Some Chloropidae (Diptera) from the Balearic Islands (Spain) with particular reference to Parc Natural de s'Albufera de Mallorca

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An account is given of the dipterous family Chloropidae from the Balearic Islands. New records of all the 41 species recently encountered on the Balearic Islands of Ibiza and Mallorca are given with some information on their habitat and distribution. The genus *Speccafrons* Sabrosky, 1980, is recorded for the first time from Spain with the species *S. halophila* (Duda, 1933) and another one unnamed. The following 16 species are also recorded from Spain for the first time: *Calamoncosis duinensis* (Strobl, 1909), *Calamoncosis stipae* Nartshuk, 1962, *Elachiptera rufifrons* Duda, 1932, *Incertella zuercheri* (Duda, 1933), *Lasiambia aterrima* (Duda, 1933), *Lipara lucens* Meigen, 1830, *Lipara rufitarsis* Loew, 1858, *Oscinella ventricosi* Nartshuk, 1955, *Oscinimorpha tenuirostris* (Duda, 1933), *Polyodaspis picardi Seguy*, 1946, *Speccafrons halophila* (Duda, 1933), *Trachysiphonella ruficeps* (Macquart, 1835), *Tricimba humeralis* (Loew, 1858), *Cryptonevra flavitarsis* (Meigen, 1830), *Cryptonevra nigritarsis* (Duda, 1933), *Eurina ducalis* Costa, 1885.

Key words: *Chloropidae, Balearics, faunistics, new records.*

ALGUNS CHLOROPIDAE (DIPTERA) DE LES ILLES BALEARS (ESPANYA) AMB ESPECIAL REFERÈNCIA AL PARC NATURAL DE S'ALBUFERA DE MALLORCA. Es relaciona un llistat de dípters de la familia Chloropidae de les Illes Balears. Es donen noves citacions de totes les 41 espècies trobades recentment a les illes d'Eivissa i de Mallorca (Illes Balears), a més d'aportar informació sobre el seu hàbitat i distribució. El gènere *Speccafrons* Sabrosky, 1980, és una nova cita per a Espanya amb les espècies *S. halophila* (Duda, 1933) i una altra no assignada específicament. Les següents 16 espècies són, també, noves cites per a Espanya: *Calamoncosis duinensis* (Strobl, 1909), *Calamoncosis stipae* Nartshuk, 1962, *Elachiptera rufifrons* Duda, 1932, *Incertella zuercheri* (Duda, 1933), *Lasiambia aterrima* (Duda, 1933), *Lipara lucens* Meigen, 1830, *Lipara rufitarsis* Loew, 1858, *Oscinella ventricosi* Nartshuk, 1955, *Oscinimorpha tenuirostris* (Duda, 1933), *Polyodaspis picardi Seguy*, 1946, *Speccafrons halophila* (Duda, 1933), *Trachysiphonella ruficeps* (Macquart, 1835), *Tricimba humeralis* (Loew, 1858), *Cryptonevra flavitarsis* (Meigen, 1830), *Cryptonevra nigritarsis* (Duda, 1933), *Eurina ducalis* Costa, 1885.

Paraules clau: *Chloropidae, Illes Balears, faunística, noves citacions.*

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Introduction

The Chloropidae is a family of flies with a diverse biology, but most species develop in plants, mainly in the shoots of Graminae. The Catalogue of Palaearctic Diptera (Nartshuk, 1984) and the more recent Catalogue of the Diptera of the Iberian Peninsula and Balearic Islands (De Bruyn & Báez, 2002) list relatively few species in this family for the Iberian Peninsula and none for the Balearic Islands (old references from the 19th century were excluded). However, the first records of Chloropidae from the Balearics were published in an article on Mallorcan insects (Moragues y de Manzanos, 1894) wherein the following five species were recorded (current nomenclature in parentheses): *Camarota flavitarsis* Meigen, 1830 ((*Camarota curvipennis* (Latreille, 1805)); *Chlorops didyma* (*Chlorops scalaris* Meigen, 1830); *Chlorops laeta* (*Chlorops laetus* Meigen, 1830); *Chlorops notata* (*Thaumatomyia notata* (Meigen, 1830)); *Siphonella palposa* (*Lasiambia palposa* (Fallén, 1820)); *Oscinis pusilla* (*Oscinella pusilla* Meigen, 1830). Three of the foregoing species remain unconfirmed, namely: *Chlorops laetus* Meigen, 1830, *Chlorops scalaris Meigen, 1830* and *Lasiambia palposa* (Fallén, 1820), but are included in the list below for completeness.

Nartshuk (2003) lists a number of additions to the fauna of the Iberian Peninsula. These include the genera *Lipara* Meigen, 1830, *Trachysiphonella* Enderlein, 1936 and two new species: *Aphanotrigonum andersoni* Nartshuk, 2003 and *Lasiosina hispanica* Nartshuk, 2003, but no records from the Balearics. Deeming (2003) recorded *Oscinella nartshukiana* Beschovski, 1978 from Portinatx, Ibiza. Evidently the Chloropidae of this region is poorly studied and therefore a list of species may be of interest and helps to rectify the paucity of records from the Balearics.

In this article I record all the species that I recently encountered in Mallorca and Ibiza. Most of the species were found in the wetland at s'Albufera de Mallorca Natural Park, which lies at the north eastern end of Mallorca. This is because work focused on the park with little collecting done elsewhere. I provided a list of species of Diptera, including Chloropidae, in a report on the park (Ebejer, 2003). Those species are included in this account with their data. Three taxonomic corrections to that list are required. The species of *Cryptonevra* Lioy, 1864 were identified as *consimilis* (Collin, 1932) and *diadema* (Meigen, 1830). These specimens are all in fact *nigritarsis* (Duda, 1933). The species provisionally identified as *Aphanotrigonum ? cinctellum* Zettersedt, 1848 was later dissected and found to be *inerme* Collin, 1946.

The park consists of about 1700 hectares, most of which is wetland dominated by extensive *Phragmites* beds. Around and within these are pine woods, dunes, dry meadows, canals, pools and *Tamarix* groves. The park is adjacent to the coast, but most of the aquatic habitats are fresh water and some of the canals also have *Arundo* growing on the banks along much of their length. The areas of salt marsh have *Arthrocnemum* (=*Salicornia*), *Tamarix* and a variety of Graminae.

Material and Methods

Specimens were collected as part of a systematic investigation into the Diptera of the park. Collecting methods included sweeping with a hand net the vegetation in the various habitats, light traps, water traps and

Malaise traps. Most of the collecting was done in the spring and early summer with some supplementary collecting in the autumn by members and volunteers of TAIB (The Albufera Initiative for Biodiversity). During a week of intensive field work in April 2001 special effort was made to sample in all types of habitat. In late May 2006, some species were reared from old galls of *Lipara* and from stems of *Phragmites* that had old tunnels made by larvae of Lepidoptera. Limited collecting outside the reserve was also undertaken.

Results

The following list includes all 44 species now known from the Balearics, but it only gives data for the 41 species that are confirmed, thus no data are available for those species recorded by Moragues y de Manzanos (1894), but not yet encountered again. The data for each species are listed with the initials of the collector given at the end: CED – C.E. Dyte; MJE – M.J. Ebejer; DG – D. Gibbs; JG – J. Guiu; PH – P. Hill; NJR – N.J. Riddiford; AS – A. Sergeant. Voucher specimens are deposited in the reference collection at the Parc s'Albufera, in Amgueddfa Cymru-National Museum of Wales, Cardiff and in the private collection of the author. The species are listed in alphabetical order within each of the subfamilies.

List of Species

Siphonellopsinae

Siphonellopsis Strobl, 1906
Siphonellopsis lacteibasis Strobl, 1906
Mallorca: 1♂, s'Albufera, Ses Puntes marsh west, *Tamarix, Arthrocnemum, Juncus,* Graminae, Chenopodaceae, 16.iv.2001, MJE.

Widespread around the Mediterranean and Black Sea coasts.

Oscinellinae

Aphanotrigonum Duda, 1932
Aphanotrigonum femorellum Collin, 1946
Mallorca: 1♂ & 1♀, Mallorca, salt marsh 1 km north of Alcudia, 18.v.1986, CED; Ibiza: 5♂♂ and 1♀, Ses Feixes de Talamanca, 29.v.2006, MJE.

Widespread in Europe and the Mediterranean.

Aphanotrigonum inerme Collin, 1946
Mallorca: 2♂♂ & 1♀, s'Albufera, Ses Puntes marsh east, *Tamarix, Salicornia,* Graminae, 16.iv.2001, MJE; 2♂♂ & 2♀♀, s'Albufera, Es Comú coastal dunes, *Pinus, Pistacia, Cistus,* Graminae, 18.iv.2001, MJE; 2♂♂ & 2♀♀, s'Albufera, Es Cibollar marsh north, *Tamarix, Juncus,* Graminae, 18.iv.2001, MJE; 2♂♂ & 3♀♀, s'Albufera, Sa Roca, 21-25.iv.2004, Malaise trap, NJR & JG; 1♀, s'Albufera, Es Colombars, Malaise trap, 10-11.vi.2005, PH; 2♂♂ & 1♀, s'Albufera, Es Cibollar, *Salicornia* marsh with Graminae, 28.v.2006, MJE.

Known from Britain, Bulgaria and Spain.

Calamoncosis Enderlein, 1911
Calamoncosis duinensis (Strobl, 1909)
Mallorca: 3♀♀, s'Albufera, Camí des Polls, edge of marsh with *Tamarix* and Graminae including *Juncus* and *Phragmites*, 28.v.2006, MJE.

Widespread in Europe; known from Mongolia and Japan.

Calamoncosis minima (Strobl, 1893)
Mallorca: 1♀, s'Albufera, Es Forcadet, Canal des Sol and Torrent de Muro, 17.iv.2001, MJE; 3♀♀, s'Albufera, Es Rotlos, Malaise trap, 4-6.vi.2005, PH; 1♀, s'Albufera, Es Rotlos, Malaise trap, 4-6.vi.2005, PH; 1♀, s'Albufera, Es Colombars, Malaise trap, 10-11.vi.2005, PH; 1♂, Escorca, mountains east of Gorg Blau, 1150m, 26.v.2006, MJE.

Widespread and common in *Phragmites* around the Mediterranean, Central Europe and across Russia.

Calamoncosis stipae Nartshuk, 1962
Mallorca: 2♂♂ and 2♀♀, Escorca, Cuber, 900m, 24.iv.2006, DG.

Known from several Central and Northern European countries and southern Russia. Probably more widespread. New to Spain.

Calamoncosis sp.
Mallorca: 4♀♀, s'Albufera, Es Colombars, Malaise trap, 10-11.vi.2005, PH; 3♀♀, s'Albufera, Camí des Polls, edge of marsh with *Tamarix* and Graminae including *Juncus* and *Phragmites*, 21.v.2006, MJE.

These females probably belong to another species. Their identity is not clear and male specimens when eventually they are found may be more helpful to ascertain identity.

Elachiptera Macquart, 1935
Elachiptera bimaculata (Loew, 1845)
Mallorca: 2♀♀, s'Albufera, Es Colombars, Malaise trap, 10-11.vi.2005, PH; 3♂♂ and 1♀, Escorca, mountains east of Gorg Blau, 1150m, 26.v.2006, MJE.
Widespread around the Mediterranean, but not restricted to coastal areas.

Elachiptera cornuta (Fallen, 1820)
Mallorca: 1♂, s'Albufera, Es Forcadet, Canal des Sol and Torrent de Muro, 17.iv.2001, MJE; 1♀, s'Albufera, Es Forcadet, Canal des Sol, meadow with flowering plants, 17.iv.2001, MJE.

The species generally referred to as *cornuta* exhibits significant variation in most of the characters. A detailed analysis of these was undertaken by Ismay (1978). So far, there appears to be nothing in the biology of this species that would support it being divided into a complex of species and therefore for the purposes of this article I consider *cornuta* and its various forms to be a single species.

Widespread right across the Palaearctic Region.

Elachiptera rufifrons Duda, 1932
Mallorca: 5♂♂, s'Albufera, Es Forcadet, Canal des Sol and Torrent de Muro, 17.iv.2001, MJE; 1♀, s'Albufera, Sa Roca, 18.iv.2004, Malaise trap, NJR; 2♂♂ and 4♀♀, Es Ras, reared from larval frass in old Lepidoptera tunnels in *Phragmites*, 21-27.v.2006, MJE.

Known from Israel and North Africa and few other countries in Europe. This is the first record for the Western Mediterranean and for Spain.

Elachiptera sp.
3♂♂, Es Ras, reared from larval frass in old Lepidoptera tunnels in *Phragmites*, 21-27.v.2006, MJE.

These specimens have the mesonotum with pollinose stripes similar to those in *cornuta*. However, the frontal triangle is entirely yellow as in *rufifrons*. It also differs from *rufifrons* in the following characters: arista

broad and parallel sided, not long elliptical; humerus shiny, only posterior margin very narrowly pollinose; third costal sector (R2+3 to R4+5) is at most 1.9 times the fourth (R4+5 to M1+2) whereas in *rufifrons* it is 1.9 to 2.3.

Incertella Sabrosky, 1980
Incertella zuercheri (Duda, 1933)
Mallorca: 1♀, s'Albufera, Es Forcadet, Canal des Sol and Torrent de Muro, 17.iv.2001, MJE; 1♀, s'Albufera, Es Forcadet, Canal des Sol, meadow with flowering plants, 17.iv.2001, MJE; 22♂♂ and 6♀♀, s'Albufera, Es Rotlos, Malaise trap, 4-6.vi.2005, (in alcohol) JG, PH, AS; 4♂♂ & 6♀♀, s'Albufera, Es Colombars, Malaise trap, 10-11.vi.2005, PH; 2♂♂ & 2♀♀, s'Albufera, Camí des Polls, edge of marsh with *Tamarix* and Graminae including *Juncus* and *Phragmites*, 21.v.2006, MJE; 1♀, s'Albufera, Es Cibollar, *Salicornia* marsh with Graminae, 21.v.2006, MJE; 2♂♂& 2♀♀, s'Albufera, Es Ras, reared from larval frass in old Lepidoptera tunnels in *Phragmites*, 21-27.v.2006, MJE; 1♂ and 1♀, s'Albufera, Son Bosc, 25.v.2006, MJE.

Common in Central and Northern Europe and around the Mediterranean especially in *Phragmites* beds.

Lasiambia Sabrosky, 1941
Lasiambia aterrima (Duda, 1933)
Mallorca: 1♂, s'Albufera, Es Cibollar marsh south, *Tamarix, Juncus, Salicornia*, 19.iv.2001, MJE.

Known from Tunisia.
Lasiambia palposa (Fallén, 1820)
Recorded by Moragues y de Manzanos (1894). Although this species could occur on the Balearics, it is also easily confused with *Polyodaspis picardi* Seguy, 1946, which was described after Moragues y de Manzanos published his paper.

Lipara Meigen, 1830
Lipara lucens Meigen, 1830
Mallorca: 1♀, s'Albufera, Ses Puntes marsh east, *Tamarix, Salicornia,* Graminae, 16.iv.2001, MJE; 1♂, s'Albufera, Sa Roca, 21-25.iv.2004, Malaise trap, NJR & JG.

Widespread in Europe and the Mediterranean.

Lipara rufitarsis Loew, 1858
Mallorca: 1♂, s'Albufera, Es Ras dry meadow near marsh, *Euphorbia*, 16.iv.2001, MJE; 2♀♀, s'Albufera, Es Cibollar marsh south, *Tamarix, Juncus, Salicornia*, 19.iv.2001, MJE; many ♂♂ and ♀♀, s'Albufera, Camí des Forcadet and Camí des Polls, edge of marsh with *Tamarix* and Graminae including *Juncus* and *Phragmites*, 21.v.2006, MJE.

Common in Western Europe and around the Mediterranean through to Mongolia and Japan.

Lipara similis Schiner, 1854
Mallorca: 2♂♂, s'Albufera, Ses Puntes marsh west, *Tamarix, Salicornia, Juncus,* Graminae, *Chenopodaceae,* 16.iv.2001, MJE; 1♂ & 1♀, s'Albufera, Es Forcadet, Canal des Sol, meadow with flowering plants, 17.iv.2001, MJE; 1♂, s'Albufera, Es Forcadet, Canal des Sol and Torrent de Muro, 17.iv.2001, MJE; 1♀, s'Albufera, Es Cibollar marsh north, *Tamarix, Juncus,* Graminae, 18.iv.2001, MJE.

Widespread in Europe, but in the Mediterranean it had been only known from Israel until it was recently recorded from Spain (Nartshuk, 2003).

Melanochaeta Bezzi, 1906
Melanochaeta pubescens (Thalhammer, 1898)
Mallorca: 1♂, s'Albufera, Ses Puntes marsh west, *Tamarix, Salicornia, Juncus,* Graminae, *Chenopodaceae,* 16.iv.2001, MJE; 3♂♂ & 1♀, s'Albufera, Es Forcadet, Canal des Sol and Torrent de Muro, 17.iv.2001, MJE; 1♀, s'Albufera, Es Forcadet, Canal des Sol, meadow with flowering plants, 17.iv.2001, MJE; 1♀, s'Albufera, Es Colombars, Malaise trap, 10-11.vi.2005, PH; 1♀, s'Albufera, Es Rotlos, Malaise trap, 4-6.vi.2005, PH; many ♂♂ and ♀♀, s'Albufera, Son Bosc, 24.v.2006, MJE; many ♂♂ and ♀♀, s'Albufera, Camí des Polls, edge of marsh with *Tamarix* and Graminae including *Juncus* and *Phragmites*, 28.v.2006, MJE.

Widespread across central Europe and around the Mediterranean through to Afghanistan. Very common in *Phragmites* beds.

Oscinella Becker, 1909
Oscinella frit (Linnaeus, 1758) group
Mallorca: 1♀, s'Albufera, Es Forcadet, Canal des Sol and Torrent de Muro, 17.iv.2001, MJE; 1♂ and 1♀, s'Albufera, Camí des Polls, edge of marsh with *Tamarix* and Graminae including *Juncus* and *Phragmites*, 21.v.2006, MJE; 1♀, s'Albufera, Son Bosc, 24.v.2006, MJE; Ibiza: 1♂ and 1♀, Ses Feixes de Talamanca, 29.v.2006, MJE.

Widespread in the Holarctic Region and parts of India and Pakistan.

Oscinella nartshukiana Beschovski, 1978
Mallorca: 3♂♂ and 1♀, s'Albufera, Camí des Polls, edge of marsh with *Tamarix* and Graminae including *Juncus* and *Phragmites*, 21.v.2006, MJE; 1♀, s'Albufera, Son Bosc, 24.v.2006, MJE.

This species was previously recorded from Ibiza (Deeming, 2003). Widespread in the Mediterranean, Africa, Arabia and the Near East.

Oscinella sp aff. *nitidigenis* (Becker, 1908)
Mallorca: 1♀, s'Albufera, Camí des Polls, edge of marsh with *Tamarix* and Graminae including *Juncus* and *Phragmites*, 21.v.2006, MJE.

O. nitidigenis is widespread in Europe and the Macaronesian Islands. Its distribution extends to many parts of Africa and Asia. Numerous specimens from the above geographical areas, in the collections of the National Museum Cardiff, have the characteristic frontal triangle where this not only reaches the front edge of the frons, but it is as broad as the margin, thus giving it a rhomboidal rather than a triangular shape. The specimen from Mallorca has a sharply pointed apex to the frontal triangle and this barely reaches the anterior margin of the frons. The mesonotal, pleural and abdominal pollinosity is less intense, giving the insect a distinctly more shiny appearance, although this is not as marked as in *nitidissima* (Meigen, 1838). This specimen also differs from *nitidissima* in several other characters, notably its larger size, the proportions of gena and third antennal segment, and the colouration of the legs.

Oscinella pusilla (Meigen, 1830)
Mallorca: 2♂♂ and 8♀♀, s'Albufera, Es Rotlos, Malaise trap, 4-6.vi.2005, (in alcohol) PH; 2♂♂ & 1♀, s'Albufera, Camí des Polls, edge of marsh with *Tamarix* and Graminae including *Juncus* and *Phragmites*, 21.v.2006, MJE; and many ♂♂♀ and ♀♀

from Alcudia, St Martí, Puig de Son Fé, 22.v.2006; s'Albufera, Ses Salinetes and Son Bosc, 24.v.2006, MJE.

The identification of this species is unsatisfactory as it is based on chromatic characters and relative proportions of head and antennal parts. All these show significant variation. It is possible that some of these specimens are in fact *frit*. For these reasons this species is here recorded with some doubt.

Widespread in the Palaearctic Region.

Oscinella ventricosi Nartshuk, 1955
Mallorca: 2♂♂, s'Albufera, Camí des Polls, edge of marsh with *Tamarix* and Graminae including *Juncus* and *Phragmites*, 21.v.2006, MJE; 3♂♂ and 1♀, s'Albufera, Son Bosc, 25.v.2006, MJE; 1♂, s'Albufera, Es Cibollar *Salicornia* marsh with Graminae, 28.v.2006, MJE.

Known from Bulgaria and Russia.

Oscinimorpha Lioy, 1864
Oscinimorpha arcuata (Duda, 1932)
Mallorca: 6♂♂ and 1♀♀, Alcudia, St Martí, Puig de Son Fé, 22.v.2006, MJE.

Widespread in Central and Northern Europe and the Mediterranean.

Oscinimorpha longirostris (Loew, 1858)
Mallorca: 3♂♂ & 1♀, Alcudia, Cova Sa Martin, 19.iv.2001, MJE; 12♂♂ and 5♀♀, Alcudia, St Martí, Puig de Son Fé, 22.v.2006, MJE; Ibiza: 12♂♂ and 5♀♀, Ses Feixes de Talamanca, 29.v.2006, MJE.
Widespread around the Mediterranean.

Oscinimorpha tenuirostris (Duda, 1933)
Ibiza: 1♂, Parc Natural Ses Salines, Torre de Ses Portes, 1.vi.2006, MJE.

Described from Tunisia and until now only known from that country.

Polyodaspis Duda, 1933
Polyodaspis picardi Seguy, 1946
Mallorca: 2♀♀, s'Albufera, Es Rotlos, Malaise trap, 6-8.vi.2005, PH; 1♀, Es Ras, reared from larval frass in old Lepidoptera tunnels in *Phragmites*, 21-27.v.2006, MJE.

Described from Nice, France, it has not been recorded from elsewhere, but the author has specimens from other Mediterranean islands. Dr Deeming (pers. comm.) reared it in Crete from emergent shoots of *Arundo donax* showing dead heart. The collections in the National Museum Cardiff have specimens from Cyprus (Pissouri), Greece (Peloponessos), Malta (Fiddien), Portugal (Algarve) and Tunisia (Bizerte).

Polyodaspis sulcicollis (Meigen, 1838)
Mallorca: 1♂, s'Albufera, Es Cibollar marsh south, *Tamarix, Juncus, Salicornia*, 19.iv.2001, MJE; 1♀, s'Albufera, Sa Roca, 21-25.iv.2004, Malaise trap, NJR & JG.

Common and widespread in Central Europe and the Mediterranean through the Middle East to Mongolia.

Siphunculina Rondani 1856
Siphunculina ornatifrons (Loew, 1858)
Mallorca: 2♂♂, s'Albufera, Camí des Polls, edge of marsh with *Tamarix* and Graminae including *Juncus* and *Phragmites*, 21.v.2006, MJE.

Known from all around the Mediterranean, Atlantic and Pacific islands, parts of Asia and Africa.

Speccafrons Sabrosky, 1980
Speccafrons halophila (Duda, 1933)
Mallorca: 1♀, s'Albufera, Es Cibollar marsh south, *Tamarix, Juncus, Salicornia*, 19.iv.2001, MJE; Ibiza: 2♂♂ & 3♀♀, Parc Natural Ses Salines, Es Cavallet, dunes with *Pinus* and *Juniperus* wood near *Juncus* and *Salicornia* marsh, 1.vi.2006, MJE.

Widespread in Europe; known also from Mongolia. New record of the genus for Spain.

Speccafrons sp. aff. *costalis* (Duda, 1930)
Mallorca: 1♀, s'Albufera, Camí des Polls, edge of marsh with *Tamarix* and Graminae including *Juncus* and *Phragmites*, 21.v.2006, MJE; Ibiza: 1♂, Parc Natural Ses Salines, Es Cavallet, dunes with *Pinus* and *Juniperus* wood near *Juncus* and *Salicornia* marsh, 1.vi.2006, MJE.

S. costalis was described from Taiwan. Kanmiya (1983) examined type material of *costalis* and *halophila* and gave detailed descriptions with illustrations of the male hypopygium of both *costalis* and *pallidinervis* (Becker, 1911). The species from the Balearics seems to be identical to *costalis*, but study of more material including an examination of the male hypopygium would be required to confirm this.

Trachysiphonella Enderlein, 1936
Trachysiphonella ruficeps (Macquart, 1835)
Mallorca: 1♂, s'Albufera, Es Comú coastal dunes, *Pinus, Pistacia, Cistus,* Graminae, 18.iv.2001, MJE; 1♂ & 1♀, s'Albufera, Es Colombars, Malaise trap, 10-11.vi.2005, PH; 8♂♂ and 10♀♀, s'Albufera, Son Bosc, 24.v.2006, MJE; 3♂♂ and 4♀♀, Parc Natural Ses Salines, Torre de Ses Portes and Es Cavallet, dunes with *Pinus* and *Juniperus* wood near *Juncus* and *Salicornia* marsh, 1.vi.2006, MJE.

Known from most of Europe and the Mediterranean.

Tricimba Lioy, 1864
Tricimba humeralis (Loew, 1858)
Mallorca: 1♂, s'Albufera, Es Cibollar marsh south, *Tamarix, Juncus, Salicornia*, 19.iv.2001, MJE; 1♀, s'Albufera, Sa Roca, 21-25.iv.2004, Malaise trap, NJR & JG; 2♂♂♀ and 2♀♀, Es Cibollar, *Salicornia* marsh with Graminae, 28.v.2006, MJE; Ibiza: 1♂, Parc Natural, Ses Salines, Torre de Ses Portes, 30.v.2006, MJE.

Very common in central Europe, around the Mediterranean and the Middle East through to China.

Tricimba sp.
Ibiza: 1♂ & 1♀, Parc Natural, Ses Salines, Torre de Ses Portes, 30.v.2006, MJE.

These specimens differ from *humeralis* in several characters. The gena is proportionately narrower, the humerus and the margin of the scutellum are not yellow, but dark grey; in the male hypopygium, the surstylus is longer and much narrower and pointed; viewed directly from behind, the surstylus is almost as long as the epandrium is high, and the cercal plate is broadly fused with the epandrium. In a revision of the Palaearctic species of this genus, Dely-Draskovits (1983) described several new species and illustrated almost all the species of *Tricimba* based upon a study of the types. The unidentified species from the Balearics is similar to *freidbergi* Dely-Draskovits, 1983 from Israel, a species which like *humeralis* and a few others has a shiny black spot in front of the anterior ocellus. However, *freidbergi* is a significantly larger species and the surstylus is not as long or as

pointed as the species from the Balearics. There is some similarity also to *fungicola* Dely-Draskovits, 1983, but neither this nor *cincta* (Meigen, 1830), whose male is undescribed, have the shiny black spot on the frons. A study of more material is required to ascertain with certainty whether or not this is an undescribed species.

CHLOROPINAE

Camarota Meigen, 1830
Camarota curvipennis (Latreille, 1805)
Mallorca: 3♂♂, s'Albufera, Son Bosc, 24.v.2006, MJE; 2♂♂, s'Albufera, Es Comú coastal dunes, *Pinus, Pistacia, Cistus,* Graminae, 27.v.2006, MJE.

Widespread in Europe.

Chlorops Meigen, 1803
Chlorops laetus Meigen, 1830

Recorded by Moragues y de Manzanos (1894). Not yet confirmed, but may be expected to occur in the Balearics.

Chlorops scalaris Meigen, 1830

Recorded by Moragues y de Manzanos (1894). Not yet confirmed, but may be expected to occur in the Balearics.

Cryptonevra Lioy, 1864
Cryptonevra flavitarsis (Meigen, 1830)
Mallorca: 1♂, s'Albufera, Es Colombars, Malaise trap, 10-11.vi.2005, PH.

Widespread in Europe and the Mediterranean; known also from China and Mongolia.
Cryptonevra nigritarsis (Duda, 1933)
Mallorca: 1♂ & 2♀♀, s'Albufera, Es Cibollar marsh south, *Tamarix, Juncus, Salicornia,* 19.iv.2001, MJE; 1♀, s'Albufera, Es Rotlos, Malaise trap, 4-6.vi.2005, PH; 2♂♂ and 4♀♀, Es Ras, reared from larval frass in old Lepidoptera tunnels in *Phragmites*, 21-27.v.2006, MJE; 1♀, s'Albufera, Ses Salinetes, 24.v.2006, MJE; 1♂ & 1♀, s'Albufera, Es Cibollar marsh, *Tamarix, Juncus, Salicornia*, 28.v.2006, MJE.

According to D. Gibbs (pers. comm.) there may be two species under this name. External differences are subtle, but the male genitalia show important differences. However, at this stage little is known about the extent of variation that can occur within the currently accepted species *nigritarsis* and therefore I am treating this as one species until further work clarifies the position.

Known from Central Europe. New record for Spain.

Eurina Meigen, 1830
Eurina ducalis Costa, 1885
Mallorca: 3♂♂ & 1♀, s'Albufera, Es Cibollar marsh south, *Tamarix, Juncus, Salicornia*, 19.iv.2001, MJE.

Widespread around the Mediterranean. New record for Spain.

Eutropha Loew, 1866
Eutropha fulvifrons (Haliday, 1833)
Mallorca: 5♀♀, Sta Margalida, Son Serra beach, *Posidonia* wrack, Graminae, *Tamarix*, 19.iv.2001, MJE.
Ibiza: many ♂♂ and ♀♀, Parc Natural Ses Salines, Torre de Ses Portes and Es Cavallet, dunes with *Pinus* and *Juniperus* wood near *Juncus* and *Salicornia* marsh, 1.vi.2006, MJE.

A very common coastal species in Western Europe and North Africa.

Lasiosina Becker, 1910
Lasiosina herpini (Guérin-Méneville, 1848)
Mallorca: 1♀, s'Albufera, Es Cibollar marsh south, *Tamarix, Juncus, Salicornia*, 19.iv.2001, MJE; 1♂, s'Albufera, Camí des Polls, edge of marsh with *Tamarix* and Graminae including *Juncus* and *Phragmites*, 21.v.2006, MJE; 1♀, s'Albufera, Camí des Polls, edge of marsh with *Tamarix* and Graminae including *Juncus* and *Phragmites*, 28.v.2006, MJE.

Widespread in Europe and the Middle East.

Pseudopachychaeta Strobl, 1902
Pseudopachychaeta pachycera Strobl, 1902

Mallorca: 3♂♂ & 1♀, Pollença, Vale de Son March, meadow, Graminae, *Populus, Quercus*, 21.iv.2001, MJE.

Widespread around the Mediterranean.

Thaumatomyia Zenker, 1833
Thaumatomyia notata (Meigen, 1830)
Mallorca: 2♂♂, s'Albufera, Es Comú coastal dunes, *Pinus, Pistacia, Cistus,* Graminae, 18.iv.2001, MJE; 1♂ & 1♀, Sa Pobla, Son Ton woods, *Pinus, Pistacia, Arbutus,* Graminae, 21.iv.2001, MJE; 1♂, s'Albufera, Sa Roca, 21-25.iv.2004, Malaise trap, NJR & JG; 1♀, s'Albufera, Es Colombars, Malaise trap, 10-11.vi.2005, PH; 4♀♀, s'Albufera, Es Rotlos, Malaise trap, 6-8.vi.2005, PH; in May 2006 found to be very common at all sites in Mallorca and Ibiza.

An abundant species that is known from the whole of the Palaearctic Region and parts of Africa and Tropical Asia. This species is a predator on root aphids. Populations are often large and therefore it can be considered as a beneficial insect.

Discussion

Given that most species of Chloropidae have developmental stages in Graminae (Ferrar, 1987), s'Albufera with its wetlands and diversity of plants in this family would be expected to host a reasonable number of species. With intensive collecting, I found 33 species of Chloropidae on the small island of Malta where wetlands are scarce, very small and markedly disturbed by anthropogenic activities (unpublished). A total of 44 species from all three subfamilies has been found in Mallorca and Ibiza, where sampling has been infrequent and therefore it is reasonable to expect several more species if collecting is intensified. Furthermore, if collecting were extended across all seasons to include drier and wooded areas on the island, further genera could be expected, especially those that do not breed in Graminae, but use fungi, wood and nests of arthropods for larval development (Ismay & Nartshuk, 1998). For example, *Speccafrons* breeds in the egg cocoons of spiders and *Lasiambia* have been recorded from egg masses of Acrididae and Dictyoptera as well as sap exuding from damaged trees (Ismay, 2000).

Lipara is a genus of four European species, all of which have larvae that form galls in the shoots of *Phragmites*. Among the inquilines that invade recent and older galls of *Lipara* are other chloropid species in the genera *Calamoncosis*, *Cryptonevra* and *Incertella*. Pokorný & Skuhravý (1981) published a detailed account of these gall forming flies and their inquilines. Three species of *Lipara,* two each of *Cryptonevra* and *Calamoncosis* and one species of *Incertella* have been found at s'Albufera de Mallorca to date. I reared the species in the last three genera as well as *Polyodaspis picardi*, *Elachiptera rufifrons* and a second

unnamed species of *Elachiptera* from the old tunnels of Lepidoptera larvae made in *Phragmites* stems. There is scope for further study in this area to elucidate the preferences of individual species and to investigate the degree or otherwise to which they may co-exist with other species in the same larval tunnels.

This article adds 16 named species to the Chloropidae known from the Iberian Peninsula and its islands and 41 new records for the Balearics. At least as far as the Balearics are concerned more species can be expected. Although the two species of *Chlorops* and *Lasiambia palposa* noted from Mallorca by Moragues y de Manzanos (1894) have not yet been confirmed, their occurrence there would not be surprising, as the island is within the known distribution range of all three species. However, *P. picardi* was described long after Moragues y de Manzanos' paper and since the two species *L. palposa* and *P. picardi* bear a strong superficial resemblance to one another, it is quite possible that Moragues y de Manzanos' identification, though "correct" at the time, may actually refer to *P. picardi*. The unidentified species of *Calamoncosis, Elachiptera, Speccafrons* and *Tricimba* may be new species, but more material is required before this can be confirmed.

The Chloropidae is a family where many species often have large populations that usually occupy specific habitat niches. The biological diversity of the family and often the narrow functional roles in ecosystems of many species render them important biomarkers. For these reasons, if not for their pure scientific interest, they merit study and listing in ecological and faunistic works on most terrestrial habitats.

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