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# Records of Stratiomyidae, Pipunculidae and Conopidae (Diptera) from northern Spain

## Citas de Stratiomyidae, Pipunculidae y Conopidae (Diptera) del norte de España

**GAKO-HITZAK:** Stratiomyidae, Pipunculidae, Conopidae, lehen aipamen, Penintsula Iberiar.

**PALABRAS CLAVE:** Stratiomyidae, Pipunculidae, Conopidae, primeras citas, Península Ibérica.

**KEY WORDS** Stratiomyidae, Pipunculidae, Conopidae, first records, Iberian Peninsula.

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### LABURPENA

Gipuzkoa eta Nafarroako Dipteraren hiru familiari buruzko aipamenak egin dira. 52 ale horiek Stratiomyidaeren 4 espeziekoak. Pipunculidaeren 13 espeziekoak eta Conopidaeren 6 espeziekoak dira. Fauna iberikoari buruzko aipamen berriak izartoz (\*) adierazita daude.

### RESUMEN

Se presentan citas de tres familias de Diptera de las provincias de Gipuzkoa y Navarra. Los 52 individuos pertenecen a 4 especies de Stratiomyidae, 13 especies de Pipunculidae y 6 especies de Conopidae. Las nuevas citas para la fauna Ibérica están marcadas con un asterisco (\*).

### SUMMARY

Records of three families of Diptera are presented for the provinces of Gipuzkoa and Navarra. The 52 specimens belong to 4 species of Stratiomyidae, 13 species of Pipunculidae and 6 species of Conopidae. New species for the Iberian Peninsula are marked by an asterisk (\*).

### INTRODUCTION

A survey of a small number of stratiomyid, pipunculid and conopid flies collected in northern Spain are presented in this paper. Literature information on biology, flight period and distribution of each species are given where available. New species for the Iberian Peninsula are marked by an asterisk (\*). Unless otherwise stated, the specimens were netted by the author and are part of his collection. Collection sites are listed at the end of this paper.

### STRATIOMYIDAE

Soldier flies are small to medium sized with some species having colourful markings or metallic reflexions. Their larvae live in various habitats, ranging

from terrestrial to aquatic. CARLES-TOLRÁ (1999) states that more than 60 species are known to occur in the Iberian Peninsula. Here, two new species are presented for Spain. Information cited in the species discussions is from ROZKOSNY (1982 & 1983), who published a revision of the European Stratiomyidae, including distribution maps for each species.

#### Subfamily Sarginae

##### *Chloromyia formosa* (Scopoli, 1763)

##### Material

Gipuzkoa: **Irura:** 3♂♂, 16.VI.1999; **Monte Ulia:** 1♀, 12.VI.2000; 1♂, 17.VI.2000; **Tximistarri:** 1♂ 1♀, 9.VI.1999; 1♀, 3.VII.1999; 1♀, 8.VI.2000; Id, 17.VI.2000.

A Palaearctic species that occurs from central Scandinavia to North Africa to eastern Siberia. Recently introduced into North America. The flight period extends mainly from April to August. The lar-

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vae have been found under stones, in garden soil and in dung.

***Microchrysa cyaneiventris*** (Zetterstedt, 1842)\*

Material

Navarra: **Finca de Artikutza I**: 2♂♂, 15.VII.-11.VIII.1996 (Malaise), heterogeneous beech forest, Martínez de Murguía leg.

The species has been recorded from the French part of the Pyrenees as indicated in ROZKOSNY (1982). Its distribution is limited to the area central Scandinavia to Bulgaria to Moscow. It occurs from the beginning of June to end of July. To date, the larvae have only been found in soil beneath moss on a tree trunk but should be expected to occur in more Substrates.

***Microchrysa polita*** (Linnaeus, 1758)

Material

Navarra: **Finca de Artikutza II**: 1♀, 1.-29.VIII.1994 (Malaise), oak forest, Martínez de Murguía leg.

The species is widely distributed throughout Europe and Palaearctic Asia. It has also been introduced into North America. *Microchrysa polita* flies from beginning of May to middle of October. The larvae live in various Substrates like dung, decaying organic matter or soil beneath moss.

**Subfamily Stratiomyinae**

***Stratiomys potamida*** (Meigen, 1822)\*

Material

Gipuzkoa: **Parque de Aiete**: 1♀, 6.VIII.2000.

A European species with a limited range in Fennoscandia and in southern areas. In France, its distribution along the Atlantic coast reaches as far south as the region around Bordeaux. Adults have been recorded from beginning of May to the last third of August. The larvae live in the littoral zone of standing water, for example.

**PIPUNCULIDAE**

Big-headed flies are small, inconspicuous flies, their compound eyes occupying almost the entire globular head. They are important endoparasites of Auchenorrhyncha during their larval stage, therefore playing a significant role in the biological regulation of their host populations. So far, some 50 species have been recorded from the Iberian Peninsula (DE MEYER, 1997; KEHLMAIER & MARTINEZ DE MUR-

GUÍA, 1998; CARLES-TOLRÁ, pers. comm.). Here, eleven new species are recorded for Spain. For a detailed geographical distribution of each species see DE MEYER (1996). If not otherwise stated, information about host species are taken from WALOFF & JERVIS (1987).

**Subfamily Chalarinae**

***Chalarus ?fimbriatus*** (Coe, 1966)\*

Material

Gipuzkoa: **Tximistarri**: 1♂, 24.IV.2000, hovering along a hedge.

The European species of this genus have recently been revised by JERVIS (1992). However there are still many questions unanswered, especially with respect to the males of the *basalis-group* to which *fimbriatus* belongs. Following his key, which comprises three of the four known males of this group, the here presented specimen keys out to *Ch. fimbriatus*, but differs in some respects from the given description, i.e. side bristles on tergite 1 yellow. Consulting the papers by VON DER DUNK (1997a) and SACK (1935), there is the possibility that it actually might be *Ch. basalis*, the species not included in JERVIS (1992). Unfortunately, neither VON DER DUNK (1997a) nor SACK (1935) present a thorough description of male *Ch. basalis* Loew, 1873. Therefore the specimen presented here is treated as *Ch. ?fimbriatus*.

The species has a Palaearctic distribution and has been recorded from end of April to mid September. JERVIS (1992) documented two species of typhlocybinae (Cicadellidae: Typhlocybinae) hosts for *Ch. fimbriatus*.

***Jassidophaga ?beatricis*** (Coe, 1966)\*

Material

Gipuzkoa: **Monte Ulia**: 1♀, 26.VI.2000, *Rubus* shrubs; **Tximistarri**: 1♀, 8.VI.2000, hovering along a hedge.

The two specimens seem to belong to this uncommon but widely distributed Palaearctic species, which flies from end of May to beginning of August (COE, 1966; DE MEYER & DE BRUYN, 1989). However, DEMPEWOLF (pers. comm.) points out a small difference in the shape of the basal part of the ovipositor compared to German specimens. No male specimens could be caught to corroborate this determination so the flies are treated as *J. ?beatricis*. The only known host for this species is *Oncopsis alni* (Schrank, 1801) (Cicadellidae: Macropsinae).

### Subfamily Pipunculinae

#### *Cephalops obtusinervis* (Zetterstedt, 1844)\*

##### Material

Gipuzkoa: **Monte Ulia**: 1 ♀, 11.-18.V.2000 (yellow colour dish), trap situated in herbal vegetation next to a road).

A Palaearctic species widely distributed throughout Europe, however not recorded from France yet. It is also known to occur in Japan. In Belgium *C. obtusinervis* is considered unimodal with records stretching from early May to the end of June and one straggler from the beginning of September (DE MEYER & DE BRUYN, 1989). This species is known to parasitise *Speudotettix subfuscus* (Fallén, 1806) (Cicadellidae: Deltocephalinae) and an unidentified species of *Stiroma* (Delphacidae).

#### *Cephalops subultimus* Collin, 1956\*

##### Material

Gipuzkoa: **Monte Ulia**: 1 ♂, 17.IX.2000, along *Rubus* bushes; **Tximistarri**: 1 ♂ 1 ♀ (in copula), 1 ♂, 1 ♀, all 9.IX.2000, on a meadow between fern and high grass.

Known to occur in many European countries, this bivoltine species flies from June to October (DE MEYER & DE BRUYN, 1989) and prefers open habitats (VON DER DUNK, 1997a). The two known hosts belong to the Delphacidae.

#### *Cephalops ultimus* (Becker, 1900)\*

##### Material

Gipuzkoa: **Hernani**: 1 ♂, 10.VII.1999, hovering nearby *Rubus* bushes on a pasture; **Tximistarri**: 1 ♂, 18.VII.2000; 1 ♂, 9.IX.2000, hovering along a hedge.

The flight period of this widely distributed European species stretches from the end of May until the beginning of November, with two generations per year (DE MEYER & DE BRUYN, 1989). The five known hosts for this species all belong to the Delphacidae.

#### *Cephalosphaera furcata* (Egger, 1860)

##### Material

Gipuzkoa: **Miramon**: 1 ♀, 29.VIII.2000, hovering along a path between herbs in a heterogeneous forest.

A Palaearctic species which also has been recorded from Japan. VON DER DUNK (1997a) lists its flight period as May to July. The specimen presen-

ted here could therefore provide evidence for a possible bivoltinism of this species in northern Spain. The only host known belongs to the Cixiidae.

#### *Cephalosphaera germanica* Aczél, 1940\*

##### Material

Gipuzkoa: **Monte Ulia**: 1 ♀, 29.IV.2000, hovering between foliage of *Crataegus* and *Acer* spec.

According to COE (1966), this univoltine species flies from May to July. DE MEYER (1996) compiles western, central and northern European countries for its distribution; however, it hasn't been recorded from France yet. Its hosts are unknown.

#### *Dorylomorpha confusa* (Verrall, 1901)\*

##### Material

Gipuzkoa: **Monte Ulia**: 2 ♂♂, 19.V.2000, hovering among *Rubus* spec. bushes.

Following ALBRECHT (1990) this Palaearctic, univoltine species flies in Central Europe from the beginning of May to late July and seems to occur predominantly in the temperate to southern boreal zone (see his distribution map 37). In former Czechoslovakia *D. confusa* occurs mainly in humid and dry woods and wood edges (LAUTERER, 1981 in ALBRECHT, 1990: 192). Hosts unknown but other *Dorylomorpha* are known to parasitise Deltocephalinae (Cicadellidae).

#### *Dorylomorpha imparata* (Collin, 1937)\*

##### Material

Gipuzkoa: **Tximistarri**: 1 ♂, 24.IV.2000, hovering among *Rubus* bushes.

The distribution of *D. imparata* is limited to the temperate to middle boreal zone and montane regions of the Palaearctic (see map 35 in ALBRECHT, 1990). In Central Europe, it flies from the beginning of April to mid June and is therefore considered univoltine (ALBRECHT, 1990). For host range see *D. confusa*.

#### *Eudorylas fascipes* (Zetterstedt, 1844)\*

##### Material

Gipuzkoa: **Tximistarri**: 1 ♂, 9.IX.2000, hovering between grass and fern.

This Palaearctic species is known to occur from Ireland to Japan and North Korea, but has not been recorded from France. BANKOWSKA (1997) obtained this species in north-eastern Poland from various habitats from May to September. Currently five hosts are known, all belonging to the Deltocephalinae (Cicadellidae).

***Eudorylas subfascipes*** Collin, 1956\*

## Material

Gipuzkoa: **Tximistarri**: 1♂, 24.IV.2000, hedge mainly made up out of *Rubus*, *Salix*, *Hedera helix* L.

*E. subfascipes* seems to be bivoltine and can especially be found in forests from April to June and in August (VON DER DUNK, 1997a). The species has been recorded from Great Britain to as far east as Japan, but has not been recorded from France. WALLOF & JERVIS (1987) list four host species all belonging to the Deltocephalinae (Cicadellidae).

***Eudorylas subterminalis*** Collin, 1956\*

## Material

Gipuzkoa: **Tximistarri**: 1♀, 28.X.2000, hovering along a shady forest path amongst herbs and *Rubus*.

A Palaearctic species known from many European countries, incl. France and Italy, and also recorded from Mongolia. In Belgium, records range from mid May to mid June, mid July to beginning of August and mid September, indicating two or even three generations per year (DE MEYER & DE BRUYN, 1989). COE (1966) limits the flight period for Great Britain from May to August and October. *E. subterminalis* prefers open habitats but does occur on bushes occasionally (VON DER DUNK, 1997b). Ten species of Deltocephalinae (Cicadellidae) have been recorded as hosts so far.

***Pipunculus campestris*** Latreille, 1805

## Material

Gipuzkoa: **Hernani**: 1♀, 10.VII.1999, *Rubus* bushes; **Tximistarri**: 1♂, 24.IV.2000, hedge.

*Pipunculus campestris* is apparently bivoltine or even trivoltine in Belgium, with records ranging from the end of April to the beginning of November, signalling a bivoltism and occasionally trivoltism (DE MEYER & DE BRUYN, 1989). It is a widespread Palaearctic and Nearctic species (DE MEYER, 1996). Eleven species of Deltocephalinae (Cicadellidae) have been recorded as hosts.

**CONOPIDAE**

Conopidae are small to medium size flies that are almost exclusively endoparasites of adult Aculeate Hymenoptera. From the Iberian Peninsula some 50 species have been recorded (CARLES-TOLRÁ, 1999). One new species is presented below for

Spain. Information on the flight period are from VON DER DUNK (1994) and distribution data are from CHVÁLA & SMITH (1988).

**Subfamily Myopinae*****Myopa buccata*** (Linnaeus, 1758)

## Material

Navarra: **Finca de Artikutza I**: 1♀, 7.-20.IV.1997 (Malaise), beech forest, Martínez de Murguía leg.

This species flies between April and July and is widespread in the Palaearctic. Its hosts are unknown but other species of *Myopa* parasitise *Andrena* (Andrenidae) (SMITH, 1966).

***Myopa extricata*** Collin, 1960

## Material

Navarra: **Finca de Artikutza I**: Id 1♀, 24.III.-6.IV.1997 (Malaise), beech forest, Martínez de Murguía leg., ♀ Carles-Tolrá coll.

Despite the fact that *M. extricata* is widespread in the Palaearctic and also occurs in Tunisia, it has only been recorded from Spain from the Balearic Islands in the past as indicated in CHVÁLA & SMITH (1988) and CARLES-TOLRÁ (pers. comm.). The species flies from early April to July. For host range see *M. buccata*.

***Sicus ferrugineus*** (Linnaeus, 1761)

## Material

Gipuzkoa: **Monte Ulia**: Id, 26.V.2000; Id, 6.VI.2000; 2♂♂, 17.VI.2000; Tximistarri: 1♂, 13.V.2000.

This common Palaearctic conopid can be found from May to September. It is known to parasitise *Bombus agrorum* (F.), *B. hortorum* (L.), *B. lapidarius* (L.) and *B. terrestris* (L.) (SMITH, 1969).

***Thecophora atra*** (Fabricius, 1775)

## Material

Gipuzkoa: **Monte Igeldo**: 1♀, 11.V.1999; **Monte Ulia**: 1♂, 11.IX.1999 (Carles-Tolrá det.); 1♀, 2.V.2000; 1♀, 19.VII.2000; Id 1♀, 3.IX.2000, both on *Picris hieracioides* L.

Navarra: **Finca de Artikutza I**: 1♀, 27.V.-9.VI.1996 (Malaise), beech forest, Martínez de Murguía leg.

*Thecophora atra* is a widespread Palaearctic fly that occurs from May to October. Its hosts are unknown but it has been associated with the genus *Halictus* (Halictidae) (SMITH, 1966).

## COLLECTION SITES

### Province of Gipuzkoa

Locality	Altitude	U.T.M. coordinates
San Sebastián	60m	30TWN8496
Miramon (San Sebastián)	100m	30TWN8293
Parque de Aiete (San Sebastián)	80m	30TWN8195
Monte Ulia (San Sebastián)	100-150m	30TWN8598
Monte Igeldo (San Sebastián)	80m	30TWN8097
Tximistarri (San Sebastián)	20-80m	30TWN7896
Hernani	60m	30TWN8191
Irura	150m	30TWN7480

### Province of Navarra

Locality	Altitude	U.T.M. coordinates
Finca de Artikutza I	600m	30TWN9786
Finca de Artikutza II	450m	30TWN9785
Betelu (Valle de Araxes)	230m	30TWN8364

### *Thecophora pusilla* (Meigen, 1824)

Material

Gipuzkoa: **San Sebastián**: 1 ♀, 13.V.1999.

This species is widespread in the Palaearctic and has also been recorded from Tunisia and Madeira. The flight period ranges from May to October. For host range see *T. atra*.

### *Zodion notatum* (Meigen, 1804)\*

Material

Navarra: **Betelu**: 1 ♂, 12.VI.1999, caught on a Umbellifera.

This new species for the Iberian Peninsula can be found from May to September and has a distribution stretching from western Europe as far east as Mongolia. It is also known from Egypt. Hosts are still unknown, however the closely related *Z. cinereum* is known to parasitise species of *Halictus* (Halictidae) (SMITH, 1966).

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## REFERENCES

- ALBRECHT, A.  
1990 Revision, phylogeny and classification of the genus *Dorylomorpha* (Diptera, Pipunculidae). *Acta Zoologica Fennica*, 188: 1-240.
- BANKOWSKA, R  
1997 Pipunculidae (Diptera) of Puszcza Biaowieska. *Fragmenta faunistica*, 40 (14): 191-198.
- CARLES-TOLRÁ, M  
1999 Dipteros nuevos e interesantes para la Península Ibérica e Islas Baleares (Diptera: Xylomyidae, Stratiomyidae, Acroceridae, Scenopinidae, Lonchopteriidae, Opetiidae, Platypezidae, Conopidae). *Boln. Asoc. Esp. Ent.*, 23 (1-2): 195-212.
- CHVÁLA, M. & SMITH, K.G.V.  
1988 Family Conopidae. In: Soós, A. & Papp, L. (Eds): *Catalogue of Palaearctic Diptera. Volume 8. Syrphidae-Conopidae*. Akadémiai Kiadó, Budapest: 245-272.
- COE, R.L.  
1966 Family Pipunculidae. In: *Handbooks for Identification of British Insects, Volume X (Part 2c)*, 1-83.
- DE MEYER, M.  
1996 World catalogue of Pipunculidae (Diptera). *Documents de travail de l'Institut royal des Sciences naturelles de Belgique*, 86: 1-127.

- 1997 Contribution to the Pipunculidae fauna of Spain (Diptera). *Beiträge zur Entomologie*, 47 (2): 421-450.
- DE MEYER, M. & DE BRUYN, L.
- 1989 Seasonal Occurrence and Voltinism of Pipunculidae (Diptera) in Belgium. *Bulletin de l'Institut royal des Sciences naturelles de Belgique, Entomologie*, 58: 71-81.
- 1991 Comparison of Seasonal Activity and Voltinism of Pipunculidae (Diptera) in Different Zoogeographical Regions of Europe. *Proceedings of the Fourth European Congress of Entomology and the XIII. Internationale Symposium für die Entomofaunistik Mitteleuropas, Gödöllő*: 544-548.
- DE MEYER, M.; MERZ, B. & BÄCHLI, G.
- 1996 Additional notes on the Pipunculidae fauna (Diptera) of Switzerland. *Studia dipterologica*, 3 (2): 209-214.
- JERVIS, M.A.
- 1992 A taxonomic revision of the pipunculid fly genus *Chalarus* Walker, with particular reference to the European fauna. *Zoological Journal of the Linnean Society*, 105: 243-352.
- KEHLMAIER, CH. & MARTÍNEZ DE MURGUÍA, L.
- 1998 Primera cita del genus *Nephrocerus* Zetterstedt, 1838 para la Península Ibérica (Diptera: Pipunculidae). *Munibe, Cienc. nat.*, 50: 111-112.
- LAUTERER, P.
- 1981 Contribution to the knowledge of the family Pipunculidae of Czechoslovakia (Diptera). *Acta Musei Moraviae*, 66: 123-150.
- ROZKOSNY, R.
- 1982 A biosystematic study of the European Stratiomyidae (Diptera). Volume 1: Introduction, Beridinae, Sarginae and Stratiomyinae. *Series entomologica*, 21: 1-401.
- 1983 A biosystematic study of the European Stratiomyidae (Diptera). Volume 2: Clitellariinae, Hermetiinae, Pachygasterinae and Bibliography. *Series entomologica*, 25: 1-431.
- SACK, P.
- 1935 Dorylidae (Pipunculidae). In: *Fliegen der palaearktischen Region*, 4 (4), no 32, 57 pp. (E. Lindner, Ed). Stuttgart.
- SMITH, K.G.V.
- 1966 The larva of *Thecophora occidentis*, with comments upon the biology of Conopidae (Diptera). *J. Zool. Lond.*, 149: 263-276.
- 1969 Family Conopidae. In: *Handbooks for Identification of British Insects, Volume X (Part 3a)*: 1-18.
- VON DER DUNK
- 1994 Bestimmungsschlüssel für Dickkopffliegen (Diptera: Conopidae). *galathea*, 10(4): 133-140.
- 1997a Key to Central European species of Pipunculidae (Diptera). *Studia dipterologica*, 4 (2): 289-335.
- 1997b Ecological studies on Pipunculidae (Diptera). *galathea*, 13 (2): 61-76
- WALOFF, N. & JERVIS, M.A.
- 1987 Communities of Parasitoids Associated with Leafhoppers and Planthoppers in Europe. *Advances in Ecological Research*, 17: 281-402.