

## Notes on some interesting species of Mollusca Gastropoda of the Monterosato collection from the Museum of Paleontology (Catania University, Italy)

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### ABSTRACT

In the year 2008, the then named Department of Geological Sciences of the University of Catania came into possession of malacological material belonging to Tommaso Di Maria, baron of Allery and marquis of Monterosato (Palermo, 1841–1927), an important malacologist specialized in the systematics of continental and mostly marine and fossil molluscs from the Mediterranean Sea and north east Atlantic. The small collection also includes interesting lots of shells belonging to other Sicilian naturalists such as the abbot Giuseppe Brugnone (Caltanissetta, Italy) and Pietro Calcara (Palermo, Italy). In this malacological collection, some interesting taxa little known and difficult taxonomic interpretations have been found. The rediscovery of the *Aghatina mandralisci* Calcara, 1840 and *Lachesis retifera* Brugnone, 1880 probable lectotypes, and the taxonomy of *Helix schwerzenbachi* Calcara, 1841 and *Helix cupani* Calcara, 1842 (syntypes) are discussed. Particularly, *A. mandralisci* is proposed as a synonym of *Allopeas gracilis* (Hutton, 1834), *H. schwerzenbachi* is proposed as a synonym of *Punctum (Punctum) pygmaeum* (Draparnaud, 1801), and *H. cupani* is proposed as a synonym of *Xerotracha conspurcata* (Draparnaud, 1801).

### KEY WORDS

Taxonomy; Mollusca; Gastropoda; Monterosato; malacological collection; Museum.

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### INTRODUCTION

Tommaso Di Maria, baron of Allery and marquis of Monterosato (Palermo June 27<sup>th</sup>, 1841 - ibidem, March 1<sup>st</sup>, 1927), was one of the most influential malacologists in the second half of the 19th century, specialized in the systematics of continental and

mostly marine and fossil molluscs from the Mediterranean and north east Atlantic. He described a very large number of taxa, still valid today.

Much of the Monterosato specimens, since 1942, are held in the malacological collections of the Museo Civico di Zoologia di Roma [= Township Zoological Museum of Rome (ZMR)]. These

collections have always been considered a great amount of information because they contain not only the specimens of Monterosato himself, but also acquired lots belonging to other contemporary malacologists, such as Giovanni Battista Adami, Nicola Tiberi, Giuseppe Antonio Brugnone, which in turn included shells belonging to Luigi Benoit, Ignazio Libassi and Pietro Calcara (Oliverio & Tringali, 2001).

In recent years, this important collection has undergone new studies and a complete list of new marine mollusc taxa introduced by Tommaso Allery Di Maria Marquis of Monterosato has been compiled (Oliverio & Tringali, 2001; Appolloni et al., 2018).

In February 2008, Ms. Laura Ryolo heir of the Marquis of Monterosato, donated library and malacological material belonging to him, to the then Department of Geological Sciences of the University of Catania. In the same year, the malacologist Stefano Palazzi cataloged the collection (Table 1, Fig. 1) allocated in the then Section of Oceanology and Paleocology, now belonging to those of the today's Museum of Palaeontology of the Department of Biological, Geological and Environmental Sciences, University of Catania (Reitano, 2016).

In the present work, we will examine some species of this collection, which are poorly known and of particular taxonomic interest.

## MATERIAL AND METHODS

The Monterosato collection kept at the Museum of Palaeontology of the University of Catania (MPCU) consists of 140 lots: 136 Gastropoda (marine, terrestrial, and freshwater recent and fossils species), 3 Bivalvia, and a mixed collection including molluscs and other taxonomic groups.

They arrived to the MPCU in a good state of preservation, inside a cardboard box. The shells with one or more labels were contained mostly inside variously shaped and sized glass vials and partly inside rectangular handmade cardboard boxes. The vials were closed with a cork stopper or cotton balls. Some of the most interesting shells were extracted from the original vial, to be photographed, and then placed back in a plastic box, to avoid harm from Byne's disease. The 140 lots were

then placed inside cardboard boxes with plastic lids. Each box contains:

- the original vial still closed, for lots containing uninspected shells;

- the original vial, emptied of the shells, with its cap, both inside a zipped plastic bag, plus the shells in a plastic box;

- the cm-sized shells, inside zipped plastic bags and/or relative cardboard boxes;

- the original labels, inside plastic boxes when of compatible size, or inside zipped plastic bags;

- a label bearing the words "Laura Ryolo Donation, Monterosato Collection, Sample n° (from 1 to 140)" and also the Latin name of the mollusc species, in square brackets when assigned by the reviser and finally the locality;

- a label printed on a strip of paper, folded into three parts, with the header "University of Catania - Museum of Paleontology" bearing the inventory number of the collections on its lateral side. In the central part the complete inventory number of the Museum is reported, together with the progressive number of the Monterosato collection (as per the label mentioned above), the specific name (in square brackets when assigned by the reviser) followed by the number of specimens (in round brackets). The age, the location, and finally the initials of the reviser and the year of the revision (S[tefano] P[alazzi] 2008) are also reported.

In the present work are examined four lots we considered more interesting: 1136/13–33 *Bul[imus] mandraliscae*, 1173/13–33 *H[elix] schwerzenbachi*, 1178/13–33 *H[elix] cupaniana*, 1198/13–33 *Lachesis retifera* (Calcara, 1840a, b, 1841, 1842, 1845) (Figs. 2, 3).

Low magnification photos were acquired with a Canon EOS700D digital camera equipped with Tamron SP 60mm f/2 Di II LD Macro, in order to document the general features of the shells. Specimens were also examined uncoated under a Tescan Vega 2 LMU Scanning Electron Microscope in Low Vacuum modality to investigate tube micro-morphology. All images were acquired at the Department of Biological, Geological and Environmental Sciences (University of Catania, Italy). The photographed specimens, although with some dirt of organic substances, have not undergone any cleaning, in order to avoid their damage.

ACRONYMS. MPCU: Museum of Paleontology, Catania University (Italy).

Numbers	Taxon revised by Palazzi, 2008	Age	Locality	Remarks
1060/13-33	[ <i>Bivalvia</i> sp.]	Recent	Madéra	
1061/13-33	[ <i>Alvania</i> spp.]	Recent	Madéra	
1062/13-33	[ <i>Pusillina</i> and <i>Crisilla</i> spp.]	Recent	[Madéra]	
1063/13-33	[ <i>Pusillina</i> sp.]	Recent	[Madéra]	
1064/13-33	<i>Raphitoma sandriana</i> var.	Recent	Ognina-Magnisi-Palermo	Ex coll. Brugnone
1065/13-33	<i>Nassa semistriata</i>	Pliocene	Savonese	
1066/13-33	<i>Nassa italica</i>	Pliocene	Castell'Arquato	Ex coll. Foresti
1067/13-33	[ <i>Nassa dertonensis</i>	Pliocene	[Castell'Arquato]	
1068/13-33	[ <i>Raphitoma</i> sp.]	Recent	Pal[ermo]	
1069/13-33	<i>Helix aperta soluta-contraria</i>	Recent	Palermo	
1070/13-33	<i>H[elix] propemuralis</i>	Recent	Castelvetr[ano]	
1071/13-33	<i>P[ecten] jacob[aeus]</i> juv.	Recent	Palermo	
1072/13-33	<i>Helix glaberrima</i>	Recent	Madonie	
1073/13-33	<i>H[elix] rupestris</i>	Recent	England	Ex coll. Brugnone
1074/13-33	<i>H[elix] rupestris elata</i>	Recent	Palermo	Ex coll. Brugnone
1075/13-33	<i>H[elix] rupestris</i>	Recent	Oreto	Ex coll. Brugnone
1076/13-33	<i>Zonites nitidulus</i>	Recent	England	Ex coll. Brugnone
1077/13-33	[ <i>Helix</i> ] <i>gregaria</i>	Recent	Donnafugata e Ragusa	
1078/13-33	[ <i>Monacha</i> sp.]	Recent	Toscana	Ex coll. Del Prete
1079/13-33	<i>Nassa cuvieri</i>	Pliocene	Altav[illa Milicia]	
1080/13-33	[ <i>Retusa</i> sp.]	Recent	Magnisi	
1081/13-33	<i>Hel[ix] aspersa minor</i>	Recent	Ile de Re, Charente inf.	
1082/13-33	<i>Lithocerithium derelictum</i>	Recent	Tunisi lagoon	Ex coll. Pallary
1083/13-33	<i>Helix hiberna</i>	Recent	Gabriele	Ex coll. Brugnone
1084/13-33	[ <i>Helix</i> ] <i>onychina</i>	Recent	[sine loco]	
1085/13-33	<i>Helix cantiana</i>	Recent	York	
1086/13-33	[ <i>Nassarius mutabilis</i> ]	Recent	Pal[ermo]	
1087/13-33	[ <i>Nassarius cuvierii</i> ]	Recent	Pal[ermo]	
1088/13-33	<i>Helix libassiana</i>	Recent	[sine loco]	Name ms of Brugnone
1089/13-33	<i>Zonites excavatus</i>	Recent	England	Ex coll. Brugnone
1090/13-33	<i>Cl[ausilia] grimmeri avinensis</i>	Recent	Avinskogel	
1091/13-33	<i>Pupa superstructa</i>	Recent	Rutais (?)	
1092/13-33	[mainly <i>Clausiliidae</i> ]	Olocene	Port Stewart, N. Ireland	
1093/13-33	<i>H[elix] sub(alpina?)</i>	Recent	Assisi	Ex coll. Del Prete
1094/13-33	[ <i>Alvania</i> sp.]	Recent	Arenella [Palermo]	
1095/13-33	[ <i>Pusillina</i> sp.]	Recent	Porto di Pal[ermo]	
1096/13-33	<i>Alvinia scabra</i>	Pleistocene	Milazzo	
1097/13-33	<i>Acinus hispidulus</i>	Recent	Corfù	Ex coll. Chaster
1098/13-33	[Collection of shells]	Recent	Cap Breton	
1099/13-33	[ <i>Cochlicopa</i> sp.]	Recent	Castellam[mare, Trapani]	
1100/13-33	<i>Cochlicopa folliculus</i>	Recent	[sine loco]	Ex coll. Brugnone
1101/13-33	[ <i>Ferussacia folliculus</i> ]	Recent	S. Polo [Parma]	
1102/13-33	<i>Cochlicopa folliculus</i>	Recent	Brancaccio [Palermo]	Ex coll. Brugnone
1103/13-33	[ <i>Ferussacia folliculus</i> ]	Recent	Modica	

Table 1/1. Catalogue of the Monterosato malacological collection of the MPCU (the content of the square brackets refers to the Stefano Palazzi's revision).

Numbers	Taxon revised by Palazzi, 2008	Age	Locality	Remarks
1104/13-33	<i>Acha[tina] petitiiana</i>	Recent	Monte Cuccio et al.	Ex coll. Brugnone
1105/13-33	<i>Acha[tina] petitiiana</i>	Recent	[sine loco]	Ex coll. Brugnone
1106/13-33	[ <i>Cochlicopa</i> ] <i>folliculus</i>	Recent	pr[esso] Palermo	
1107/13-33	<i>Ach[atina] gemmellariana</i>	Recent	Palermo	Ex coll. Brugnone
1108/13-33	<i>Ach[atina] rizeana</i>	Recent	Palermo	Ex coll. Brugnone
1109/13-33	<i>Ach[atina] acicula</i>	Recent	England	Ex coll. Brugnone
1110/13-33	<i>Ach[atina] teres</i>	Recent	Palermo	Ex coll. Brugnone
1111/13-33	<i>Ach[atina] acicula</i>	Recent	Firenze	Ex coll. Brugnone
1112/13-33	<i>Ach[atina] actoniana</i>	Recent	Palermo	Ex coll. Brugnone
1113/13-33	<i>Ach[atina] pulchella</i>	Recent	Palermo	Ex coll. Brugnone
1114/13-33	<i>Ach[atina] hohenwarti</i>	Recent	Castelgoff[redo, Mantova]	Ex coll. Brugnone
1115/13-33	<i>Ach[atina] hohenwarti</i>	Recent	Magnisi e Bucche[ri]	Ex coll. Brugnone
1116/13-33	<i>Ach[atina] goniostila</i>	Recent	Palermo	Ex coll. Brugnone
1117/13-33	[ <i>Ferussacia folliculus</i> ]	Recent	Santa Cristina di Gela	
1118/13-33	[ <i>Cecilioides</i> sp.]	Recent	Viareggio	
1119/13-33	[ <i>Ferussacia folliculus</i> ]	Recent	Varie località	Ex coll. Brugnone
1120/13-33	[ <i>Caecum</i> sp.]	Recent		
1121/13-33	<i>Odostomia pusilla</i>	Pleistocene	Monte Pellegrino	Ex coll. Villa (?)
1122/13-33	<i>Alvinia clathrella</i>	Pleistocene	Milazzo	
1123/13-33	<i>Acme fusca</i>	Recent	Paler[mo]	Ex coll. Brugnone
1124/13-33	<i>Cochlicopa cylindracea</i>	Recent	Ponte di Corleone	Ex coll. Brugnone
1125/13-33	<i>Carychium minimum</i>	Recent	England	Ex coll. Brugnone
1126/13-33	<i>Cochlicopa lubrica</i>	Recent	Lentini	Ex coll. Brugnone
1127/13-33	<i>Acme fusca</i>	Recent	Ponte di Corleone	Ex coll. Brugnone
1128/13-33	<i>Cochlicopa tridentata</i>	Recent	England	
1129/13-33	[ <i>Hohenwartia</i> sp.]	Recent	Orciano	
1130/13-33	<i>Zua collina subventricosa</i>	Recent	Siagne (?)	
1131/13-33	<i>Ach[atina] incerta</i>	Recent	Lipari	Ex coll. Brugnone
1132/13-33	<i>Cochlicopa lubrica</i>	Recent	Bozzano [Bolzano ?]	Ex coll. Brugnone
1133/13-33	<i>Carychium minimum</i>	Recent	Mondello	
1134/13-33	<i>Carychium tridentatum</i>	Recent	Palermo	
1135/13-33	<i>Ach[atina] petitiiana</i>	Recent	Ognina et al.	
1136/13-33	<i>Bul[imus] mandraliscae</i>	Recent	Palermo	Ex coll. Brugnone
1137/13-33	<i>Carychium tridentatum</i>	Recent	Castelgoffredo [Mantova]	Ex coll. Brugnone
1138/13-33	<i>Cochlicopa lubrica</i>	Recent	Englande e Lesina	Ex coll. Brugnone
1139/13-33	<i>Ach[atina] bourguignatiana</i>	Recent	Monte Cuccio	Ex coll. Brugnone
1140/13-33	<i>P[omatias] margheritae</i>	Recent	Liguria	Settepassi [leg.] 1918
1141/13-33	[ <i>Rissoina bruguierei</i> ]	Recent	Adjim [Tunisia]	
1142/13-33	[ <i>Rissoa</i> sp.]	Recent	Adjim [Tunisia ]	
1143/13-33	[ <i>Caecum subannulatum</i> ]	Recent	Adjim [Tunisia ]	
1144/13-33	[ <i>Caecum</i> sp.]	Recent	Adjim [Tunisia ]	
1145/13-33	[ <i>Chrysallida</i> sp.]	Recent	Adjim [Tunisia ]	
1146/13-33	[ <i>Melanella praecurta</i> ]	Recent	Adjim [Tunisia ]	
1147/13-33	<i>Tr[ansiberus] subdentalis</i>	Recent	pr. di Marsala e di Mazzara	Ex coll. Brugnone, nomen never published

Table 1/2. Catalogue of the Monterosato malacological collection of the MPCU (the content of the square brackets refers to the Stefano Palazzi's revision).

Numbers	Taxon revised by Palazzi, 2008	Age	Locality	Remarks
1148/13-33	[ <i>Theba pisana</i> ] monstr. <i>scalaris</i>	Recent	Palermo Luglio	
1149/13-33	[ <i>Theba pisana</i> ] monstr. <i>perfecta</i>	Recent	pr. Palermo	
1150/13-33	<i>Cl[ausilia] byzantina</i>	Recent	Creta - Kambi pr. Psiloriti	
1151/13-33	<i>Cl[ausilia] (Delima) alschingeri</i>	Recent	Sine loco [Croatian endemism]	
1152/13-33	[ <i>Helicidae</i> sp. juv.]	Recent	Brunnen Canton Schwyz	
1153/13-33	[ <i>Marmorana platychela</i> monstr sinistral]	Recent	Sine loco	
1154/13-33	[ <i>Clausilia</i> ] <i>piceata</i>	Recent	flotté par le mer en Dalmatie provenant d'Italie	
1155/13-33	[ <i>Ferussacia</i> sp.]	Recent	Favignana	
1156/13-33	<i>H[elix] rotundata</i> var. <i>albina</i>	Recent	Sine loco	Ex coll. Brugnone
1157/13-33	<i>Helix nemausensis</i>	Recent	Porte de Gentilly près Paris	
1158/13-33	<i>H[elix] subhispidata</i> vel <i>calvula</i>	Recent	Palermo	Ex coll. Brugnone
1159/13-33	<i>Pleurotoma</i> sp.	?Pliocene	spiaggia di St. Raphael [Francia]	
1160/13-33	[ <i>Eulima</i> cf. <i>glabra</i> ]	Recent	Pal[ermo]	
1161/13-33	[ <i>Rissoa</i> sp.]	Recent	Rabat [Marocco]	
1162/13-33	[ <i>Vallonia</i> sp.]	Recent	Mondello	Ex coll. Brugnone
1163/13-33	[ <i>Helicidae</i> sp.]	Recent	Madonie	Ex coll. Brugnone
1164/13-33	<i>Cl[ausilia] byzantina</i> var. <i>adspersa</i>	Recent	Creta Neokuri	
1165/13-33	<i>H[elix] vermiculata</i>	Recent	Linosa	
1166/13-33	<i>Helix aspersa</i>	Recent	Mauritius	Ex coll. Oberwimmer
1167/13-33	<i>Drillia modiola</i>	Miocene: Tortonian	S. Agata [Fossili - AL]	
1168/13-33	<i>H[elix] fulva</i>	Recent	Monte Cuccio et al.	Ex coll. Brugnone
1169/13-33	<i>Testacella haliotidea</i>	Recent	Parroco Gandolfo (Monte Cuccio)	Ex coll. Brugnone
1170/13-33	[ <i>Chauvetia minima</i> ] var. <i>albina</i>	Recent	Arenella	
1171/13-33	[ <i>Oxychilus</i> sp.]	Recent	England	
1172/13-33	<i>Vitrina diaphana</i>	Recent	Castelgoffredo [Mantova]	Ex coll. Brugnone
1173/13-33	<i>H[elix] schwerzenbachi</i>	Recent	Oreto	Ex coll. Brugnone
1174/13-33	<i>Zonites alliarius</i>	Recent	England	Ex coll. Brugnone
1175/13-33	<i>H[elix] nitidosa</i>	Recent	Madonie	Ex coll. Brugnone
1176/13-33	<i>Cl[ausilia] (Delima) piceata</i>	Recent	Sine loco	
1177/13-33	<i>Daudebardia brevipes</i>	Recent	Ponte della Grazia	Ex coll. Brugnone
1178/13-33	<i>H[elix] cupaniana</i>	Recent	Orfanello presso Oreto	Ex coll. Brugnone
1179/13-33	<i>Zonites minutus</i>	Recent	Catania-Magnisi	Ex coll. Brugnone
1180/13-33	<i>H[elix] pulchella</i>	Recent	England	Ex coll. Brugnone
1181/13-33	<i>Claus[ilia] (Alopi) plumbea</i>	Recent	Brasso [Romania]	
1182/13-33	[ <i>Alopi</i> ] <i>haueri transitans</i>	Recent	Bratocia [Romania]	
1183/13-33	[ <i>Cantareus apertus</i> ] sinistral	Recent	Sine loco	
1184/13-33	[ <i>Cantareus apertus</i> ] <i>scalariforms</i>	Recent	Sine loco	
1185/13-33	[ <i>Theba pisana</i> ] <i>scalariforms</i>	Recent	Sine loco	
1186/13-33	[ <i>Cantareus aspersus</i> ] var. <i>flavida</i>	Recent	Capoterra [Sardegna]	
1187/13-33	[ <i>Ercetella mazzullii</i> ] sinistral	Recent	Sine loco	

Table 1/3. Catalogue of the Monterosato malacological collection of the MPCU (the content of the square brackets refers to the Stefano Palazzi's revision).

Numbers	Taxon revised by Palazzi, 2008	Age	Locality	Remarks
1188/13-33	<i>H[elix] aspersa</i>	Recent	Sine loco	
1189/13-33	[ <i>Marmorana muralis</i> ]	Recent	Giardino Marchiello	
1190/13-33	<i>H[elix] globularis</i>	Pleistocene	[Monte] Pellegrino	Ex coll. Brugnone
1191/13-33	[ <i>Nassa mutabilis</i> ] var. <i>globulina</i>	Recent	Bastia [Corsica]	Ex coll. Locard
1192/13-33	<i>F[issurella] gibba</i> var. <i>radiata</i>	Recent	Sine loco	
1193/13-33	<i>Venericardia antiquata</i>	Recent	Sfax [Tunisia]	
1194/13-33	<i>Zonites obscuratus</i>	Recent	Monte Prana [Alpi Apuane]	Ex coll. Brugnone
1195/13-33	<i>H[yalinia] cellaria</i>	Recent	Madonie	
1196/13-33	[ <i>Monacha</i> sp.]	Recent	Madonie	Ex coll. Brugnone
1197/13-33	<i>Helix aspersa</i>	Recent	Ponta Delgada Azzorre	
1198/13-33	<i>Lachesis retifera</i>	Plio-pleistocene	Giannettello	
1199/13-33	<i>Clausilia filfolensis</i>	Recent	Filfla [Malta]	Ex coll. Caruana Gatto. nomen ms never published

Table 1/4. Catalogue of the Monterosato malacological collection of the MPCU (the content of the square brackets refers to the Stefano Palazzi's revision).



Figure 1. The Monterosato malacological collection of the Museum of Palaeontology, Catania University (Italy).

MANDRALISCA ENRICO PIRAINO BARONE DI.

Catologo dei molluschi terrestri e fluviatili delle Madonie e luoghi adiacenti. Palermo Stamperia Oretea 1840.

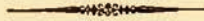
Nota di alcune specie di molluschi terrestri e fluviatili di Sicilia. Palermo Estratto dal Giornale Letterario num 230. 1842.

PHYLIPPI R. A.

Enumeratio molluscorum Siciliae etc. Berolini 1836. Idem v. 2. Halis Saxonum. 1844.

TESTA DOMENICO.

Due nuove specie di conchiglie rinvenute nei dintorni di Palermo.



## SPIEGAZIONE DELLA TAVOLA.

Fig.	1.	Helix	Calcarae.
»	2.	»	Brocehi.
»	3.	»	Deshayesii.
»	4.	»	Scheverzenbachii.
»	5.	»	Cupani.
»	6.	»	Dibenedicti.
»	7.	»	Assorinensis.
»	8.	»	Nortoni.
»	9.	»	Usticensis.
»	10.	Pupa	contorta.
»	11.	Bulimus	cylindraceus.
»	12.	»	Mandalisci.
»	13.	Limnaeus	minimus.
»	14.	Valvata	Bocconi.
»	15.	Paludina	Mussonii.
»	16.	»	Porri.
»	17.	»	Salinasii.



(Memoria comunicata in dicembre 1844).

Figure 2. Caption on page 46 of the table attached to the work of Calcara (1845) where *Bulimus mandralisci*, *Helix schwerzenbachii*, and *Helix cupani*, found in the Monterosato malacological collection (MPCU), are drawn.

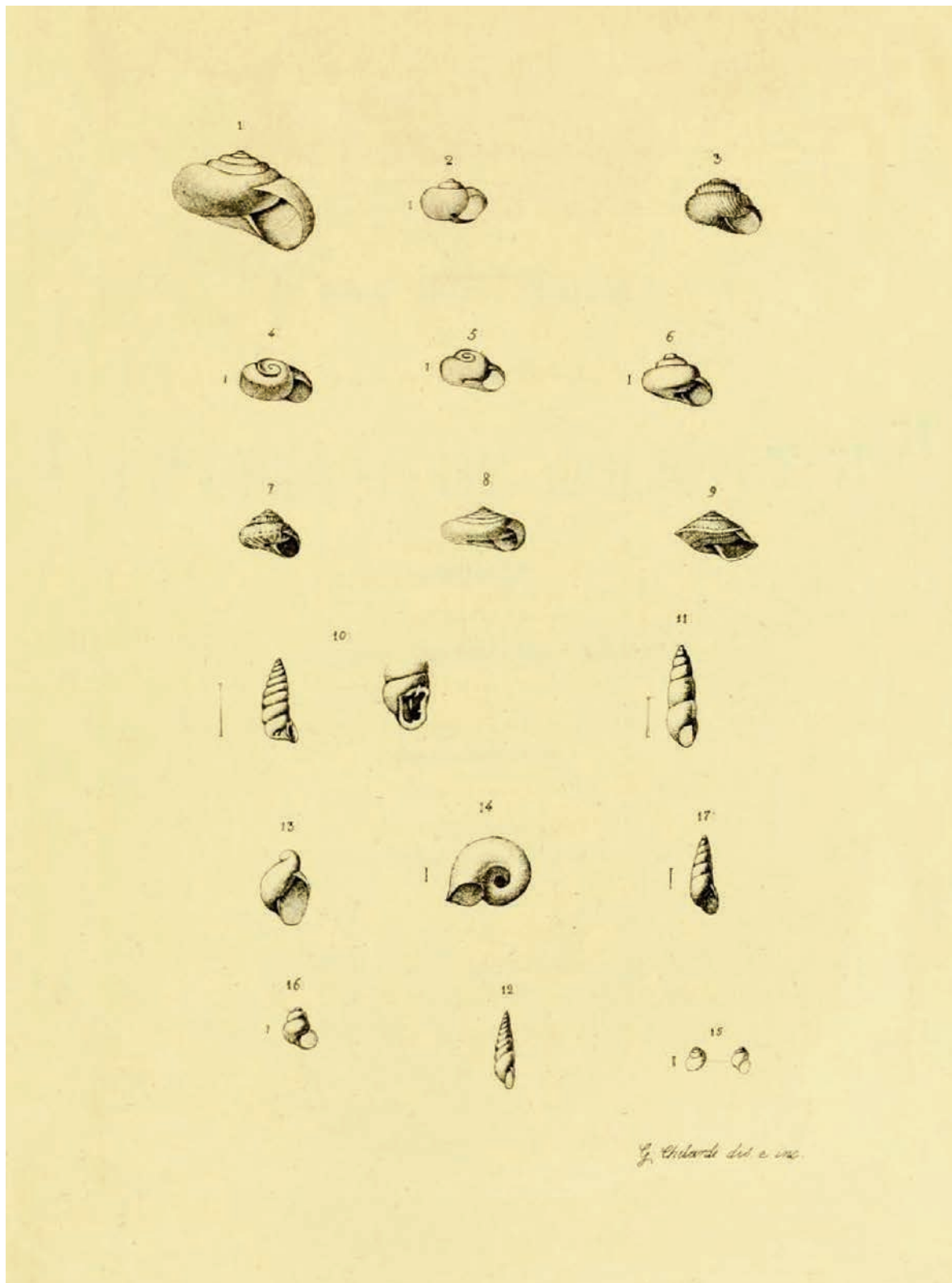


Figure 3. Table attached to the work of Calcara (1845) where *Bulimus mandralisci*, *Helix schwerzenbachii* and *Helix cupani*, found in the Monterosato malacological collection (MPCU), are drawn.



## RESULTS

### *Aghatina mandralisci* Calcara, 1840 (Figs. 4–7)

LOCUS TYPICUS. Calcara, 1840a: “*Conchiglia unica ritrovata dall'ornatissimo signor Testa nei contorni di Palermo ed esistente nella sua collezione*” [= surroundings of Palermo, Sicily, Italy].

DESCRIPTION. Calcara, 1840a: “*Testa cilindracea subfusiformis, subdiaphana flava apice obtuso, longitudinaliter tenuissime striata; anfractibus septem, convexo planis; sutura profunda divisis, apertura oblongo-ovata, labro simplici. Lunghezza 6 linee - Larghezza 2 1/6 - Altezza dell'apertura 2 linee*”.

Conical elongated slender whitish-opaque shell 9.50 mm high and 2.79 mm wide, consisting of seven whorls; last whorl and aperture high respectively the 49% and the 31% of the total shell. The protoconch is rounded with weak longitudinal striae, on the first whorl; a regular sutural crenulation starts with the second protoconch whorl. The teleoconch whorls are evenly rounded with a deep suture, which is crenulated by minute papillae. The surface of the whorls is covered by fine and dense axial striae with the widest curvature in the median region of each whorl. The last whorl is more flattened than the previous ones. The aperture is oblong-oval; the columella is straight and folded to close the umbilicus.

REMARKS. Calcara (1840a, b) refers to a single shell, on which he based the institution of this taxon, belonging to the collection of “*signor Domenico Testa*” of Palermo, and found by him “*nei contorni di Palermo* [in the surroundings of Palermo]”. Calcara himself (1840b, in note 2) says to have never found it in so many researches and for this reason he considers it “*specie dubbiosa per la Sicilia* [a doubtful species for Sicily]”.

Lancia (1853) considers the shell of *Bulimus mandralisci* to a “*var. monstrosa*” of *Hypnophila cylindracea* (Calcara, 1840). Based on this, Benoit (1862: 227) excludes *B. mandralisci* from the Sicilian species.

As reported by Cimino (2011), in Abbot Brugnone “*la passione per la malacologia fu alimentata dall'amicizia con l'affermato malacologo Domenico Testa che vantava una ricca collezione ritenuta allora superiore a tutte le altre e che metteva a disposizione dell'abate. Una collezione che,*

*pur troppo, è andata distrutta durante la Spedizione dei Mille perché la casa del Testa era vicina al Palazzo Reale e fu distrutta da un incendio. Si salvarono solo alcuni rari pezzi che il Testa aveva scambiato con il Brugnone* [the passion for malacology was nourished by friendship with the affirmed malacologist Domenico Testa who boasted a rich collection considered superior to all the others at the time and which he made available to the abbot. A collection that, unfortunately, was destroyed during the Expedition of the Thousand because the Testa's home was close to the Royal Palace and was destroyed by fire. Only a few rare pieces were saved that Testa had exchanged for the Brugnone]”.

Also Benoit (1882: 76) reports that Brugnone had the opportunity to take shells from the collection of Domenico Testa. The specimen we analyzed corresponds in size and morphological characters to the original description of *B. mandralisci* and could constitute its lectotype. This shell could then be passed from Testa to Brugnone and by the latter labeled with the name of *B. mandraliscae*. After the death of Brugnone (1884) the collection of the Nissen abbot was sold to the Marquis of Montesorato (Ryolo & Palazzi, 2008; Cimino, 2011).

We attribute the shell of *B. mandralisci* from the MPCU to the species *Allopeas gracilis* (Hutton, 1834) (Subulinidae). The species (graceful awlshell) is widely distributed in subtropical and tropical areas of Asia, Africa, Australia, Polynesia, central-southern America, Caribbean islands and southeastern United States (Dundee, 1971; Capinera, 2017), also introduced in the Peninsula Arabica (Neubert, 1998) and Iraq (Naser, 2010). Although this species has been described from India, Neck (1976) and Aufferberg & Stange (1988) suggest that its origin is South America.

It is probable that the shell found in the surroundings of Palermo by Testa and described by Calcara (1840a) was introduced to Sicily with exotic plant species. It is more difficult to hypothesize whether this shell belonged to a living and acclimated population, albeit small or localized. Nowadays, little subulinids like *A. gracilis* have been found again in Palermo, inside the Botanical Garden (Roberto Viviano, *in verbis*) but, also in this case, without evidence of living populations.

Taking into account the above, we propose *B. mandralisci* as a younger synonym of *A. gracilis* (Hutton, 1834).

***Lachesis retifera*** Brugnone, 1880 (Figs. 8–12)

LOCUS TYPICUS. Contrada “Giannittello” (today Giannittello), near Caltanissetta, Sicily, Italy.

DESCRIPTION. Brugnone, 1880: “*Conchiglia minuta, ovato-turrita, con apice ottuso e levigato, lunga mm. 6¼, larga mm. 2½: anfratti 7, leggermente convessi, separati da suture poco profonde, sottilmente reticolati: reticolo formato da linee poco elevate o costicine longitudinali e spirali, le une e le altre uguali tra loro ed ai loro intervalli, perlate nel loro incrociamiento e formanti tante piccole areole incavate e quadrate come le maglie d'una rete; linee longitudinali rette, esistenti dalla seconda metà del primo giro, 24 nell'ultimo, quasi mancanti nella coda; linee spirali o transverse protratte dal secondo giro sino a tutta la coda, 13 nell'ultimo giro, 5 nel penultimo, 3 negli altri: apertura rotondata, coda cortissima, columella contorta; labbro destro acuto, internamente munito di 5 pieghe grosse, che cominciano sopra il canaletto ma non arrivano in alto; labbro sinistro tenue, distinto e continuo col destro*”.

Shell buccinoid, 6.30 mm high, 2.6 mm wide, solid, with seven moderately convex whorls and a marked suture. Protoconch 750 µm in maximum diameter. The nucleus is smooth and 400 µm in diameter; the first whorl is markedly sculptured by axial ribs, narrower than the spaces separating them, where spiral cords are obvious at the intersection with the ribs generating small tubercles. The teleoconch ornamentations are spiral cords and axial ribs, both narrower than the interspaces. Interspaces between the ribs and cords form a rather uniform mesh, which form beaded tubercles. The first whorl consists of three spiral cords. In the last whorl there are 13 spiral cords, of which 4 from the penultimate whorl. The size of the cords is constant for almost the entire surface of the last whorl. Axial ribs on the last whorl 24 in number and prosocline. Last whorl and aperture high respectively the 60% and 42% of the total height of the shell. Outer lip enlarged, showing traces of reconstruction due to trauma. Inside the lip there are five weak denticles, the apical one most evident; the abapical tooth forms the outer edge of the siphonal canal. White-yellowish color with some presumed traces of original coloring near the tubercles.

REMARKS. For a correct geological dating of this species, it should be considered that the presence of *Chlamys (Aequipecten) scabrella* (Lamarck, 1819) (Bivalvia Pectinidae) mentioned by Brugnone among the fauna found in Contrada Giannittello, would indicate it belong to the MPMU3 area (Monegatti & Raffi, 2001). In the geological map of Caltanissetta (<http://www.isprambiente.gov.it/Media/carg/631-Caltanissetta-Enna/Foglio.html>) near Contrada Giannittello (near Cozzo di Naro, SW of Caltanissetta) are outcropping at the bottom the marly clays of Geracello (Upper Pliocene) and towards the other the sands of Lannari (Upper Pliocene-Lower Pleistocene?). Since the exact collection point of the fossil is unknown, we attribute its age, as a precaution, to the Upper Pliocene-Lower Pleistocene.

The taxonomic aspects relating to *Chauvetia retifera* have already been extensively discussed (Micali, 1998; Tringali, 2001). In the present work, the taxon *Chauvetia retifera* is considered applicable only to the fossil species treated here. Therefore we believe that the name *Chauvetia elongata* F. Nordsieck & Garcia-Talavera, 1979 is available and applicable for the living species, both in the Atlantic and Mediterranean (Micali, 1998; Gofas & Oliver, 2010), unlike what is reported in MolluscaBase ([www.molluscabase.org/aphia.php?p=taxdetails&id=138890](http://www.molluscabase.org/aphia.php?p=taxdetails&id=138890); last consultation 21/12/2019). As already believed by Tringali (2001) the taxa described by Monterosato (1889) are not available, having been published as synonyms for *Lachesis retifera* (ICZN, 2019: Art. 11.6), and as varieties are not available (ICZN, 2019: Art. 45). At present *Chauvetia retifera* is not known for any other Plio-Pleistocene deposit in the Mediterranean area.

The species differs in general from *Chauvetia elongata* in having a smaller shell and less slender profile (see also Table 2).

***Helix schwerzenbachii*** Calcare, 1841 (Figs. 13–15)

LOCUS TYPICUS. Calcare, 1841: “*Si rinviene comunemente attaccata sopra le pietre della contrada di Bellolampo e come ancora nelle vicinanze delle sponde dell'Oreto [near Palermo]*”.

DESCRIPTION. Calcare, 1841: “*Testa minuta, orbiculata, tenui, pellucida, glabra, corneo fulva, late*

	<i>Chauvetia retifera</i>	<i>Chauvetia elongata</i>
Protoconch	Maximum diameter 750 µm with a nucleus 400 µm wide	Maximum diameter 850 µm with a nucleus 450 µm wide
Teleoconch	Spiral cords narrower than the interspaces	Spiral cords twice the size of the interspaces
	Axial ribs narrower than the interspaces, which form beads at the intersection with the spiral cords	Axial ribs of the same size of interspaces, slightly elevated which form quadrangular nodules at the intersection with the spiral cords
	Whorls moderately convex that mark a deep suture	Whorls little convex that mark a canaliculate suture
	24 axial ribs in the last whorl	20-24 axial ribs in the last whorl
	13 spiral cords on the last whorl, four of which came from the penultimate whorl	17-18 spiral cords on the last whorl, five of which came from the penultimate whorl
	Last whorl high 60% of the total height of the shell	Last whorl high 56-58% of the total height of the shell

Table 2. Morphological differences between *Chauvetia retifera* and *C. elongata*.

*umbilicata; anfractibus 3 convexis, ultimo magno inflato; apertura rotundata patula, labro simplici, acuto. Diametro 1/3 di linea* [equivalent to about 0.8 mm]”.

Shell discoidal in shape and very small, light horny brown and shiny, teleoconch consisting of three convex whorls; external surface with dense and regular ribs, on the ventral side around the umbilicus about 20 rows of very prominent, blunt spiral ribs crossed by axial ribs, followed by an area with only axial sculpture towards the outer edge of the body whorl; aperture rounded, margin thin (but broken), umbilicus wide.

REMARKS. According to Calcara (1841) this taxon differs from the similar “*Helix*” *pygmaea* Draparnaud, 1801 in having a shell one third smaller, for a smaller number of whorls, for the orbicular shape and for having a wider umbilicus.

The species was accepted by Aradas & Maggioro (1841: 60) and Calcara (1845: 17) but most of the later authors considered the taxon *H. schwerzenbachii* Calcara, 1841 doubtful and based on juvenile specimens: Philippi (1844: 218), Pfeiffer L. (1848: 218; 1853: 272; 1868: 492), Kobelt (1875: 10), Tryon (1887: 30), Taylor (1909: 160).

Benoit (1859: 144–145, Pl. 4, f. 8) describes the species of Calcara sub *H. schwerzenbachiana* and

he too compares it with “*Helix pygmoea*”. However, the description of Benoit (1859) for some characters is different from that of Calcara. In particular, Benoit (1859) describes the last angled and dilated whorl, the rounded lunar aperture, the smallest umbilicus and the presence of a lamella that originates between the two edges of the peristome and continues inside the coil. These characteristics lead us to believe that *H. schwerzenbachiana* Benoit, 1859 is based on juvenile specimens of a different species from that of Calcara (1841), probably *Lauria cylindracea* (Da Costa, 1778).

The two specimens preserved in the Monterosato collection of the MPCU are *juveniles* since their heights are respectively 1.03 mm (1173/13-33a) and 1.027 mm (1173/13-33b). Both show apex and peristome heavily damaged. The shape of the shell and the ornamentation of these specimens lead us to classify them as *Punctum (Punctum) pygmaeum* (Draparnaud, 1801), a species with a wide Holarctic distribution, present all throughout Italy (Manganelli et al., 1995) and mainly linked to undergrowth environments of wooded areas.

These two specimens are probably syntypes of the species described by Calcara because, in the label inserted in this lot, the abbot Brugnone reported the wording “*avuta dall'autore* [had by the

author]”, moreover Brugnone bought shells directly from Calcara (Cimino, 2011), which subsequently merged in the Monterosato collection (Ryolo & Palazzi, 2008).

In consideration of the above, *Helix schwerzenbachii* is proposed here as a synonym of *Punctum (Punctum) pygmaeum* (Draparnaud, 1801).

### *Helix cupani* Calcara, 1842

LOCUS TYPICUS. Calcara, 1842: “*Trovati nelle sponde di fiume Oreto vicino Ponterrotto*” [near Palermo, Sicily, Italy].

DESCRIPTION. Calcara, 1842: “*testa parva, orbiculato-depressa, corneo-fulva, inferne convexa late umbilicata; anfractibus 2 a suturis impressis, superficie punctulato-scabra, subpilosa, labro tenui, simplici. Diametro ½ linea* [equivalent to about 1.15 mm]”.

Shell dextral, very small, pale light brown, globose; 2–2.1 convex whorls. The protoconch, about 1.5 whorls, is regular spirally striated, sometimes, with faint ribs more evident near the suture. On the ventral side, around the umbilicus, spiral striae are weaker, and short ribs have a concentric shape. The teleconch whorl is globose with irregular ribs. The surface of the shell is covered by irregular periostracal hairs. Aperture rounded, margin thin slightly reflected towards the umbilicus.

REMARKS. From a nomenclatural point of view, Benoit (1859: 146) re-describes and depicts the Calcara’s species by amending the name *H. cupani* to *H. cupaniana* and citing the original spelling in the text. Subsequently, Pfeiffer (1868: 431–432) places *H. cupaniana* Benoit, 1859 in synonymy with *H. cupani* Calcara, 1842. However, the name *H. cupaniana* attributed to Calcara (1842) continued to be used by most of subsequent authors: Benoit (1875: 138; 1882: 40), Westerlund (1876: 39; 1890: 3, 49), Reinhard (1877: 285), Kobelt (1877: 285), Pilsbry (1894: 47), Taylor (1909: 180), Ruhoff (1980: 227).

Although the taxon *H. cupani* Calcara, 1842 was used by some authors of the 1800s, including Aradas & Maggiore (1841: 60), Calcara (1845: 18) and Pfeiffer (1848: 424), the taxon *H. cupaniana* has remained in predominant use, attributed to the original author Calcara (1842). Therefore, it can be considered a justified amendment of *Helix cupani* Calcara, 1842 (I.C.Z.N. Art. 33.2.3.1.).

From a taxonomic point of view, *H. cupaniana* Calcara, 1842 was prevalently considered a doubtful species, with a description based on juvenile specimens. Philippi (1844: 218) hypothesizes that *H. cupani* may be based on juvenile specimens of *Xerotracha apicina* (Lamarck, 1822), as also shared by Pilsbry (1894: 254). Benoit (1859: 146, Pl. 4, f. 9) accepts the species of Calcara (1842) and publishes a description and drawing compatible with young specimens of *Xerotracha* Monterosato, 1892. However, figures 9 and 10 of Benoit’s Plate 4 (1859) are reversed (see Kobelt, 1877: 285). Reinhard (1877: 285) and Kobelt (1877: 285), on the basis of specimens from the Berlin Museum, place *H. cupaniana* in synonymy of *Discus (Gonyodiscus) rotundatus rotundatus* (O.F. Müller, 1774). This synonymy was followed by later authors as Westerlund (1890: 3, 49), Pilsbry (1894: 46–47) and Taylor (1909: 180).

The lot of the MPCU is made up of 43 rather uniform specimens in terms of size and morphological characteristics. These characters allow us to attribute these shells to the species *Xerotracha conspurcata* (Draparnaud, 1801).

The original description of *H. cupaniana* Calcara, 1842 shows the term “*subpilosa*”, and therefore corresponds better to the specimens of *X. conspurcata* of the MPCU, rather than to the specimens of *D. rotundatus* of the Berlin Museum. Furthermore, the locality “Orfanello near Oreto” written on the label of the MPCU specimens is very close to the type locality of *H. cupaniana*: “banks of the Oreto river near Ponterrotto”.

Considering that, Brugnone purchased shells directly from Calcara (Cimino, 2011) the specimens of the MPCU, ex Monterosato collection, ex Brugnone collection can be considered syntypes.

In consideration of the above, *Helix cupaniana* Calcara, 1842 is proposed here as a synonym of *Xerotracha conspurcata*.

Bourguignat (1878?) established the new genus *Allerya* for three species of small molluscs from Sicily: *A. monterosati* n. sp., *A. brocchi* (Calcara, 1842) and *A. cupanii* (Calcara, 1842). It is likely that the description of *A. monterosati* and *A. brocchi*, as for *H. cupaniana*, was based on juvenile specimens of already described species. Thus, further studies are necessary for a correct taxonomic interpretation of both *A. monterosati* and *H. brocchi* and of the genus *Allerya*.



Figures 4–7. *Aghatina mandralisci* Calcareo, 1840 from Monterosato malacological collection (MPCU). Figs. 4, 5: shell and original label. Figs. 6, 7: protoconch.



Figures 8–12. *Lachesis retifera* (Brugnone, 1880) from Monterosato malacological collection (MPCU). Figs. 8, 9: shell and original label. Figs. 10–12: protoconch.



Figures 13–15. *Helix schwerzenbachii* Calcara, 1841 from Monterosato malacological collection (MPCU). Fig. 13: shells 1173/13–33a and 1173/13–33b and original label. Fig. 14: shell 1173/13–33a. Fig. 15: shell 1173/13–33b.



Figures 16–21. *Helix cupani* Calcare, 1842 from Monterosato malacological collection (MPCU). Fig. 16: shell 1198/13–33a. Fig. 17: shell 1198/13–33b. Fig. 18: shell 1198/13–33c. Fig. 19: shell 1198/13–33d. Fig. 20: shell 1198/13–33e; protoconch nucleus. Fig. 21: shell 1198/13–33e, detail of the periostracal hairs and microsculpture.





Figure 22. *Helix cupani* Calcara, 1842 from Monterosato malacological collection (MPCU), shells and original label.

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