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Additions to the Heteroptera Fauna of the Maltese Islands (Hemiptera, Heteroptera, Coreidae).

Arnold SCIBERRAS[1]& Jeffrey SCIBERRAS[2]

ABSTRACT

Two new records of species of Hemiptera Coreidae, *Leptoglossus occidentalis* (Heidemann, 1910) and *Gonocerus insidiator* (Fabricius, 1787) from the Maltese islands (Central Mediterranean) are hereby reported.

Keywords: *Leptoglossus occidentalis, Gonocerus insidiator*, Heteroptera, Maltese Islands.

INTRODUCTION

There is quite an abundance of publications (over 40 writings) on the Heteroptera fauna of the Maltese Islands. The earliest work on Maltese Heteroptera is probably that of Dallas (1852) who included four species from Malta. An additional two species were recorded by Walker (1875), while Saunders (1876) described two new species from Maltese specimens. Very few new records appeared in the catalogues of Palaearctic Heteroptera of Futon (1886), Reuter (1885) and Oshanin (1909 & 1912). Andres (1916) has added with his records a total number of known species to 36. Stichel`s (1956-1961) four volume work on European Heteroptera and his catalogue of Palaearctic Hemiptera (Stichel, 1956-1962), brought the Maltese total to 45 species. Servadei (1967) added the local list up to 60 species but Tamanini's work(1966) on local Heteroptera published a year earlier, included 30 species personally checked by Schembri(1992) and an additional 37 species mentioned in the literature, thus bringing his total to 67. De Lucca (1969) added a further nine species to the Maltese list, while Rieger (1986) collected 77 species from the Maltese Islands, 35 of which he reported for the first time. The first monumental work on this group of insects in the Maltese Islands is of Schembri (1992) in which he reviews all past literature and brings the Maltese list up to 209 species, 86 of these were new records. The later work was only suppressed in Carapezza`work (1995) as the local species list was reduced from 209 to 198 after several synonymies from Schembri`s work. Aukema& Reiger (1995,1996,1999,2001,2006) have published 5 volumes of catalogues of the Heteroptera of the Palaearctic region in which there are several new records from the Maltese Islands. Cuesta Segura et.al (2010) reviewed and corrected the list from several synonymies and other changes and recorded 7 new species for the archipelago raising the list up to 223 species. The present work adds two new species of this sub–order to the list of the Maltese Islands.

[1] – 131 `Arnest`, Arcade Str, Paola – bioislets@gmail.com (Corresponding author)
2 - 1 Marmir Bountempo Estate, Balzan- wildalienplanet@gmail.com

Notes on the ecology and distribution of the newly-reported species

Leptoglossus occidentalis (Heidemann, 1910).

The first specimen of this species locally was noted on 10/xii/2004 when a small group of trees were being loaded out of a container arriving from the Corpo Forestale nursery in Arezzo (Italy) to Ghadira Nature Reserve as part of the program to be planted in the Foresta 2000 project. A single specimen was found and collected on 11/xii/2004 (**fig 1**) from *Quercus coccifera* which were infested with *Rhaphigaster nebulosa* (Poda, 1761), a hepimteriod already known from Malta. Nearby shrubs from planting mainly *Fraxinus angustifolia* and *Arbutus unedo* were also heavily infested with the latter species. Specimens from both of these species were sent for identification to the National Museum Cardiff in Wales but this never took place. The specimens are still housed there. Only in late 2009 identification was made possible by images of the specimens sent to Dr. Berend Aukema for confirmation of research already carried out by the authors. On 13/iii/2006 several specimens were observed individually on *Rosmarinus officinalis* and *Acanthus mollis*. On 14/x/2007 several specimens of *Leptoglossus occidentalis* were observed on *Punica granatum*. Although collection never took place, it is now suspected that along with these specimens there was also *Leptoglossus phyllopus* (Linnaeus,1767) present due to the high morphological diversity that was observed between different specimens. In that case, this species would also be a new record for the Maltese archipelago. However since not enough data was gathered, this species still cannot be recorded. Several other visits proved fruitless in finding the mentioned species. On 2/iii/2008, three specimens were noted at Mistra on *Pinus halepensis*. These were accompanied by 8 specimens of *Ploearia domestica* (Scopoli, 1786), another hepimteriod already known from Malta (Lanfranco, 1964).

Gonocerus insidiator (Fabricius, 1787).

On 2/vi/2006 a single specimen was collected from Inula crithmoides by Beating Ghadira Bay. (Deposited in one of the authors collection) and on 22/xi/2009, a single specimen was repeatedly observed and photographed (figs5, 6) on Pistacia lentiscus at Simar Nature Reserve, Xemxija. On 6/xii/10,67specimens were observed at the same location but this time not only as adults but in 3 different nymph stages (figs2-4).

DISCUSSION

Leptoglossus occidentalis`s presence in the Maltese islands has to be treated as an accidental introduction. Moreover, it is an introduced species to Europe where it was first reported in 1999 from northern Italy (Lis *et al.* 2008). It had probably been accidentally imported with timber and as it seems more than once, its presence was subsequently reported from that country almost simultaneously from locations at considerable distances apart (Lis *et al.* 2008). By 2007, it had established itself in the northern Balkans (Slovenia and Croatia, the Alps (Austria, Switzerland), and parts of the Czech Republic, France, Germany and Hungary(Lis *et al.* 2008); in 2003 it was found to occur in Spain though this population probably derived from a separate introduction(Lis *et al.* 2008). The 2007 records from Weymouth College (England) and Oostende (Belgium) might also represent one or two further independent introductions (Lis *et al.* 2008). In late 2007, it was found at Wroclaw and Miechow (Poland); this species probably represent a further range expansion out of the Czech Republic. During the autumn of 2008, a large influx of this species arrived on the south coast of England, indicating natural immigration from continental Europe (Malumphy *et al.*2008). In late 2009, a large number of this species invaded Koc University in Istanbul, Turkey. It was also first recorded from Tokyo, Japan in 2008 and some additional records from Tokyo and Kanagawa Prefecture have been added until 2009.It is most probable that this species was introduced with the vegetation imported for the improvement of Foresta 2000 site as the majority of specimens were observed in this site were the flora was loaded prior being planted and following years at the Foresta 2000 and nearby site. The Mistra specimens are an indication that this species is expanding its distribution locally. It is interesting to note that it was observed on a diversity of flora and it is able to feed on other species that do not exist in its place of origin. In captivity this species fed on all kinds of fruits except apple (Sciberras, A. unpublished data) and it most likely have the same behavior in the wild, thus in the future may be a potential pest to local agricultural fruit and crops. As for *Leptoglossus phyllopus* being observed locally feeding on *Punica granatum*, it

does confirm with present literature due to the fact that this species is one of the major pests on *Punica granatum* in California. However due to the lack of substantial records and the fact that the authors could not trace records of this species in Europe, its presence locally cannot be confirmed.

Gonocerus insidiator has a worldwide distribution and in Europe it is already recorded from Bosnia and Herzegovina, Cyprus, Spain, France, Greece, Croatia, Italy and Portugal. In Federal Republic of Yugoslavia its presence is still doubtful (faunaeur.org). Its presence locally is likely to be indigenous and possibly due to its rarity, this species must have been over looked by previous recordings of entomologists.

The proposal of Maltese names is based on the English name and on some morphological characteristic of the species, therefore *L. occidentalis* Maltese vernacular name should be "Seffud Tal-Kalzetti" and that of *Gonocerus insidiator* should be "Seffud Tal-Qrun."

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Fig1 **Fig 2** **Fig 3**

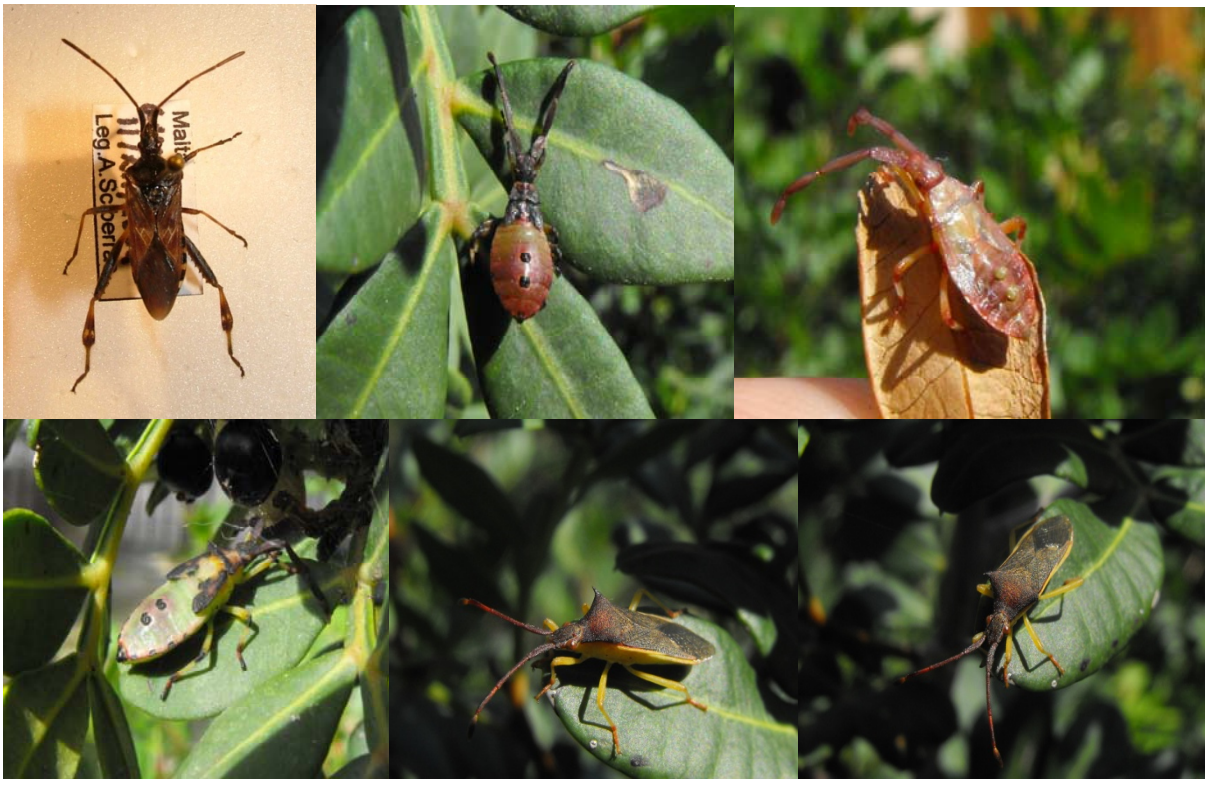

Fig4 **Fig 5** **Fig 6**

Fig1- *Leptoglossus occidentalis`s* specimen collected on 11/xii/2004 from Ghadira.(Photo credit –A.Sciberras) **Fig2-4**(3 nymph satges) - *Gonocerus insidiator `s* specimens photographed on 6/xii/2010. **Fig5**(side of adult),

Fig6(top of adult)- *Gonocerus insidiator `s* specimen photographed on 22/xi/2009.All specimens from Simar Nature Reserve Xemxija.(Photo credits –J.Sciberras).

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