

## *Syrphophilus bizonarius* (Gravenhorst, 1829) (Hymenoptera) - new to Malta, with a revised check-list of the Ichneumonidae of the Maltese Islands

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The Ichneumonidae is a species rich family with 36,179 valid species recorded by YU & HORSTMANN (1997). Ichneumonids utilise a diverse array of insects and arachnids as their hosts and play an essential role in the normal functioning of terrestrial ecosystems. They have also been used successfully as biocontrol agents (GUPTA, 1991).

The Ichneumonids of the Maltese Islands have not been studied in any detail. Twenty-four species were listed by SCHEMBRI (1992) in which work reference to two previously recorded species was made. In the Fauna Europaea database (VAN ACHTERBERG & ZWAKHALS, 2004), 23 species were reported as occurring in Malta, but some species previously reported were omitted and no references were provided for other species included therein. For these reasons, a revised check-list of the 29 species of Ichneumonidae recorded from the Maltese Islands (Table 1) is included in the present work with relevant notes where appropriate.

Recently, a sample of aphids on *Lonicera implexa* which were being preyed upon by four syrphid larvae was collected. The larvae and their ichneumonid parasitoid were reared to maturity. The purpose of this note is to record the presence of the ichneumonid, and its biology, for the first time from Malta.

### *Syrphophilus bizonarius* (Gravenhorst, 1829)

(Fig. 1)

**Material examined.** MALTA: Zurrieq, 1.v.2012, 1 ♂ & 2 ♀♀ emerged from 3 puparia of *Episyrphus balteatus* (De Geer, 1776) (Diptera, Syrphidae), leg. D. Mifsud. The syrphid larvae were feeding on the aphid *Hyadaphis passerinii* (del Guercio, 1911) on *Lonicera implexa* and were collected on 23.iii.2012 from a coastal garigue habitat.



Figure 1: *Syrphophilus bizonarius*

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*Syrphophilus bizonarius* is widely distributed in the Holarctic and the Oriental Regions (DASCH, 1964), with records from many European countries (VAN ACHTERBERG & ZWAKHALS, 2004). It is known to parasitize the following species of syrphids: *E. balteatus*, *Eupeodes corollae* (Fabricius, 1794), *Eupeodes luniger* (Meigen, 1822), *Sphaerophoria scripta* (Linnaeus, 1758) and *Syrphus vitripennis* (Meigen, 1822) (DUŠEK *et al.*, 1979). The first two species and *S. scripta* are known to occur in Malta (EBEJER, 1988).

**Table 1.** Revised check-list of the Ichneumonidae of the Maltese Islands with species listed alphabetically.

Ichneumonidae	Notes where appropriate
<i>Allophatnus aetnensis</i> (Rudow, 1883)	Recorded as <i>Mesostenus hellenicus</i> Schmiedeknecht, 1905 by SCHEMBRI (1992).
<i>Anomalon cruentatum</i> (Geoffroy, 1785)	Recorded as <i>Anomalon foliator</i> (Fabricius, 1798) by SCHEMBRI (1992).
<i>Chirotica productor</i> Aubert, 1982	This species was described from material collected in Portugal and Malta. The type material from Malta (Wied is-Sewda) was designated as syntype in the Aubert collection (KLOPFSTEIN & BAUR, 2011).
<i>Ctenichneumon messorius</i> (Gravenhorst, 1820)	
<i>Ctenochares bicolorus</i> (Linnaeus, 1767)	
<i>Diadegma armillatum</i> (Gravenhorst, 1829)	Recorded from Malta on the basis of a single specimen reared from larvae of <i>Prays oleae</i> Bernard (HABER & MIFSUD, 2007).
<i>Diadegma exareolator</i> Aubert, 1964 <sup>3</sup>	Recorded from Malta on the basis of 1 ♂ and 2 ♀♀ reared from <i>Bedellia somnutella</i> (Zeller) (SHAW & HORSTMANN, 1997). SCHEMBRI (1992) reported an taxon as “genus near <i>Diadegma</i> ”.
<i>Diadegma semiclausum</i> (Hellén, 1949)	Recorded from Gozo as a parasitoid of <i>Plutella xylostella</i> (Linnaeus) (FARRUGIA, 1995; MIFSUD, 1997) but record was not included in the Fauna Europaea database as occurring in Malta.
<i>Eutanyacra picta</i> (Schrank, 1776)	
<i>Exeristes roborator</i> (Fabricius, 1793)	
<i>Exochus castaniventris</i> Brauns, 1896	

<i>Exochus mitratus</i> Gravenhorst, 1829	Recorded as <i>Exochus australis</i> Thompson, 1894 by SCHEMBRI (1992).
<i>Exochus prosopius</i> Gravenhorst, 1829	
<i>Gelis cyanurus</i> (Förster, 1850)	Recorded as <i>Gelis wesmaelii</i> (Fonscolombe, 1852) by SCHEMBRI (1992).
<i>Hyposoter ebeninus</i> (Gravenhorst, 1829)	Recorded by VALLETTA (1972) as a parasitoid of <i>Pontia daplidice</i> (Linnaeus) but record for Malta was omitted from the Fauna Europaea database.
<i>Itopectis maculator</i> (Fabricius, 1775)	Species reported by SCHEMBRI (1992) but record from Malta was not included in the Fauna Europaea database.
<i>Megastylus orbitator</i> Schjödte, 1838	Recorded as <i>Megastylus rufipleuris</i> (Förster, 1871) by SCHEMBRI (1992).
<i>Mesostenus grammicus</i> Gravenhorst, 1829	
<i>Metopius (Peltocarus) dentatus</i> (Fabricius, 1779)	Prior to SCHEMBRI (1992), this species was also reported from Malta by VALLETTA (1973) as parasitizing <i>Hyles euphorbiae</i> Linnaeus and <i>Gastropacha quercifolia</i> (Linnaeus, 1758).
<i>Netelia (Netelia) fuscicarpus</i> (Kokujev, 1899)	In the Fauna Europaea database this species is included under <i>Netelia (Netelia) testacea</i> (Gravenhorst, 1829). <i>Netelia fuscicarpus</i> was in fact synonymised with <i>N. testacea</i> by TOLKANITZ (1974). The type of <i>N. testacea</i> was studied by HORSTMANN (1992) and it is possible that Tolkanitz misinterpreted <i>N. testacea</i> (K. Horstmann, <i>pers. comm.</i> , 2012) and it is for this reason that this species is recorded as such in the present work. The species was reported from Malta by SCHEMBRI (1992) but record was omitted from the Fauna Europaea database.
<i>Pimpla rufipes</i> (Miller, 1759)	Recorded as <i>Pimpla instigator</i> (Fabricius, 1793) and observed to emerge from pupae of <i>Pieris brassicae</i> (Linnaeus), <i>Pieris rapae</i> (Linnaeus) and <i>Papilio machaon melitensis</i> Eller (SCHEMBRI, 1992). MIFSUD (1997) recorded this species as <i>P. hypochondriaca</i> (Retzius, 1783) from pupae of <i>Pieris brassicae</i> .
<i>Pimpla spuria</i> Gravenhorst, 1829	
<i>Protichneumon fusorius</i> (Linnaeus, 1761)	Recorded as <i>Protichneumon pisorius</i> (Linnaeus, 1758) ssp. <i>persicus</i> Morley, 1915 by SCHEMBRI (1992).

Ichneumonidae	Notes where appropriate
<i>Syrphophilus bizonarius</i> (Gravenhorst, 1829)	Recorded in the present study as a parasitoid of puparia of <i>Episyrphus balteatus</i> .
<i>Syzeuctus tigris</i> Seyrig, 1926	
<i>Temelucha meridonellator</i> Aubert, 1981	This species was recorded by SCHEMBRI (1992) on the basis of a single male as <i>Temelucha</i> cf. <i>annulata</i> (Szépligeti, 1899). This same specimen was later included in the type series of <i>T. meridonellator</i> (KLOPFSTEIN & BAUR, 2011).
<i>Thaumtogelis innoxius</i> Schwarz, 2001	A recently described species for which 1 ♀ collected from Malta was included in the type series (SCHWARZ, 2001).
<i>Venturia canescens</i> (Gravenhorst, 1829)	Apart from SCHEMBRI'S (1992) record, this species was also reported by MIFSUD (1997) from larvae which probably belong to <i>Selania leplastriana</i> (Curtis).
<i>Virgichneumon digrammus</i> (Gravenhorst, 1820)	

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