

SOME CHALCIDOIDEA (HYMENOPTERA) FROM LLEIDA NEW TO THE SPANISH FAUNA

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Abstract: Some species of Hymenoptera Chalcidoidea collected in Lleida are listed. The 88 species included are all new records for the Spanish fauna, as are 15 genera.

Key words: Hymenoptera, Chalcidoidea, Lleida, Spain.

Algunos Chalcidoidea (Hymenoptera) de Lleida, con nuevos registros para la fauna ibérica

Resumen: Se enumeran algunas especies de Hymenoptera Chalcidoidea colectadas en Lleida. Las 88 especies incluidas constituyen todas nuevos registros para la fauna española, así como lo son 15 géneros de Chalcidoidea.

Palabras clave: Hymenoptera, Chalcidoidea, Lleida, España.

Introduction

A number of Chalcidoidea species were collected in Lleida, Spain, during a survey of the local fauna of the group carried out in 2006–2010. Among the species determined to date are a number that are new to the Spanish fauna. These species are listed in the present paper with comments on their biology and distribution.

This catalogue includes 47 Eulophidae, 13 Pteromalidae, 10 Torymidae, 6 Eurytomidae, 5 Encyrtidae, 2 Trichogrammatidae, 2 Perilampidae, 1 Aphelinidae, 1 Tetracampidae and 1 Eupelmidae, giving a total of 88 species and 15 genera new to the Spanish fauna. The 15 newly recorded genera of Chalcidoidea are *Gugolzia*, *Eulonchetron*, *Isocyrtus*, *Leptomeraporus*, *Pylonotus*, *Urolepis* (Pteromalidae), *Systole* (Eurytomidae), *Boucekiella*, *Eupoecilopoda* (Encyrtidae), *Entedonomphale*, *Allocerastichus*, *Astichus*, *Pronotalia* (Eulophidae), *Poropoea* and *Pterandrophysalis* (Trichogrammatidae).

A total of 902 different species of Chalcidoidea have been recognised to date from Lleida province, and many others no doubt await discovery. Among the recognised species, 408 (45%) were already known to be present in Spain and 88 (10%) had not previously been recorded for the Spanish fauna. The latter are listed below. The remaining 406 species (45%) comprise 8 (1%) that have been recently described or are to be described, and 398 (44%) which include both still unidentified species and probably undescribed species in about equal numbers.

Material and methods

The specimens have been collected by the author, mainly in Lleida province, but some, where stated, in neighbouring areas of Huesca province. The material is mostly deposited in the author's collection. Most species have been identified by the author, although some have been determined (*det.*) or verified (*vid.*) by those colleagues mentioned in the acknowledgements.

Most of the data were from selected plant material collected in the field. This method enables further biological

data to be obtained, and it often facilitates identification. Plant samples were stored indoors in polythene bags, controlled for condensation and fungal growth, and checked periodically for chalcid emergences. Some species were obtained by sweeping over vegetation or selected plants in field.

Data given for each species include a short description of distribution and biology, followed by collecting method, number of specimens, location and coordinates on the 10x10 km UTM grid (the prefix 31T is omitted, since it is common to all coordinates), and date of collection, which can be expressed as a single date for field collected specimens (*col.*), or emergence date (or range of dates) for specimens that emerged in the laboratory (*em.*).

Species account

TORYMIDAE

Idiomacromerus carayoni (Steffan, 1986)

Species previously known only from France, where it was collected from the flower heads of *Centaurea aspera* (Steffan, 1986).

Specimens: Emerged from *Centaurea aspera* heads: 1 ♀, 1 ♂, Torrebases, BF98, col. 13.6.2006, em. 23.6.2006; 1 ♀, 2 ♂♂, Alcoletge, CG01, col. 15.6.2007, em. 28.6.2007 (*det.* M.-J. Gijswijt).

Idiomacromerus perplexus (Gahan, 1914)

A species widely distributed in the Holarctic region. A parasitoid of *Bruchophagus* sp. (Eurytomidae) in Fabaceae seeds, mainly *B. roddi* Gussakovskiy on *Medicago sativa*, and *B. platypterus* (Walker) on *Trifolium*, but also *Eurytoma onobrychidis* Nikol'skaya on *Onobrychis* (Grissell, 1995). It may be common in *M. sativa* fields in Spain.

Specimens: Emerged from *Medicago sativa* fruits: 12 ♀♀, 16 ♂♂, Alcoletge, CG01, col. 23.6.2006, em. 25.6 / 25.9.2006; 8 ♀♀, 8 ♂♂, Estany d'Ivars, CG31, col. 17.7.2006, em. 18.7 / 13.8.2006.

Idiomacromerus terebrator (Masi, 1916)

Holarctic species, a parasitoid of *Bruchophagus platypterus* (Walker) (Eurytomidae) and *Apion* sp. (Coleoptera: Apionidae) in *Trifolium* seeds (Noyes, 2007).

Specimens: Emerged from *Trifolium repens* fruits: 5 ♀♀, 2 ♂♂, Lleida, La Mitjana, CG01, col. 24.7.2006, em. 27.7 / 2.8.2006.

Pseudotorymus sapphyrinus (Fonscolombe, 1832)

Palaearctic species, a parasitoid in galls of *Lasioptera eryngii* (Valot) (Diptera: Cecidomyiidae) on *Eryngium campestre* (Grissell, 1995). Reports of *P. sapphyrinus* as a parasitoid in *Diplolepis* sp. (Cynipidae) galls on *Rosa* sp. require confirmation.

Specimens: Emerged from *Lasioptera eryngii* galls on *Eryngium campestre*: 24 ♀♀, 30 ♂♂, Ager, CG15, col. 29.6.2007, em. 1.7 / 15.7.2007; 8 ♀♀, 9 ♂♂, Omells na Gaia, CF39, col. 6.7.2007, em. 12.7 / 18.7.2007; 2 ♀♀, 2 ♂♂, Omells na Gaia, CF49, col. 6.7.2007, em. 18.7.2007; 2 ♀♀, Alfes, CG00, col. 7.2.2008, em. 26.5.2008; 1 ♀, 3 ♂♂, Mont-rebei, CG16, col. 3.7.2008, em. 18.7.2008 (vid. R.R. Askew).

Torymus armatus Boheman, 1834

Palaearctic species, a parasitoid in nests of solitary wasps and bees, in stems of *Rubus* and other plants (Noyes, 2007).

Specimens: Sweeping *Ficus carica*: 1 ♂, Lleida, La Mitjana, CG01, col. 24.7.2006; sweeping *Foeniculum vulgare*: 1 ♂, Lleida, La Mitjana, CG01, col. 29.8.2006;

Torymus corni Mayr, 1874

European species, a parasitoid in galls of *Craneiobia corni* (Giraud) (Cecidomyiidae) on *Cornus sanguinea* (Graham & Gijswijt, 1998). Specimens from Lleida are relatively large, with body length up to 2.1mm, and females have a rather longer ovipositor, 2.05x as long as hind tibia and as long as gaster plus one-third mesosoma (Graham & Gijswijt (1998) give body length up to 1.8 mm and ovipositor sheath 1.6-1.9x as long as hind tibia). Specimens: Emerged from *Craneiobia corni* galls on *Cornus sanguinea*: 3 ♀♀, 12 ♂♂, Sant Llorenç de Montgai, CG23, col. 20.10.2007, em. 27.11 / 14.12.2007 (forced).

Torymus fagineus Graham, 1994

European species, parasitoid in galls of *Mikiola fagi* (Hartig) (Cecidomyiidae) on *Fagus sylvatica* (Graham & Gijswijt, 1998). Specimens: Sweeping plants in *Fagus* forest: 1 ♀, Pantà de Senet, CH11, col. 19.8.2008.

Torymus fuscicornis (Walker, 1833)

European species, a parasitoid of *Semudobia* Kieffer (Cecidomyiidae), in *Betula* fruits, probably occurring throughout the range of *Betula* distribution. (Graham & Gijswijt, 1998).

Specimens: Emerged from *Betula pendula* fruits: 10 ♀♀, 13 ♂♂, Les, CH14, col. 19.8.2008, em. 12.4 / 10.5.2009.

Torymus gracilior Graham, 1994

A species reported from France, Italy, Sweden and the eastern Palaearctic. It was previously included in the *cyaneus* group of *Torymus* (Graham & Gijswijt, 1998), but is now included in the *varians* group (Zavada, 2003), which comprises species that develop in Rosaceae seeds as phytophages or as parasitoids of *Megastigmus* Dalman (Torymidae).

Specimens: Emerged from *Amelanchier ovalis* fruits: 2 ♀♀, Mont-rebei, CG16, col. 3.7.2008, em. 2009.

Torymus nitidulus (Walker, 1833)

Holarctic species, a parasitoid of *Semudobia* (Cecidomyiidae), in *Betula* fruits, widespread over the *Betula* distribution area. (Graham & Gijswijt, 1998).

Specimens: Emerged from *Betula pendula* fruits: 1 ♂, Les, CH14, col. 19.8.2008, em. 15.4.2009.

EURYTOMIDAE

Bruchophagus gibbus (Boheman, 1836)

Holarctic species, widely distributed. A phytophage in *Trifolium pratense* and *Trifolium* sp. seeds (Zerova & Seryogina, 1994), and in other Fabaceae, but records from *Medicago sativa* probably refer to *B. roddi* Gussakovskiy.

Specimens: Emerged from *Trifolium repens* heads: 16 ♀♀, 8 ♂♂, Lleida, La Mitjana, CG01, col. 24.7.2006, em. 27.7 / 2.8.2006.

Bruchophagus platypterus Walker, 1832

Holarctic species, phytophagous in *Lotus corniculatus* and *Lotus* sp. seeds (Zerova & Seryogina, 1994).

Specimens: Sweeping grasses in a subalpine area: 2 ♀♀, Túnel de Viella, boca N., CH12, col. 18.8.2008.

Bruchophagus roddi Gussakovskiy, 1933

Subcosmopolitan species, distributed in the Holarctic, Neotropical, Oriental and Australian regions, phytophagous in seeds of *Medicago sativa*, *M. falcata* and *M. lupulina* (Zerova & Seryogina, 1994). It is probably common throughout Spain in *M. sativa* fields.

Specimens: Emerged from *Medicago sativa* fruits: 23 ♀♀, 24 ♂♂, Alcoletge, CG01, col. 23.6.2006, em. 25.6.2006 / 8.2006; 18 ♀♀, 36 ♂♂, Lleida, La Mitjana, CG01, col. 24.7.2006, em. 27.7.2006 / 8.2006; 50 ♀♀, 50 ♂♂, Alcoletge, CG01, col. 1.2.2007, em. 11.3 / 22.4.2007.

Eurytoma gyorfii Erdős, 1957

European species which attacks Coleoptera Anobiidae in dead wood. It is at present included in the *erythroaspis* group of *Eurytoma* but may later be transferred elsewhere (Lotfalizadeh *et al.*, 2007).

Specimens: Sweeping *Foeniculum vulgare*: 1 ♀, Lleida, La Mitjana, CG01, col. 8.9.2006.

Systole albipennis Walker, 1832

A species with a Holarctic and Oriental distribution. Phytophagous in seeds of several Apiaceae: *Carum*, *Ferula*, *Bupleurum*, *Torilis*, *Pastinaca*, *Petroselinum*, *Conium*, *Daucus*, *Foeniculum*, etc. (Zerova & Seryogina, 1994).

Specimens: Emerged from *Foeniculum vulgare* seeds: 4 ♀♀, 7 ♂♂, Montoliu, CG00, col. 28.9.2007, em. 2008; 13 ♀♀, 5 ♂♂, Els Torms, CF08, col. 15.10.2007, em. 2008; 2 ♂♂, Sarroca, BF99, col. 6.2.2008, em. 2008.

Systole bipunctata Erdős, 1952

European species, phytophagous in seeds of *Eryngium campestre* (Zerova & Seryogina, 1994).

Specimens: Emerged from *Eryngium campestre* seeds: 29 ♀♀, Utxesa, BF99, col. 17.2.2006, em. 29.5 / 11.6.2006.

EUPELMIDAE

Eupelmus australiensis (Girault, 1913)

Subcosmopolitan species, parasitoid in galls of *Stenodiplosis sorghicola* (Coquillett) (Cecidomyiidae) on the widespread weed *Sorghum halepense* (Noyes, 2007).

Specimens: Sweeping *Sorghum halepense*: 3 ♀♀, Torres de Segre, BF99, col. 14.7.2010; 1 ♀, Torres de Segre, BF99, col. 11.10.2010 (det. L.Fusu).

PERILAMPIDAE

Perilampus chrysonotus Förster, 1859

Palaearctic species, a secondary parasitoid of Lepidoptera via Ichneumonoidea (Noyes, 2007).

Specimens: Emerged from *Suaeda vera* stems, with undetermined Lepidoptera: 1 ♀, Torres de Segre, BG90, col. 30.10.2007, em. 15.11.2007; sweeping *Suaeda vera*: 1 ♀, 1 ♂, Torres de Segre, BG80, col. 26.9.2009; sweeping *Dorycnium pentaphyllum*: 1 ♀, Torres de Segre, BG80, col. 5.6.2007.

Perilampus neglectus Bouček, 1956

European species, known as a secondary parasitoid of Lepidoptera via Ichneumonoidea (Noyes, 2007).

Specimens: Sweeping *Quercus faginea*: 1 ♀, Ager, CG15, col. 29.6.2007.

TETRACAMPIDAE

Foersterella erdoesi Bouček, 1958

European species, a parasitoid of *Cassida* Linnaeus (Coleoptera: Chrysomelidae) (Noyes, 2007).

Specimens: Sweeping *Juniperus phoenicea*: 1 ♂, Juncosa, CF17, col. 27.6.2009; 1 ♂, Fraga, Serreta Negra (Huesca), BF59, col. 26.6.2009 (vid. R.R. Askew).

PTEROMALIDAE

Subfamily Miscogastrinae

Erdoesia tessellata Bouček, 1957

European species, probably a parasitoid of *Cis* Latreille (Coleoptera: Ciidae), developing in Polyporaceae fungi, *Bjerkandera*, *Inonotus*, *Phylloporia*, *Polyporus*, *Stereum*, *Trametes* (Askew & Boness, 2008).

Specimens: Sweeping in *Quercus petraea* forest: 1 ♀, Les, CH14, col. 19.8.2008.

Subfamily Pireninae

Gastrancistrus clavatus (Thomson, 1876)

Palaearctic species of uncertain biology. Graham (1969) swept it from inflorescences of *Artemisia vulgaris*, which suggests that it may be a parasitoid in galls of *Rhopalomyia* Rubsaaen (Cecidomyiidae).

Specimens: Sweeping in *Fagus sylvatica* forest margins: 1 ♀, Pantà de Senet, CH11, col. 19.8.2008.

Gastrancistrus puncticollis (Thomson, 1876)

European species with unknown biology. Other species of *Gastrancistrus* Westwood are known as parasitoids in galls of Diptera Cecidomyiidae (Graham, 1969).

Specimens: Sweeping in *Fagus sylvatica* forest margins: 1 ♀, 1 ♂, Pantà de Senet, CH11, col. 19.8.2008.

Macroglenes herbaceus (Graham, 1969)

European species with unknown biology. Other species of *Macroglenes* Westwood are parasitoids of Diptera Cecidomyiidae (Mitroiu, 2010).

Specimens: Sweeping grasses in a subalpine area: 1 ♂, Túnel de Viella, boca N., CH12, col. 18.8.2008.

Subfamily Pteromalinae

Cyrtopyx lichtensteini (Masi, 1922)

Holarctic species, recorded as a parasitoid of Coleoptera Curculionidae and Lepidoptera Pyralidae (Noyes, 2007). In Lleida it has been obtained from *Centaurea aspera* heads containing Diptera Tephritidae and *Larinus* sp. (Curculionidae), but host relationships remain uncertain.

Specimens: Emerged from *Centaurea aspera* heads: 1 ♀, 2 ♂♂, Torrebases, BF98, col. 13.6.2006, em. 23.6.2006 (vid. R.R. Askew).

Gugolzia harmolitae Delucchi & Steffan, 1956

A species previously known only from France. It is a parasitoid of *Tetramesa romana* (Walker) (Eurytomidae) in *Arundo donax* stems (Noyes, 2007).

Specimens: Sweeping *Foeniculum vulgare*, near *Arundo* stands: 1 ♀, Alcoletge, CG01, col. 4.8.2006 (vid. R.R. Askew).

Eulonchetron torymoides Thomson, 1878

European species, parasitoid in galls of *Pontania* spp. (Hymenoptera: Tenthredinidae) on *Salix* spp. The specimens from Lleida have very long gasters, 4x as long as the mesosoma, similar to the proportions of a form developing in *P. viminalis* (Linnaeus) galls on *S. purpurea* (Askew, 1995).

Specimens: Emerged from *Pontania viminalis* galls on *Salix purpurea*: 2 ♀♀, Mont-rebei, CG16, col. 3.7.2008, em. 21.7 / 24.8.2008.

Isocyrtus laetus Walker, 1833

European species, a parasitoid of mining Diptera (Agromyzidae) (Noyes, 2007).

Specimens: Sweeping in a *Quercus faginea* forest: 1 ♀, Mont-rebei, CG06, col. 5.6.2008.

Leptomeraporus nicaeae (Walker, 1839)

Holarctic species, a parasitoid of *Tetramesa* Walker (Eurytomidae) in grass stems. Its occurrence in galls of Cynipidae Aylacini (Askew *et al.* 2006) is probably accidental.

Specimens: Emerged from *Stipa parviflora* stems, containing *Tetramesa* sp.: 2 ♀♀, 1 ♂, La Granja d'Escarp, BF88, col. 11.1.2007, em. 7.2.2007 (forced) (det. R.R. Askew).

Pachyneuron groenlandicum (Holmgren, 1872)

A widely distributed Holarctic and Oriental species, a parasitoid of several Diptera Syrphidae (Noyes, 2007).

Specimens: Sweeping in a *Populus* forest: 1 ♀, Torres de Segre, BG90, col. 3.9.2008; sweeping *Ephedra distachya*: 1 ♀, 3 ♂♂, Montoliu, CG00, col. 21.5.2009.

Psilonotus achaeus Walker, 1848

Holarctic species, a parasitoid of *Semudobia* (Cecidomyiidae) in *Betula* fruits (Noyes, 2007).

Specimens: Emerged from *Betula pendula* fruits: 3 ♀♀, 1 ♂, Les, CH14, col. 19.8.2008, em. 1.9 / 15.9.2008.

Trichomalopsis microptera (Lindeman, 1887)

Holarctic species, recorded as a parasitoid of *Mayetiola* Kieffer (Cecidomyiidae) and *Oscinella* Becker (Diptera: Chloropidae), pests of cereals such as *Triticum* (Noyes, 2007). The female found in Lleida has the scapes shorter and paler than usual (R.R. Askew, pers. com.)

Specimens: Emerged from *Hordeum vulgare* stems containing *Oscinella* sp.: 1 ♀, 1 ♂, Alfes, CG00, col. 24.5.2007, em. 2.6 / 3.6.2007 (det. R.R. Askew).

Urolepis maritima (Walker, 1834)

Holarctic species, a solitary pupal ectoparasitoid of Diptera, especially halophilous Ephydriidae, hence mainly found along coasts (Gibson, 2000). Also recorded from the Canary Islands (Báez & Askew, 1999).

Specimens: Sweeping *Suaeda vera*: 1 ♀, 1 ♂, Utxesa, BF99, col. 21.9.2009.

EULOPHIDAE

Subfamily Eulophinae

Sympiesis dolichogaster Ashmead, 1888

Holarctic species, now nearly subcosmopolitan. A parasitoid of leaf-mining Lepidoptera, mainly Gracillariidae, with preference for those feeding inside leaf-rolls in the later part of their development, on deciduous trees (*Quercus*, *Populus* and many others) (Bouček & Askew, 1968). Also recorded from the Canary Islands (Báez & Askew, 1999).

Specimens: Emerged from *Betula pendula* leaves: 1 ♂, Les, CH14, col. 19.8.2008, em. 25.8.2008.

Cirrospilus suaedaegallarum Viggiani, 1971

Species known only from Italy (Sicily), as a parasitoid in galls of *Aceria caulobia* (Nalepa) (Acarina: Eriophyidae), on *Suaeda fruticosa* (= *S. vera*) stems (Viggiani, 1971).

Specimens: Emerged from *Aceria caulobia* galls on *Suaeda vera* stems: 3 ♀♀, 3 ♂♂, Utxesa, BF99, col. 12.3.2008, em. 14.5 / 1.6.2008; 6 ♀♀, Utxesa, BF99, col. 29.4.2009, em. 9.5 / 5.6.2008; emerged from *Suaeda vera* stems, probably containing galls: 6 ♀♀, 1 ♂, Torres de Segre, BG90, col. 30.10.2007, em. 2008 (vid. R.R. Askew).

Elachertus artaeus (Walker, 1839)

European species, a parasitoid of Lepidoptera Tortricidae, Gracillariidae and Gelechiidae (Bouček & Askew, 1968). Previously considered a synonym of *E. lateralis* (Spinola, 1808), it was recently reinstated as a valid species (Baur, 2005).

Specimens: Emerged from *Potentilla caulescens* infrutescences: 1 ♀, Terradets, CG25, col. 23.3.2010, em. 29.3.2010.

Elachertus fenestratus Nees, 1834

Holarctic species, a parasitoid of Lepidoptera Tortricidae, Gelechiidae and Coleophoridae (Bouček & Askew, 1968).

Specimens: Sweeping plants: 1 ♀, Vall de Boí, CH10, col. 19.8.2008.

Subfamily Entedoninae

Ceranisis pacuvius (Walker, 1838)

European species, a parasitoid of Thripidae (Thysanoptera) nymphs (Triapitsyn, 2005).

Specimens: Sweeping *Dorycnium pentaphyllum*: 1 ♂, Aspa, CF09, col. 3.6.2006.

Closterocerus (Asecodes) erxias (Walker, 1848)

Holarctic species, a primary or secondary parasitoid of eggs and small larvae (Coleoptera Chrysomelidae, Diptera Agromyzidae, Hymenoptera Tenthredinidae, leaf-mining Lepidoptera, etc.) (Bouček & Askew, 1968).

Specimens: Sweeping *Populus* forest margins: 1 ♀, Torres de Segre, BG90, col. 3.9.2008.

Entedon leucocnemis Erdős, 1944

European species, a parasitoid of Coleoptera Curculionidae associated with *Scrophularia* and *Olea* (Noyes, 2007).

Specimens: Sweeping *Retama sphaerocarpa*: 1 ♀, Aitona, BF89, col. 17.6.2009.

Entedon palliocrus Erdős, 1944

Palaearctic species, a parasitoid of Apionidae on Fabaceae seeds (Bouček & Askew, 1968).

Specimens: Sweeping *Dorycnium pentaphyllum*: 6 ♀♀, 1 ♂, Torres de Segre, BG80, col. 5.6.2007; Sweeping *Quercus faginea*: 1 ♀, Mont-rebei, CG06, col. 5.6.2008 (vid. R.R. Askew).

Entedonomphale carbonaria (Erdős, 1954)

European species with unknown biology but probably, like related species, a larval parasitoid of Thysanoptera Phlaeothripidae (Triapitsyn, 2005).

Specimens: Emerged from *Dactylis glomerata* stems: 4 ♀♀, 2 ♂♂, Montoliu, CG00, col. 9.6.2007, em. 24.6.2007; emerged from *Dorycnium pentaphyllum* fruits: 1 ♀, Lleida, La Mitjana, CG01, col. 22.6.2007, em. 24.6.2007.

Omphale salicis Haliday, 1833

Palaearctic species, parasitoid in galls of *Contarinia lentis* Aczel and *C. vincetoxici* Kieffer (Cecidomyiidae) (Noyes, 2007).

Specimens: Sweeping grasses in a subalpine area: 1 ♀, 1 ♂, Túnel de Viella, boca N., CH12, col. 18.8.2008.

Pediobius cassidae Erdős, 1958

Palaearctic species, a secondary parasitoid of Coleoptera Chrysomelidae and Lepidoptera via Hymenoptera Ichneumonidea (Bouček & Askew, 1968).

Specimens: Sweeping in *Populus* forest margins: 1 ♂, Torres de Segre, BG90, col. 12.9.2009.

Subfamily Euderinae

Allocerastichus doderi Masi, 1924

European species, a parasitoid of *Cis* (Ciidae) developing in the Polyporaceae fungi *Chondrostereum*, *Corioloopsis*, *Polyporus*, *Pycnoporus* and *Trametes* (Askew & Boness, 2008).

Specimens: Emerged from *Trametes* sp. on *Populus alba*: 2 ♀♀, 1 ♂, Lleida, La Mitjana, CG01, col. 8.8.2005, em. 2006; found in wood and fungi remains: 1 ♀, Lleida, La Mitjana, CG01, col. 8.8.2005.

Astichus arithmeticus (Förster, 1851)

Holarctic species, a common parasitoid of *Cis*, *Ennearthron* Mellie, *Octotemnus* Mellie, *Sulcacis* Dury (Ciidae) developing in the Polyporaceae fungi *Bjerkandera*, *Corioloopsis*, *Daedalea*, *Daedaleopsis*, *Fomes*, *Ganoderma*, *Inonotus*, *Lenzites*, *Phellinus*, *Piptoporus*, *Polyporus*, *Skeletocutis* and *Trametes* (Askew & Boness, 2008).

Specimens: Emerged from *Trametes* sp. on *Populus alba*: 2 ♀♀, Lleida, La Mitjana, CG01, col. 8.8.2005, em. 2006.

Astichus longevittatus Masi, 1925

European species, a parasitoid of *Cis* and *Rhopalodontus* Mellie (Ciidae) developing in the Polyporaceae fungi *Chondrostereum*, *Daedalea*, *Phellinus*, *Polyporus* and *Trametes* (Askew & Boness, 2008).

Specimens: Emerged from *Trametes* sp. on *Populus alba*: 1 ♀, Lleida, La Mitjana, CG01, col. 8.8.2005, em. 2006.

Subfamily Tetrastichinae

Aprostocetus agrus (Walker, 1839)

European species, its biology hitherto little known, collected near Apiaceae flowers (Graham, 1987). It was reared in Lleida from *Foeniculum vulgare* seeds containing phytophagous *Systole albipennis* Walker (Eurytomidae). Specimens are similar to form *conii* (Erdős), which is extensively yellow with gaster 2.6 times as long as wide.

Specimens: Emerged from *Foeniculum vulgare* seeds: 2 ♀♀, Sarroca, BF99, col. 6.2.2008, em. 19.5 / 20.6.2008; 1 ♀, Els Torms, CF08, col. 15.10.2007, em. 19.9.2008.

Aprostocetus brachycerus (Thomson, 1878)

European species of uncertain biology, obtained from *Daucus carota* seeds and frequently collected near Apiaceae flowers (Graham, 1987). It has been obtained in Lleida from *Bupleurum frutescens* seeds together with *Aprostocetus roesellae* (Nees).

Specimens: Emerged from *Bupleurum frutescens* seeds: 12 ♀♀, 3 ♂♂, Sant Llorenç de Montgai, CG23, col. 28.2.2007, em. 7.3 / 22.4.2007.

Aprostocetus capnopterus Graham, 1987

Species previously known from Greece and Portugal, with unknown biology (Graham, 1987). Body colour is variable in specimens from both countries. The examined specimen has an intermediate coloration, with head and mesosoma reddish, gaster black, coxae and femora coloured as mesosoma, tibiae dark brown to black, mid and hind tarsi white, except last segment black.

Specimens: Sweeping *Atriplex halimus*: 1 ♀, Utxesa, BF99, col. 7.8.2006.

Aprostocetus cecidomyiarum (Bouché, 1834)

European species, a parasitoid in galls of *Rhopalomyia artemisiae* (Bouché) and *R. tubifex* (Bouché) (Cecidomyiidae), on *Artemisia vulgaris* and *Artemisia* spp. (Graham, 1987). In Lleida it has been obtained from *Artemisia herba-alba*, probably containing hidden galls of *Rhopalomyia* sp.

Specimens: Emerged from *Artemisia herba-alba* infrutescences: 5 ♀♀, 4 ♂♂, Torres de Segre, BF99, col. 3.1.2007, em. 21.1 / 23.1.2007 (forced); 4 ♀♀, Algerri, CG03, col. 19.1.2007, em. 2.2.2007 (forced).

Aprostocetus cracens Graham, 1987

Species distributed in Italy, Greece and Turkey, associated with *Coraeus rubi* (Linnaeus) (Coleoptera: Buprestidae) developing in *Rubus* (Noyes, 2007).

Specimens: Sweeping *Foeniculum vulgare*: 1 ♀, Torres de Segre, BG90, col. 2.9.2006.

Aprostocetus diplosidis Crawford, 1907

Subcosmopolitan species, parasitoid in galls of *Stenodiplosis sorghicola* (Coquillett) (Cecidomyiidae) on the widespread weed *Sorghum halepense* (Graham, 1987).

Specimens: Emerged from *Sorghum halepense* infrutescences: 222 ♀♀, 5 ♂♂, Torres de Segre, BF99, col. 11.10.2010, em. 19.10 / 30.11.2010; sweeping *Sorghum halepense*: 3 ♀♀, Torres de Segre, BF99, col. 9.10.2010.

Aprostocetus diversus (Förster, 1841)

Palaearctic species, parasitoid in galls of Diptera Cecidomyiidae on *Salix* (Noyes, 2007).

Specimens: Sweeping *Foeniculum vulgare*, near *Populus/Salix* forest: 2 ♀♀, Lleida, La Mitjana, CG01, col. 2.9.2006.

Aprostocetus lycidas (Walker, 1839)

European species, parasitoid in galls of *Hartigiola annulipes* (Hartig) and *Mikiola fagi* (Hartig) (Cecidomyiidae) on *Fagus sylvatica* (Graham, 1987).

Specimens: Sweeping *Fagus sylvatica*: 1 ♀, Túnel de Viella, boca S., CH12, col. 19.8.2008.

Aprostocetus micantulus (Thomson, 1878)

European species, parasitoid in galls of *Dasineura abietiperda* (Henschel) (Cecidomyiidae), and also swept from *Pinus* foliage (Graham, 1987).

Specimens: Sweeping *Pinus halepensis*: 1 ♀, Utxesa, BF99, col. 8.9.2007.

Aprostocetus pallipes (Dalman, 1820)

Holarctic species, parasitoid in galls of *Oligotrophus* Latreille (Cecidomyiidae), on *Betula* spp. (Graham, 1987).

Specimens: Emerged from *Betula pendula* fruits: 2 ♀♀, 3 ♂♂, Les, CH14, col. 19.8.2008, em. 1.9 / 15.9.2008.

Aprostocetus roesellae (Nees, 1834)

European species with uncertain biology, obtained from *Chaerophyllum temulum* seeds (Graham, 1987). It has been obtained in Lleida from *Bupleurum fruticosum* seeds together with *Aprostocetus brachycerus* (Thomson).

Specimens: Emerged from *Bupleurum fruticosum* seeds: 8 ♀♀, 2 ♂♂, Sant Llorenç de Montgai, CG23, col. 28.2.2007, em. before 19.6.2007.

Aprostocetus rumicis Graham, 1987

European species, a parasitoid of *Perapion curtirostre* (Germar) and *P. violaceum* (Kirby) (Coleoptera: Apionidae) in stems of *Rumex acetosa* (Graham, 1987).

Specimens: Sweeping grasses in a subalpine area: 1 ♀, Túnel de Viella, boca N., CH12, col. 18.8.2008.

Aprostocetus (Chrysotetrastichus) suevius (Walker, 1839)

European species, a parasitoid associated with eggs of *Plagioderma Chevrolat* and *Pyrrhalta Joannis* (Chrysomelidae) (Noyes, 2007).

Specimens: Sweeping in a *Quercus petraea* forest: 1 ♀, Bossost, CH14, col. 18.8.2008.

Aprostocetus (Ootetrastichus) crino (Walker, 1838)

Holarctic species, a parasitoid associated with eggs of *Oecanthus* sp. (Orthoptera: Gryllidae). Recorded also from Andorra (Graham, 1987).

Specimens: Sweeping plants: 1 ♀, 1 ♂, Bossost, CH14, col. 18.8.2008.

Aprostocetus (Ootetrastichus) ovivorax (Silvestri, 1920)

Palaearctic species, parasitoid in eggs of *Oecanthus pellucens* (Scopoli) (Gryllidae) (Graham, 1987).

Specimens: Sweeping *Retama sphaerocarpa*: 2 ♀♀, Aitona, BF89, col. 17.6.2009; Sweeping dry herbs: 1 ♂, Sarroca, BF99, col. 16.5.2009.

Baryscapus adalia (Walker, 1839)

European species with unknown biology.

Specimens: Sweeping near marsh vegetation: 1 ♀, Sarroca, BF99, col. 14.6.2008.

Baryscapus fossarum Graham, 1991

European species, a parasitoid of *Mompha fulvescens* (Haworth) (Lepidoptera: Momphidae) developing in *Epilobium hirsutum* (Graham, 1991).

Specimens: Emerged from *Epilobium hirsutum* infrutescences: 2 ♀♀, 2 ♂♂, Aitona, BF89, col. 27.12.2007, em. 22.5.2008.

Baryscapus impeditus (Nees, 1834)

European species, a parasitoid of pupae of *Chrysopa* Leach in Brewster (Neuroptera: Chrysopidae). Recorded also from Andorra (Graham, 1991).

Specimens: Sweeping *Pinus halepensis*: 2 ♀♀, 21 ♂♂, Utxesa, BF99, col. 23.8 / 8.9.2007; sweeping *Foeniculum vulgare*: 1 ♀, Torres de Segre, BG90, col. 2.9.2006; 2 ♀♀, Lleida, La Mitjana, CG01, col. 2.9.2006; sweeping *Retama sphaerocarpa*: 3 ♂♂, Montoliu, CG00, col. 23.5.2008; sweeping *Prunus dulcis*: 1 ♂, Montoliu, CG00, col. 23.5.2008.

Neotrichoporoides cavigena Graham, 1987

European species with unknown biology, sometimes swept from grasses in marshy places with *Phragmites* (Graham, 1987).

Specimens: Sweeping grasses in a subalpine area: 1 ♂, Túnel de Viella, boca N., CH12, col. 18.8.2008.

Neotrichoporoides gordensis Graham, 1987

European species with unknown biology, probably attacking some dipterous hosts in grass species (Graham, 1987).

Specimens: Sweeping grasses in subalpine area: 1 ♂, Túnel de Viella, boca N., CH12, col. 18.8.2008.

Oomyzus incertus (Ratzeburg, 1844)

Holarctic species, a parasitoid of *Hypera postica* (Gyllenhal) (Curculionidae) on *Medicago* and *Trifolium* (Graham, 1991).

Specimens: Sweeping grasses, including *Trifolium* sp., at the margin of a wet area: 11 ♀♀, 2 ♂♂, Alcoletge, CG01, col. 19.7.2007.

Oomyzus sempronius (Erdős, 1954)

Palaearctic species, a gregarious endoparasitoid of *Chrysopa* larvae (Chrysopidae), occasionally also on *Chilocorus bipustulatus* (Linnaeus) (Coleoptera: Coccinellidae) (Graham, 1991).

Specimens: Sweeping *Pinus halepensis*: 1 ♀, Utxesa, BF99, col. 23.8.2007; 1 ♀, Utxesa, BF99, col. 8.9.2007.

Oomyzus sokolowskii (Kurdjumov, 1912)

Subcosmopolitan species, a gregarious endoparasitoid of *Plutella xylostella* (Linnaeus) (Lepidoptera: Plutellidae) and its parasitoid *Cotesia vestalis* (Haliday) (Hymenoptera: Braconidae) (Graham, 1991).

Specimens: Emerged from *Plutella xylostella* pupae on *Brassica oleracea*: 36 ♀♀, 3 ♂♂, Torres de Segre, BF99, col. 28.6.2010, em. 13.7 / 23.7.2010; 12 ♀♀, 1 ♂, Torres de Segre, BF99, col. 14.7.2010, em. 23.7 / 25.7.2010.

Pronotalia carlinarum (Szelényi & Erdős, 1951)

European species, its host uncertain but associated with heads of *Carlina vulgaris* and *Centaurea scabiosa* (Asteraceae) (Graham, 1991).

Specimens: Emerged from *Centaurea scabiosa* heads: 22 ♀♀, 5 ♂♂, Omells na Gaia, CF39, col. 6.7.2007, em. 10.7 / 28.7.2007.

Pronotalia hungarica (Erdős, 1955)

European species with uncertain host, associated with heads of *Centaurea aspera* (Asteraceae) (Graham, 1991).

Specimens: Emerged from *Centaurea paniculata* heads: 2 ♀♀, 1 ♂, Ager, CG15, col. 29.6.2007, em. 29.10.2007.

Pronotalia inflata Graham, 1991

European species, known from Germany and Sweden, parasitoid in galls of *Lipara lucens* Meigen (Chloropidae) on *Phragmites australis* (Graham, 1991).

Specimens: Emerged from *Lipara lucens* galls on *Phragmites australis*: 6 ♀♀, Utxesa, BF99, col. 28.4.2009, em. 12.6.2009.

Quadrastichus anysis (Walker, 1838)

European species, a parasitoid of *Monarthropalpus flavus* (Schrank) (Cecidomyiidae) on *Buxus sempervirens* (Graham, 1991).

Specimens: Sweeping *Quercus petraea*: 1 ♀, Bossost, CH14, col. 18.8.2008; sweeping *Quercus* forest margins: 1 ♀, Les, CH14, col. 19.8.2008.

Quadrastichus artemisiphilus Graham, 1991

European species with unknown biology, associated with *Artemisia vulgaris* and *A. arborescens*, possibly attacking some Diptera Cecidomyiidae host in these plants (Graham, 1991).

Specimens: Emerged from *A. vulgaris* infrutescences: 2 ♀♀, Bossost, CH14, col. 18.8.2008, em. 26.8.2008.

Quadrastichus vacuna (Walker, 1839)

European species, a common and widespread parasitoid in galls of *Dasineura ulmaria* (Bremi) (Cecidomyiidae) on *Salix* sp. and possibly other hosts (Graham, 1991).

Specimens: Sweeping *Foeniculum vulgare*, in *Populus/Salix* forest: 1 ♀, 1 ♂, Lleida, La Mitjana, CG01, col. 28.8.2006; sweeping margins of *Populus/Salix* forest: 2 ♀♀, Lleida, La Mitjana, CG01, col. 19.9.2009; sweeping *Phragmites australis*: 4 ♀♀, Utxesa, BF99, col. 21.9.2009.

Tamarixia pubescens (Nees, 1834)

European species, a parasitoid of *Trioza remota* Förster (Hemiptera: Psyllidae) and usually swept from *Quercus* foliage, also from *Salix alba* foliage (Graham, 1991).

Specimens: Sweeping *Salix elaeagnos*: 1 ♀, Mont-rebei, CG06, col. 3.7.2008.

Tamarixia upis (Walker, 1839)

European species, a parasitoid of *Trioza urticae* (Linnaeus) (Psyllidae) on *Urtica* sp. (Graham, 1991).

Specimens: Sweeping *Populus* forest margins, including *Urtica dioica*: 1 ♀, Torres de Segre, BG90, col. 8.8.2008; 1 ♀, Aitona, BF89, col. 13.8.2008; sweeping *Quercus* forest margins: 4 ♀♀, Les, CH14, col. 19.8.2008.

Tetrastichus atratulus (Nees, 1834)

Palaearctic species, recorded as a parasitoid of Diptera Agromyzidae and Stratiomyiidae (Noyes, 2007).

Specimens: Sweeping a *Populus* forest: 6 ♀♀, Torres de Segre, BG90, col. 3.9.2008; 4 ♀♀, 4 ♂♂, Torres de Segre, BG90, col. 3.10.2008.

Tetrastichus coeruleus (Nees, 1834)

Holarctic species, parasitoid on eggs of *Crioceris asparagi* (Linnaeus) (Chrysomelidae) on *Asparagus* (Graham, 1991).

Specimens: Sweeping *Brachypodium retusum*: 1 ♀, Aitona, BF89, col. 28.5.2009.

ENCYRTIDAE

Blastothrix longipennis Howard, 1881

Holarctic species, a parasitoid of *Parthenolecanium corni* (Bouché), *P. persicae* (Fabricius) and *P. rufulum* (Cockerell) (Coccidae) (Noyes, 2007).

Specimens: Sweeping plants: 3 ♀♀, Vall de Boi, CH10, col. 19.8.2008.

Boucekiella depressa Hoffer, 1954

Holarctic species, a primary and secondary parasitoid of Hemiptera Pseudococcidae mainly on *Phragmites australis*, but also *Cynodon dactylon* (Noyes, 2007).

Specimens: Emerged from *Phragmites australis* stems: 1 ♀, 5 ♂♂, Utxesa, BF99, col. 29.8.2007, em. 16.9.2007; emerged from *Phragmites australis* stems with *Lipara lucens* Meigen galls: 2 ♀♀, Utxesa, BF99, col. 12.3.2008, em. 19.5.2008; 3 ♀♀, 1 ♂, Candasnos (Huesca), BF59, col. 15.3.2010, em. 2010.

Eupoecilopoda perpunctata (Masi, 1942)

Palaearctic species, a parasitoid of *Chrysopa* (Chrysopidae) (Noyes, 2007).

Specimens: Sweeping *Pinus halepensis*: 1 ♀, Utxesa, BF99, col. 29.8.2007.

Habrolepis italicus Delucchi, 1965

Mediterranean species, a parasitoid of *Asterodiaspis ilicicola* (Targioni) and *A. variolosa* (Ratzeburg) (Asterolecaniidae) on *Quercus* spp. (Delucchi, 1965).

Specimens: Emerged from *Quercus coccifera* leaves with *Asterodiaspis* cf. *ilicicola*: 1 ♀, Aitona, BF89, col. 13.3.2010, em. 2010; emerged from *Quercus faginea* leaves: 2 ♀♀, Menarguens, CG12, col. 21.12.2007, em. 26.5.2008.

Psyllaephagus tamaricicola Myartseva, 1979

Species distributed in Central Asia and also recorded from Sweden, a parasitoid of Psyllidae associated with *Tamarix* (Myartseva, 1979) (Trjapitzin, 1981).

Specimens: Sweeping *Tamarix canariensis*: 2 ♀♀, Torres de Segre, BG80, col. 5.6.2007.

APHELINIDAE

Coccophagus obscurus Westwood, 1833

Holarctic species, a parasitoid of many Hemiptera Coccoidea, such as *Acanthococcus henryi* (Balachowsky), *Physokermes piceae* (Schrank), *Pulvinaria vitis* (Linnaeus) and *Lichtensia viburni* Signoret (Noyes, 2007). This species was placed in synonymy with *C. insidiator* (Dalman), which was misidentified by early authors. Graham (1976), after examining the types, reinstated this species as valid. Previous records of *C. insidiator* from Spain (García Mercet, 1930) actually refer to *C. obscurus*, while true *C. insidiator*, a species in subgenus *Polycoccophagus* Sugonjaev, is distributed in Sweden, Finland and Russia (Vikberg & Koponen, 2008) but is not present in Spain.

Specimens: Sweeping *Ulmus minor*: 1 ♀, Aspa, CF09, col. 3.6.2006; sweeping *Quercus faginea*: 1 ♂, Mont-rebei, CG06, col. 5.6.2008.

TRICHOGRAMMATIDAE

Poropoea stollwerckii Förster, 1851

European species, a parasitoid in eggs of *Attelabus nitens* (Scopoli) (Coleoptera: Attelabidae) inside leaf-rolls on *Quercus* leaves. The host eggs are reached by means of the specially adapted long ovipositor (Subba Rao, 1969).

Specimens: Emerged from leaf-rolls of *Attelabus* sp. on *Quercus faginea*: 2 ♀♀, Ciutadilla, CF49, col. 8.6.2008, em. 23.6.2008.

Pterandrophysalis levantina Nowicki, 1935

European species, parasitoid in eggs of Coleoptera Curculionidae, particularly associated with thistles in the genera *Centaurea* and *Cirsium*. *P. levantina* has been reared from *Bangasternus orientalis* (Capiomont) eggs, and other possible hosts in Europe are *Larinus planus* (Fabricius) and *Rhinocyllus conicus* (Froelich) (Polaszek et al., 2009).

Specimens: Sweeping near cereal fields: 1 ♂, Sarroca, BF99, col. 1.6.2008.

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