

## ***Chiloneus hoffmanni* (González, 1970) (Coleoptera Curculionidae) new to Italy, with a checklist of the species of the genus and ecological notes**

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### **ABSTRACT**

*Chiloneus hoffmanni* (González, 1970) (Coleoptera Curculionidae) thus far considered a Maltese endemic, is here recorded for the first time from Lampedusa island (Italy). Several adults of this species and of *C. solarii* Pesarini, 1970 were found feeding on leaves of *Charybdis pancration* (Asparagaceae). These observations constitute the first data on the ecology of these species. An updated checklist of *Chiloneus* Schoenherr, 1842 is also provided.

### **KEY WORDS**

Curculionidae; *Chiloneus*; diversity; biology; Mediterranean.

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## **INTRODUCTION**

*Chiloneus* Schoenherr, 1842 is a genus of Sciaophilini Sharp, 1891 (Coleoptera Curculionidae) having a Mediterranean-Turanian distribution. The genus currently includes 41 described species of which 40 are accommodated in the nominal subgenus, and one in the subgenus *Mylaconeus* Pesarini, 1970 (Borovec, 2013; Borovec & Perrin, 2016). The absolute majority of species are distributed in the warmer parts of the Mediterranean basin.

The most recent and comprehensive revision of this group was published by González (1970), who however confused members of this genus with those of *Desbrochersella* Reitter, 1906, a morphologically similar genus of Omiini Shuckard, 1840 (Alonso-Zarazaga & Lyal, 1999). Distinguishing features for the above mentioned genera were provided by Borovec & Perrin (2016), who also

described new species, proposed new combinations and several new synonyms, outdating the recent catalogue of Borovec (2013).

Four species of *Chiloneus* were recorded from Italy, of which three belong to the nominotypical subgenus, and one to the endemic subgenus *Mylaconeus* (Abbazzi & Maggini, 2009; Borovec, 2013).

## **MATERIAL AND METHODS**

In the last 10 years, regular visits to the Pelagic islands were carried out by one of us (AC), mostly to study the bird and dragonfly fauna (Corso, 2005; Corso et al., 2009, 2012). During October and November 2016, several specimens of *Chiloneus* were hand-collected on sea squill after heavy rains on Linosa island. A few weeks later, in view of the

results obtained in Linosa, the same plant was successfully investigated on Lampedusa island in order to check the presence of *Chiloneus*. Given the faunistic and botanic similarity between the Pelagie and the Maltese archipelagoes (Corti et al., 2002), we decided to compare *Chiloneus* from the three islands, i.e. Linosa, Lampedusa and Malta, which are close to each other (Fig. 7). In Malta, one of us (DM) collected this weevil from the base of the same plant, called also sea onion or giant hyacinth, in a coastal garigue habitat in the south-eastern part of Malta (Munxar, l/o St. Thomas Bay), and additional material was available from Mellieha in Malta and Qbajjar in Gozo. Specimens are preserved in the personal collections of EC and RC in Rome, and of DM in Malta.

Body size of specimens is meant from an ideal line in front of eyes to the tip of elytra, excluding thus the rostrum, as usual for weevils. Measures were taken with an ocular grid.

Pictures were taken by Francesco Sacco with a Nikon 810 camera provided with a Mitutoyo Plan Apo 10X objective and a tube lens f 80mm 4X. Photo were then stacked with the program Helicon Focus 6.1, and further processed using the program Adobe Photoshop CS5.

Nomenclature of plants follows the checklist by Conti et al. (2005).

ABBREVIATIONS. AC: Andrea Corso; EC: Enzo Colonnelli; RC: Roberto Casalini; DM: David Mifsud. Distribution, AG: Algeria; BH: Bosnia and Hercegovina; CY: Cyprus; CR: Croatia; EG: Egypt; GR: Greece; KZ: Kazakistan; IT: Italy; JO: Jordan; IS: Israel; LB: Libya; MA: Malta; MO: Morocco; SP: Spain; TR: Turkey; TU: Tunisia.

## RESULTS AND DISCUSSION

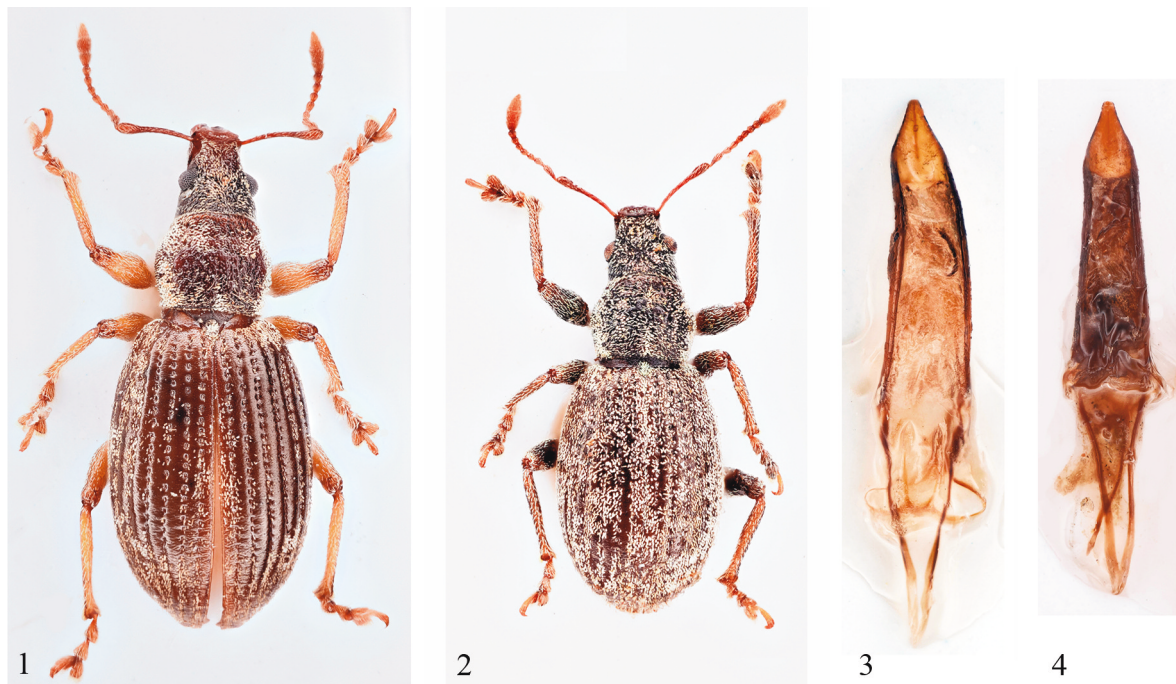
On Linosa island, *Chiloneus solaris* Pesarini, 1970, a weevil previously known on the basis of the eight type specimens (Pesarini, 1970), was commonly found at the base of leaves of *Charybdis pancration* (Steinh.) Speta (Asparagaceae) (Fig. 5). It was found from sea level up to the top of Monte Vulcano (m 195 a.s.l.), feeding on leaves and producing irregular holes on their surface (Fig. 6). During the day, adults were hidden at the base of the rather succulent large leaves of the plant, being act-

ive at night. Similar behaviour was shown by *Chiloneus* on Lampedusa and the Maltese islands. Hundreds of exemplars were observed in Linosa, and about 130 were collected at Monte Vulcano, Monte Bandiera, Monte Rosso and Mannarazza. These are the first ecological observations for these insular *Chiloneus*, whose larvae probably develop inside the bulbs of *Charybdis* and/or possibly inside roots of the near plants.

During the five days spent on Lampedusa several *Charybdis* and similar plants from all over the island were investigated for the presence of this weevil. Interestingly, many specimens of *Chiloneus* were found all over the western part of the island, from Capo Ponente to Albero Sole, Punta dell'Acqua, Cala Pulcino and Cala Galera, whereas not a single specimen was found on the eastern part, east of the town of Lampedusa to Punta Sottile, Cala Francese and Capo Levante. In fact, on the eastern part of the island, and suggesting that the two weevils exclude each other from developing on the same plants, was rather common only the sub-endemic *Brachycerus schatzmayri* Zumpt, 1937. This rather common weevil produces similar damage to the leaves of the plant, and no less than 40 specimens were found. Apart this large Asparagaceae, no other plant was found as possible host of this huge *Brachycerus* Olivier, 1789 in the island. In the field it became evident that the specimens of *Chiloneus* from Lampedusa were slightly different from those found in Linosa.

Specimens from Linosa and Lampedusa were morphologically compared, and it was found that they belong to two apparently different species. In fact, the specimens from Lampedusa were very similar to *Chiloneus hoffmanni* González, 1970, a species considered endemic to the Maltese archipelago (Mifsud & Colonnelli, 2010). From side to side examination of numerous specimens of *Chiloneus* from Malta and Lampedusa, we were able to identify the *Chiloneus* from Lampedusa as *C. hoffmanni*, a species never reported for the Italian fauna.

Given the close relationship of these insular *Chiloneus* to one another and their variability of size, density and colour of scales of integument, absence or presence and size of profemoral tooth, the only reliable feature which allows discrimination of *C. hoffmanni* (Fig. 1) from *C. solaris* (Fig.



Figures 1, 3. Male of *Chiloneus hoffmanni* from Lampedusa (Sicilian Channel, Italy), habitus and aedeagus from above, respectively. Figures 2, 4. Male of *Chiloneus solarii* from Linosa (Sicilian Channel, Italy), habitus and aedeagus from above, respectively. Photos by Francesco Sacco.



Figure 5. Leaves of *Charybdis pancration* cribbled by adults of *Chiloneus solarii* in Linosa (Sicilian Channel, Italy). Figure 6. Detail of the same, with some insects half-hidden inside the rosette of leaves. Photos by Andrea Corso.

2) are the striae of the latter which are clearly narrower since their punctures are at most as wide as 1/3 of the width of the flat dorsal intervals, whereas in *C. hoffmanni* at least some striae are formed by punctures as wide as half of the often quite convex intervals. The aedeagus and spermatheca are very similar in both species, merely the aedeagus of *C. hoffmanni* is slightly wider than that of *C. solarii* (Figs. 2 and 4). The body size of *C. hoffmanni* is also on average somewhat larger (mm 4.0–5.5, mean 4.6) than that of *C. solarii* (mm 3.5–5.0, mean 4.2). The presence or absence of minute blunt profemoral tooth cannot be used to differentiate these two species as indicated by Pesarini (1970), since a great variability was observed following examination of more than 220 specimens at hand.

In general, vestiture of *C. hoffmanni* is also sparser, and its integument more polished and paler, whereas the colour of scales varies in both species from golden-brownish to metallic greenish. We plan to carry out molecular studies next year to better assess the taxonomic status of these extremely close insular populations.



## CHECKLIST

As already pointed out, the checklist of *Chiloneus* provided by Borovec (2013) became outdated after the publication of the work by Borovec & Perrin (2016) in which several taxonomical, nomenclatural and distributional changes were made. It seems thus appropriate to provide here under an updated list of all species of this genus, using a format slightly different from that used in the catalogue by Löbl & Smetana (2013). However, same country abbreviations are being used to facilitate comparison in distributional data. Indented names are synonyms. The list is presented here under.

*Chiloneus* (*Chiloneus*) Schoenherr, 1842

*Chilonorrhinus* Reitter, 1915

*Microelytrodon* Pic, 1945

*Rhinochrosis* Desbrochers des Loges, 1892

*aliquoi* (Pesarini, 1975) - IT

*barbaricus* (González, 1970) - AG

*vaulgeri* (Desbrochers des Loges, 1897)

*belloi* Borovec et Weill, 2016 - SP

*brevipilis* Desbrochers des Loges, 1893 - AG, TU

*tuniseus* Desbrochers des Loges, 1897

*brevithorax* Desbrochers des Loges, 1875 - CY

*theresae* (Pic, 1945)

*carinidorsum* Desbrochers des Loges, 1871 - AG

*chevrolati* Tournier, 1874 - MO, PT, SP

*parvus* (Stierlin, 1899)

*subglobatus* (Desbrochers des Loges, 1892)

*tingitanus* (González, 1970)

*chobauti* (Desbrochers des Loges, 1897) - AG

MO, TU

*inhumeralis* (Pic, 1903)

*cinerascens* (Rosenhauer, 1856) - AG, MO, SP

*nitens* (Pic, 1904)

*seminitidus* (Hustache, 1941)

*corcyreus* Penecke, 1935 - GR (Kerkyra)

*corpulentus* (Kiesenwetter, 1864) - GR

*cyrenaicus* Borovec et Weill, 2016 - LB

*franzi* (González, 1970) - SP

*gabrieli* Reitter, 1915 - GR

*globulus* Borovec et Perrin, 2016 - AG

*hispidus* (González, 1972) - JO

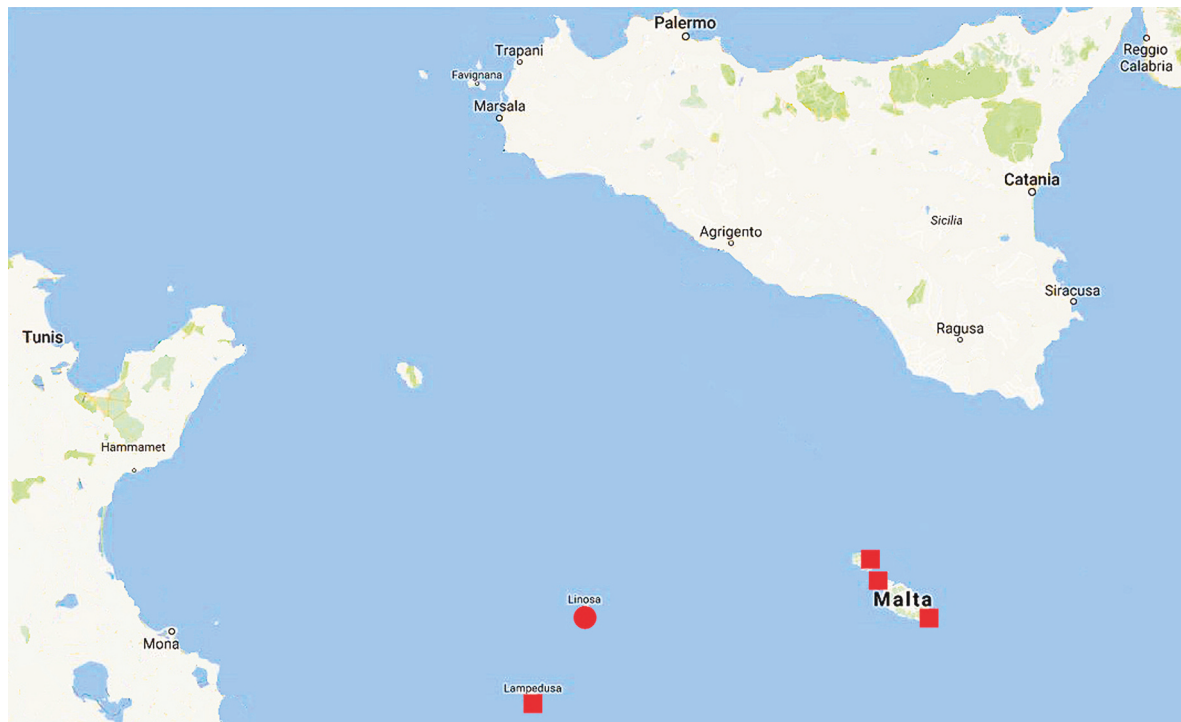


Figure 7. Map of central Mediterranean, showing the position of Linosa, Lampedusa, and Maltese islands. Localities of *Chiloneus hoffmanni* are marked by red squares, whereas those of *C. solarii* are marked by a red dot.

*hoffmanni* (González, 1970) - IT (Lampedusa), MA  
*deluccai* Pesarini, 1970  
*infuscatus* (Chevrolat, 1861) - AG, TU  
*algericus* Desbrochers des Loges, 1871  
*innotatus* (Pic, 1927) - CY  
*insulanus* (González, 1970)  
*jonicus* Kraatz, 1859 - GR  
*maculatus* (Hampe, 1870) - BH, CR  
*maroccanus* (Hoffmann, 1954) - MO  
*mediterraneus* (González, 1970) - SP  
*meridionalis* (Boheman, 1840) - IT (Sicily)  
*championi* (González, 1970)  
*siculus* Boheman, 1842  
*minutissimus* (Pic, 1904) - AG  
*nitidipennis* (Pic, 1927)  
*subannulipes* (Pic, 1917)  
*omiasformis* Borovec et Weill, 2016 - SP  
*ottomanus* Desbrochers des Loges, 1892 - TR  
*pallidus* Bajtenov, 1974 - KZ  
*pennatus* (Faust, 1885) - AG, SP  
*dividuus* (Pic, 1904)  
*pruinus* (Desbrochers des Loges, 1896)  
*pertusicollis* (Fairmaire, 1868) - AG, EG  
*nasutus* Desbrochers des Loges, 1897  
*ruficornis* (Allard, 1869)  
*sphaeropterus* (Allard, 1869)  
*sahlbergi* Reitter, 1915 - IS  
*scythropoides* Reitter, 1915 - CY  
*sitoniformis* Reitter, 1915 - IS  
*sitonoides* Reitter, 1915 - AG  
*solaris* Pesarini, 1970 - IT (Linosa)  
*submaculatus* (Pic, 1917) - AG, TU  
*alboscuteellaris* (Pic, 1917)  
*syriacus* (Stierlin, 1886) - IS  
*tenietensis* Borovec et Perrin, 2016 - AG  
*vaulogeri* (Pic, 1896) - LB, TU  
*alluaudi* (Pic, 1903)  
*pilosulus* Normand, 1953  
*veneriatus* Normand, 1937: 244 - TU

***Chiloneus* (*Mylaconeus*) Pesarini, 1970**

*lonai* Pesarini, 1970 - IT

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