

The Cryptocephalini of the Maltese Islands (Coleoptera, Chrysomelidae)

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ABSTRACT. Four species of the Tribe Cryptocephalini have been asserted as occurring in Malta. These include *Pachybrachis siculus*, *Cryptocephalus fulvus*, *C. plantaris* and *C. macellus*. The occurrence of a fifth species, *C. ochroleucus*, remains doubtful. Taxonomic notes and some biogeographic remarks are reported.

KEY WORDS. *Cryptocephalus*, *Pachybrachis*, Malta, Mediterranean.

INTRODUCTION

Systematic studies of leaf beetles (Coleoptera, Chrysomelidae) for some circum-Sicilian islands were carried out in relatively recent times (DACCORDI & RUFFO, 1975; RATTI, 1987; LO VALVO & MASSA, 1995), but the only contribution on this group for Malta dates back to early 1900's (CAMERON & CARUANA-GATTO, 1907). The list provided therein consists of about sixty species, and although it provides a general overview of the group in Malta, further studies will certainly reveal more species.

Up to now, only four species of the Tribe Cryptocephalini Gyllenhal, 1813 have been recorded from the Maltese Islands. CAMERON & CARUANA-GATTO (1907) recorded *Cryptocephalus signaticollis* Suffrian, 1848 (= *Cryptocephalus fulvus* (Goeze, 1777)) from Gnejna and *C. ochroleucus* Fairmaire, 1859 from Marsascula. ANDRES (1916) a prisoner of war, was in Malta between June 1915 and February 1916 and recorded *C. fulvus* in October/November from a "strong smelling Labiate (Thymian ?)" from the Verdala barracks. SASSI & ZOIA (2002) recorded *Cryptocephalus plantaris* Suffrian, 1868 and in the Fauna Europaea database, SASSI (2004) recorded four species as occurring in Malta, of which one, *C. macellus* Suffrian, 1860 represented a new record.

Thanks to the courtesy of Dr David Mifsud (University of Malta) I had the opportunity to study a small but interesting collection of Maltese Cryptocephalini. Material was collected by Henry Borg Barthet (HBB), Charles Farrugia (CF) and David Mifsud (DM) and is deposited in the private collections of the author and that of DM. The results of the study are reported below.

ANNOTATED SPECIES LIST

Cryptocephalus fulvus (Goeze, 1777)

(Figs. 1, 4)

Material examined. MALTA: Bahrja, 20.iv.2002, 4 exs., DM; Mellieha, Badja Ridge, 26.iv.2004, 2 exs., HBB; Mistra Valley, nr. Mellieha Hill, 21.v.2004, 1 ex., HBB; Wied il-Luq, 1.v.1990, 1 ex., DM; Buskett, 7.xi.1995, 1 ex., CF. **GOZO:** Dwejra, 25.iv.2003, 1 ex., DM; Dwejra, 10.v.1992, 1 ex., CF; Ramla, 18.iv.1990, 1 ex., DM; Ghasri, 25/30.vi.1995, 2 ex., CF; Wied tax-Xlendi, 17.iv.1990, 3 exs., DM.

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One specimen of *C. fulvus* was collected on *Ridolfia segetum* and another one on flowers of an undetermined Apiacea ("Persley Blossom"). The species is undoubtedly polyphagous and some literature data (JOLIVET, 1966) reported observations of this species on spontaneous Apiaceae, indicating reliable collecting data with regards to the feeding habits of this species.

***Cryptocephalus macellus* Suffrian, 1860**

(Figs. 2, 5)

Material examined. MALTA: Bahrija, 20.iv.2002, 8 exs., DM; Wied Babu, 15.ix.1995, 2 exs., DM; Buskett, 5.vi.1994/15.IX.1995, 2 exs., DM.

***Cryptocephalus plantaris* Suffrian, 1868**

(Figs. 3, 6)

Material examined. MALTA: Migra Ferha, 30.x.1995, 1 ex., DM; Buskett, 15.ix.1995/20.vii.2002, 2 exs., DM; Mellieħa, Mellieħa Bay, 30.x.2004, 2 exs., HBB; Mellieħa, Kortin, 13.ix.2005, 1 ex., U.V. light trap, HBB; Zejtun, 19.ix.1996, 2 ex., DM; Wied Babu, 15.ix.1995, 1 ex., DM. **COMINO:** Il-Hazina 13.viii.2002, 4 exs., DM.

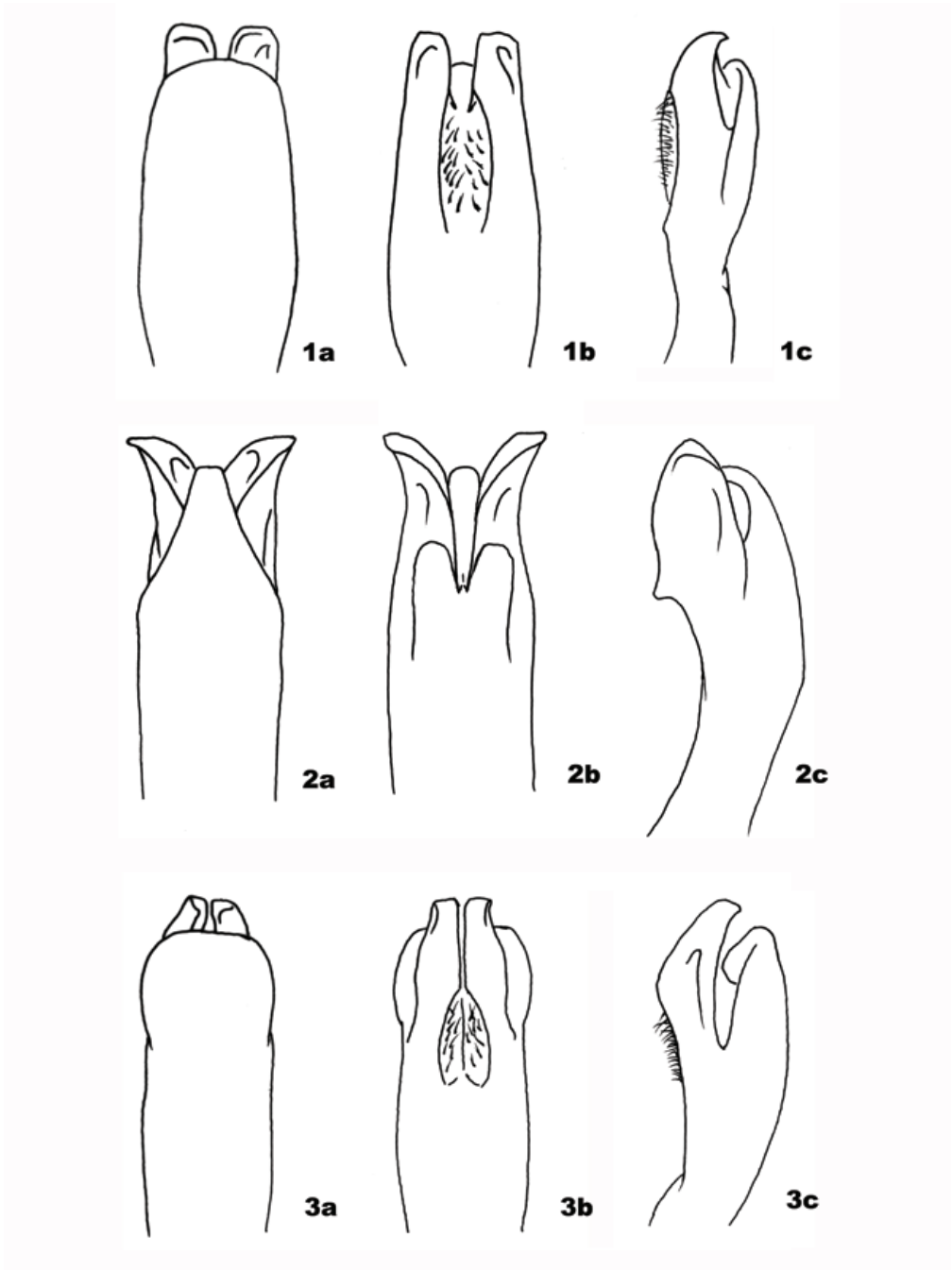
***Pachybrachis siculus* (Weise, 1891)**

(Figs. 7-10)

Material examined. MALTA: Mellieħa, Kortin, 10.vi.2004, 4 exs., HBB.

DISCUSSION

Pachybrachis siculus represents a new record for Malta, and prior to this study, it was known only from Sicily and Pantelleria (LIEBMAN, 1962; BURLINI, 1968; RATTI, 1986). The species shows a very variable chromatic pattern and has been included in "group 4" by BURLINI (1968) in his revision of European *Pachybrachis* since the typical form shows dorsal pattern characterised by the presence of large black spots. However, Burlini himself recognised that the species is chromatically very variable. In fact, he recorded the presence of strongly melanistic specimens, which he informally recorded as "morpha *madoniensis*" (BURLINI, 1963), and others which resembled species he placed in "group 2", characterised by no distinct black spots, and elytral punctuation more or less arranged in distinct rows. He named these latter specimens as "morpha *imitator*" (BURLINI, 1968). Now, while the tendency to melanism is widespread in many species of the genus *Pachybrachis*, and therefore the presence of specimens with such characteristics is not surprising, the existence of the "morpha *imitator*" appears to be quite unusual, because the habit of species belonging to the "group 2" is generally well characterised and generally there are no transitional forms to the appearance of species in "group 4". Burlini himself had to be perplexed, noting in particular the strong external similarity with *P. simius*, and only after the examination of the aedeagus he was resolved to consider "*imitator*" as a form of *P. siculus* and of little taxonomic interest. On the basis of the material in study, I can confirm the strong similarity of the aedeagus of "*imitator*" with that of *P. siculus*. I also noted however, some differences in pronotal punctuation (more spaced in "*imitator*") and there may be evidence of a possible geographical separation (Fig. 11) between the two forms. The form "*imitator*" would be found on Pantelleria, Malta and the southern half of Sicily, whereas the "typical form" would be confined to the Tyrrhenian side of Sicily. These observations perfectly agree with the current distributions of several species of *Pachybrachis*, which are often confined to small Mediterranean islands. Thus, *P. freyi* Burlini, 1957 occurs only on Cephalonia Island,



Figures 1-3: Aedeagus in dorsal (a), ventral (b) and lateral (c) view; **1:** *Cryptocephalus fulvus* (Gozo, Ramla); **2:** *Cryptocephalus macellus* (Malta, Bahrija); **3:** *Cryptocephalus plantaris* (Malta, Zejtun).

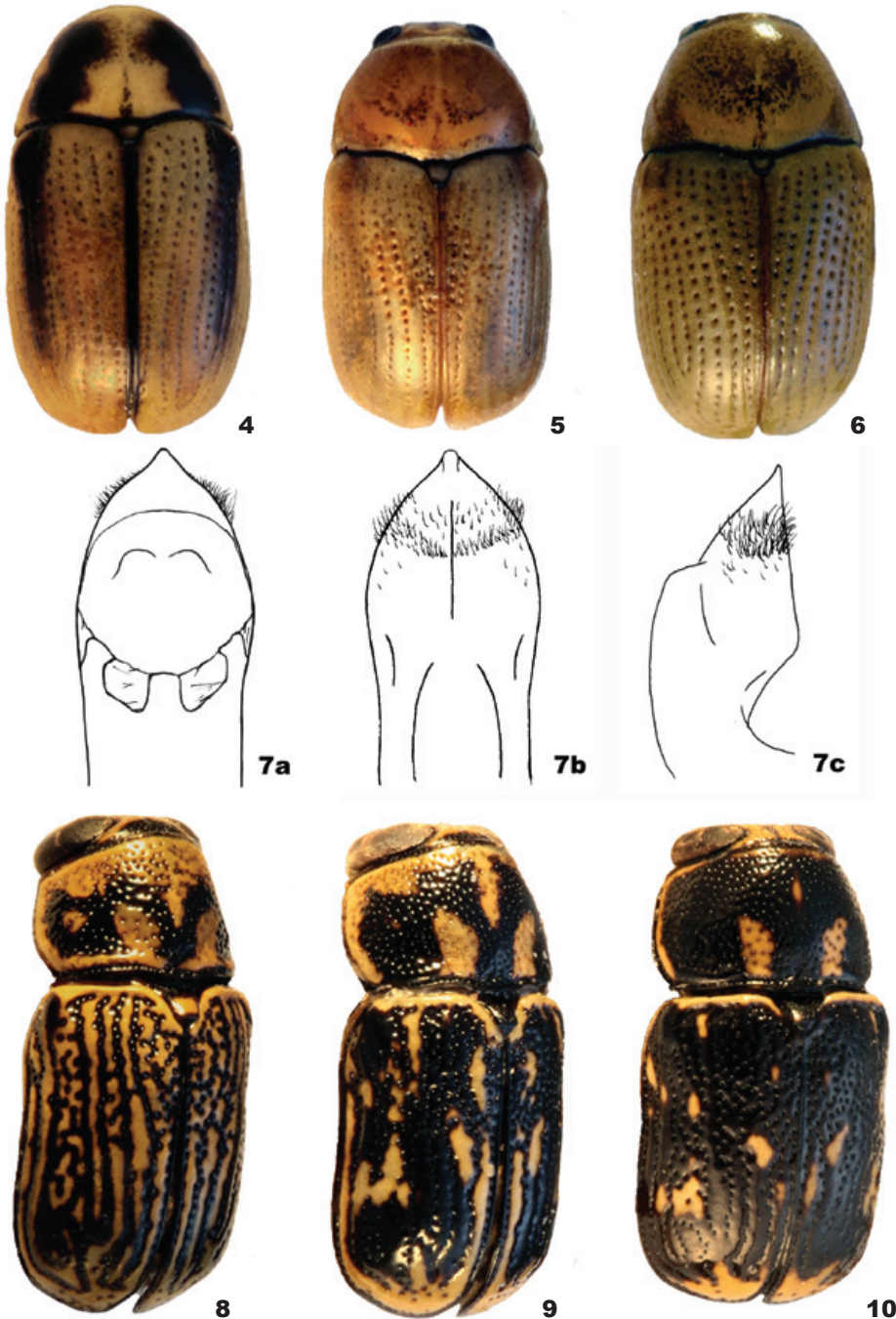


Figure 4: *Cryptocephalus fulvus* (Malta, Bahrija); **Figure 5:** *C. macellus* (Malta, Bahrija); **Figure 6:** *C. plantaris* (Comino, Il-Hazina); **Figure 7:** *Pachybrachis siculus* (Malta, Mellieha) - Aedeagus in dorsal (a), ventral (b) and lateral (c) view; **Figures 8-10:** Variation in *Pachybrachis siculus*; **8:** “ab. *imitator*” (Malta, Mellieha); **9:** typical (Sicily, Trapani); **10:** “ab. *madoniensis*” (Sicily, Trapani).

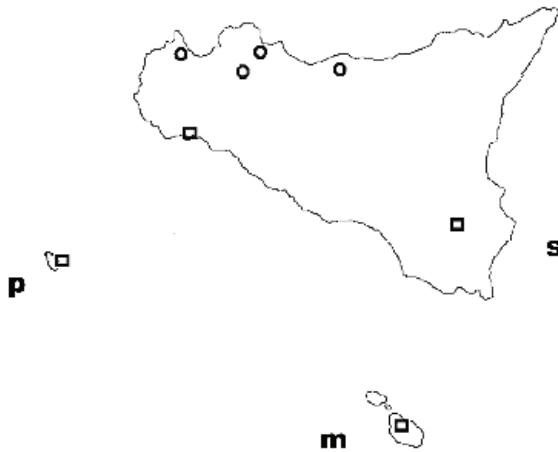


Figure 11: Known distribution of *Pachybrachis siculus* (Circles: typical form and “*ab. madoniensis*”; Squares: “*ab. imitator*”; s: Sicily; p: Pantelleria; m: Maltese Islands).

P. burlinii Daccordi & Ruffo, 1971 is known only from Pontine Islands, *P. osellai* Daccordi & Ruffo, 1975 is distributed on the Aegadian Islands, and *P. sassii* Montagna, 2011 is confined to Giglio Island (BURLINI, 1957; DACCORDI & RUFFO, 1971; DACCORDI & RUFFO, 1975; MONTAGNA, 2011). Such restricted distributions for a good number of *Pachybrachis* spp. could be the result of a higher tendency towards speciation through a mechanism of island colonisation and subsequent isolation. Unfortunately, I do not have enough information to reach reliable conclusions, so it would be desirable the examination of additional material in order to resolve the issue.

Cryptocephalus ochroleucus was recorded from Malta by CAMERON & CARUANA GATTO (1907) and was not found during the present study. While I cannot exclude the reliability of this record and even though, *C. ochroleucus* is relatively common in Sicily and Calabria (*personal observations*), the strong similarity between this species and *C. luridicollis* (the species with which *C. plantaris* has been kept in synonymy for a long time (SASSI & ZOIA, 2002)) should be taken into account. For this reason, it is possible that the record of CAMERON & CARUANA GATTO (1907) may actually refer to *C. plantaris* and thus the presence of *C. ochroleucus* in the Maltese Islands should be confirmed.

On the basis of the present work, four species of Cryptocephalini have been ascertained for the Republic of Malta, of which, two, are Siculo-Maltese endemics (*Pachybrachis siculus* and *Cryptocephalus plantaris*). One species has a widespread distribution in Europe, Asia and North Africa (*C. fulvus*) and another is a Turanic-European-Mediterranean species (*C. macellus*). The Maltese species of the Tribe Cryptocephalini confirm the strong affinities of the Maltese fauna with that of Sicily and not with that of North Africa. This is in agreement with the widely supported hypothesis about a land connection between these islands and the Hyblean Region of Sicily in Quaternary times (HUNT & SCHEMBRI, 1999; SCHEMBRI, 2003).

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REFERENCES

- ANDRES, A. (1916) Verzeichnis der während meiner Kriegsgefangenschaft von mir auf Malta gesammelten Lepidoptera, Hemiptera und Coleoptera. *Entomologische Rundschau*, **33**(12): 57-59.
- BURLINI, M. (1957) Un nuovo *Pachybrachis* dell'isola di Cefalonia. *Bollettino della Società Entomologica Italiana*, **87**(1-2): 25-27.
- BURLINI, M. (1963) Nota sul *Pachybrachis siculus* Weise. *Memorie del Museo Civico di Storia Naturale di Verona*, **11**: 133-134.
- BURLINI, M. (1968) Revisione delle specie Italiane e della maggior parte delle specie Europee del genere *Pachybrachis* Chev. (Coleoptera Chrysomelidae) XXII Contributo alla conoscenza dei Cryptocephalini. *Memorie della Società Entomologica Italiana*, **47**:11-116.
- CAMERON, M. & CARUANA GATTO, A. (1907) A List of the Coleoptera of the Maltese Islands. *Transactions of the Entomological Society of London*, **59**(3): 383-403.
- DACCORDI, M. & RUFFO, S. (1971) Coleotteri crisomelidi raccolti nelle Isole Ponziane e descrizione di una nuova specie del genere *Pachybrachis* Redt. *Fragmenta Entomologica*, **8**: 41-48.
- DACCORDI, M. & RUFFO, S. (1975) Coleotteri crisomelidi delle Isole Egadi e descrizione di una nuova specie del gen. *Pachybrachis*. *Bollettino del Museo Civico di Storia Naturale, Verona*, **1**[1974]:427-437.
- HUNT, C.O. & SCHEMBRI, P.J. (1999) Quaternary environments and biogeography of the Maltese Islands (pp. 41-75). In: MIFSUD, A. & SAVONA VENTURA, C. [eds.], *Facets of Maltese prehistory*. The Prehistoric Society of Malta, viii + 243pp.
- JOLIVET, P. (1966) Notes Systematiques et Ecologiques sur les Chrysomelides Marocains. *Bulletin de la Société des Sciences Naturelles et Physiques du Maroc*, **46**(3-4): 305-393.
- LIEBMANN, W. (1962) Ein Beitrag zur Käferfauna von Pantelleria. *Stuttgarter Beiträge zur Naturkunde*, **87**: 1-4.
- LO VALVO, F. & MASSA, B. (1995) Indice e check-list degli Artropodi terrestri di Lampedusa, Lampione, Linosa e Pantelleria, con riferimenti bibliografici (pp. 871-896). In: MASSA, B. [ed.], *Arthropoda di Lampedusa, Linosa e Pantelleria (Canale di Sicilia, Mar Mediterraneo)*, *Naturalista Siciliano*, **19** (suppl.):xii + 909 pp.
- MONTAGNA, M. (2011) *Pachybrachis sassii*, a new species from the Mediterranean Giglio Island (Italy) (Coleoptera, Chrysomelidae, Cryptocephalinae). *ZooKeys*, **155**: 51-60.
- RATTI, E. (1986) Ricerche faunistiche del Museo civico di Storia naturale di Venezia nell'Isola di Pantelleria. VI – Coleoptera: Cerambycidae e Chrysomelidae. *Bollettino del Museo Civico di Storia Naturale, Venezia*, **37**:47-55.
- SASSI, D. (2004) Fauna Europaea: Chrysomelidae Cryptocephalinae. In: AUDISIO P. [ed.], *Fauna Europaea: Coleoptera 2. Fauna Europaea version 1.1*, available at <http://www.faunaeur.org> [accessed 29 August 2012 as version 2.5 of 23 July 2012].
- SASSI, D. & ZOIA, S. (2002) *Cryptocephalus (Burlinius) plantaris* from Sicily and Malta, species resurrected from synonymy with *C. (B.) luridicollis* (Coleoptera Chrysomelidae). *Bollettino della Società entomologica italiana*, **134**(2):111-116.
- SCHEMBRI, P. J. (2003) Current state of knowledge of the Maltese non-marine fauna (pp. 33-65). In: *Malta Environment and Planning Authority Annual report and Accounts 2003*. Floriana, Malta. Malta Environment and Planning Authority. 92 pp.

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