from Tenerife, Hierro and Gomera belonged also to *P. coadunatus*. After BÁEZ (1978), the *Paragus* specimens collected in La Palma — an unknown number by Santos Abreu and a single exemplar by Storå (FREY, 1937) — have been never examined again.

This history creates confusion when authors try to summarize the fauna of this archipelago. BÁEZ & OROMÍ (2010) listed both species, *P. tibialis* and *P. coadunatus*, from La Palma and RICARTE & MARCOS-GARCÍA (2017) listed only *P. tibialis* from this island. Unfortunately, we were not able to collect this genus during our survey, either to study any of the specimens collected by Santos Abreu, Storå or Chandler. Thus, the true identity of the *Paragus* specimens from La Palma remains uncertain.

#### ***Pelecocera (Chamaesyrrhus) nigricornis* Santos Abreu, 1924**

**Literature records.** Barranco del Río; Dehesa de la Encarnación; Lomos de Miraflores (SANTOS ABREU, 1924); Lomo de Miraflores; Barranco Mastrantes; Dehesa; Buenavista; Los Tilos; Barranco Aduares (BÁEZ, 1977); Barranco de las Angustias; La Caldera (BÁEZ, 1986).

**Examined material.** El Paso, water reservoir, 28°38'14" N 17°49'50.73" W, 1058 m, 27.x.2017, on *Foeniculum vulgare*, T.O. Burt [1♀, ZFMK-DIP-00050177]; El Paso, water reservoir, 28°38'14" N 17°49'50.73" W, 1058 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [2♂ 29♀, ZFMK-DIP-00052316, 00050113, ...00050178, ...00050179, ...00050180, ...00050181, ...00052317, ...00052319, ...00052320, ...00052321, ...00052324, ...00052325, ...00052326, ...00052327, ...00050114, ...00050115, ...00050116, ...00050117, ...00050118, ...00050119, ...00050120, ...00050121, ...00050122, ...00050123, ...00050124, ...00050125, ...00050126, ...00040496, ...00040497, ...00040498, ...00040499]; along LP-4, pine forest, 28°44'07.37" N 17°49'31.25" W, 1900 m, 31.x.2017, on *Foeniculum vulgare*, X. Mengual [8♂ 21♀, ZFMK-DIP-00050143, ...00040500, ...00040490, ...00050139, ...00050149, ...00050144, ...00050153, ...00050152, ...00050132, ...00050133, ...00050134, ...00050135, ...00050136, ...00050137, ...00050138, ...00050140, ...00050141, ...00050142, ...00050145, ...00050146, ...00050147, ...00050148, ...00050150, ...00050151, ...00050154, ...00050156, ...00050157, ...00040491, ...00040492]; P.N. Caldera de Taburiente, Roque de los Muchachos, 28°45'15.89" N 17°53'06.24" W, 2425 m, 31.x.2017, X. Mengual [1♀, ZFMK-DIP-00052248].

**Flight period in La Palma.** January to November.

**Remarks.** La Palma is the type locality of this species.

*Pelecocera (Chamaesyrrhus) nigricornis* was found locally very abundant during the central hour of the day on *Foeniculum vulgare* Mill. above 1000 m in La Palma.



BÁEZ (1977) synonymized all the names published by SANTOS ABREU (1924) for this taxon under *Chamaesyrrhus lusitanicus* Mik, 1898, but later BÁEZ (1986) established that the correct name for this taxon is *C. nigricornis* because was the first name to be mentioned in Santos Abreu's work (SANTOS ABREU, 1924). RICARTE & MARCOS-GARCÍA (2017) listed *P. nigricornis* from El Hierro, La Palma and Tenerife, and *Pelecocera lusitanica* from La Palma and Tenerife. Following BÁEZ (1986), all the records from Canary Islands should be *P. nigricornis*; thus, the records of *P. lusitanica* in the archipelago refer to *P. nigricornis*. On the other hand, THOMPSON (2013) lists *Chamaesyrrhus nigrifacies* as the valid name for the *Pelecocera (Chamaesyrrhus)* species from La Palma, which the present authors think is merely a mistake and should list *Pelecocera (Chamaesyrrhus) nigricornis*.

#### ***Scaeva albomaculata* (Macquart, 1842)**

**Literature records.** La Palma (SANTOS ABREU, 1924); Dehesa; El Paso; La Caldera; Fuencaliente; Garafia (BÁEZ, 1977); near Cumbre Nueva; La Cumbrecita (CHANDLER, 1979).

**Examined material.** P.N. Caldera de Taburiente, Roque de los Muchachos, 28°45'15.89" N 17°53'06.24" W, 2425 m, 31.x.2017, X. Mengual [1♂ 1♀, ZFMK-DIP-00052251, ...00052252]; along LP-4, Ctra Los Álamos, 28°42'57" N 17°46'04.25" W, 515 m, 31.x.2017, on *Foeniculum vulgare*, X. Mengual [2♀, ZFMK-DIP-00052247, ...00040501].

**Flight period in La Palma.** February to October.

**Remarks.** First records from October in La Palma.

#### ***Scaeva pyrastris* (Linnaeus, 1758)**

**Literature records.** La Palma (SANTOS ABREU, 1924); Dehesa; La Caldera; Barranco del Río (BÁEZ, 1977); Fuente de Los Roques, Montaña del Fuego; Cumbre Vieja, near El Charco (CHANDLER, 1979).

**Examined material.** Breña Alta, along LP-301, Ctra San Isidro, 28°38'54.91" N 17°47'18.64" W, 382 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [1♀, ZFMK-DIP-00052259]; along LP-4, near Hoya Grande, 28°47'24.89" N 17°55'06.33" W, 1200 m, 31.x.2017., on *Foeniculum vulgare*, X. Mengual [1♀, ZFMK-DIP-00052223].

**Flight period in La Palma.** February to November.

**Remarks.** First records from October in La Palma.

***Sphaerophoria rueppellii* (Wiedemann, 1830)**

**Literature records.** Santa Cruz de La Palma (BÁEZ, 1977).

**Flight period in La Palma.** March.

***Sphaerophoria scripta* (Linnaeus, 1758)**

**Literature records.** La Palma; costa de Mirca; Dehesa de la Encarnación (SANTOS ABREU, 1924); El Paso; La Caldera (FREY, 1937); Santa Cruz de La Palma (FREY, 1958); Dehesa; La Caldera (BÁEZ, 1977)]; La Galga; Fuente de Los Roques, Montaña del Fuego; Barranco de las Angustias (CHANDLER, 1979).

**Examined material.** Breña Baja, Camino Payos, 28°39'55.56" N 17°47'43.26" W, 484 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [1♂, ZFMK-DIP-00050105]; Breña Baja, along LP-301, Ctra San Isidro, 28°38'17.95" N 17°47'53.87" W, 603 m, 27.x.2017, on *Foeniculum vulgare*, T.O. Burt [1♂, ZFMK-DIP-00050200].

**Flight period in La Palma.** January to November.

**Remarks.** First records from October in La Palma.

SANTOS ABREU (1924) listed *Sphaerophoria menthastri* var. *picta* (Meigen, 1822) and FREY (1958) recorded *S. menthastri* among the material collected by H. Lindberg. The confusion about the identity of the species belonging to the *menthastri*- group lasted long time as the females could not be separated (SPEIGHT, 1973). BÁEZ (1977) stated that the material left for study from the collection of Santos Abreu belonged to *S. scripta*, and that the material of Frey was all *S. scripta* except a male of *S. rueppellii* (Wiedemann, 1830) from Gran Canaria. Thus, we consider the citations of *S. menthastri* var. *picta* (SANTOS ABREU, 1924) and *S. menthastri* (FREY, 1958) from La Palma as records of *S. scripta*.

***Syritta pipiens* (Linnaeus, 1758)**

**Literature records.** Dehesa de la Encarnación; Pago de Mirca, near the capital (SANTOS ABREU, 1924); Santa Cruz de La Palma; Los Llanos; El Paso (FREY, 1937); Lomo de Miraflores; Dehesa; Buenavista; Barlovento; Barranco del Río (BÁEZ, 1977); Fuente de Los Roques, Montaña del Fuego; Barranco de las Angustias (CHANDLER, 1979); vic. Jedey (AISTLEITNER & BARKEMEYER, 2018).

**Examined material.** Breña Baja, along LP-301, Ctra San Isidro, 28°38'17.95" N 17°47'53.87" W, 603 m, 27.x.2017, on *Foeniculum vulgare*, T.O. Burt [3♂ 3♀, ZFMK-DIP-00050224, ...00050228, ...00050229, ...00050225, ...00050226, ...00050227]; Breña Baja, along LP-301, Ctra San Isidro, 28°38'17.95" N 17°47'53.87" W, 603 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [5♂ 2♀, ZFMK-DIP-00050219,

...00050220, ...00050221, ...00050222, ...00050223, ...00050217, ...00050218]; El Paso, water reservoir, 28°38'14" N 17°49'50.73" W, 1058 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [5♀, ZFMK-DIP-00050129, ...00050130, ...00050131, ...00050164, ...00050165]; El Paso, water reservoir, 28°38'14" N 17°49'50.73" W, 1058 m, 27.x.2017, on *Foeniculum vulgare*, T.O. Burt [1♀ ZFMK-DIP-00050163]; Breña Alta, along LP-301, Ctra San Isidro, 28°38'54.91" N 17°47'18.64" W, 382 m, 27.x.2017, on *Foeniculum vulgare*, T.O. Burt [2♂ 1♀, ZFMK-DIP-00052271, ...00052272, ...00052270]; Breña Alta, along LP-301, Ctra San Isidro, 28°38'54.91" N 17°47'18.64" W, 382 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [9♂, ZFMK-DIP-00052273, ...00040486, ...00052274, ...00052275, ...00052276, ...00052277, ...00052278, ...00052279, ...00052280]; Breña Baja, Los Cancajos, near Paseo del Litoral, 28°39'0.44" N 17°45'31.81" W, 20 m, 27.x.2017, on *Schizogyne sericea*, X. Mengual [1♂, ZFMK-DIP-00052286]; Breña Baja, Camino Payos, 28°39'55.56" N 17°47'43.26" W, 484 m, 27.x.2017, on *Foeniculum vulgare*, T.O. Burt [1♀, ZFMK-DIP-00050108]; Breña Baja, Camino Payos, 28°39'55.56" N 17°47'43.26" W, 484 m, 27.x.2017, on *Foeniculum vulgare*, X. Mengual [2♂ 1♀, ZFMK-DIP-00050106, ...00050107, ...00050109]; Barlovento (Las Paredes), along LP-1, 28°49'38.27" N 17°47'35.83" W, 432 m, 28.x.2017, on *Foeniculum vulgare*, X. Mengual [1♂ 1♀, ZFMK-DIP-00052297, ...00052298]; Puntallana (La Galga), Calle Fuente Pino, 28°45'48.65" N 17°45'56.82" W, 453 m, 28.x.2017, X. Mengual [1♂ 1♀, ZFMK-DIP-00050064, ...00050065]; Breña Baja, Los Cancajos, near Paseo del Litoral, 28°39'0.44" N 17°45'31.81" W, 20 m, 28.x.2017, on *Schizogyne sericea*, X. Mengual [1♂, ZFMK-DIP-00050089]; Puntallana, along LP-1, 28°45'48.65" N 17°45'56.82" W, 453 m, 30.x.2017, on *Foeniculum vulgare*, X. Mengual [1♀, ZFMK-DIP-00052335]; near Tijarafe, Fuente del Toro, 28°41'56.15" N 17°57'01.22" W, 610 m, 31.x.2017, X. Mengual [2♂ 1♀ ZFMK-DIP-00052333, ...00052322, ...00052332]; Llano Negro, 28°48'19.64" N 17°55'26.57" W, 927 m, on *Foeniculum vulgare*, 31.x.2017, X. Mengual [1♂ 1♀, ZFMK-DIP-00052231, ...00052232]; Santa Cruz de La Palma, Barranco del Carmen, 28°41'44.50" N 17°45'57.52" W, 70 m, 02.xi.2017, on *Euphorbia lamarckii*, X. Mengual [1♂, ZFMK-DIP-00050081]; Santa Cruz de La Palma, Barranco de la Madera, 28°41'51.32" N 17°45'56.62" W, 265 m, 03.xi.2017, X. Mengual [1♂ 1♀, ZFMK-DIP-00050090, ...00050091]; Fuencaliente, along LP-207, 28°28'54.45" N 17°50'01.44" W, 360 m, 05.xi.2017, on *Euphorbia lamarckii*, X. Mengual [1♂ 1♀, ZFMK-DIP-00050070, ...00050069]; Barranco de las Angustias, Calle La Viña, 28°40'37.66" N 17°54'55.96" W, 468 m, 05.xi.2017, X. Mengual [2♂, ZFMK-DIP-00050078, ...00050079].

**Flight period in La Palma.** February to November.

**Remarks.** First records from October and November in La Palma.

RICARTE & MARCOS-GARCÍA (2017) did not list *S. pipiens* from La Palma, although the species was well documented from this island (BÁEZ, 1977).

***Xylota segnis* (Linnaeus, 1758)**

**Literature records.** Lomos de Miraflores (SANTOS ABREU, 1924); Fuente del Jubrón; La Galga; Los Tilos (BÁEZ, 1977).

**Flight period in La Palma.** July to September.

**DISCUSSION**

The study of the published literature helped us to produce a full list of historical records from La Palma, but also was useful to clarify the status of some doubtful records from the Island and for the Canary Islands. For instance, SMIT *et al.* (2004) based their syrphid records from the Canary archipelago on BÁEZ (1977) as they did not studied material from Canary Islands. In their work on the syrphid fauna from the Madeiran Archipelago, SMIT *et al.* (2004) mentioned that *Eupeodes luniger* (Meigen, 1822) and *Scaeva selenitica* (Meigen, 1822) have been recorded from the Canary Islands. We were not able to find any record in the literature to confirm their presence. BÁEZ (1977), in his monograph on the Syrphidae from the Canary Islands, excluded *Eupeodes luniger* as he could not collect this species. Moreover, this author considered that all previous authors citing *E. luniger* from the Canaries [i.e., MACQUART (1839) from Canary Islands, BIGOT (1891) from Gran Canaria, and BECKER (1908) from Tenerife] were probably mistaken and listed their records as records of *Eupeodes latilunulatus* (Collin, 1931) [BÁEZ (1977) used the name *Metasyrphus latilunulatus* (sic)]. It is interesting to point out that all the misguided records *sensu* BÁEZ (1977) were published prior to the description of *E. latilunulatus* by COLLIN (1931). MAZÁNEK *et al.* (1998) reintroduced the name *Eupeodes bucculatus* (Rondani, 1857) and synonymized *E. latilunulatus* with it as junior synonym, but they did not study any specimen from Canary Islands. Early spring specimens of *E. bucculatus* are small and extremely similar to *E. luniger* (SPEIGHT, 2017), and this might explain the confusion between these species. But SPEIGHT (2017) only listed two *Eupeodes* species from the Canaries, *Eupeodes nuba* (Wiedemann, 1830) and *E. corollae*, and mentioned that in the field both species are extremely similar. RICARTE & MARCOS-GARCÍA (2017) listed three *Eupeodes* species from this archipelago: *E. nuba*, *E. corollae*, and *E. bucculatus* [based on the records of *E. latilunulatus* from BÁEZ (1977)].

Regarding the *Scaeva* species in the Canaries, REEMER (2015) documented *Scaeva dignota* (Rondani, 1857) for the first time from the Canary archipelago and mentioned that there are only two other known species of

this genus in the Canaries, i.e., *S. albomaculata* and *S. pyrastris*. In addition, SPEIGHT (2017) excluded the Canaries from the distributional range of *S. selenitica*. With all these evidences, we can only conclude that the status of *Eupeodes luniger* and *Scaeva selenitica* in the Canary Islands is doubtful and that there are no recent records to confirm their occurrence in the Spanish archipelago. Furthermore, the identity of the specimens of *E. bucculatus* from the Canaries needs confirmation.

RICARTE & MARCOS-GARCÍA (2017) listed *Merodon aeneus* Meigen in Meigen, 1822 from La Palma, La Gomera and Tenerife. The only *Merodon* species known from the Canary Islands is *Merodon obscuritarsis* Strobl, 1909, reported from Fuerteventura by BARKEMEYER (2002) as *Merodon fuerteventurensis* Barkemeyer, 2002 and synonymized by MARCOS-GARCÍA *et al.* (2007) under *M. obscuritarsis*. This record may be a mistake, and we guess that RICARTE & MARCOS-GARCÍA (2017) probably referred to *Eristalinus aeneus* instead of *M. aeneus*. In addition, RICARTE & MARCOS-GARCÍA (2017) did not list *Eristalinus aeneus* for La Palma. Altogether, RICARTE & MARCOS-GARCÍA (2017) listed 41 hoverfly species from the Canaries, as we stated in the Introduction. But if we consider the synonymies of *Eumerus terminalis* (= *Eumerus amoenus*), and citations of *Heringia heringi* (Zetterstedt, 1843) from Canary Islands as *Heringia adpropinquans*, *Merodon aeneus* from Canary Islands as *Eristalinus aeneus*, and *Pelecocera lusitanica* from Canary Islands as *Pelecocera nigricornis*, the updated total number of Syrphidae species for the Canary archipelago is 38.

With only a week of fieldwork in the fall, we were able to record a new species for La Palma, *Eumerus obliquus*, and additionally reported new month records for 12 species, i.e., *Episyrphus balteatus*, *Eristalinus aeneus*, *Eristalinus taeniops*, *Eristalis tenax*, *Eumerus latitarsis*, *Eumerus purpureus*, *Eupeodes corollae*, *Myathropa florea*, *Scaeva albomaculata*, *Scaeva pyrastris*, *Sphaerophoria scripta*, and *Syrirta pipiens*. These new data could be expected due to the rather stable weather conditions in the archipelago and a mild climate through all the year. Further monthly records are very likely if more field work is done in order to collect hoverflies. We hope that these data can be incorporated to the Banco de Datos de Biodiversidad de Canarias ([www.biodiversidadcanarias.es](http://www.biodiversidadcanarias.es)) and be useful to preserve the rich natural heritage of the Archipelago (OROMÍ *et al.*, 2015).

With the new record of *E. obliquus* for La Palma, a total of 25 species of hoverflies have been recorded from this island. These are four species more than the hoverflies reported by SANTOS ABREU (1924), after considering the posterior valid synonyms, in a time span of almost a century.

Although the size of La Palma is not large compared with other Atlantic islands, we think that more fieldwork is needed in this Island (i.e. the areas of Fuencaliente, Garafía, San Andrés y Sauces, and Barlovento) and other parts of the Canary Archipelago to understand the distribution and phenology of the hoverflies occurring there, and we strongly believe that these new field excursions will result in more new species records.

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