

Cependant, dans les mêmes conditions expérimentales, le cycle de *C. serratus* est plus long. En effet, à une température de 30°C, une humidité relative de 75% et en présence de graines d'arachide, le cycle de la bruche de l'arachide est estimé à $57,7 \pm 22,0$ jours (NDIAYE, 1991).

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New and interesting records of Diptera Acalyptrata from Spain. Part I: Acartophthalmidae, Opomyzidae, Anthomyzidae, Asteiidae, Carnidae, Tethinidae, Milichiidae and Cryptochetidae

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Summary

Faunistical data of eight acalyptrate families (40 species) from Spain are given. One family, four genera and 25 species are recorded for the first time from Spain. Three species are also new records to Europe.

Résumé

On présente les données faunistiques de huit familles de Diptères acalyptrates (40 espèces) d'Espagne. Une famille, quatre genres et 25 espèces sont signalés pour la première fois pour la faune d'Espagne. Trois espèces sont aussi nouvelles pour la faune d'Europe.

During the last decade the author has collected Diptera (mainly Acalyptrata) in Spain, chiefly in Catalonia (Northeast of Spain). Due to the great number of specimens collected it has been necessary to divide the obtained results in four separated papers. Here is presented the first one (see CARLES-TOLRÁ, in press).

In this first part the following families are treated: Acartophthalmidae, Opomyzidae, Anthomyzidae, Asteiidae, Carnidae, Tethinidae, Milichiidae and Cryptochetidae, represented by 1,386 specimens in 15 genera and 40 species. In all, 1 family (Anthomyzidae), 4 genera (*Anthomyza* FALLÉN, 1810, *Leiomyza* MACQUART, 1835, *Hemeromyia* COQUILLET, 1902 and *Neophyllomyza* MELANDER, 1913) and 25 species are recorded for the first time from Spain (of these species, 3 are moreover new to Europe: *Meoneura perlamellata* HENNIG, 1937, *Meoneura subfreta* PAPP, 1979 and *Desmometopa varipalpis* MALLOCH, 1927).

As far Spanish records are concerned, it is worth mentioning that in many species the findings are second records to the Spanish fauna. All the specimens were collected by the author, mainly by means of bait traps (carrion, excrements, fat, etc.) and by sweeping on vegetation.

Almost all the material has been classified by the author and is deposited in his private collection.

The number of males and females examined is separated by / ($\delta\delta/\text{♀♀}$).

Acartophthalmidae

Acartophthalmus bicolor OLDENBERG, 1910

Material examined: 1/1. Barcelona: Montserrat, 23-28.VI.1984 1/1.

Specimens: collected on carrion (chicken).

Distribution: Europe, USSR and Nearctic Region.

Spanish records: **New species to Spain.**

Acartophthalmus nigrinus (ZETTERSTEDT, 1848)

Material examined: 0/5. Gerona: Ogassa, 7-19.VII.1984 0/5.

Specimens: collected on carrion (chicken).

Distribution: Europe, USSR, Mongolia and Nearctic Region.

Spanish records: second record from Spain. First record from Gerona.

Opomyzidae

Geomyza balachowskyi MESNIL, 1934

Material examined: 1/0. León: León, 8.VI.1983 1/0.

Specimens: swept on grass.

Distribution: France, Great Britain, Czechoslovakia and Hungary.

Spanish records: **New species to Spain.**

Geomyza tripunctata FALLÉN, 1823

Material examined: 85/88. Barcelona: Barcelona, 21.XI.1982 2/0, 16.I.1983 3/3, 6.II.1983 3/4, 1.III.1983 1/2, 11.XI.1983 1/1, 24.XII.1983 0/4, 20.I.1984 0/2, 7.IV.1987 0/1; Begas, 30.IX.1982 0/1; Bigas, 25.IV.1987 0/1, 13.V.1987 0/1; Canoves, 5.I.1983 6/2; Cardedeu, 5.I.1983 2/1; Castelldefels, 10.XII.1983 13/20; Corbera, 26.XII.1983 5/5; La Batlloria, 3.VI.1984 1/2; Pantano de Foix, 12.V.1984 1/0; S. Celoni, 21.VIII.1982 1/4, 12.X.1983 0/2; S. Cugat del Vallés, 13.XI.1983 3/2; Sta. Fe, 7.VII.1980 0/1; Sta. M^a de Palautordera, 10.V.1989 0/1; Suria, 23.VI.1984 0/1; Vilassar de Dalt, 27.XII.1983 6/0. Gerona: Breda, 4.I.1983 2/2, 3.VI.1984 19/19; Maranges, 25.X.1981 1/0; S. Feliu de Buixalleu, 20.X.1989 5/1. Lérida: Lles (Salto de Agua), 10.VIII.1990 0/1; Olius, 23.VI.1984 2/0. León: Crta. León-Oviedo (3 km North of León), 8.VI.1983 0/1; Gradefes, 9.VI.1983 2/0; León, 8.VI.1983 0/1; Valdeteja, 10.VI.1983 3/0; Valporquero, 10.VI.1983 3/2.

Specimens: mainly swept on grass in the shade and also on low vegetation along a stream.

Distribution: Europe and USSR.

Spanish records: first record from León.

Opomyza florum (FABRICIUS, 1794)

Material examined: 7/7. Barcelona: Barcelona, 21.XI.1982 0/1; Castelldefels, 10.XII.1983 1/2; Suria, 23.VI.1984 1/0. Lérida: Olius, 23.VI.1984 2/0. León: Gradefes, 9.VI.1983 1/1; Valdeteja, 10.VI.1983 2/1; Valporquero, 10.VI.1983 0/2.

Specimens: swept on low vegetation along a stream.

Distribution: Europe and USSR.

Spanish records: **New species to Spain.**

Opomyza germinationis (LINNAEUS, 1758)

Material examined: 5/7. Barcelona: Sta. Fe, 7.VII.1980 2/0. Gerona: Breda, 3.VI.1984 1/0; S. Feliu de Buixalleu, 20.X.1989 0/1. León: Crta. León-Oviedo (3 km North of León) 8.VI.1983 0/1; Gradefes, 9.VI.1983 1/4; Valporquero, 10.VI.1983 1/0. Santander: Fontibre, 3.VIII.1988 0/1.

Specimens: mainly swept on grass in the shade.

Distribution: Europe and USSR.

Spanish records: first record from Barcelona, León and Santander.

Opomyza petrei MESNIL, 1934

Material examined: 9/9. Barcelona: Cardedeu, 5.I.1983 0/1; La Batlloria, 3.VI.1984 1/0; S. Celoni, 21.VIII.1982 0/1. Gerona: Breda, 3.VI.1984 8/5; S. Feliu de Buixalleu, 20.X.1989 0/2.

Specimens: mainly swept on low vegetation along a stream.

Distribution: Norway, France, Czechoslovakia and Hungary.

Spanish records: **New species to Spain.**

Opomyza punctella FALLÉN, 1820

Material examined: 1/0. Gerona: Masella, 24.X.1981 1/0.

Specimens: collected on cow dung.

Distribution: Central and North Europe, Bulgaria and USSR.

Spanish records: **New species to Spain.**

Anthomyzidae

Anthomyza albimana (MEIGEN, 1830)

Material examined: 1/3. Barcelona: Cabrils, 13.VII.1986 1/2; Vilassar de Dalt, 25.VIII-8.IX.1984 0/1.

Specimens: collected on fungi and decaying fat.

Distribution: Europe and USSR.

Spanish records: **New family, genus and species to Spain.**

***Anthomyza collini* ANDERSSON, 1976**

Material examined: 3/2. Barcelona: Suria, 23.VI.1984 1/0. Lérida: Olius, 23.VI.1984 2/2.

Specimens: swept on reedbed by stream.

Distribution: Czechoslovakia, Sweden and USSR.

Spanish records: **New family, genus and species to Spain.**

Asteiidae***Asteia (Asteia) amoena* MEIGEN, 1830**

Material examined: 3/8. Barcelona: Canoves, 5.I.1983 0/1; Corbera, 26.XII.1983 0/2; Suria 23.VI.1984 2/1. Gerona: Breda, 3.VI.1984 0/1. Lérida: Olius, 23.VI.1984 1/3.

Specimens: swept on low vegetation by stream.

Distribution: Europe, USSR and Tunisia.

Spanish records: first record from Gerona and Lérida.

***Leiomyza dudai* SABROSKY, 1956**

Material examined: 60/22. Barcelona: Cabriils, 31.X.1981 1/1, 11.VI.1984 19/8, 13.VII.1986 0/1, 9.VIII.1987 7/3, 18.VIII.1987 1/1, 11.VI.1988 1/1, 23.IX.1989 8/3. Gerona: S. Feliu de Buixalleu, 17.X.1985 23/4.

Specimens: mainly collected on fungi.

Distribution: Europe, USSR and Afghanistan.

Spanish records: **New genus and species to Spain.**

***Leiomyza laevigata* (MEIGEN, 1830)**

Material examined: 0/2. Gerona: Ogassa, 7-19.VII.1984 0/1; S. Feliu de Buixalleu, 17.X.1985 0/1.

Specimens: collected on fungi and on carrion (chicken).

Distribution: Europe, USSR and Nearctic Region.

Spanish records: **New genus and species to Spain.**

Carnidae***Hemeromyia anthracina* COLLIN, 1949**

Material examined: 27/30. Barcelona: Barcelona, 28.IV.1983 0/4, 3.V.1983 6/6, 17.III.1984 1/0, 22.III.1984 4/1, 16.IV.1984 2/6, 25.V.1984 0/2, 21.IV.1987 2/1, 24.IV.1987 5/0, 28.IV.1987 1/0, 9.V.1987 1/1, 10.V.1987 4/5, 1.XI.1987 0/2, 1.V.1988 1/1, 5.VII.1988 0/1.

Specimens: mainly collected on house windows, decaying vegetation and dog excrements.

Distribution: Hungary, Egypt, Libya and Canary Is..

Spanish records: **New genus and species to Spain.**

***Meoneura acuticerca* GREGOR, 1973**

Material examined: 1/1. Barcelona: Begas, 1.X.1982 1/1.

Specimens: collected on human excrements.

Distribution: recorded only from Czechoslovakia.

Spanish records: **New species to Spain.**

***Meoneura carpathica* PAPP, 1977**

Material examined: 7/0. Barcelona: Begas, 30.IX.1982 7/0.

Specimens: collected on a rubbish bag.

Distribution: Austria, Czechoslovakia, Hungary and Rumania.

Spanish records: **New species to Spain.**

***Meoneura exigua* COLLIN, 1930**

Material examined: 45/15. Barcelona: Barcelona, 3.V.1983 2/0, 25.V.1984 1/0; Cervelló, 2-6.VII.1984 36/0; Montserrat, 23-28.VI.1984 3/12. Gerona: Ogassa, 7-19.VII.1984 3/3.

Specimens: mainly collected on carrion (hedgehog, chicken) and also on dog excrements.

Distribution: France, Hungary and perhaps Czechoslovakia.

Spanish records: **New species to Spain.**

***Meoneura flavifacies* COLLIN, 1930**

Material examined: 1/0. Gerona: Ogassa, 7.VII.1984 1/0.

Specimens: swept in a meadow.

Distribution: Europe, USSR, Mongolia and Nearctic Region.

Spanish records: **New species to Spain.**

***Meoneura flavifrons* PAPP, 1981**

Material examined: 0/1. Gerona: Ogassa, 7.VII.1984 0/1.

The reliable identification of this only female exemplar has been possible thanks to the additional material, with males and females together, collected in another posterior sample.

Specimens: swept on meadow.

Distribution: recorded only from Austria.

Spanish records: **New species to Spain.**

***Meoneura freta* COLLIN, 1937**

Material examined: 70/1. Barcelona: Barcelona, 3.V.1983 1/0; Cervelló, 2-6.VII.1984 64/0; Suria, 23.VI.1984 5/1.

Specimens: mainly collected on carrion (hedgehog) and also on excrements (dog, cow).

Distribution: Czechoslovakia, Spain, Great Britain and Hungary.

Spanish records: second record from Spain. First record from Barcelona.

***Meoneura hungarica* PAPP, 1977**

Material examined: 6/1. Barcelona: Barcelona, 28.V.1984 1/1, 3.V.1983 3/0; Begas, 30.IX.1982 1/0. Gerona: Ogassa, 7.VII.1984 1/0.

Specimens: mainly collected on dog excrements and also on cow dung.
Distribution: Czechoslovakia, Hungary and Tunisia.
Spanish records: **New species to Spain.**

***Meoneura moravica* GREGOR & PAPP, 1981**

Material examined: 9/1. Barcelona: Cabrils, 7.VII.1986 5/0, 22.VII.1986 4/1.

Specimens: collected on dog excrements.
Distribution: recorded only from Czechoslovakia.
Spanish records: **New species to Spain.**

***Meoneura neottiophila* COLLIN, 1930**

Material examined: 19/1. Barcelona: Barcelona, 6.V.1981 2/0; Cabrils, 12.IV.1982 1/1, 5.VI.1982 4/0, 31.III.1983 4/0, 4.IV.1983 1/0, 24.IX.1989 5/0. Gerona: Ogassa, 7-19.VII.1984 2/0.

Specimens: collected on carrion (hedgehog, chicken), fungi, decaying fat and pigeon excrements.
Distribution: Europe and USSR.
Spanish records: **New species to Spain.**

***Meoneura perlamellata* HENNIG, 1937**

Material examined: 0/2. Barcelona: Corbera, 26.XII.1983 0/2. The reliable identification of these only two female exemplars has been possible thanks to the additional material, with males and females together, collected in another posterior sample.

Specimens: both specimens were collected on decaying fat.
Distribution: recorded only from Israel and Jerusalem.
Spanish records: **New species to Spain and Europe.**

***Meoneura prima* (BECKER, 1903)**

Material examined: 163/32. Barcelona: Barcelona, 12.V.1981 1/0, 27.II.1982 1/4, 16.I.1983 2/2, 8.III.1983 7/3, 20.I.1984 9/8, 22.III.1984 1/0, 25.V.1984 2/0, 5.II.1988 1/0; Cabrils, 5.VI.1982 113/0, 24.IX.1982 22/14, 4.IV.1983 1/0, 27.VIII.1983 1/0; Canoves, 5.I.1983 1/0. Gerona: Cadaqués, 24.VI.1982 1/1.

Specimens: mainly collected on pigeon excrements and also on fungi and carrion (pigeon).

Distribution: Europe, Jordan, Afghanistan, Tunisia, Egypt and Nearctic Region.

Spanish records: second record from Spain. First record from Barcelona and Gerona.

***Meoneura subfreta* PAPP, 1979**

Material examined: 4/0. Barcelona: Cabrils, 12.VIII.1987 3/0, 17.VIII.1987 1/0.

Specimens: collected drowned in a swimming-pool.
Distribution: recorded only from Afghanistan.
Spanish records: **New species to Spain and Europe.**

***Meoneura triangularis* COLLIN, 1930**

Material examined: 3/0. Barcelona: Cabrils, 7.VII.1986 3/0.
Specimens: collected on dog excrements.
Distribution: Europe, USSR, Mongolia and Nearctic Region.
Spanish records: **New species to Spain.**

***Meoneura* sp.**

Up to now the majority of females of *Meoneura* are unidentifiable because of the lack of good morphological characters.

Material examined: 0/107. Barcelona: Barcelona, 3.V.1983 0/1, 7.IV.1987 0/2, 25.V.1987 0/1; Begas, 30.IX.1982 0/1; Cabrils, 5.VI.1982 0/14, 29.VII.1986 0/1, 17.IV.1987 0/1; Cervelló, 2-6.VII.1984 0/84; Corbera, 24-30.VI.1984 0/2. Huesca: Angüés, 21.X.1989 0/1.

Tethinidae

***Tethina (Rhicnoessa) alboguttata* STROBL, 1900**

Material examined: 10/8. Barcelona: Castelldefels, 10.XII.1983 9/8; Vilanova i la Geltrú, 7.IV.1989 1/0.

Specimens: collected on sea shore sand.
Distribution: Spain, Algeria and Tunisia.
Spanish records: second record from Spain. First record from Barcelona.

***Tethina (Rhicnoessa) ochracea* (HENDEL, 1913)**

Material examined: 1/0. Barcelona: Vilanova i la Geltrú, 7.IV.1989 1/0.
Specimens: collected on a seacliff.
Distribution: from Mediterranean Sea to the Indopacific area.
Spanish records: **New species to Spain.**

***Tethina (Rhicnoessa) simplex* COLLIN, 1966**

Material examined: 10/2. Gerona: Cadaqués, 26.VI.1982 10/2.
Specimens: collected on sea shore sand.
Distribution: recorded only from Great Britain.
Spanish records: **New species to Spain.**

Milichiidae

***Desmometopa m-nigrum* (ZETTERSTEDT, 1848)**

Material examined: 204/158. Barcelona: Argentona, 25.IX.1979 2/0; Barcelona, 3.XI.1987 0/1, 22.III.1988 0/1; Begas, 29.IX.1982 0/1; Cabrera de Mar, 9.V.1982 6/1, 22.V.1983 7/3, 6.V.1984 1/1, 18.VII.1987 2/1; Cabrils, 11.IX.1982 0/1, 23.V.1983 8/2, 8.VII.1983 0/1,

4.IX.1983 0/1, 9.VII.1985 1/1, 7.IX.1985 0/1, 13.VII.1986 13/22, 29.VII.1986 17/6, 28.VII.1987 0/1, 9.VIII.1987 27/23, 14-18.VIII.1987 93/52, 20.VII.1988 0/1, 13.VII.1989 0/10; Castelldefels, 10.XII.1983 1/0, 2.XI.1986 1/0. S. Cugat del Vallés, 20.VI.1982 14/4; Vilassar de Mar, 6.VI.1982 0/1. Gerona: Cadaques, 24.VI.1982 0/4; La Bisbal, 14.VIII.1982 0/2. Málaga: Marbella, 22.VII.1983 9/14. Zaragoza: Sobraduel, 2.VIII.1988 0/1; Zaragoza, 28.VII.1988 2/1.

Specimens: mainly collected drowned in a swimming-pool, on flowers and on house windows.

Distribution: almost cosmopolitan.

Spanish records: first record from Málaga and Zaragoza.

***Desmometopa sordida* (FALLÉN, 1820)**

Material examined: 4/3. Barcelona: Cabrils, 11.VIII.1987 1/1, 14.VIII.1987 0/1, 17.VIII.1987 1/0, 10.VII.1989 1/0, 13.VII.1989 1/1.

Specimens: collected drowned in a swimming-pool.

Distribution: Europe, USSR, Mongolia, North Africa and Nearctic Region.

Spanish records: second record from Spain.

***Desmometopa varipalpis* MALLOCH, 1927**

Material examined: 0/2. Barcelona: Barcelona, 22.V.1989 0/1. Zaragoza: Sobraduel, 2.VIII.1988 0/1.

Specimens: collected on a window.

Distribution: Afghanistan, Egypt and Oriental, Australian, Afrotropical, Nearctic and Neotropical Regions.

Spanish records: **New species to Spain and Europe.**

***Leptomotopa latipes* (MEIGEN, 1830)**

Material examined: 16/30. Barcelona: Barcelona, 25.IV.1984 0/1, 8.VII.1984 12/23, 7.IV.1987 1/0, 24.IV.1987 1/2, 10.V.1987 0/1, 1.XI.1987 0/1; Cabrils, 21.VII.1986 1/1, 9.VIII.1987 1/1.

Specimens: mainly recorded on pigeon excrements.

Distribution: almost cosmopolitan.

Spanish records: second record from Barcelona.

***Madiza glabra* FALLÉN, 1820**

Material examined: 10/25. Barcelona: Barcelona, 7.IV.1987 1/5, 22.III.1988 1/0; Cabrils, 9.IV.1982 0/1, 19.IV.1987 0/2, 11.VIII.1987 0/3, 17.IX.1987 1/1, 26.IX.1987 1/2; Gualba de Dalt, 15.IV.1988 5/6; Suria, 23.VI.1984 0/1. Gerona: Cadaqués, 24.VI.1982 0/1; La Bisbal, 14.VIII.1982 0/1; Mieres, 8.V.1986 0/2. León: Hoces de Vegacervera, 10.VI.1983 1/0.

Specimens: collected on flowers, cow dung, light lamps, house windows and drowned in a swimming-pool.

Distribution: Europe, USSR, Turkey, Iran, Afghanistan, Mongolia, China,

Morocco, Algeria, Tunisia, Egypt, Canary Is., Azores Is., Madeira and Nearctic Region.

Spanish records: first record from Gerona and León.

***Milichia albomaculata* (STROBL, 1900)**

Material examined: 4/10. Barcelona: Barcelona, 20.III.1987 0/1, 14.IX.1987 0/1, 25.X.1987 0/1; Cabrils, 24.VIII.1985 1/0, 9.VIII.1987 1/0, 16.VIII.1987 1/2, 15.VII.1989 0/1, 18.VII.1989 0/1, 23.VII.1989 1/3.

Specimens: mainly collected drowned in a swimming-pool.

Distribution: recorded only from Spain.

Spanish records: second record from Barcelona.

***Milichia speciosa* MEIGEN, 1830**

Material examined: 3/2. Barcelona: Barcelona, 21.IV.1987 2/1, 24.IV.1987 1/1.

Specimens: collected drowned in a swimming-pool.

Distribution: Europe, USSR, Morocco and Palestine.

Spanish records: second record from Barcelona.

***Neophyllomyza acyglossa* (VILLENEUVE, 1920)**

Material examined: 0/1. Barcelona: Cabrils, 9.VII.1985 0/1.

Specimens: collected drowned in a swimming-pool.

Distribution: Europe, USSR and Mongolia.

Spanish records: **New genus and species to Spain.**

Cryptochetidae

***Cryptochetum (Cryptochetum) buccatum* HENDEL, 1933**

Material examined: 4/1. Barcelona: Barcelona, 30.III.1987 0/1; Cabrils, 27.VIII.1989 1/0; Gualba de Dalt, 15.IV.1988 2/0. Valladolid: Puente-duero, 20.IX.1981 1/0.

Specimens: mainly collected on light lamps.

Distribution: recorded only from Germany (Oriental) and Spain.

Spanish records: second record from Spain. First record from Barcelona and Valladolid.

***Cryptochetum (Cryptochetum) jorgepastori* CADAHIA, 1984**

Material examined: 0/1. Barcelona: Cabrils, 26.IX.1987 0/1.

Specimens: collected drowned in a swimming-pool.

Distribution: recorded only from Spain.

Spanish records: second record from Spain. First record from Barcelona.

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