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LONGHORN BEETLES (COLEOPTERA, CERAMBYCIDAE) OF THE MALTESE ISLANDS (CENTRAL MEDITERRANEAN)

David Mifsud[1]

ABSTRACT

The longhorn beetles of the Maltese Islands are reviewed based on literature records and collected material. A total of 29 species are included of which three, *Arhopalus ferus* (Mulsant, 1839), *Hesperophanes sericeus* (Fabricius, 1787) and *Phoracantha recurva* Newman, 1840 are recorded for the first time. Five species, *Phoracantha semipunctata* (Fabricius, 1775), *Phoracantha recurva* Newman, 1840, *Cerambyx nodulosus* Germar, 1817, *Cerambyx carinatus* Küster, 1846 and *Phryneta leprosa* (Fabricius, 1775) are considered as introductions and locally established. The records of *Cerambyx miles* Bonelli, 1823, *Cerambyx scopolii* Füsslins, 1775, *Ropalopus clavipes* (Fabricius, 1775), *Oberea* (*Amaurostoma*) *erythrocephala* (Schrank, 1776) and *Agapanthia cynarae cynarae* (Germar, 1817) are considered doubtful or in need of confirmation and until then, these species are excluded from the cerambycid fauna of the Maltese Islands. For each species all known Maltese localities, larval host plant development, global distribution and any other notes where relevant are provided.

INTRODUCTION

The Cerambycidae is a very large family, comprising some 30-35,000 described species in about 4,000 genera. Most species are found in tropical and subtropical regions of the world, whereas the European fauna is composed of only 625 species (Althoff & Danilevsky, 1997). Most cerambycids are of a very characteristic form, usually having an elongate body, with long to extremely long antennae, hence their common name of longhorn beetles. All cerambycids feed on vegetable material and can be conveniently divided into two groups; the xylophagous species, whose larvae feed in wood, and the phytophagous species with larvae feeding in herbaceous plants. In North and Central Europe, the xylophagous species predominate, but in Southern Europe and the Mediterranean Region, the number of phytophagous species is considerable.

Cerambycids attack mostly dead or damaged trees, but some species may attack healthy trees causing considerable damage. Larvae may take from a few months to several years to develop. Some species are monophagous with larval development taking place in only one host plant, others are oligophagous feeding on only a few, usually related, host plants; polyphagous species have the ability to develop in different unrelated host-plants. Many species of longhorn beetles are of economic importance, attacking commercial timber and fruit trees. Adults feed on flowers, soft foliage, bark, sap or fruit. They are usually short lived, dying once reproduction and egg laying are completed.

HISTORICAL REVIEW

The first mention of longhorn beetles from Malta was by Gulia, who, in 1857 delivered a series of lectures on the insect fauna of these islands. These lectures were published a year later and in this work, Gulia (1858) stated that he collected 13 indigenous species of longhorn beetles. Of these, he mentioned *Marimus funestus* (sic!) [= *Morinus funereus* (Mulsant, 1863)], *Prionus coriarius* (Linnaeus, 1758), *Hammaticherus heros* (sic!) [= *Cerambyx cerdo* Linnaeus, 1758] and *Rosalia alpina* (Linnaeus, 1758). Due to the fact that a substantial number of insect species mentioned in this work are considered to be unreliable (e.g. Mifsud, 2000), these four records will not be considered further. Reiche (1877) described *Oberea melitana*, presumably from material collected in Malta. In 1890, McLachlan indicated that a serious enemy of orange trees in Malta was the larva of a large longhorn beetle (*Cerambyx miles* Bonelli, 1823) which bores into the lower parts of the stem and down into the roots, making large galleries (Anonymous, 1890). In 1894, the Maltese naturalist Alfredo Caruana Gatto published a work entitled *"Common beetles of the Maltese Islands"* (Caruana Gatto, 1894). In this work, he mentioned three longhorn beetles, one on asphodel, *Agapanthia cynarae cynarae* (Germar, 1817) and two on rosaceous trees, *Cerambyx nodulosus* Germar, 1817 and *Niphona picticornis* Mulsant, 1839.

In 1907, Cameron and Caruana Gatto published a list of Coleoptera of the Maltese Islands. This important work is

[1] Department of Plant Health, Research and Development Centre, Ghammieri, Marsa, Malta. *david.a.mifsud@gov.mt*

still the only faunistic work dealing with all beetle groups. In this work (Cameron & Caruana Gatto, 1907), sixteen species of Cerambycidae were recorded of which, one, was included on the basis of earlier records. Luigioni (1929), in his work on the Italian Coleoptera, included Cameron & Caruana Gatto's records. In 1916, Andres, a prisoner of war, published a list of Lepidoptera, Hemiptera and Coleoptera he collected from these islands. In this work, he mentioned *Hesperophanus griseus* Fabricius [= *Trichoferus griseus* (Fabricius, 1792)], a record which was overlooked by all subsequent works dealing with the study of locally occurring longhorn beetles.

Borg (1922) mentioned *Cerambyx* spp. which caused local damage to fruit trees. Borg (1939) in a paper entitled "*Our Insect Visitors*" mentioned the capture of a male and a female of *Rosalia alpina* (Linnaeus, 1758), from near a carpenter's workshop at Tarxien who made use of the ash-tree wood for his trade and *Morimus lugubris* (sic!) [= *Morinus asper* (Sulzer, 1776)] and *Morinus funereus* (Mulsant, 1863) from a heap of imported firewood at Marsa. The Ph.D. work of Saliba, "*Studies on Cerambyx species infesting fruit trees in Malta*", was the basis of most of his publications on *Cerambyx* spp. (1972a; 1972b; 1974a; 1974b; 1977). Schembri (1975) reported the capture of *Cordylomera spinicornis* (Fabricius, 1775) from Santa Venera from imported wood. A second record of this species was also reported by Mifsud & Booth (1997) from Ghammieri in Marsa.

After a lapse of nearly 80 years from Cameron & Caruana Gatto's catalogue (1907), Schembri & Sama (1986) published a thorough work on the Cerambycidae of the Maltese Islands. In this work they provided a brief review of earlier works dealing with local longhorn beetles, an annotated list of 22 species (of which 5 represented new records to these islands) and included brief notes on earlier records of imported species.

Cilia (1989) contributed an annotated list of endemic, rare, threatened and/or scientifically interesting beetles in the Red Data Book for the Maltese Islands (Schembri & Sultana, 1989). In this work he included information on nine species of Cerambycidae entirely based on published information.

In recent years, the present author was also much involved in the study of longhorn beetles occurring in Malta. In about 15 years since the publication of Schembri & Sama's work (1986), eleven new records were added, four of which were introductions which are nowadays locally established (Mifsud, 1993; Mifsud & Booth, 1997; Mifsud & Dandria, 2002; present work).

MATERIAL AND METHODS

The compilation of the following annotated species list of the Cerambycidae of the Maltese Islands is based on literature records and on material identified (public and private collections) by the present author in the past 10 years. Some material was also obtained by rearing larvae of longhorn beetles in the laboratory. This method is particularly useful for Cerambycidae and may reveal the presence of other interesting species in future work. A total of 458 specimens were examined during this study. In order to keep this work relatively compact, only the localities in the Maltese Islands for each species are provided. Where available, the Maltese localities from the earlier literature are included first (with the corresponding reference), followed by new localities based on material examined during the present study. For the new records and species known from single captures, full collecting data is provided. Brief information on host plants (after Sama, 1988, 2002; Bense, 1995), global distribution (after Sama, 1988, 2002) and any other relevant notes, where appropriate, are also included. Species which were reported as accidental introductions and never locally established are not included in this work.

ANNOTATED SPECIES LIST

1. *Arhopalus ferus* (Mulsant, 1839)

Local distribution - Malta: Rabat, Qrendi and Naxxar.
Material examined - Malta: Rabat, 24.viii.2001, 1 ex., leg. P. Sammut (attracted to light); Qrendi, 25.viii.2001, 1 ex., leg. D. Magro, Qrendi, 17.vi.2002, 1 ex., leg. D. Magro; Naxxar, 3.vii.2001, 1 ex., leg. A. Seguna (actinic light trap).
Global distribution - North Africa, Europe, Caucasus, Transcaucasia, Syria, Israel, Siberia and China. Widely distributed in Europe except Fennoscandia, reaching southern Spain, Italy and Greece. *A. ferus* (Mulsant) is more thermophilous than *A. rusticus* (Linnaeus, 1758), replacing the latter in many southern countries.
Host plants - Larval development takes place in conifers (*Pinus*, *Picea*, *Abies* and *Larix*). In the southern part of its distributional area, only *Pinus halepensis*, *P. nigra*, *P. sylvestris* and *P. leucodermis* are reported as host plants. Initially larvae feed subcortically and later tunnel the wood of dead standing trunks and stumps, often in the basal region or in exposed roots.
Notes - New record for the Maltese Islands.

2. *Icosium tomentosum atticum* Ganglbauer, 1882

Local distribution - Malta: Msida (Mifsud & Booth, 1997), Rabat, Wied Babu and Naxxar.
Material examined - Malta: Rabat, 16.vii.2001, 2 exs., leg. P. Sammut (attracted to light); Naxxar, 27.vi.2001, 1 ex., leg. A. Seguna, Naxxar, 16.vi.2001, 1 ex., leg. A. Seguna (actinic light trap); Wied Babu, 16.vi.2002, 1 ex., leg. D. Magro.
Global distribution - East Mediterranean with records from Eastern Italy up to the Middle East.
Host plants - Larval development takes place in the dead wood of conifers (*Juniperus*, *Cupressus*, *Thuja* and *Callitrix*). Initially larvae feed subcortically and later

penetrate the heartwood to pupate.
Notes - Prior to this study, this species was known from a single record which was erroneously assigned to the nominal subspecies (Mifsud & Booth, 1997).

3. ***Hesperophanes sericeus*** **(Fabricius, 1787)**

Local distribution - Malta: Rabat.
Material examined - Malta: Rabat, 21.ix.2001, 1 ex., leg. P. Sammut (attracted to light).
Global distribution - Throughout the Mediterranean Region, from North Africa (including Egypt) and Iberian Peninsula to southern France, Caucasus, southern Turkey, Iraq, Jordan and Israel.
Host plants - Larval development often takes place in dead wood of thick trunks at ground level or roots of deciduous trees such as *Juglans*, *Pistacia lentiscus*, *Vitis vinifera*, *Olea*, *Platanus*, *Quercus*, *Paliurus*, various fruit trees, and dry roots of *Halocnemum strobilaceum*.
Notes - New record for the Maltese Islands.

4. ***Trichoferus griseus*** **(Fabricius, 1792)**

Local distribution - Malta: Cospicua (Andres, 1916) and Kalkara (Mifsud & Booth, 1997).
Global distribution - Circum-Mediterranean with records from southern Europe, North Africa (including Egypt), Cyprus, southern Turkey, Iraq, Jordan and Israel. Widespread in southern and south-eastern Europe from the Iberian Peninsula, southern France, Italy, Balkans (predominantly along coastal regions) to Bulgaria, Greece including Crete, southern Ukraine and Crimea (Sama, 2002).
Host plants - Larval development takes place under bark and in wood of dry branches and stems of *Ficus carica*. The species is also reported from *Pistacia* and *Rosa* but these records should be regarded as incorrect or occasional (Sama, 2002).
Notes - *T. griseus* (Fabricius) was originally recorded from the Maltese Islands by Andres (1916). His record is based on a single specimen collected in June from the Verdala barracks. This record was overlooked by Schembri & Sama (1986) and Mifsud & Booth (1997).

5. ***Trichoferus fasciculatus*** **(Faldermann, 1837)**

Local distribution - Malta: Birkirkara, Wied is-Sewda, Gzira, Wied il-Hemsija, Hal-Far, San Pawl tat-Targa (Schembri & Sama, 1986), Naxxar, Msida (University grounds), Maqluba (Qrendi), Wied Babu, Zejtun, Kalkara and Rabat.
Global distribution - Circum-Mediterranean species with a distribution similar to *T. griseus* (Fabricius), except more widespread, eastward as far as Azerbaidzhan and northern Iran; uncommon in the eastern Mediterranean (southern Turkey and Israel). In Europe rather common and widespread only in the south, reaching southern France in the north-west and Ukraine (?) and Crimea in the east. Reported also from the Canary Islands and Madeira where local populations were described as *T. senex* Wollaston, 1854 and later sometimes referred to as *T. griseus* (Fabricius), but representing at most a subspecies of *T. fasciculatus* (Faldermann) (Sama, 2002).
Host plants - Larval development takes place in the branches and trunks of various broadleaf trees including *Sorbus*, *Cytisus*, *Quercus*, *Castanea*, *Spartium*, *Coronilla*, *Rhus*, *Paliurus*, *Colutea*, *Punica*, *Ceratonia*, *Pistacia*, *Ziziphus*, *Acer*, *Nerium*, *Anthyllis*, *Acacia*, *Eucalyptus*, *Robinia*, *Prunus*, *Morus*, *Juglans* and *Rubus*; rarely in *Ficus* and exceptionally in conifers (*Taxus*, *Pinus* and *Cupressus*).

6. ***Trichoferus holosericeus*** **(Rossi, 1790)**

Local distribution - Malta: Marsaxlokk, Mdina (Cameron & Caruana Gatto, 1907), St. Andrews (Mifsud, 1993) and Naxxar.
Material examined - Malta: Naxxar, 8.vii.2001, 1 ex., leg. A. Seguna (actinic light trap).
Global distribution - Europe, North Africa (very localised in Algeria and Morocco), Crimea, Turkey and imported (?) in Israel. Typical inhabitant of Mediterranean maquis, common only in central Mediterranean; found in Spain, France (mostly in southern areas), common and widespread in Italy (chiefly in plains), Balkans (coastal plains) up to Albania and Greece (including Crete).
Host plants - Larval development takes place under the bark and in the wood of dry trunks and branches of various broadleaf trees including *Robinia pseudacacia*, *Juglans*, *Pistacia*, *Polulus*, *Ficus carica*, *Prunus*, *Quercus*, *Ostrya carpinifolia*, *Castanea*, *Fagus* and *Ulmus*. Development also takes place in prepared timber (poles, fences, roofs, etc.) and sometimes also in furniture.

7. ***Stromatium unicolor*** **(Olivier, 1795)**

Local distribution - Malta: Buskett, Chadwick Lakes, Wied Qannotta, San Pawl tat-Targa (Schembri & Sama, 1986), Sliema, Siggiewi, Wied Babu, Wied tal-Isqof, Rabat, Marfa, Wied il-kbir, Wied tal-Bahrija, Gharghur and Zejtun. Gozo: Xaghra.
Global distribution - Central and southern Europe, North Africa, Caucasus, northern Iran, Middle East (Iraq, Jordan, Lebanon and Israel), Cyprus and Middle Asia. Imported in USA, Cuba, Brazil and Jamaica. In Europe only in Hungary and the whole of the Mediterranean Region, from the Iberian Peninsula and southern France to Crimea.
Host plants - Larval development takes place in dead dry wood of branches of various broadleaf trees including *Quercus*, *Celtis*, *Ulmus*, *Cytisus*, *Pistacia*, *Juglans*, *Fagus*, *Morus*, *Cassia*, *Ficus*, *Corylus*, *Platanus*, *Tamarix*, *Robinia*, *Prunus*, *Tilia*, *Carpinus*, *Castanea*, *Salix*, *Alnus*, *Citrus* and *Eucalyptus*; also in conifers (*Cedrus*, *Abies* and *Larix*). Development also takes place in seasoned timber, furniture, and wooden structures such as roof timbers and fences.

8. ***Phoracantha recurva*** **Newman, 1840**

Local distribution - Malta: Rabat.

Material examined - Malta: Rabat, 15.xi.2001, 1 ex., leg. P. Sammut, Rabat, 3.viii.2002, 1 ex., leg. P. Sammut.
Global distribution - Throughout the Australian continent and Papua New Guinea. Introduced in New Zealand, South Africa, California and Malawi (Wang, 1995) and more recently in the Mediterranean Region with records from Morocco (Ruiz & Barranco, 1998), Spain (Bercedo & Bahillo, 1999), Greece (Sama, G. *pers. comm.*) and now Malta.
Host plants - Larval development takes place exclusively in *Eucalyptus* trees.
Notes - New record for the Maltese Islands.

9. ***Phoracantha semipunctata*** **(Fabricius, 1775)**

Local distribution - Malta: Siggiewi, Ghammieri (Marsa), Balzan (Mifsud & Booth, 1997), Qrendi, Burmarrad, Naxxar and Rabat. Gozo: Xaghra.
Global distribution - Originally Australian, but now almost sub-cosmopolitan.
Host plants - Larval development takes place exclusively in *Eucalyptus* trees.

10. ***Penichroa fasciata*** **(Stephens, 1831)**

Local distribution - Malta: Hal-Far, Wied Babu, Sliema (Schembri & Sama, 1986), Rabat, Buskett, Naxxar, Msida, Maqluba (Qrendi), Ghammieri (Marsa) and Kalkara.
Global distribution - Europe, Caucasus, Azerbaidzhan, northern Iran, Asia Minor, Middle East including Cyprus, North Africa, occasionally imported in North America. In Europe thermophilous, occurring only in Iberian Peninsula, southern France, Italy, Balkans southward to Crete, reaching Crimea in the east (Sama, 2002).
Host plants - Larval development takes place in dead dry wood of twigs, branches and roots, and thick bark of various broadleaf trees including *Ficus*, *Quercus*, *Morus*, *Prunus*, *Ceratonia*, *Glycyrrhiza*, *Pistacia*, *Eucalyptus*, *Cercis* and *Cytisus*; occasionally also in conifers (*Pinus* and *Thuya*).

11. ***Gracilia minuta*** **(Fabricius, 1781)**

Local distribution - Malta: Buskett (Schembri & Sama, 1986), Chadwick Lakes, Marsaskala (Mifsud & Booth, 1997), Ghammieri (Marsa) and private grounds of Verdala Palace (near Buskett).
Global distribution - Probably, originally western Mediterranean, but almost cosmopolitan in distribution. Recorded from Europe, Caucasus, Asia Minor, North Africa, Canary Islands and Madeira. Imported in Japan and in North America. Common and widespread only in southern Europe, local in western, central and eastern Europe; introduced but not established in northern Europe.
Host plants - Larval development takes place under the bark of dry and thin twigs of various broadleaf trees including *Salix*, *Castanea*, *Quercus*, *Rubus*, *Ulmus*, *Ficus*, *Malus*, *Citrus*, *Acer*, *Juglans*, *Euonymus*, *Ceratonia*, *Crataegus*, *Prunus*, *Rosa*, *Corylus*, *Aesculus*, *Betula* and *Rhamnus*, often also on conifers (*Cedrus* sp., cultivated and *Pinus halepensis*).
Notes - Prior to this study, *G. minuta* (Fabricius) was known from three isolated records. More than 40 specimens were reared from a small dead branch of *Ceratonia siliqua* taken from the Verdala Palace.

12. ***Nathrius brevipennis*** **(Mulsant, 1839)**

Local distribution - Malta: Kalkara (Mifsud & Booth, 1997). Gozo: Marsalforn Valley (Mifsud, 1993) and Victoria (Mifsud & Booth, 1997).
Global distribution - Southern Europe, North Africa, Caucasus, Transcaucasia and Iran. The species was introduced in Central Europe, China, North and South America.
Host plants - Larval development takes place first under the bark and later in the wood of thin branches and twigs of various broadleaf trees including *Alnus*, *Rosa*, *Fraxinus*, *Corylus*, *Ficus*, *Castanea*, *Salix*, *Jugans*, *Quercus*, *Morus*, *Cornus*, *Ceratonia*, *Pistacia*, *Ziziphus*, *Robinia*, *Ostrya* and *Eriobotrya*, occasionally also in conifers (*Pinus* and *Cupressus*).

13. ***Stenopterus rufus rufus*** **(Linnaeus, 1767)**

Local distribution - Malta: Wied il-Kbir (Mifsud & Booth, 1997).
Global distribution - *S. rufus rufus* (Linnaeus) is known from Europe (except the northern parts), Balkans (Bulgaria), European Russia and Caucasian Region. In the east it is replaced by *Stenopterus rufus geniculatus* Kraatz, 1863 and *S. rufus syriacus* Pic, 1892.
Host plants - Larval development takes place in dead, dry wood of broadleaf trees including *Quercus*, *Castanea*, *Robinia*, *Juglans*, *Salix*, *Paliurus*, *Ostrya*, *Pistacia*, *Ulmus*, *Ficus* and *Prunus*.

14. ***Certallum ebulinum*** **(Linnaeus, 1767)**

Local distribution - Malta: Wied is-Sewda (Mifsud & Booth, 1997).
Global distribution - Iberian Peninsula, Southern France, Central-southern Italy, Greece, Turkey, Iran, Caucasus, Transcaucasia and Middle East.
Host plants - Larval development takes place in stems and roots of living herbaceous plants of the families Daucaceae, Lamiaceae and Brassicaceae (*Erysinum*, *Sisymbrium*, *Psychine*, *Raphanus* and *Raphanistrum*).

15. ***Cerambyx cerdo*** **Linnaeus, 1758**

Local distribution - Malta: Dockyard (Cameron & Caruana Gatto, 1907), Addolorata Cemetry (Schembri & Sama, 1986), Maqluba, Marsa and private ground of San Anton Gardens.
Global distribution - Europe, Caucasus, Asia Minor, northern Iran, Iraq, Israel, Palestine. Widespread in most of Europe (northward to southern Sweden, eastward to Belorussia, Ukraine, Moldavia and Crimea), but more common in the Mediterranean Region (Sama, 2002).

Host plants - Larval development takes place first under bark and later deep in the wood of sick, sun-exposed large living trunks of several species of *Quercus*. The species is also reported (probably based on occasional adaptations) from other broadleaf trees like *Juglans*, *Fraxinus*, *Castanea* and *Ceratonia*.
Notes - This species was locally known from very few records but recently more than 20 specimens were examined from Marsa. These specimens emerged from a sick cultivated *Quercus ilex* tree.

16. ***Cerambyx welensii* Küster, 1846**

Local distribution - Malta (Mifsud & Booth, 1997).
Global distribution - Europe, Southern Turkey and the Middle East (Jordan, Lebanon and Israel).
Host plants - Larval development takes place under bark and in the wood of living trunks of broadleaf trees with a special preference for *Quercus ilex* but occasionally also in *Platanus* and *Ceratonia*.

***Cerambyx miles* Bonelli, 1823**

Local distribution - Malta (Anonymous, 1890; Borg, 1922; Saliba, 1963): Marsaxlokk and Gnejna (Cameron & Caruana Gatto, 1907).
Global distribution - Europe, Asia Minor, Caucasus, Syria, Lebanon with records from Morocco which appear rather doubtful (Sama, 2002). Southern European species, in western and central Europe occurring in a few xerothermic localities: France, Switzerland (Tessin), Slovakia, Hungary. More common in southern Europe (but localised in Iberian Peninsula), and widespread from southern France, Italy, and Balkans to Crimea.
Host plants - Larval development takes place in living broadleaf trees with a special preference to *Quercus* but also in *Amygdalus*, *Prunus*, *Malus*, *Pyrus*, *Crataegus*, *Carpinus* and *Vitis*.
Notes - The species was originally recorded from the Maltese Islands in 1890 when McLachlan mentioned that a serious enemy of orange-trees in Malta was the larva of a large longhorn beetle (*Cerambyx miles*) which bores into the lower parts of the stem and down into the roots, making large galleries (Anonymous, 1890). This host plant record is very unusual for *C. miles* Bonelli. Cameron & Caruana Gatto (1907) recorded the species from Marsaxlokk and Gnejna but these records most probably refer to *C. nodulosus* Germar. Borg (1922) recorded this species as injurious to pear trees and other cultivated trees, whereas Saliba (1963) reported that *C. miles* Bonelli is locally common on apple and pear trees. Local records of *C. miles* Bonelli should be referred to *C. nodulosus* Germar.

17. ***Cerambyx nodulosus* Germar, 1817**

Local distribution - Malta: Balzan, Birkirkara (Schembri & Sama, 1986), Santa Venera, Iklin, Zejtun, around Dragonara Hotel (Paceville), Zabbar, Chadwick Lakes, Tal-Virtu (Rabat), Ghammieri (Marsa) and St. Julians.
Global distribution - East Mediterranean with records from Venezia Giulia, Istria, Dalmatia, Greece, Bulgaria, Romania, Turkey, Syria and Caucasus.
Host plants - Larval development takes place in wood of living broadleaf trees, especially in fruit-trees such as *Pyrus* and *Malus*, but also in *Crataegus* and *Acer*.
Notes - This species was originally recorded from the Maltese Islands by Caruana Gatto (1894) but in his later co-authored catalogue it was substituted by *C. miles* Bonelli (Cameron & Caruana Gatto, 1907; Schembri & Sama, 1986). The records of *Cerambyx dux* Faldermann, 1837 by Saliba (1963; 1972b; 1974a; 1977) should refer to this species. This Eastern element is thought to have been accidentally introduced in the Maltese Islands (Sama, 1988) were it is now a well established pest of stone fruit-trees.

18. ***Cerambyx carinatus* Küster, 1846**

Local distribution - Malta: Balzan (Mifsud & Booth, 1997) and Rabat.
Material examined - Malta: Rabat, 21.vi.2002, 1 ex., leg. P. Sammut, Rabat, 23.vi.2002, 1 ex., leg. P. Sammut, Rabat, 1.vii.2002, 1 ex., leg. P. Sammut.
Global distribution - Balkan Peninsula (southward to Greece), Turkey and Malta.
Host plants - Larval development takes place in sick wood of trunks of *Prunus* spp.
Notes - Besides the material cited above, an old specimen (?) (Sammut, P. *pers. comm.*) labelled 'Malta' was also found in the collections of the Natural History Museum of Mdina, indicating that this species may have been introduced earlier than the first records indicated by Mifsud & Booth (1997). This introduced species seems to be locally established.

***Cerambyx scopolii* Füsslins, 1775**

Local distribution - Malta (Saliba, 1963).
Global distribution - Europe, Asia Minor and Caucasus. In Europe the species is very common from southern Scandinavia (Norway and Sweden) to Sicily and Crete and from Portugal to Russia and Crimea. In North Africa (Algeria and Tunisia), *C. scopolii* Füsslins is replaced by *C. paludivagus* Lucas, 1846.
Host plants - Larval development takes place first under bark and later in wood of dead branches and trunks of broadleaf trees including *Juglans*, *Quercus*, *Prunus*, *Fagus*, *Castanea*, *Carpinus*, *Betula*, *Ulmus*, *Salix*, *Populus*, *Syringa*, *Tilia*, *Corylus* and *Ostrya*.
Notes - This species was only recorded by Saliba (1963) as uncommon on vines and the record is most likely incorrect.

***19. Hylotrupes bajulus* (Linnaeus, 1758)**

Local distribution - Malta: Dockyard (Cameron & Caruana Gatto, 1907), Tigne, Gzira, Marsa (Schembri & Sama, 1986), Sliema, Qrendi and Zejtun.
Global distribution - Europe, North Africa, Canary Islands, Madeira, Asia Minor, Middle East, Northern Iran,

Caucasus, Siberia and China. Imported in North America, South Africa, Madagascar and Asia.
Host plants - Larval development takes place in the dead dry wood of stems and stumps of conifers (*Picea*, *Pinus* and *Abies*). The species is common in Europe were it develops in wooden buildings made with conifer timber.

***Ropalopus clavipes* (Fabricius, 1775)**

Local distribution - Malta (Cameron & Caruana Gatto, 1907).
Global distribution - Europe, Caucasus, Asia Minor, Middle East and Siberia. Sporadic in central Europe (northward to Denmark according to old records) and most common in south-eastern Europe.
Host plants - Larval development takes place in dead twigs and small branches of trees and bushes of various broadleaf trees including *Acer*, *Alnus*, *Castanea*, *Fagus*, *Quercus*, *Corylus*, *Salix*, *Malus*, *Prunus*, *Tilia*, *Rhamnus*, *Ulmus*, *Juglans*, *Paliurus*, *Pistacia* and *Populus*; occasionally it can also develop in conifers (*Picea excelsa* and *Abies cilicica*).
Notes - The record of *R. clavipes* (Fabricius) by Cameron & Caruana Gatto (1907) is in need of verification, since the southernmost European station of this taxon is peninsular Italy. The Maltese record could be attributed to an accidental introduction. The possibility of a misidentification with other *Ropalopus* species is also remote. Most *Ropalopus* species have distributions in Central Europe or adjacent regions with the exception of two species, *R. siculus* (Stierlin, 1864) and *R. insubricus* (Germar, 1824), both with larval development generally taking place in *Acer* spp., a host plant which is locally lacking.

20. ***Chlorophorus glabromaculatus* (Goeze, 1777)**

Local distribution - Malta: Birkirkara (Schembri & Sama, 1986), Buskett, Ghajn Rihana, Wied Has-Sabtan and Sliema.
Global distribution - Europe with records from France (except south-western provinces), Italy (including Sardinia and Sicily), Switzerland, Belgium, Germany (introduced) and north-western Balkans (mostly in coastal regions).
Host plants - Larval development takes place in dead dry wood of broadleaf trees including *Quercus*, *Castanea*, *Robinia*, *Vitis*, *Prunus*, *Acer*, *Ulmus*, *Populus*, *Salix*, *Alnus*, *Zelkova crenata* and others; only occasionally in conifers (*Juniperus*).
Notes - Prior to this study, *C. glabromaculatus* (Goeze) was locally known from two single records (Schembri & Sama, 1986). More than 20 specimens were reared from dead branches of *Quercus* taken from Buskett. In Italy the species is known from all regions but unlike Malta, it seems to be more rare and sporadic in the south and on the islands (Sama, 1988).

21. ***Chlorophorus varius* (Müller, 1766)**

Local distribution - Malta: Buskett (Cameron & Caruana Gatto, 1907), Wied Incita, Wied Qannotta (Schembri & Sama, 1986), Bahrija and Gnejna.
Global distribution - Central and Southern Europe (sporadic in Central Europe), Asia Minor, Northern Iran, Turkestan and Western Siberia.
Host plants - Larval development takes place in the wood of exposed twigs and branches of broadleaf trees including *Vitis*, *Acer*, *Quercus*, *Populus*, *Malus*, *Crataegus*, *Juglans*, *Robinia*, *Elaeagnus*, *Ficus*, *Sesbania*, *Prunus*, *Pyrus*, *Morus*, *Castanea*, *Ulmus*, *Alnus*, *Fraxinus*, *Pistacia*, *Paliurus*, *Salicornia* and *Spartium*.

22. ***Parmena* sp.**

Local distribution - Malta: Marsaskala (Cameron & Caruana Gatto, 1907), Buskett, Ghajn Hadid, Delimara, Qawra Point, White Tower Bay (Schembri & Sama, 1986), Golden Bay, Armier, Ghajn Rihana, Hagar Qim, Qrendi, Rabat, Bahrija, Wied is-Sewda, Wied il-Kbir and Zejtun. Gozo: Ta' Pinu, Sannat (Schembri & Sama, 1986), Ghasri, Dwejra, Marsalforn and Qbajjar. Comino: Santa Maria and near Tower (Schembri & Sama, 1986).
Global distribution - Malta (?).
Host plants - Within the *pubescens/algirica* group (refer to comments hereunder), larval development has been reported to occur in stalks, roots and twigs of herbaceous plants including *Euphorbia*, *Crithmum*, *Foeniculum*, *Ferula*, *Thapsia*, *Amni*, *Chrysanthemum*, *Papaver* and Carduaceae, only occasionally in *Ficus* and *Nerium*.
Notes - This species was recorded as *Parmena pubescens* (Dalman, 1817) by Schembri & Sama (1986). Sama (1988) included the Maltese species in the nominotypical subspecies, stating however that the specimens from the Pelagic and the Maltese Islands could be separated as a distinct taxon. The exact taxonomic status of the Maltese *Parmena*, which belong to the *pubescens/algirica* group, remains to be clarified. They could belong to a new species or to a form of *P. algirica* Castelnau, 1840 (G. Sama, personal communication).

23. ***Phryneta leprosa* (Fabricius, 1775)**

Local distribution - Malta: Wied tal-Isqof, Hemsija, Mdina, Tal-Virtu, Ghammieri (Marsa) and Mosta (Mifsud & Dandria, 2002).
Global distribution - From Sierra Leone to Angola and Tanzania (Breuning, 1937; Adlbauer & Mourglia, 1999).
Host plants - Larval development takes place in the wood of living trunks of several broadleaf trees. In Malta, *P. leprosa* (Fabricius) was only reported as developing in thick trunks of *Morus nigra* (Mifsud & Dandria, 2002).
Notes - This species was presumably accidentally introduced in Malta in 1998. It is locally naturalised and is causing considerable damage to *Morus nigra* trees (Mifsud & Dandria, 2002).

***24. Niphona picticornis* Mulsant, 1839**

Local distribution - Malta: Marsaskala (Cameron & Caruana Gatto, 1907), Birkirkara, Wied il-Ghasel, Buskett,

Wied Qirda, Sliema (Schembri & Sama, 1986), St. Julians, Dingli, Mistra, Mellieha, Wied Babu, Delimara, Zejtun, Ghajn Tuffieha, Fomm ir-Rih and Rabat. Gozo: Ramla.
Global distribution - Throughout the Mediterranean Region.
Host plants - Larval development takes place in dead branches and stems of broadleaf trees including *Ficus*, *Spartium*, *Pistacia*, *Robinia*, *Castanea*, *Ulmus*, *Punica*, *Morus*, *Prunus*, *Quercus*, *Calycotome*, *Sambucus*, *Laurus*, *Cercis*, *Euphorbia*, *Rhamnus*, *Phoenix* and *Genista*; occasionally in conifers (*Pinus*).

25. ***Deroplia troberti* (Mulsant, 1843)**

Local distribution - Malta: Buskett (Schembri & Sama, 1986; Mifsud & Booth, 1997) and Wied Qannotta.
Material examined - Malta: Wied Qannotta, 20.iii.1988, 4 exs., leg. A. Seguna (actinic light trap).
Global distribution - Europe and North Africa. In southern Europe the species is mostly found along the coastal plains of Portugal, Spain, Southern France (including Corsica), western and southern Italy (including Sardinia and Sicily), Croatia, Bosnia-Herzegovina and Greece (including Crete: *D. troberti cruciata* Sama, 1997).
Host plants - Larval development takes place in dead and dying twigs of broadleaf trees including *Quercus* spp., *Nerium oleander*, *Pistacia lentiscus*, *Laurus nobilis* and *Juglans regia*.
Notes - Prior to this study, *D. troberti* (Mulsant) was known from two isolated records, both taken from Buskett.

26. ***Saperda punctata* (Linnaeus, 1767)**

Local distribution - Malta: Valletta (Cameron & Caruana Gatto, 1907).
Global distribution - Europe, North Africa (Algeria), Asia Minor and Caucasus. In central Europe the species is sporadic but widely distributed; in southern and south-eastern Europe the species is known from northern Spain and Italy to Balkans, Moldavia, Crimea, Ukraine and European Russia (Sama, 2002).
Host plants - Larval development takes place under bark of sick and dying stems and branches of *Ulmus*; only occasionally in *Quercus* and *Tilia*.
Notes - *S. punctata* (Linnaeus) is a relatively rare species in the southern Mediterranean Region; it is very rare in Sicily where it was found only recently, following old citations (Sama, G. *pers. comm.*). The record by Cameron & Caruana Gatto (1907) should be correct. The fact that the species was never found recently may be due to extinction, following extensive habitat degradation and persecution of indigenous *Ulmus* trees (Lanfranco, 1989).

***Oberea* (*Amaurostoma*) *erythrocephala* (Schrank, 1776)**

Local distribution - Malta (Reiche, 1877).
Global distribution - Europe, North Africa (Morocco), Asia Minor, Caucasus, Transcaucasia, northern Iran, Middle East, southern Urals, northern Kazakhstan. Sporadic (thermophilous) in Poland, Belorussia and southern Urals; locally common in France, Switzerland, Germany, south-eastern Austria and Hungary; widespread but uncommon and strongly localized in Iberian Peninsula (southward to Cadiz) and Italy (apparently absent south of Latium); rather common in Balkans (reaching northern Greece) eastward to southern part of European Russia and European Kazakhstan (Sama, 2002).
Host plants - Larval development takes place in the central stalks towards the roots of several *Euphorbia*, especially *E. characias*, *E. cyparissias*, *E. esula* and *E. seguieriana*.
Notes - Reiche (1877) described *Oberea melitana* Reiche from material presumably collected from Malta. This taxon was later included as a variety of *Oberea erythrocephala* (Schrank). This record is in need of verification because what was locally collected (if really in Malta) could have been a different species of *Oberea*.

27. ***Calamobius filum* (Rossi, 1790)**

Local distribution - Malta: Ta' Baldu, Girgenti, Imtahleb (Cameron & Caruana Gatto, 1907), Wied Qirda (Schembri & Sama, 1986), Mgiebah, Bahrija and Zejtun.
Global distribution - Europe, North Africa, Asia Minor, Caucasus, Transcaucasia, northern Iran, Middle East, Cyprus. Widely distributed in southern parts of Europe from Spain and France to Austria, Czechia, Slovakia, Ukraine and southern part of European Russia (Sama, 2002).
Host plants - Larval development takes place in living stems of Poaceae: *Arrhenaterum elatius*, *Calamogrostis pseudophragmites*, *Dactylis glomerata*, *Hedysarum*, *Hordeum* and *Triticum*.

28. ***Agapanthia asphodeli* (Latreille, 1804)**

Local distribution - Malta: Hamrun, Wied il-Ghasel, Wied Qannotta (Schembri & Sama, 1986), Wied Has-Sabtan, Pellegrin, Gharghur, Mosta, Wardija, Wied iz-Zurrieq, Maqluba, Buskett, Mistra and Ghar Lapsi.
Global distribution - North Africa, Iberian Peninsula, France, Switzerland, Italy, Balkans, Turkey, Syria and Caucasus.
Host plants - Larval development takes place in the stalks of herbaceous plants with a special preference for *Asphodelus* but also in *Thapsia*, *Ferula* and in Carduaceae.

***Agapanthia cynarae cynarae* (Germar, 1817)**

Local distribution - Malta: Fort Manuel and Corradino (Cameron & Caruana Gatto, 1907).
Global distribution - Europe. In southern and south-eastern Europe known from north-eastern and south-eastern Italy, Balkans (from Istria to Peloponnese and European Turkey) and Crete (described as a separate subspecies: *A. cynarae michaeli* Sláma, 1986).
Host plants - Larval development takes place primarily in the stalks of Asteraceae with a preference for *Onopordon* but also in *Carduus pycnocephalus*, *Cirsium*, *Aconitum* and *Acanthus*.

Notes - Most likely, the record of this species by Caruana Gatto (1894) and Cameron & Caruana Gatto (1907) is erroneous. The species is not even known from Sicily and according to Sama (1988) an old citation of this species for Sicily should refer to either *A. villosoviridescens* (DeGeer, 1775) or *A. maculicornis* (Gyllenhal, 1817).

29. ***Agapanthia cardui* (Linnaeus, 1758) (s. l.)**

Local distribution - Malta: Imtahleb (Cameron & Caruana Gatto, 1907), Ghadira, Gwardamangia, Wied Qirda, Birkirkara, Wied is-Sewda (Schembri & Sama, 1986), Wied Has-Sabtan, Zejtun, Tal-Munxar (St. Thomas Bay), Rabat, Buskett, Maqluba and Bahrija.
Global distribution - Central and southern Europe, with records from western France to Poland, Ukraine, and eastward to southern Urals, northern and central areas of Spain, Italy, Balkans and southward to Greece; southern parts of Mediterranean peninsulas, Sicily and Andalusia, North Africa and Middle East.
Host plants - Larval development takes place in the stalks of herbaceous plants including *Urtica*, *Cirsium*, *Scolymus*, *Carduus*, *Melilotus*, *Heracleum*, *Senecio*, *Eupatorium*, *Chrysanthemum*, *Dipsacus*, *Pyrethrum*, *Valeriana*, *Salvia* and others.
Notes - In the southernmost part of its distributional range, *A. cardui* (Linnaeus) is a very variable species with two main phenotypes; a northern one, delimited by a distribution from central and southern Europe up to Greece (refer to global distribution above) and a southern one, mainly delimited by the rest (southern parts of Mediterranean peninsulas to Middle East) of the distributional range provided above. Larval morphology fully supports the separation of these two forms into two species, which confirms recent studies on shape of aedeagus and endophallic sclerites (Sama, 2002).

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