

Annotated review of the Cantharidae and Malachiidae (Coleoptera) of the Maltese Islands

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Abstract. The Cantharidae and Malachiidae (Coleoptera) of the Maltese Islands are reviewed. Six species of the family Cantharidae are listed, two of which are new for the Maltese Islands: *Cantharis praecox* Gené, 1836, and *Malthinus latirufus* (Pic, 1901). *Malthinus pseudoscriptus* Wittmer, 1971, syn. nov. is synonymized with *Malthinus scapularis* Marseul, 1878. Male last abdominal segments of *Malthodes cameroni* (Pic, 1903) are illustrated for the first time. Fourteen species of the family Malachiidae are listed, four of which are new for the Maltese Islands: *Sphinginus lobatus* (Olivier, 1790), *Attalus sicanus* Erichson, 1840, *Ebaeus ruffoi* Pardo, 1962, and *Axinotarsus pulicarius* (Fabricius, 1775). *Attalus melitensis* var. *testaceipes* Pic, 1903, syn. nov. is synonymized with *Attalus sicanus* Erichson, 1840.

Key words. Coleoptera, Cantharidae, Malachiidae, Palaearctic region, Malta, taxonomy, new synonyms, distribution

Introduction

Malta, Gozo and Comino, together with some minor islands, constitute the Maltese Archipelago situated in the Central Mediterranean Basin. Malta, with a total surface area of 245.7 km² is the largest island, followed by Gozo with an area of 67.1 km². In total, the landmass of the Maltese Islands is about 316 km². The resident population numbers about 400,000, representing one of the highest population densities in the world with over 1,200 persons per square kilometre. The islands are aligned in a northwest-to-southeast direction and located in the Sicilian Channel approximately 96 km from Sicily, 320 km from Tunisia and 330 km from Tripolitania (Libya). Despite an intense impact of humans, the Maltese Islands still harbour

a diverse array of natural habitats (Figs. 7-10). The islands are semi-arid with an average annual precipitation of about 530 mm.

The Cantharidae, commonly known as soldier beetles, represent a relatively small family of beetles with about 135 genera and 5,000 described species worldwide. Adults are diurnal, occurring on flowers of various trees and shrubs. They are predacious but can also feed on pollen, nectar and fresh foliage. Larvae are common in the soil and leaf litter where they are generally predatory on small arthropods. The Malachiidae are represented by about 150 genera and about 3,000 described species. The family has a worldwide distribution with a marked preference for desert and arid biotopes. Adults feed on pollen or fungi. Larvae live mainly in dead wood and in the stems of plants, where they are predatory on larvae of xylophagous insects. Larvae of the genus *Ebaeus* are known to be predatory on larvae of some nest-making Hymenoptera. Recently, the Malachiidae have been mostly included as a subfamily of the Melyridae. However, MAJER (1994) who was the last to revise the Melyridae and related families, classified the Malachiidae in the family rank.

Local and foreign entomologists have had particular interest in the Coleoptera of the Maltese Islands mainly due to the isolation and strategic position of the archipelago. The earliest records of the Cantharidae and Malachiidae from the Maltese Islands are due to descriptions of new species (MARSEUL 1878; PEYRON 1877; PIC 1903a, b, 1904). The so far most comprehensive and classic work on the Coleoptera of the Maltese Islands is the list by CAMERON & CARUANA GATTO (1907). They included 24 taxa under the family name of Cantharidae. Of these, one is now included in the family Lampyridae, five in the Cantharidae (including one taxon not identified to species level), one in the Drilidae, nine in the Malachiidae (one taxon included as a variety and two species based only on earlier citations), and eight in the Melyridae (one included as a variety). Since then, numerous revisions of various groups appeared in which earlier records were reviewed and extended. In particular, LUIGIONI (1929) included CAMERON & CARUANA GATTO'S (1907) records in his work on the Italian Coleoptera. TONNA-BARTHET (1931) published a list of rare Coleoptera of the Maltese Islands, based entirely on earlier citations. Finally, CILIA (1989) compiled an annotated list of endemic, rare, threatened and/or scientifically interesting beetles in the Red Data Book for the Maltese Islands (SCHEMBRI & SULTANA 1989). Most of this work was also based on previously published information.

The present work thus attempts to provide an up-to-date overview of the species of Cantharidae and Malachiidae that occur in the Maltese Islands.

Material and methods

For each species we include its basionym, earlier cited references peculiar to Malta (with the exception of LUIGIONI (1929) who repeated CAMERON & CARUANA GATTO (1907)), specimens examined, global distribution and, where relevant, additional notes. We also illustrate the distribution of endemic and nearly endemic species (Figs. 4-6). Double slashes in precise label data indicate separate labels.

The examined specimens are housed in the following institutions and private collections:

BMNH	Natural History Museum, London, Great Britain;
DMZM	David Mifsud collection, Zejtun, Malta;
HBBM	Henry Borg Barthet collection, Mellieha, Malta;
NMPC	National Museum, Praha, Czech Republic.

Whenever possible, we re-evaluated data recorded by CAMERON & CARUANA GATTO (1907). Specimens collected around early 1900s (presumably by Malcolm Cameron and/or Alfredo Caruana Gatto), of which a substantial amount is conserved in the BMNH, are labelled as ‘Cameron Coll., B.M. 1936-555’. These specimens are often accompanied by a unique number, which corresponds to a number in Cameron’s private notes and in which the following information is (partially or fully) included: date of collection, name of the species, name of the person (usually in initials) who identified this species, locality name, and ecological data. When available, such information is included after the mentioned number in square brackets. Specimens collected in Malta between 1874-1876 by Commander James John Walker is also conserved in the BMNH and is labelled as ‘G.C. Champion Coll., B.M. 1927-409’. This material was almost exclusively collected between the months of October and March of the three mentioned years. In CAMERON & CARUANA GATTO’S (1907) list, entries based on this material are either indicated by an asterisk or especially noted as either Coll. J.J.W. or teste J.J.W. (CAMERON & CARUANA GATTO 1907). Except for the name Malta, there are no other precise locality names or habitats available for these specimens.

This paper also includes additional material of the Cantharidae and Malachiidae collected in the Maltese Islands between 1989 and 2005. Moreover, Karel Majer maintained a large database (largely unpublished), which included data on specimens he identified from various museums and private collections. In 1998, Majer sent his data on the Maltese Malachiidae to one of us (D. Mifsud). We include these data where relevant.

Checklist of Maltese Cantharidae

<i>Cantharis praecox</i> Gené, 1836	<i>Malthodes bifurcatus</i> Kiesenwetter, 1852
<i>Malthinus scapularis</i> Marseul, 1878	<i>Malthodes cameroni</i> (Pic, 1903)
<i>Malthinus latirufus</i> (Pic, 1901)	<i>Malthodes</i> sp.

Checklist of Maltese Malachiidae

<i>Colotes maculatus</i> (Castelnau de Laporte, 1836)	<i>Hypebaeus flavicollis</i> (Erichson, 1840)
<i>Colotes punctatus</i> (Erichson, 1840)	<i>Ebaeus gibbus</i> (Drapiez, 1819)
<i>Sphinginus lobatus</i> (Olivier, 1790)	<i>Ebaeus ruffoi</i> Pardo, 1962
<i>Attalus cyaneus</i> (Fabricius, 1792)	<i>Charopus apicalis</i> Kiesenwetter, 1859
<i>Attalus melitensis</i> Peyron, 1877	<i>Axinotarsus pulicarius</i> (Fabricius, 1775)
<i>Attalus sicanus</i> Erichson, 1840	<i>Malachius australis</i> Mulsant & Rey, 1867
<i>Attalus maculicollis</i> (Lucas, 1849)	<i>Clanoptilus</i> sp.

Annotated list of Cantharidae

Cantharis praecox Gené, 1836

Cantharis praecox Gené, 1836: 178.

Material examined. MALTA: 2 exs. (DMZM): Zejtun, 4.ii.1996, leg. D. Mifsud // *Cantharis praecox* Gené, det. A. Kopetz 2000; 2 exs. (DMZM): Marsa, Ghammieri, 23.ii.1996, leg. D. Mifsud // *Cantharis praecox* Gené, det. A. Kopetz 2000; 1 ex. (DMZM): Fiddien, 19.iii.1996, leg. D. Mifsud // *Cantharis praecox* Gené, det. A. Kopetz 2000; 1 ex. (DMZM): Bidnija, 20.ii.1998, leg. D. Mifsud // *Cantharis praecox* Gené, det. A. Kopetz 2000; 1 ex. (DMZM): Blata l-Bajda, 30.iii.1990, leg. D. Mifsud // *Cantharis praecox* Gené, det. A. Kopetz 2000.

Distribution. Corsica, Sardinia, Sicily (DELKESKAMP 1939) and Malta.

Comments. *Cantharis praecox* represents a new record for the Maltese Islands. The species is frequently found in diverse habitats in Malta.

Malthinus scapularis Marseul, 1878

Malthinus scapularis Marseul, 1878: 23.

Malthinus scapularis: CAMERON & CARUANA GATTO (1907): 397.

Malthinus scapularis: TONNA-BARTHET (1931): 7.

Malthinus pseudoscriptus Wittmer, 1971: 170, **syn. nov.**

Material examined. MALTA: 3 exs. (BMNH): 8679 [= April '04, *Malthinus scapularis*, St. Paul's Bay] // M. Cameron Coll. B.M. 1936-555; 1 ex. (BMNH): M. Cameron Coll. B.M. 1936-555; 18 exs. (BMNH): G. C. Champion Coll. B.M. 1927-409; 1 ex. (DMZM): private grounds of Verdala palace (nr. Buskett) // 5.iv.-16.v.2002, leg. D. Mifsud // reared from dead branches of *Ceratonia siliqua* L.; 4 exs. (DMZM): Bahrija, 20.iv.2002, leg. D. Mifsud; 1 ex. (DMZM): same locality, 12.v.1996, leg. D. Mifsud // *Malthinus pseudoscriptus* Wittmer, det. A. Kopetz 2000; 1 ex. (DMZM): St. Thomas Bay, Tal-Munxar // 16.iii.2003, leg. D. Mifsud; 1 ex. (DMZM): same locality, 29.iv.2002, leg. D. Mifsud; 1 ex. (DMZM): Hagar Qim, 4.iv.2004, leg. D. Mifsud; 1 ex. (DMZM): Zejtun, 26.iv.1989, leg. D. Mifsud // *Malthinus pseudoscriptus* Wittmer, det. A. Kopetz 2000; 1 ex. (DMZM): Selmun, 30.iii.1996, leg. D. Mifsud // *Malthinus pseudoscriptus* Wittmer, det. A. Kopetz 2000; 2 exs. (DMZM): Wied Has-Sabtan, 14.iv.1990, leg. D. Mifsud, on flowers of *Erica multiflora* L. // *Malthinus pseudoscriptus* Wittmer, det. A. Kopetz 2000; 4 exs. (DMZM): same locality, 4.iv.1996, leg. D. Mifsud; 1 ex. (DMZM): Wardija, Ballut tal-Imgiebah, 100 m, 1.iv.2002, leg. Schuh & Mifsud; 5 exs. (NMPC): Buskett, 22.iv.2004, leg. Z. Švec. Gozo: 1 ex. (DMZM): Wied il-Lunzjata, 17.iv.1990, leg. D. Mifsud // *Malthinus pseudoscriptus* Wittmer, det. A. Kopetz 2000; 1 ex. (DMZM): Wied Ilma, 19.iv.1990, leg. D. Mifsud // *Malthinus pseudoscriptus* Wittmer, det. A. Kopetz 2000; 1 ex. (DMZM): Dwejra, 25.iv.2003, leg. D. Mifsud.

Distribution. Sardinia, Elba Island, Central and Southern Italy, Sicily and Malta (MARSEUL 1878, WITTMER 1971).

Comments. Two species of the genus *Malthinus* Latreille, 1806, are known to occur in the Maltese Islands. WITTMER (1971) had no specimens from Malta and wrote that he did not find any material of *M. scapularis* in the collection of Marseul. He illustrated the aedeagus of this species based on specimens collected from Marettimo (Egadi Islands) on the western coast of Sicily. *Malthinus pseudoscriptus* fits well the description of *M. scapularis*, especially in the characteristic coloration of the pronotum. Therefore we regard *M. pseudoscriptus* as a synonym of the latter. The material from Marrettimo Island examined by WITTMER (1971) belongs to another, probably undescribed species. The second Maltese species, *M. latirufus*, differs from MARSEUL's (1878) original description of *M. scapularis* in a smaller size, different coloration of the pronotum, shorter antenna, different shape of the head and distinctly smaller eyes.

***Malthinus latirufus* (Pic, 1901)**

Malthodes latirufus Pic, 1901: 17.

Material examined. MALTA: 2 exs. (BMNH): 7433 [= June 1902, *Malthodes* ? sp., ER, Ta' Baldu] // M. Cameron Coll. B.M. 1936-555 // *Malthodes* sp. female, désiré [Pic's handwriting]; 3 exs. (BMNH): M. Cameron Coll. B.M. 1936-555; 2 exs. (DMZM): Bahrija, 20.iv.2002, leg. D. Mifsud.

Distribution. Tunisia (WITTMER 1971) and Malta (Fig. 4).

Comments. *Malthinus latirufus* represents a new record for Malta where it is locally rare and with a restricted distribution. It was recorded as *Malthodes* sp. by CAMERON & CARUANA GATTO (1907). The species was previously known only from Tunisia. The Maltese specimens differ from the Tunisian ones by a darker pronotum, which has only a narrow pale border on its anterior and posterior margin and sometimes also on posterior corners, whereas the Tunisian specimens possess either an entirely yellow pronotum or a central darker spot of variable size. WITTMER (1971) mentioned that coloration of this species is variable. We are thus of the opinion that the darker coloration of the pronotum falls within the variability of this species.

***Malthodes bifurcatus* Kiesenwetter, 1852**

Malthodes bifurcatus Kiesenwetter, 1852: 297.

Malthodes malcolmi Pic, 1904: 49; synonymized by FIORI (1906): 2.

Malthodes malcolmi: CAMERON & CARUANA GATTO (1907): 397.

Malthodes malcolmi: TONNA-BARTHET (1931): 7.

Malthodes malcolmi: CILIA (1989): 118.

Material examined. MALTA: 1 ex. (BMNH): cotype // *Malthodes Malcolmi* (Pic) // M. Cameron Coll. B.M. 1936-555; 1 ex. (BMNH): Determined by Dr. Cameron // *malcolmi* // M. Cameron Coll. B.M. 1936-555; 3 exs. (BMNH): 8680 [= April '04, *Malthodes malcolmi* (Pic), Bosketto] // M. Cameron Coll. B.M. 1936-555; 9 exs. (BMNH): M. Cameron Coll. B.M. 1936-555; 1 ex. (NMPC): Zejtun, 1.v.2003, leg. D. Mifsud; 1 ex. (DMZM): Bahrija, 19.iii.1995, leg. D. Mifsud // *Malthodes bifurcatus* Kiesw., det. A. Kopetz 2000; 4 exs. (DMZM): Girgenti Valley, 17.iii.1990, leg. D. Mifsud // *Malthodes bifurcatus* Kiesw., det. A. Kopetz 2000; 1 ex. (DMZM): Mistra, 4.ii.1996, leg. D. Mifsud // *Malthodes bifurcatus* Kiesw., det. A. Kopetz 2000.

Distribution. Sicily and Malta (FIORI 1906). For distribution in Malta see Fig. 4.

Comments. FIORI (1906) had no material of this species from the Maltese Islands, but he correctly synonymized *M. malcolmi* with *M. bifurcatus*. We have examined Cameron's original material upon which Pic based his description, and can confirm the synonymy.

***Malthodes cameroni* (Pic, 1903)**

Podistrina cameroni Pic, 1903a: 155.

Malthodes ruralis: CAMERON & CARUANA GATTO (1907): 397.

Malthodes ragusai: CAMERON & CARUANA GATTO (1907): 397, misidentification.

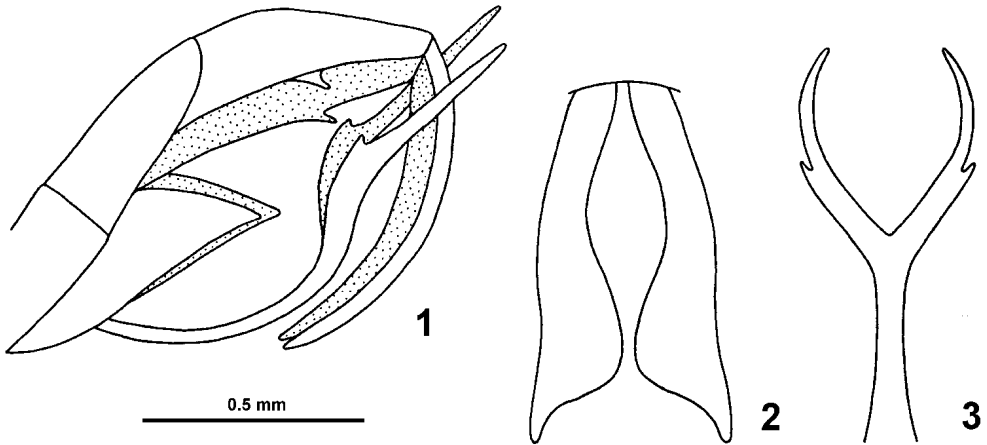
Malthodes cameroni: TONNA-BARTHET (1931): 7.

Malthodes cameroni: CILIA (1989): 118.

Material examined. MALTA: 3 exs. (BMNH): 8051 [= May 1903, *Malthodes Podistrina Cameroni* (Pic), MP, Gbir] // *Podistrina Cameroni* [Pic's handwriting] // M. Cameron Coll. B.M. 1936-555; 1 ex. (BMNH): iv.1904, M. Cameron Coll. B.M. 1936-555; 7 exs. (BMNH): G.C. Champion Coll. B.M. 1927-409 // *Ragusai Fiori*, det. Ganglbauer; 1 ex. (DMZM): Selmun, 30.iii.1996, leg. D. Mifsud // *Malthodes laciniatus* Kiesw., det. A. Kopetz 2000; 1 ex. (DMZM): Wied Has-Sabtan, 4.iv.1996, leg. D. Mifsud // *Malthodes laciniatus* Kiesw., det. A. Kopetz 2000; 1 ex. (DMZM): Mellieha, Kortin, near Imgiebah Valley, 8.iv.2004, leg. H. Borg Barthet; 1 ex. (NMPC): Mellieha, Kortin, 19.iv.2004, leg. H. Borg Barthet. Gozo: 1 ex. (DMZM): Dwejra, 25.iv.2003, leg. D. Mifsud.

Distribution. Malta (Fig. 4).

Comments. FIORI (1906) mentioned the possibility that *M. cameroni* could be identical with *M. bifurcatus*. This hypothesis was adopted by JAKOBSON (1911) and subsequent authors but it was questioned by WITTMER (1970), who emphasized the necessity to examine the type mate-



Figs. 1-3. *Malthodes cameroni* Pic, 1903. 1 – last abdominal segments, oblique lateral view; 2 – last tergite, ventrocaudal view; 3 – last sternite, caudal view.

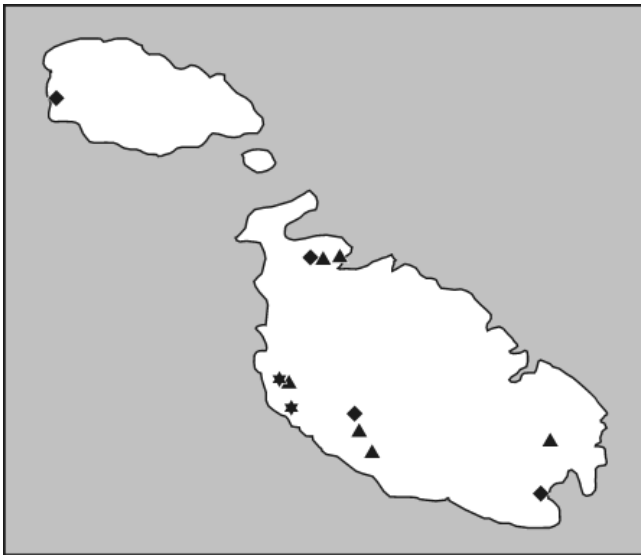


Fig. 4. Distribution of *Malthinus latirufus* (Pic, 1901) (asterisc), *Malthodes bifurcatus* Kiesenwetter, 1852 (triangle) and *Malthodes cameroni* (Pic, 1903) (rhomb) in the Maltese Islands (Malta at bottom, Gozo at top and Comino in middle).

rial. In the present work, *M. cameroni* is recognised as a valid species, strongly differing from *M. bifurcatus*. Given the shape of the male last abdominal segments (Figs. 1-3), *M. cameroni* is closely related to *M. ruralis* Kiesenwetter, 1871, described from Sicily. Unfortunately, no material of *M. ruralis* is at our disposal and Kiesenwetter's type material was destroyed. Material identified as *M. ruralis* in collections (NMPC, collection of W. Wittmer, Basel) does not agree in certain details with Kiesenwetter's original description, and so the validity of *M. cameroni* must be for the present keep open. Based on specimens collected by Walker (Champion Coll.), CAMERON & CARUANA GATTO (1907) reported this taxon as *Malthodes ragusai* Fiori, 1905, a species with narrower and laterally apically curved bifurcated branches of the last tergite and described from Sicily. However, all corresponding specimens that we could examine are in fact males of *M. cameroni*. CAMERON & CARUANA GATTO (1907) reported the abundance of *M. cameroni* species in Malta as rare.

Malthodes sp.

Material examined. MALTA: 2 exs. (DMZM): Migra Ferha, 2.iv.2004, leg. D. Mifsud.

Comments. These two females without yellow apical spots on elytra differ strongly both from apterous females of *M. cameroni*, which also lack the elytral spots, and from bigger and much paler females of *M. bifurcatus*. Additional specimens including males are needed for their reliable identification.

Annotated list of Malachiidae

Colotes maculatus (Castelnau de Laporte, 1836)

Malachius maculatus Castelnau de Laporte, 1836: 29.

Colotes maculatus: CAMERON & CARUANA GATTO (1907): 397.

Material examined. MALTA: 1 ex. (BMNH): 5503 [= 21 Aug., *Colotes maculatus*, Ghirgenti] // M. Cameron Coll. B.M. 1936-555; 1 ex. (BMNH): M. Cameron Coll. B.M. 1936-555; 2 exs. (DMZM): Salina, 11.vii.2002, leg. D. Mifsud; 2 exs. (DMZM, NMPC): Bahrija, 20.iv.2002, leg. D. Mifsud.

Distribution. Libya, Tunisia, Algeria, Morocco, Portugal, Spain, Balearics, S France, Corsica, Sardinia, Italy, Sicily, Austria, Croatia, Greece, Crete, Turkey, Syria (HORION 1953), Montenegro, Macedonia, Bulgaria, Georgia (unpublished records, coll. NMPC).

Comments. CAMERON & CARUANA GATTO (1907) reported the occurrence of *Colotes maculatus* in Malta as 'general'.

Colotes punctatus (Erichson, 1840)

Charopus punctatus Erichson, 1840: 122.

Colotes punctatus: CAMERON & CARUANA GATTO (1907): 397.

Material examined. MALTA: 1 ex. (BMNH): 7332 [= June 1902, *Colotes punctatus*, ER, St. Paul's Bay] // M. Cameron Coll. B.M. 1936-555; 8 exs. (DMZM, NMPC): around Ghadira Reserve (Melliha) // 2.vi.2002, leg. D. Mifsud; 1 ex. (DMZM): St. Thomas Bay, Tal-Munxar, 28.iv.2002, leg. D. Mifsud. COMINO: 1 ex. (DMZM): Santa Maria Bay, 13.viii.2002, leg. D. Mifsud.

Distribution. Tunisia, Algeria, Morocco, Portugal, Spain, Balearics, S France, Sardinia, S Italy, Sicily, Malta, Croatia, Greece (GREINER 1937, PLATA & SANTIAGO 1987, AUDISIO et al. 1995), Corsica (unpublished record, coll. NMPC).

Sphinginus lobatus (Olivier, 1790)

Malachius lobatus Olivier, 1790: 12.

Material examined. None.

Distribution. France, Portugal, Spain, Germany, Switzerland, Italy, Corsica, Sardinia, Austria, Hungary, Tunisia and Algeria (PLATA & SANTIAGO 1990).

Comments. We are including this new record for the Maltese Islands on the basis of Karel Majer's database (see Material and methods). AUDISIO et al. (1995) did not include Sicily in the distribution range of this species in Italy. The presence of this species in Malta thus needs to be verified by additional specimens.

Attalus cyaneus (Fabricius, 1792)

Malachius cyaneus Fabricius, 1792: 223.

Attalus erythroderus Erichson, 1840: CAMERON & CARUANA GATTO (1907): 397.

Material examined. MALTA: 15 exs. (BMNH): M. Cameron Coll. B.M. 1936-555; 37 exs. (BMNH): G.C. Champion Coll. B.M. 1927-409; 1 ex. (HBBM): Mellieha, Kortin, 6.iii.2004, leg. H. Borg Barthet; 1 ex. (HBBM): same data but 26.iv.2003; 1 ex. (DMZM): Bahrija, 20.iv.2002, leg. D. Mifsud; 3 exs. (DMZM): Delimara, 6.iv.1993, leg. P. Sprick; 3 exs. (DMZM): Mdina (Rabat), 1.iv.1993, leg. P. Sprick; 1 ex. (DMZM): Bingemma, 220 m, 4.iv.1993; 2 exs. (NMPC): Buskett, 22.iv.2003, leg. Z. Švec; 1 ex. (NMPC): Marsascala, 21.iv.2003, leg. Z. Švec.

Distribution. Tunisia, Algeria, Spain, Balearics, S France, Sardinia, Sicily and Malta (GREINER 1937, PLATA & SANTIAGO 1990).

Comments. CAMERON & CARUANA GATTO (1907) recorded this species from Ta' Baldu.

Attalus melitensis Peyron, 1877

Attalus melitensis Peyron, 1877: 159, incorrect original spelling.

Attalus melitensis: CAMERON & CARUANA GATTO (1907): 397.

Attalus melitensis: TONNA-BARTHET (1931): 7.

Attalus melitensis melitensis: CILIA (1989): 119.

Material examined. MALTA: 6 exs. (BMNH): 7336 [= June 1902, *Attalus melitensis*, Jniena] // M. Cameron Coll. B.M. 1936-555; 8 exs. (BMNH): M. Cameron Coll. B.M. 1936-555; 18 exs. (BMNH): G.C. Champion Coll. B.M. 1927-409; 1 ex. (BMNH): *Attalus melitensis*, det. A. Evers 1948, without further data; 4 exs. (BMNH): missing data; 1 ex. (DMZM): Dingli Cliffs, 31.iii.2002, leg. Schuh & Lang; 4 exs. (DMZM): St. Thomas Bay, Tal-Munxar, 13.iv.2003, leg. D. Mifsud; 2 exs. (DMZM): Bahrija, 20.iv.2002, leg. D. Mifsud; 1 ex. (DMZM): Ghar Lapsi, 12.v.2002, leg. D. Mifsud // on flowers of *Cynara cardunculus* L.; 2 exs. (HBBM): Mellieha Ridge, N of Manikata, 20.iv.2004, leg. H. Borg Barthet; 1 ex. (HBBM): Mellieha Hill, 1.v.2003, leg. H. Borg Barthet; 2 exs. (HBBM): Mellieha-Selmun, Mistra Valley, 7.iv.2004, leg. H. Borg Barthet; 2 exs. (HBBM): Mellieha, Kortin, 19.iv.2004, leg. H. Borg Barthet; 2 exs. (HBBM): Mellieha, Gnien Ingraw, 1.v.2004, leg. H. Borg Barthet; 1 ex. (HBBM): Mellieha, Selmun-Imgiebah Rd., 27.iv.2004, leg. H. Borg Barthet; 1 ex. (HBBM): Mellieha, Main street, 10.i.2004, leg. H. Borg Barthet; 2 exs. (HBBM): L-Andrijet, 9.v.2004, leg. H. Borg Barthet; 7 exs. (NMPC): Marsascala, 21.iv.2003, leg. Z. Švec; 1 ex. (NMPC): Buskett, 22.iv.2003, leg. Z. Švec. Gozo: 1 ex. (DMZM): Dwejra Bay, 30.iii.2002, leg. Schuh & Mifsud; 3 exs. (DMZM): same locality, 25.iv.2003, leg. D. Mifsud; 16 exs. (NMPC): same locality and date, leg. Z. Švec.

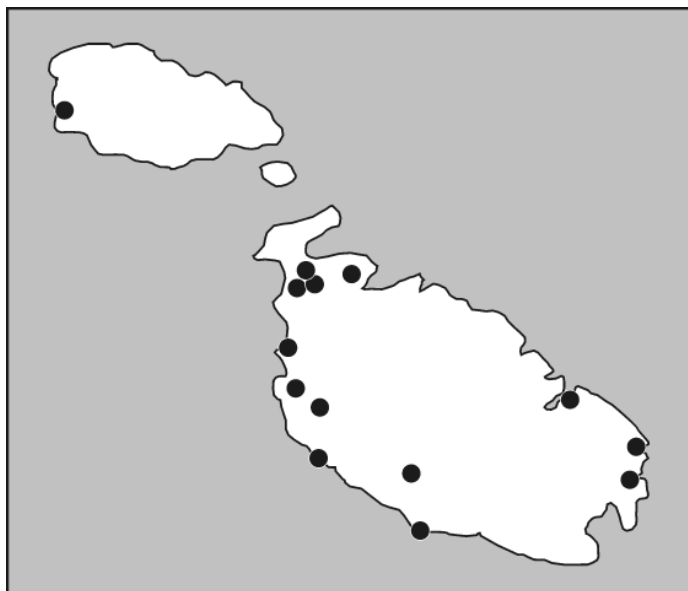


Fig. 5. Distribution of *Attalus melitensis* Peyron, 1877 in the Maltese Islands (Malta at bottom, Gozo at top and Comino in middle).

Distribution. Malta (Fig. 5).

Comments. ABEILLE DE PERRIN (1891) recorded this species from Etruria (= Tuscany), AUDISIO et al. (1995) did not report its occurrence in northern Italy but mentioned only Sicily with a question mark. Thus, *A. melitensis* seems to be endemic to the Maltese Islands; its presence in northern Italy and Sicily needs to be verified. The abundance of this species in Malta was given as 'general' by CAMERON & CARUANA GATTO (1907).

Attalus sicanus Erichson, 1840

Attalus sicanus Erichson, 1840: 91.

Attalus melitensis var. *testaceipes* Pic, 1903b: 169, **syn. nov.**

Attalus melitensis var. *testaceipes*: CAMERON & CARUANA GATTO (1907): 397.

Attalus var. *testaceipes*: TONNA-BARTHET (1931): 7.

Attalus melitensis testaceipes: CILIA (1989): 119.

Material examined. MALTA: 1 ex. (BMNH): 7337 [= June 1902, *A. dalmatinus*, Jniena] // M. Cameron Coll. B.M. 1936-555 // var. *testaceipes* [Pic's handwriting], [? Syntype]; 15 exs. (BMNH): M. Cameron Coll. B.M. 1936-555.

Distribution. Tunisia, Algeria, Balearics, Sardinia, Sicily, Austria, Croatia, Greece and Turkey (GREINER 1937, PLATA & SANTIAGO 1990) and Malta.

Comments. *Attalus sicanus* represents a new record for the Maltese Islands. This species is now known with certainty from Sicily and Malta, and its occurrence in the Balearics and Sardinia is possible. However, the occurrence in all the other countries mentioned by PLATA & SANTIAGO (1990) is very unlikely and possibly refers to other species such as *A. dalmatinus* Erichson, 1840. PIC (1903b) described *A. melitensis* var. *testaceipes* on the basis of Cameron's

material, which was at least partly available for examination. This material is identical to specimens of *A. sicanus* from Sicily; hence the above synonymy is established.

Attalus maculicollis (Lucas, 1849)

Malachius maculicollis Lucas, 1849: 194.

Material examined. None.

Distribution. Tunisia, Algeria, Morocco, France and Malta (PLATA & SANTIAGO 1987).

Comments. PLATA & SANTIAGO (1987) included Malta in the global distribution of this species. Karel Majer (pers. comm. to D. Mifsud 1998, see Material and methods) examined material of this species from Malta. Its presence in the Maltese Islands is hence possible but needs to be verified by additional specimens.

Hypebaeus flavicollis (Erichson, 1840)

Ebaeus flavicollis Erichson, 1840: 117.

Hypebaeus flavicollis: CAMERON & CARUANA GATTO (1907): 397.

Material examined. MALTA: 1 ex. (BMNH): 8121 [= May 1903, *Hypebaeus flavicollis* ♂, Boschetto] // M. Cameron Coll. B.M. 1936-555; 1 ex. (BMNH): 8119 [= May 1903, *Hypebaeus flavicollis* ♀, Ta' Baldu] // M. Cameron Coll. B.M. 1936-555; 1 ex. (BMNH): M. Cameron Coll. B.M. 1936-555; 1 ex. (BMNH): M. Cameron Coll. B.M. 1936-555 // *Hypebaeus flavicollis* det. A. Evers 1948; 11 exs. (BMNH): G.C. Champion Coll. B.M. 1927-409; 1 ex. (NMPC): St. Thomas Bay, Tal-Munxar, 13.iv.2003, leg. D. Mifsud; 1 ex. (DMZM): same locality, 29.iv.2002, leg. D. Mifsud; 1 ex. (DMZM): Marsa, Ghammieri, 11.iv.2003, leg. D. Mifsud; 1 ex. (DMZM): same locality, 28.iii.2003, leg. D. Mifsud; 1 ex. (NMPC): Siggiewi, 4.v.2003, leg. D. Mifsud; 1 ex. (DMZM): Valletta city, 2.iv.2002, leg. R. Schuh.

Distribution. Algeria, Spain, Balearics, France, Switzerland, Sardinia, Italy, Sicily, Malta, Romania, Croatia, Turkey (GREINER 1937, HORVATOVICH 1969, ALLENSPACH & WITTMER 1979, AUDISIO et al. 1995), Albania, and Greece including Rhodos (unpublished records, coll. NMPC). The presence of this species in Algeria needs to be verified.

Ebaeus gibbus (Drapiez, 1819)

Malachius gibbus Drapiez, 1819: 133, plate 8 Fig. 4.

Ebaeus taeniatus: BAUDI DI SELVE (1871): 126.

Ebaeus cyaneus: CAMERON & CARUANA GATTO (1907): 397.

Material examined. None.

Distribution. SE France, Italy, Sicily, Malta and Hungary (ABEILLE DE PERRIN 1891; HORVATOVICH 1969). The presence of this species in Hungary needs to be verified.

Comments. *Ebaeus gibbus* was reported from Malta by BAUDI DI SELVE (1871) as *E. taeniatus* Mulsant & Rey, 1867. CAMERON & CARUANA GATTO (1907) followed BAUDI DI SELVE (1871) as they did not see any specimens. Karel Majer (pers. comm. to D. Mifsud 1998) examined specimens from Malta. The occurrence of this species in the Maltese Islands is highly probable but requires confirmation.

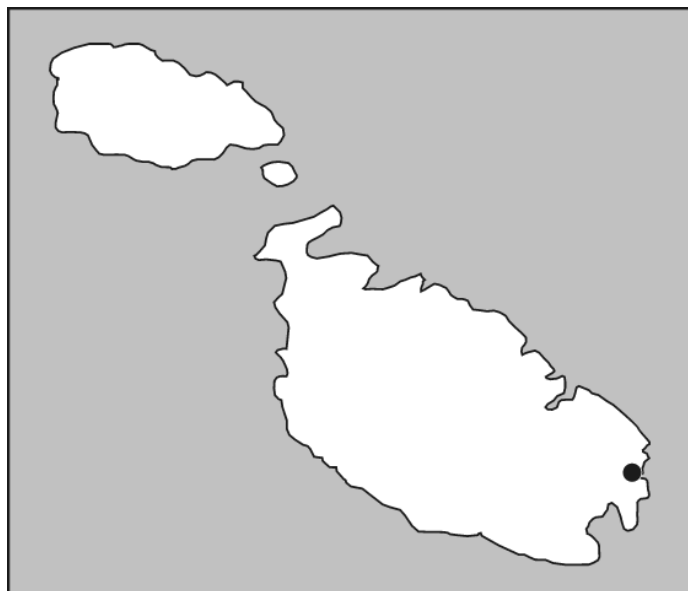


Fig. 6. Distribution of *Ebaeus ruffoi* Pardo, 1962 in Maltese Islands (Malta at bottom, Gozo at top and Comino in middle).

Ebaeus ruffoi Pardo, 1962

Ebaeus ruffoi Pardo, 1962: 288.

Material examined. MALTA: 1 ex. (DMZM): St. Thomas Bay, Tal-Munxar // 18.vii.2002, leg. D. Mifsud.

Distribution. Sicily (AUDISIO et al. 1995) and Malta (Fig. 6).

Comments. *Ebaeus ruffoi* represents a new record for Malta. The species was previously known only from Sicily.

Charopus apicalis Kiesenwetter, 1859

Charopus apicalis Kiesenwetter, 1859: 33.

Charopus apicalis: CAMERON & CARUANA GATTO (1907): 397.

Material examined. MALTA: 1 ex. (DMZM): 8057 [= May 1903, *Charopus apicalis* ♀, Salina] // M. Cameron Coll. B.M. 1936-555; 1 ex. (BMNH): 8077 [= May 1903, *Charopus apicalis* ♂, L'Imtahleb] // determined by Dr. Cameron // M. Cameron Coll. B.M. 1936-555; 1 ex. (BMNH): M. Cameron Coll. B.M. 1936-555 // *apicalis* Ksw.; 2 exs. (BMNH): M. Cameron Coll. B.M. 1936-555 // *Charopus apicalis* Ksw., C. M. F. von Hayek det.; 9 exs. (BMNH): M. Cameron Coll. B.M. 1936-555; 1 ex. (BMNH): G.C. Champion Coll. B.M. 1927-409 // *Charopus apicalis* Ksw. R. J. W. Aldridge det. 1977; 40 exs. (BMNH): G.C. Champion Coll. B.M. 1927-409; 6 exs. (DMZM, NMPC): Melliha, Kortin, 10.iv.2004, leg. H. Borg Barthet; 3 exs. (HBBM): Melliha-Kortin, near Imgiebah Valley, 8.iv.2004, leg. H. Borg Barthet; 1 ex. (NMPC): Melliha, Selmun-Imgiebah Rd., 27.iv.2004, leg. H. Borg Barthet; 1 ex. (DMZM): W Bingemma, 236 m, 3 km W Mdina, 4.iv.1993, leg. P. Sprick; 4 exs. (DMZM): NW Marfa Ridge, maquis, 3.iv.1993, leg. P. Sprick; 2 exs. (DMZM): S Dingli Cliffs, dry rock, 5.iv.1993, leg. P. Sprick; 1 ex. (DMZM): 1 km SSW San Lawrenz, Il-Qattara, 30.iii.2002, leg. Schuh & Mifsud.

Distribution. Tunisia, Algeria, Morocco, Sardinia, S Italy, Sicily, Malta, Greece (ABEILLE DE PERRIN 1890, PLATA & SANTIAGO 1987, AUDISIO et al. 1995) and Croatia (unpublished record, coll. NMPC).

***Axinotarsus pulicarius* (Fabricius, 1775)**

Malachius pulicarius Fabricius, 1775: 308.

Material examined. MALTA: 1 ex. (DMZM): Melliha, Badja Ridge, 26.iv.2004, leg. H. Borg Barthet.

Distribution. Southern and Central Europe, northwards to Denmark, not in Scandinavia, in the south ranging from Portugal to southern Russia and Caucasus; Morocco, Algeria (HORION 1953, PLATA & SANTIAGO 1990). In Italy, the species is known from the entire peninsula as well as Sardinia and Sicily (AUDISIO et al. 1995).

Comments. *Axinotarsus pulicarius* represents a new record for the Maltese Islands.

***Malachius australis* Mulsant & Rey, 1867**

Malachius australis Mulsant & Rey, 1867: 93.

Malachius lusitanicus Erichson, 1840 s. lat.: GREINER (1937): 109.

Material examined. MALTA: 14 exs. (DMZM, NMPC): Marsa, Ghammieri, 17.iv.2006, on *Phalaris canariensis* (Poaceae), leg. D. Mifsud; 3 exs. (DMZM): same data but 2.v.2006.

Distribution. France, Italy (including Sicily) (PARDO 1960, AUDISIO et al. 1995), Malta.

Comments. *Malachius australis* represents a new record for the Maltese Islands. GREINER (1937) considered *M. australis* as an aberration of *M. lusitanicus* Erichson, 1840 sensu lato and reported it from Malta as such, but not as ‘ab. *australis*’ (only France is mentioned). This distributional data was repeated by PLATA & SANTIAGO (1987) but not by PLATA & SANTIAGO (1990). The occurrence of *M. lusitanicus* in the Maltese Islands is highly improbable, because *M. lusitanicus* and *M. australis* are vicarious and not known from the same areas.

***Clanoptilus* sp.**

Malachius bellieri Peyron, 1877: 53.

Malachius dissimilis: CAMERON & CARUANA GATTO (1907): 397, misidentification.

Material examined. None.

Comments. PEYRON (1877) described *M. bellieri* from specimens originating from Sicily and Malta. ABEILLE DE PERRIN (1883) synonymized this species with *M. dissimilis* Baudi di Selve, 1873 described from Caucasus and known to occur only in this region. Later, he examined the type specimen from Malta and synonymized it with *Malachius geniculatus* Germar, 1824 (ABEILLE DE PERRIN 1891). The southernmost limit of the distribution of *Clanoptilus geniculatus* is southern peninsular Italy, and it has never been recorded from Sicily (AUDISIO et al. 1995). No material of this species was available for CAMERON & CARUANA GATTO (1907) and they recorded this species based on the above-mentioned earlier record. Karel Majer (pers. comm. to D. Mifsud, 1998) examined specimens from Malta which he identified as *Clanoptilus dissimilis*. The identity of this species cannot be resolved until additional specimens become available for study.



Fig. 7. Coastal garigue (Tal-Munxar). Habitat of *Malthinus scapularis* Marseul, 1878, *Colotes punctatus* Erichson, 1840, *Attalus melitensis* Peyron, 1877, *Hypebaeus flavicollis* (Erichson, 1840) and *Ebaeus ruffoi* Pardo, 1962.



Fig. 8. High maquis valley system (Girgenti). Habitat of *Malthodes bifurcatus* Kiesenwetter, 1852.



Fig. 9. Valley system and garigue (Bahrija). Habitat of *Malthinus scapularis* Marseul, 1878, *M. latirufus* (Pic, 1901), *Malthodes bifurcatus* Kiesenwetter, 1852, *Colotes maculatus* (Castelnau de Laporte, 1836), *Attalus cyaneus* (Fabricius, 1792) and *A. melitensis* Peyron, 1877.



Fig. 10. Coastal maquis (Mistra). Habitat of *Malthodes bifurcatus* Kiesenwetter, 1852.

Conclusions

Six species of the Cantharidae are recorded from the Maltese Archipelago, of which one remains unidentified to species level. Zoogeographically, the Maltese Cantharidae show a strong affinity to the Italian fauna. *Cantharis praecox* and *Malthinus scapularis* can be defined as typically West Mediterranean species even though their current distributional ranges are restricted to a few locations. *Malthinus latirufus* and *Malthodes bifurcatus* can be defined as sub-endemic taxa, the former known only from Tunisia and Malta (hence a North African element in the Maltese fauna) and the latter represents a Siculo-Maltese endemic. *Malthodes cameroni* seems to be the only species endemic to the Maltese Islands. It is closely related to *M. ruralis*, a species described from Sicily. *Malthinus scapularis* can be regarded as the most common species of the Cantharidae in Malta and *Cantharis praecox* and *Malthodes bifurcatus* (Fig. 4) as relatively frequent, whereas *Malthinus latirufus* (Fig. 4), *Malthodes cameroni* (Fig. 4) and *Malthodes* sp. are rare, even though more fieldwork is needed to evaluate their abundance in Malta.

Fourteen species of the Malachiidae are recorded from the Maltese Islands, of which the identity of one species (*Clanoptilus* sp.) remains unknown. Most species have confined Euro-Mediterranean distributions. Thus, *Colotes maculatus*, *Sphinginus lobatus* and *Hypebaeus flavicollis* are typical Circum-Mediterranean species, sometimes with distributions which penetrate into Central Europe. West Mediterranean species are represented by *Colotes punctatus*, *Attalus cyaneus*, *A. sicanus*, *A. maculicollis*, *Ebaeus gibbus*, *Charopus apicalis*, *Axinotarsus pulicarius* and *Malachus lusitanicus*. *Ebaeus ruffoi* is a Siculo-Maltese endemic whereas *Attalus melitensis* is most likely endemic to the Maltese Islands. Little information is available on the abundance of the Malachiidae in the Maltese Islands. Some are known only from earlier records. *Attalus melitensis* seems to be relatively common (Fig. 5), whereas *Colotes maculatus*, *C. punctatus*, *Attalus cyaneus*, *Hypebaeus flavicollis* and *Charopus apicalis* can be regarded as frequent. *Ebaeus ruffoi* (Fig. 6) and *Axinotarsus pulicarius* are each known from a single specimen. More fieldwork is needed to verify whether they are indeed rare.

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