

NOTES ON THE LAND AND FRESHWATER MOLLUSCA OF THE ISLAND OF GOZO (MALTESE ISLANDS)

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ABSTRACT

An annotated list of living species of land and freshwater molluscs from the Island of Gozo, in the Maltese archipelago is presented. *Pisidium personatum* is listed as still extant in at least one local stream. *Deroceras panormitanum* (Lesson & Pollonera, 1882) and *Hohenwartiana hohenwarti* (Rossmässler, 1839) are listed as recorded from the island for the first time.

INTRODUCTION

During the years 2001 to 2006, searches were conducted for land and freshwater molluscs at several stations throughout the island of Gozo. This short survey was undertaken to determine the conservation status of the land and freshwater molluscs of the island. An effort was made to concentrate mainly on the species of Limacidae which could possibly be presently living on the island. With a few exceptions, the molluscan fauna is similar to that of the main island, Malta. The need is stressed for proper conservation efforts to be taken in order to preserve the habitat of a few endangered species.

ABBREVIATIONS USED

FF = a common species; not threatened; F = a locally frequent species, but could be threatened; R = a rare species; RR = a rare species and highly threatened; PR = a previously recorded species not met with; NR = a newly recorded species for Gozo Island; CM = Constantine Mifsud.

MATERIAL AND METHODS

Sampling was largely conducted during the spring and winter months in order to record living material when possible; however, sampling during the summer months was also occasionally conducted. The "larger" species were hand picked or noted while searching under stones and amongst various vegetation, while the "smaller" species were found by examining leaf litter, sediment gravel and silt from streams and springs.

RESULTS

Hereunder is an annotated list of species recorded from Gozo, with additions encountered during the recent survey. The systematics follow Giusti, Manganelli & Schembri (1995):

Pomatias sulcatus (Draparnaud, 1801) - FF

The species was found living under stones at various localities.

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Pseudamnicola moussonii (Calcara, 1841) - F

Many living specimens were noted attached to stones and other material in the stream at Wied ix-Xlendi, in moss in the fountain at Fontana, and at Il-Qattara a small spring and pool at Il-Qawra.

Ovatella myosotis (Draparnaud, 1801) - PR

No specimens were found by the present authors. However, one of us (CM) had the opportunity to examine a few live specimens collected on Gozo. These were found from il-Qawra in the supralittoral (at the shingle beach in the 'Inland sea') during both warm (May/June) and cold (January/February) seasons, by M.J. Gauci during studies for her (unpublished) M. Sc. dissertation.

Mercuria cf. similis (Draparnaud, 1805) - R

Found living in the spring at Fontana and at Ghajn Hosna. A few specimens were also noted live in the stream at Wied ix-Xlendi and at Il-Qattara, in the limits of il-Qawra.

Carychium schlickumi Strauch, 1977 - PR

No live specimens were found, however, a fresh empty shell of this very small species was recently found in a sediment sample taken from Xlendi Bay in a depth of 15 metres (CM). We cannot recognize any difference between this specimen and specimens of *C. minimum* (O. F. Müller, 1774), from France, except for slight obvious rubbing of the growth lines. Although the species is cited as rare, it is probably being overlooked, because of its minute size.

Physa (Physella) acuta (Draparnaud, 1805) - F

Many live specimens were noticed at Wied ix-Xlendi, while single specimens were seen at Il-Qattara in the limits of il-Qawra.

Lymnea (Galba) truncatula Draparnaud, 1805 - R

Only a few live and dead specimens were found at Il-Qattara and at l-Ghadira ta' Sarraflu

Planorbis moquini Requier, 1848 - RR

A few fresh, empty shells were found in a gravelly sediment at Wied ix-Xlendi

Ancylus fluviatilis Müller, 1774 - FF

Live specimens were seen at Fontana and Il-Qattara, while a few empty shells of this species were found in sediments from Wied ix-Xlendi and at Ghajn Hosna, limits of Xaghra.

Truncatellina callicratis (Scacchi, 1833) - FF

Specimens were found at Munxar, Wied ix-Xlendi and Nadur in leaf litter.

Granopupa granum (Draparnaud, 1801) - FF

A common species, especially in garigue areas where wild thyme (*Thymbra capitata*) predominates.

Ruprestrella philippi (Cantraine, 1840) - FF

This is a frequent to common species inhabiting the top of rocky hills in all the Maltese Islands. It was found live at the top of the Tar-Riefnu hill at Xlendi. Fresh empty shells were found in leaf litter from Munxar.

Lauria cylindracea (Da Costa, 1778) - R

This seems to be a rare species in Gozo. Only two fresh empty shells were found at Wied ix-Xlendi.

Vallonia pulchella (Müller, 1774) - PR

Apparently also a rare species in the Maltese Islands. No specimens were found in this survey.

Pleurodiscus balmei (Potiez & Michaud, 1838) - F

A few fresh empty shells were found at Ghajn Hosna, near Xaghra.

Chondrula (Mastus) pupa (Linnaeus, 1758) - FF

A locally common species. It was found at Munxar, Wied ix-Xaghra, Nadur, Dwejra and Marsalforn.

Vitrea contracta (Westerlund, 1871) - R

A few empty shells were found in leaf litter from under a carob tree at Nadur, in the limits of San Blas Bay and an empty shell from Wied ix-Xlendi.

Vitrea subrimata (Reinhardt, 1871) - PR

No specimens were found in this survey.

Vitrea species (Giusti *et al.* 1995) - PR

No specimens were found in this survey.

Oxychilus draparnaudi (Beck, 1837) - FF

A common species noted under stones at Wied Haneq, limits of Xaghra.

Oxychilus hydatinus (Rossmässler, 1838) - R

Two empty shells were found in leaf litter from Nadur.

Milax nigricans (Philippi, 1836) - FF

A locally common slug known to be a pest on crops. It was found under stones on the sides of the stream at Wied ix-Xaghra, Dwejra, San Dimitri, San Blas and Nadur near Ta' Xhajma bore hole. The colour of the animal varies from dark, tar-black to greyish white. A few specimens from Wied ir-Ramla had a very light greyish colour with a yellow carina and a totally black head. Although we have tentatively placed them under this name, following the advice of Karl H. Beckmann who examined images, there still remains a problem. After dissections by ourselves and various other European experts on this family, no genitalia have been found, notwithstanding the fact that a few specimens, at a size of 35 to 40mm, gave the impression of being of an adult size.

Deroceras panormitanum (Lessona & Pollonera, 1882) - FF - NR

Many specimens were found under stones at Wied ix-Xaghra, while other specimens were noted at San Blas, Nadur and Il-Qattara. *D. panormitanum* is known locally to be a widespread pest.

Cecilioides acicula (Müller, 1774) - F

A few specimens were found in leaf litter at Wied ix-Xlendi, Munxar and Nadur.

Cecilioides janii (De Betta & Martinati, 1855) - PR

No specimens were found in this survey.

Hohenwartiana hohenwarti (Rossmässler, 1839) - R - NR

A fresh empty shell was found from fine silt at Ghajn Hosna, limits of Xaghra, on the road to Ramla Bay, while another fresh shell was found at Wied il-Haneq.

Ferussacia folliculus (Gmelin, 1791) - FF

A rather common species found under stones and leaf litter in many places.

Rumina decollata (Linnaeus, 1758) - FF

Another common species locally.

Testacella riedeli Giusti *et al.*, 1995 - PR

We have not encountered this species during sampling.

Muticaria macrostoma macrostoma (Cantraine, 1835) - R

A few shells were found in a rocky habitat with wild thyme (*Thymbra capitata*), between Xaghra and Nadur. Another form of this species, *oscitans* (Charpentier, 1852) is quite common and inhabits crevices in rocks. However, only few specimens of the form *mamotica* (Gulia, 1861) were noted live. This locally endemic form occurs at Munxar on a patch of rock with shallow soil deposits about a hundred square metres in area. The site is just above Wied ix-Xlendi. Most of the area where it lives has been recently built up and building is still threatening the site. The mosses or lichens on which the species is found are scarce. Presently the site is heavily grazed by goats.

Papillifera papillaris (Müller, 1774) - FF

A common species found in every part of the island.

Sphincterochila candidissima (Draparnaud, 1801) - PR

Notwithstanding the very thorough search which was carried out at San Dimitri, where it was previously recorded, no specimens of this species were found.

Xerotricha conspurcata (Draparnaud, 1801) - FF

A very common species at all sites visited. The colour of the animal may be cream, or greyish-black.

Xerotricha apicina (Lamarck, 1822) - FF

The species was found on the sand dunes at Ramla l-Hamra. Many empty shells were scattered everywhere at this site.

Trochoidea spratti spratti (Pfeiffer, 1846) - F

Many empty shells of the typical *spratti* and a few living specimens were noted on a hillside, near the salt pans at Il-Qolla s-Safra, limits of Marsalforn. Other forms (*calcarata*, *ogygiaca* sensu Beckmann 1987) of this very variable species were also found.

Tochoidea gharlapsi Beckman, 1987 - PR

This species was recently also recorded from Xlendi and Ras in-Newwiela, Gozo (Giusti *et al.*, 1995), however only a single, fresh dead shell was found from Ta' Cenc, during this survey. The species is known to be 'not threatened' mainly due to its rather inaccessible habitat.

Cochlicella acuta (Müller, 1774) - FF

A very common species everywhere.

Cochlicella conoidea (Draparnaud, 1801) - FF

The species was found living among the leaves of *Pancreatium maritimum* on the sand dunes at Ramla l-Hamra. Many empty shells were also scattered everywhere at this site.

Cerzuela caruanae (Müller, 1774) - FF

A common species found live at San Dimitri.

Caracollina lenticula (Michaud, 1831) - FF

A common species, found living under stones in many of the localities visited.

Schileykiella parlatoris (Bivona, 1839) - PR

No specimens were found.

Theba pisana (Müller, 1774) - F

This species is probably one of the most abundant mollusc species in Gozo. Specimens are beautifully decorated with fine equally spaced, dark spiral lines.

Eobania vermiculata (Müller, 1774) - FF

A very common species, at all sampled locations.

Marmorana melitensis (Férussac, 1821) - F

A few live specimens were observed in shady places, attached to walls of houses at Qala.

Cantareus apertus (Born, 1778) - FF

An extremely common species, at all locations.

***Cantareus aspersum* (Müller, 1774) - FF**

The species is common and regarded as a pest by farmers. It is however considered as a culinary delicacy on the Maltese Islands. Unfortunately, many of the rubble walls have suffered irreparable damage or complete destruction in the search for these molluscs by the people who collect them for food. Around the island it is also frequently seen packed in net-bags for sale at food outlets.

***Pisidium personatum* Malm, 1855 - RR**

This, our unique, still living, freshwater bivalve, had been rediscovered after more than a hundred years by Sammut & Mifsud (1988 as *P. casertanum* (Poli, 1791) living in a stream at Wied ix-Xlendi. The species is reported herein to be still living at the same locality, albeit only a few specimens were noted alive. Specimens were found in both thick mud and in the sedimentary gravel of the stream. The largest specimens noted measured 3.25mm in length, 3mm in height and 2mm in width.

Giusti *et al.* (1995), after examining a few valves from material originally collected by the present authors, have reassessed that the material examined by them actually belong to *P. personatum* and not to *Pisidium casertanum* (Poli, 1791). However, they also maintained that both species are present at Wied ix-Xlendi. The new material examined belongs solely to *P. personatum*. It is opportune to add here that *P. personatum* retains its young in a special brood pouch up to the veliger stage.

DISCUSSION AND CONCLUSIONS

Most of the previously recorded species (and forms) for the Island of Gozo have been rediscovered in this short survey, and the majority were found alive. Moreover a few other species not previously recorded have been found either as empty shells or living and have been added to the list.

Muticaria macrostoma form *mamotica* (Gulia, 1861) is in our opinion in greatest danger since it is threatened to extinction by development, which is advancing in on its extremely limited habitat, and also by overgrazing. Other species threatened are all the freshwater mollusca living at Wied ix-Xlendi. Frequent illegal dumping of waste building material into this valley could lead to partial or complete blockage of the perennial stream and the extinction of the *Pisidium* and also other fauna. *Pisidium personatum* has been found live only in this particular freshwater habitat in Gozo.

The Limacidae of this island seem to have never been thoroughly studied, probably due to some difficulties in determining the species. *Deroceras panormitanum* and *Milax nigricans* are common and may be pests in some areas. The lack in the stations sampled on Gozo of any specimens of *Limacus flavus* (Linnaeus, 1758) and *Lehmannia melitensis* (Lessona & Pollonera), very common species on the main island of Malta, has still not yet been fully explained.

ACKNOWLEDGEMENTS

We would like to thank K. H. Beckmann for important literature references and identification of a curious colour form of specimens of *Milax nigricans*. Thanks are also due to M. J. Gauci for allowing us to cite her records of *Ovatella myosotis* from Gozo.

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(Accepted August 2007)