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The Craneflies (Diptera, Tipulidae and Limoniidae) and Winter Gnats (Diptera, Trichoceridae) of Malta

Martin J. EBEJER¹

ABSTRACT. The literature pertaining to the dipteran families Tipulidae, Limoniidae and Trichoceridae of Malta is reviewed. New material has been studied and as a result, 11 new records are added for the islands. The family Trichoceridae is also recorded for the first time.

KEY WORDS. Mediterranean, new records.

INTRODUCTION

This group of flies is very poorly represented among the fauna of the Maltese Islands and little has been recorded about it. There are about 17,000 described species of Tipuloidea worldwide (OOSTERBROEK, 2014), yet only 16 species are known from Malta. Although there are approximately 116 described species of Trichoceridae worldwide, only one is found on Malta. This is not surprising since Trichoceridae are predominantly inhabitants of humid habitats with a high organic content in cool to cold climates. Species of Tipuloidea can be found almost everywhere including deserts, but the highest diversity is reached in moist temperate climates.

Although the Trichoceridae are not closely related to the Tipulidae and Limoniidae (despite the superficial resemblance) the family is included here for convenience. No Pediciidae or Cylindrotomidae are known from Malta.

The Tipuloidea have larvae that feed in a variety of habitats ranging from moist terrestrial habitats where they develop in rotting wood, in soil or in moss or in overtly aquatic habitats. The puparial stage of all species is terrestrial and the vast majority of larvae are phytophagous.

The earliest record (ZETTERSTEDT, 1851: 3998) of a tipuloid fly from Malta is *Pachyrhina maculosa* (Meigen, 1818), a species sent to him by a Mr Delicata. *Pachyrhina maculosa* is a junior synonym of *Nephrotoma appendiculata* (Pierre, 1919). It is mentioned again in BEZZI & DE STEFANI-PEREZ (1897) on the basis of Zetterstedt's same publication. CILIA (1973) recorded *Tipula oleracea* Linnaeus, 1758 as a common species from April to November, but this flight period is evidently wrong, as the exceedingly hot and dry summer months would not sustain the adults. More likely the flight period is in the reverse, namely November to April.

OOSTERBROEK & THEOWALD (1992) recorded *Nephrotoma appendiculata pertenua* (Oosterbroek, 1978), *N. cornicina* (Linnaeus, 1758), *Tipula mediterranea* Lackschewitz, 1930, *T. oleracea* Linnaeus, 1758 and *Ellipteroides lateralis* (Macquart, 1835). In the online world catalogue (OOSTERBROEK, 2014) *Limonia nubeculosa* Meigen, 1804) is added.

¹ Entomology Section, Department of Biodiversity & Systematic Biology, Amgueddfa Cymru National Museum of Wales, Cathays Park, Cardiff, UK. E-mail: martin.ebejer@btinternet.com

All the material examined was collected by the author and is in the author's collection (part dry and part in alcohol) unless otherwise stated or followed by the codon NMWC (National Museum of Wales, Cardiff, UK).

ANNOTATED SPECIES LIST

Family **Limoniidae** Speiser, 1909

Cheilotrichia cinerascens (Meigen, 1804)

Material examined: Malta, Buskett, 12.i.1980, 1 ♂; Fiddien, 8.i.1992, 1 ♀.

Notes: New record for the Maltese Islands.

Dicranomyia chorea (Meigen, 1818)

Material examined: Malta, Bahrija, 21.vii.1977, 1 ♂, 25.vii.1977, 1 ♂, Buskett, 14.iv.1977, 1 ♂ & 1 ♀, 22.iv.1992, 1 ♀, 25.iv.1994, 1 ♂ & 1 ♀.

Notes: New record for the Maltese Islands.

Dicranomyia sericata (Meigen, 1830)

Material examined: Malta, Qormi, Wied il-Kbir, 20.ii.1977, 3 ♂♂ & 1 ♀; Wied Incita, 27.ii.1994, 2 ♂♂ & 2 ♀♀, 6.iii.1994, 5 ♂♂.

Notes: New record for the Maltese Islands.

Ellipteroides lateralis (Macquart, 1835)

Notes: Recorded in the Catalogue of Palaearctic Diptera (SAVCHENKO *et al.*, 1992) and in the online World Catalogue of Craneflies (OOSTERBROEK, 2014).

Eriocnopa diuturna (Walker, 1848)

Material examined: Malta, Bahrija, 3.xi.1991, 1 ♂, 24.xii.1998, 2 ♂♂; Fiddien, 5.iii.1991, 2 ♂♂, 8.iv.1992, 4 ♂♂, 14.iv.1996, 2 ♂♂ & 1 ♀; Gnejna, 4.i.1987, 1 ♂ & 1 ♀; Rabat, Wied Ghomor, 31.iii.1992, 1 ♂; Wied Qannotta, 16.vii.1995, 1 ♂, 18.iii.1996, 2 ♂♂. Gozo, Wied ir-Ramla, 10.iv.1993, 1 ♂ & 2 ♀♀.

Notes: New record for the Maltese Islands.

Erioptera fuscipennis Meigen, 1818

Material examined: Malta, Bahrija, 6.iv.1985, 1 ♂ (NMWC); Wied Incita, 5.i.1987, 1 ♂.

Notes: New record for the Maltese Islands.

Helius flavus (Walker, 1856)

Material examined: Malta, Fiddien, 11.v.1992, 1 ♂ & 1 ♀ [determined by J. Kramer (Leicester)].

Notes: New record for the Maltese Islands.

Limonia nubeculosa Meigen, 1804

Material examined: Malta, Balzan, 2.iii.1976, 1 ♂, 22.ii.1977, 1 ♀; Birzebbugia, Għar il-Friefet, 1.vii.1975, 1 ♀; Buskett, 12.i.1980, 1 ♂, 22.iv.1992, 1 ♂ 1.v.1992, 1 ♀, 27.iii.1994, 1 ♂ & 2 ♀♀, 20.iii.1996, 1 ♀; Fawwara, 18.iii.1992, 2 ♂♂; Fiddien, 14.iv.1996, 1 ♂. Gozo, Mgarr ix-Xini, 23.iv.1992, 2 ♀♀.

Molophilus obscurus (Meigen, 1818)

Material examined: Malta, Bahrija, 27.xii.1975, 1 ♂, 2.ii.1994, 2 ♂♂ & 1 ♀.

Notes: New record for the Maltese Islands.

Symplecta hybrida (Meigen, 1804)

Material examined: Malta, Fiddien, 14.iv.1996, 1 ♂ & 1 ♀; Wied il-Mistra, 17.iii.1996, 1 ♂ & 1 ♀, J.C.Deeming; Wied Qannotta, 16.vii.1995, 1 ♂. Gozo, Ramla dunes, 21.iv.1994, 1 ♂.

Notes: New record for the Maltese Islands.

Symplecta pilipes (Fabricius, 1787)

Material examined: Malta, Balzan, 23.x.1993, 2 ♂♂; Fiddien, 11.v.1992, 1 ♀, 14.iv.1996, 2 ♂♂ & 1 ♀; Fomm ir-Riħ, 16.iv.1994, 1 ♂, 25.iv.1994, 4 ♂♂; Salina, 16.iv.1977, 3 ♂♂, 11.iv.1994, 3 ♂♂ & 1 ♀; Wied Qannotta, 5.iv.1992, 1 ♂, 16.xii.1995, 2 ♂♂. Gozo, Wied ir-Ramla, 23.iv.1992, 1 ♂ & 1 ♀, 21.iv.1994, 17 ♂♂ & 9 ♀♀.

Notes: New record for the Maltese Islands.

Symplecta stictica (Meigen, 1818)

Material examined: Malta, Mgiebaħ, 24.iii.1996, 2 ♂♂ & 2 ♀♀; Salina, 16.iv.1977, 3 ♂♂ & 2 ♀♀. Gozo, Ramla dunes, 23.iv.1992, 3 ♂♂ & 2 ♀♀, 21.iv.1994, 6 ♂♂.

Notes: New record for the Maltese Islands.

Family **Tipulidae** Latreille, 1802*Nephrotoma appendiculata pertenua* (Oosterbroek, 1978)

Material examined: Malta, Balzan, 1.iii.1991, 3 ♂♂; Marfa Ridge, 22.iii.1992, 1 ♂; Qormi, Wied il-Kbir, 20.ii.1977, 1 ♂ & 1 ♀; Rabat, Wied Ghomor, 31.iii.1992, 1 ♂; Wied Incita, 27.ii.1994, 1 ♂; Wied is-Sewda, 5.iv.1976, 1 ♂, 12.ii.1977, 1 ♂. Comino, Santa Marija, 28–30.iii.2002, 1 ♂.

Nephrotoma cornicina (Linnaeus, 1758)

Notes: Recorded in the Catalogue of Palaearctic Diptera (OOSTERBROEK & THEOWALD, 1992) and in the online World Catalogue of Craneflies (OOSTERBROEK, 2014).

Tipula mediterranea Lackshevit, 1930

Material examined: Malta, Bahrija, 2.ii.1994, 1 ♂; Gnejna, 9.iii.1996, 1 ♂.

Tipula oleracea Linnaeus, 1758

Material examined: Malta, Bahrija, 2.ii.1994, 1 ♂; Ghajn Rihana, 2.x.1976, 1 ♂; Gnejna, 9.iii.1996, 1 ♂; Mgiebah, 26.iii.1995, 1 ♂; Mistra, 17.iii.1996, 1 ♂; Rabat, Wied Liemu, 24.v.1998, 1 ♂; Salina, 11.iv.1976, 1 ♂; Wardija, 25.ii.1996, 1 ♂; Wied Incita, 6.iii.1994, 1 ♂. Gozo, Mgarr ix-Xini, 23.iv.1992, 1 ♂; Ramla dunes; 23.iv.1992, 1 ♂.

Family **Trichoceridae** Kertész, 1902*Trichocera annulata* Meigen, 1818

Material examined: Malta, Balzan, 20.ii.1976, 1 ♀; Buskett, 12.i.1980, 1 ♂ & 1 ♀, 29.xii.1998, 2 ♀♀; Wied Incita, 5.i.1987, 1 ♂; Wied Qannotta, 20.ii.1994, 2 ♂♂.

Notes: New family and species record for the Maltese Islands.

CONCLUSION

The present paper lists ten new records of Limoniidae and the new family and species record of Trichoceridae. All but two earlier records of Tipuloidea are confirmed. *Ellipteroides lateralis* (Macquart) and *Nephrotoma cornicina* (Linnaeus) have not been found again. However, this does not imply that the records are incorrect as more fieldwork is required to ascertain their status.

THEOWALD (1984) in his revision of the subgenus *Tipula* (*Tipula*) Linnaeus, 1758, maps the occurrence of *T. oleracea* on Malta, but does not specify any records. This subgenus has a number of very closely related species with few external morphological characters to enable confident identification. This must rely upon detailed examination of the male postabdomen. Some of the species seem to have a disjunct distribution around the Mediterranean, or at least they are not recorded from some intervening countries. *Tipula subcunctans* Alexander, 1921 and *T. italica* Lachschewitz, 1930 occur in Sicily. It is possible that one or both of these species may yet be found on Malta. It is most curious that from the large subgenus *Tipula* (*Lunatipula*), with so many representative species occurring all around the Mediterranean, not one has been found on Malta.

Several more species of Limoniidae should occur on Malta. There are so many that are very common and widespread around the Mediterranean that the dearth of species on the Maltese Islands is somewhat mysterious. The wholesale destruction of habitats, unplanned and uncontrolled urbanisation, and excessive uncontrolled use of pesticides in agriculture no doubt contributed to this state of affairs. However, more intensive fieldwork is also required in order to ascertain the true status of these insects in the Maltese Islands.

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